

# Social Basis of the Belief-As-Benefit-Effect

by

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## **Abstract**

Involvement in and commitment to religion/spirituality (R/S) are thought to promote health by building interpersonal bonds through R/S social engagement, a mechanism known as Spirituality as Support Enhancement (SSE). The SSE mechanism implies that R/S social engagements should be associated with health benefits distinct from social engagements in general, but this implication remains untested. The current study has two research questions: 1) Do R/S social engagements contribute to predicting health beyond general social engagements? And 2) Do general social engagements attenuate the relationship between R/S social engagements and health? Using data from the 2020 General Social Survey ( $N = 22,908$ ), two series of survey-weighted multilevel regression models and simultaneous equation models were performed to address the research questions. The results showed that R/S social engagement measures made minimal contributions to predicting health and were weak predictors of health across all models. Findings have implications for R/S-related healthcare and social policies.

*Keywords:* religion/spirituality, psychological health, health, general social survey, Canada

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## List of Symbols and Abbreviations

BABE — Belief-As-Benefit-Effect

CCA — Complete Case Analysis

COVID-19 — Coronavirus Disease 2019

GSS — General Social Survey

IDA — Imputed Data Analysis

LOGIT — Logistic Regression

MAR — Missing at Random

MCAR — Missing Completely at Random

MICE — Multiple Imputation by Chained Equations

MLOGIT — Multinomial Logistic Regression

MNAR — Missing Not at Random

PMM — Predictive Mean Matching

PUMF — Public Use Microdata File

R/S — Religion/Spirituality

SOC — Sense of Coherence

SMD — Standardized Mean Difference

SSE — Spirituality as Support Enhancement

WHO — World Health Organization

$B$  — A  $k \times k$  matrix containing between-imputation variance

$C$  — The number of categories in a categorical variable

$c$  — Category in a categorical variable

CI — Confidence Interval

$D_I(k, \nu_I)$  — Multivariate Wald test statistic and associated degrees of freedom

$d$  — Cohen's  $d$

$df_{Old}$  — Degrees of freedom for pooled univariate Wald test, calculated using the original formula from Rubin (1987)

$df_{Adjusted}$  — Degrees of freedom for pooled univariate Wald test, calculated using the adjusted formula from Barnard and Rubin (1999)

$df_{Observed}$  — Observed degrees of freedom for pooled univariate Wald test

$E$  — Posterior mean

$F(df1, df2)$  —  $F$ -test statistic and associated degrees of freedom

$i$  — Identifier of imputed dataset

$j$  — Identifier of variable specified in the imputation model

$k$  — Number of parameters to be estimated

$m$  — Number of imputed datasets

$N(\mu, \sigma^2)$  — Normal distribution

$N$  — Sample Size

$P$  — Posterior Distribution

$\Pr$  — Probability

$p$  —  $p$ -value

$Q$  — A vector of size  $k$  containing the quantity of interest of a given population

$q$  — Number of variables in the dataset

$R^2$  — Coefficient of determination

$\Delta R^2$  — Changes in the coefficient of determination

$R$  — An  $N \times q$  matrix containing the location of missing data in the population

$r$  — Relative increase of variance due to nonresponse estimated for single parameter estimates

$\bar{r}$  — Relative increase of variance due to nonresponse estimated for multiparameter estimates

$T$  — A  $k \times k$  matrix containing the total variance estimated for single parameter estimates

$\tilde{T}$  — A  $k \times k$  matrix containing the total variance estimated for multiparameter estimates

$t(df)$  — Student's  $t$ -test statistic and associated degree of freedom

$t$  — Identifier of iteration

$V$  — Posterior variance

$V^{1/2}$  — Unscaled covariance matrix of estimated coefficients of the predictors in the imputation model after Cholesky decomposition

$W$  — A  $k \times k$  matrix containing within-imputation variance

$w_l^D$  — Statistical weight of sampling unit  $l$  given the sampling design  $D$

$Wald_{pooled}$  — Pooled univariate Wald test statistic

$X$  — An  $N \times k$  matrix containing observed values of the predictors in the imputation model for variable  $Y$

$X_{mis}$  — The matrix containing observed values of the predictors for sampling units with missing  $y$  in the imputation model for variable  $Y$

$X_{obs}$  — The matrix containing observed values of the predictors for sampling units with observed  $y$  in the imputation model for variable  $Y$

$Y$  — An  $N \times q$  matrix containing partially observed sample data

$Y_{obs}$  — Observed data

$Y_{mis}$  — Missing data

$\dot{Y}$  — Imputed data

$y$  — Values in variable  $Y$

$y_{\text{obs}}$  — Observed values in variable  $Y$

$y_{\text{mis}}$  — Missing values in variable  $Y$

$\dot{y}$  — Imputed values in variable  $Y$

$\hat{y}_i$  — Imputed values in variable  $Y$  for sampling units with observed  $y$

$\hat{y}_j$  — Imputed values in variable  $Y$  for sampling units with missing  $y$

$\dot{y}_i$  — Stochastically simulated predicted values in variable  $Y$  for sampling units with observed  $y$

$\dot{y}_j$  — Stochastically simulated predicted values in variable  $Y$  for sampling units with missing  $y$

$\dot{z}_1$  — A vector of size  $k$  containing values randomly drawn from  $N(0, 1)$

$\beta$  — Type 1 error rate

$\chi^2$  — Chi-Squared statistic

$\pi_l^D$  — Likelihood of being sampled of sampling unit  $l$  given the sampling design  $D$

$\psi$  — Overall probability of data being missing

$\hat{\beta}_0$  — Estimated intercept in the imputation model

$\dot{\beta}_0$  — Stochastically simulated intercept in the imputation model

$\hat{\beta}$  — Estimated coefficients of the predictors in the imputation model

$\dot{\beta}$  — Stochastically simulated coefficients of the predictors in the imputation model

$\epsilon$  — Error value randomly drawn from a normal distribution

$\hat{\sigma}^2$  — Estimated residual variance

$\dot{\sigma}^2$  — Stochastically simulated residual variance

$\Phi$  — Parameters of the imputation models that model the distribution of  $Y$

$\theta$  — Estimated statistics of interest

$\lambda$  — Proportion of the variance attributable to the missing data

## **Social Basis of the Belief-As-Benefit-Effect**

Religion/Spirituality (R/S) has been viewed as a sociocultural determinant of health, with scholarly work on this topic emerging as early as 1897, when sociologist Émile Durkheim found that R/S partially explained differing suicide rates across communities (Durkheim, 1897). In recent decades, owing much to the rise of alternative medicine and the hospice movement (Crowley, 1988; Wiebe, 2014), there has been a revived interest in exploring the relationship between R/S and health. What followed was decades of research yielding a persistent pattern of findings that lend support to the idea that R/S causally promote psychological and physiological wellness, a pattern that has recently come to be described as the Belief-As-Benefit-Effect (BABE; Garssen et al., 2020; Litalien et al., 2021; Papaleontiou-Louca, 2021; Schuurmans-Stekhoven, 2016).

Several underlying mechanisms have been explored to account for the health-promoting effect of R/S, but few have received as much research attention as R/S social engagement (Bhat et al., 2026; Koenig, 2018; Salsman et al., 2024; Shapiro, 2021). Research on R/S social engagement posits that the health benefits of R/S arise from the social context it creates, which promotes health by building interpersonal relationships and social support (Idler et al., 2017; Peterson, 2011; Pirutinsky et al., 2011). However, while R/S social engagement is demonstrably beneficial for human health (Dunbar, 2020; Eatamadi & Napier, 2023; Im et al., 2023), existing literature has neglected to compare it to the similar benefits produced by social engagement in many other contexts (Gero et al., 2018; Larrabee Sonderlund et al., 2019; Schuurmans-Stekhoven, 2013; Wickramaratne et al., 2022). In essence, when viewed in the broader context of the social support literature, R/S, as a social context, did not appear to be different from other social contexts in

promoting health benefits. Framed differently, to assert that R/S social engagement is the underlying mechanism of BABE is to imply that the health benefits arising from R/S-themed social engagement are attributable to its R/S element. This is problematic, as the health benefits attributed to R/S may be better explained by factors that are not explicitly religious. Specifically, social engagement in general and demographic factors, including age, education, and socioeconomic status, may also contribute to the relationship (Galen, 2017; Schuurmans-Stekhoven, 2013, 2019). This is of considerable relevance to the Canadian population, as there has been a steady decline in religious affiliation, participation, and spiritual activities since 1985, mainly driven by changes in relationships with religion between generations of Canadians (Cornelissen, 2021; Thiessen & Wilkins-Laflamme, 2017, 2020). Using the lens of BABE, this sociocultural shift in Canadians' relationship with R/S may have considerable impacts on their mental and physical health.

### **Religion/Spirituality**

A consistent and universal definition of religion remains contested (McKinnon, 2002; Taves, 2011), although, in psychology, religion can be defined as a set of beliefs, practices, and rituals rooted in established traditions related to the “transcendent,” which could be god(s), mystical figures, ultimate truth, enlightenment, or life after death (Koenig, 2018; Koenig et al., 2012). A closely related concept—spirituality—has no universally agreed-upon definition in psychological research (Koenig, 2018; Puchalski et al., 2014). Proposed definitions of spirituality have centred around the search, experience, or expression of “the sacred” in life (i.e., any part of life pursued with devotion and exclusivity), which may or may not be transcendent or supernatural (Koenig, 2018;

Mahoney & Shafranske, 2013). The inclusive notion of sanctity has not only given rise to extreme variance and ambiguity in the definition of spirituality but also introduced substantial overlap between spirituality and religion. Consequently, proposed definitions of spirituality have invariably failed to identify a definitive subset of human experiences that are a) not religious and b) adequate in capturing the lived experience of spirituality across diverse populations (Can Oz et al., 2021; Hayden et al., 2022; Klein et al., 2016; Speed, 2016; Čepulienė & Skruibis, 2023). This has led many scholars to question the credibility of spirituality as a separate and distinct concept from religion (Garssen et al., 2012; Klein et al., 2016; Koenig, 2018; Speed, 2016). Given the challenges in disentangling spirituality from religion, the two concepts are henceforth discussed together as R/S.

### ***Dimensions of Religion/Spirituality***

R/S involvement and practices are multidimensional, as R/S plays a variety of roles in the lives of individuals (Koenig, 2018; Koenig et al., 2012). There are several distinct approaches to partitioning the dimensions of R/S, focusing on the motivational, cognitive, and behavioural aspects of R/S involvement (Koenig, 2018; Trimble, 1997). When viewed as a social determinant of health, R/S is often measured in the following dimensions: the organizational behavioural dimension (i.e., R/S practices in a community or social setting), the nonorganizational behavioural dimension (i.e., R/S activities and behaviours in private, such as prayer and meditation), and the subjective/intrinsic dimension (i.e., R/S-related cognition, such as perceived importance of R/S in life; Koenig, 2018; Koenig et al., 2015). These three dimensions remain the most captured

dimensions of R/S in the BABE literature (Garssen et al., 2020; Hodapp & Zwingmann, 2019; Idler et al., 2017; Shattuck & Muchlenbein, 2018).

### ***Shifting Religious Landscape***

In Western societies, secularization—the decline in the social and cultural significance of religion—began in the early 20<sup>th</sup> century, as religion was increasingly separated from various aspects of society in historically Christian countries (Dillon, 2003; Kasselstrand et al., 2023). At the individual level, national and regional statistics in several countries have shown significant declines in religious belief, behaviour, and belonging in the general population since 1945 (Australian Bureau of Statistics, 2022; Kay, 1997; Linda, 2014; Reader, 2012). The decline of individual religious faith subsequently intensified in the 1980s in much of the modern world, marking the beginning of a global trend that persists into the 21<sup>st</sup> century (Bibby, 2011; Kasselstrand et al., 2023; Sherkat, 2014; Thiessen & Wilkins-Laflamme, 2017). While some scholars dispute the credibility of these observations as evidence for secularization (Finke & Stark, 2003; 2006; Stark et al., 2005), international survey data from the World Value Survey and European Values Study demonstrated that secularization is a global phenomenon in this period (i.e., 1981-2020; Kasselstrand et al., 2023). In Canada, Cornelissen (2021) reported a steady decline in religious affiliation, participation in religious or spiritual activities, and the importance of religious belief in life among Canadians since 1985. While some age-related changes were observed, religiosity remained relatively stable within each generation of Canadians, and the observed decline appeared to be mainly driven by changes in relationships with religion between, rather than within, generations of Canadians (Cornelissen, 2021). Several other studies note the

rise of secularism among younger cohorts, regardless of the religious context during childhood (Stolz, 2020; Thiessen & Wilkins-Laflamme, 2017, 2020).

Historically, modernization, defined as the socioeconomic transition from a traditional, rural, and unindustrialized society to a contemporary, urbanized, and industrialized society, was a common antecedent to secularization in Western societies (Kasselstrand et al., 2023). Secularization scholars have theorized that modernization may undermine the sociocultural significance of religious and other supernatural beliefs by separating religion from many aspects of society (i.e., differentiation) and promoting secular knowledge and understanding of the world (i.e., rationalization<sup>1</sup>; Bruce, 2002; Kasselstrand et al., 2023). In support of this theory, a cluster analysis by Kasselstrand et al. (2023) found that highly modernized countries with minimal government regulation of religion are, on average, substantially less religious than countries with low levels of modernization or high levels of religious regulation. Many scholars have also identified religious, cultural, and social pluralism as the initial catalyst for the growth of secularity in Western societies, which in turn fuels irreligious socialization and further contributes to the expansion of secularity as it becomes increasingly accepted in the social sphere (Bruce, 2013; Norris & Inglehart, 2011; Thiessen & Wilkins-Laflamme, 2017). However, while modernization and secularization frequently co-occur, a modernized society isn't necessarily a secular one, as the modernization process defined in secularization theory denotes acultural and areligious societal changes in economic development, social stratification, and labour organization (Bruce, 2002, 2013; Kasselstrand et al., 2023;

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<sup>1</sup> To clarify, rationalization, in this context, refers to the ordering of society based on reasoning, efficiency, and scientific evidence. It does not imply that individuals are inherently more rational in a modernized society.

Martin, 2005). In other words, it is entirely possible, albeit highly unusual, for a society to become highly modernized yet remain unsecularized (Kasselstrand et al., 2023).

## **Health**

As defined by the World Health Organization (WHO), health describes a state of complete well-being with regard to one's physical, mental, and social functioning, including but not limited to the absence of diseases<sup>2</sup>. Therefore, a fulsome assessment of an individual's health needs must capture both the degree of dysfunction (i.e., objective measure) and an individual's experience and perception of it (i.e., subjective measure; Langevin, 2024; Riegelman, 2019). Objective measures of health assess an individual's functioning using standardized, quantitative indicators, typically comprising biomarkers and performance-based assessments (e.g., Guralnik et al., 1994; Noushad et al., 2021). In contrast, subjective measures of health assess an individual's lived experience of their functions and dysfunctions through perception-based assessments (Pequeno et al., 2020; Stone & Mackie, 2013). Objective and subjective measures are generally considered complementary and equally important in formulating a holistic picture of an individual's health status (Langevin, 2024; Stone & Mackie, 2013).

## **Religion/Spirituality and Health**

Regardless of which dimensions of R/S are assessed, greater levels of R/S are often found to be associated with better psychological and physiological health outcomes (Dilmaghani, 2018; Garssen et al., 2020; Habib et al., 2018; Mukerjee & Venugopal, 2017; Walker et al., 2020; Yaden et al., 2022). This pattern of findings (BABE) has led

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<sup>2</sup> *Constitution of the World Health Organization*, 22 July 1949, 221 UNTS 1639 (entered into force 5 June 1991)

some scholars to advocate for the inclusion of R/S in the conceptualization of health (Irawati et al., 2023; Targari et al., 2022) or the consideration of R/S as a social determinant of health (Idler, 2014; Idler et al., 2017; Koenig, 2018; Koenig et al., 2012).

### ***Religion/Spirituality and Subjective Well-Being***

The relationship between R/S and subjective measures of health, or subjective well-being, has been widely investigated in the BABE literature. There is a prevailing consensus that higher R/S is associated with better self-rated physical health, mental health, and life satisfaction (Bonelli & Koenig, 2013; Fastame et al., 2015; Jim et al., 2015; Koenig, 2018; Koenig et al., 2012). However, the relationship between R/S and subjective well-being is not uniform across dimensions of R/S, with the organizational behavioural dimension being the more consistent predictor of better subjective well-being (AbdAleati et al., 2014; Bonelli & Koenig, 2013; Cragun et al., 2016; Fastame et al., 2015; Koenig & Vaillant, 2009; Rosmarin & Koenig, 2020; Salsman et al., 2015; Unterrainer et al., 2012). In other words, the relationship between R/S and subjective well-being is, at least in part, dependent on how an individual has elected to participate in R/S. On this note, while the organizational behavioural dimension is the most consistent R/S predictor of health, it is also arguably the least accessible form of participation in R/S for individuals with poor physical or mental health (Elmer & Stadtfeld, 2020; Koenig & Vaillant, 2009; Speed & Lamont, 2023). Consequently, findings pertaining to the relationship between the organizational behavioural dimension of R/S and subjective well-being are further complicated by the bidirectional relationship between R/S involvement and health. Furthermore, systematic reviews of the relationship between R/S and subjective well-being have found smaller effect sizes in recent studies (i.e., post-

2010), with the overall effect size being trivial-to-small (Garssen et al., 2020; Hodapp & Zwingmann, 2019). This was further corroborated by recent findings from numerous studies leveraging population-level data, as religious groups did not exhibit any practically meaningful difference in subjective well-being when compared to nonreligious groups, even in well-powered analyses ( $d < 0.20$ ; Baker et al., 2018; Speed, 2022; Speed et al., 2020; Speed & Lamont, 2023; Stroope & Baker, 2018; Walker et al., 2020). In summary, while the main body of literature supports a positive association between R/S and subjective well-being, the exact mechanism and the practical significance of this association remain elusive.

### **Mechanisms of BABE**

Numerous non-competing explanatory mechanisms have been proposed to account for the observed health effects of R/S involvement, garnering varying levels of empirical support (Borges et al., 2021; Koenig, 2018; Koenig et al., 2012; Litalien et al., 2021). Generally, R/S is thought to promote health outcomes by providing a strong Sense of Coherence (SOC; Crescioni & Baumeister, 2013; Garssen et al., 2020; Jeserich et al., 2023), enhancing coping effectiveness (Ahles et al., 2016; Imran et al., 2022; Reynolds et al., 2016), and boosting the quality and frequency of social engagement (Idler et al., 2017; Krause, 2008; Peterson, 2011).

### ***Sense of Coherence (SOC)***

**Definition.** First conceptualized by Antonovsky (1987), SOC refers to a life orientation characterized by an enduring belief that life events, positive or negative, are comprehensible, manageable, and meaningful. Antonovsky conceptualized SOC as one of the key factors in explaining the role of stress on human health in the salutogenic

model of health, which focuses on factors responsible for the origin of health, rather than disease (i.e., pathogenic model of health). As a theoretical formulation, SOC is inherently multidimensional, comprising three dimensions of unequal salience: the cognitive dimension, the belief that life events are explicable and predictable (i.e., comprehensibility); the behavioural dimension, the confidence in one's ability in managing life events via personal and interpersonal resources (i.e., manageability); and the motivational dimension, the perception of life as interesting, satisfactory, and worthwhile (i.e., meaningfulness). The motivational dimension appears to be the central dimension within SOC, as a lack of meaningfulness often results in deteriorations in comprehensibility and manageability (Antonovsky, 1987).

**Sense of Coherence and Health.** Recent systematic reviews and meta-analyses have established that a weaker SOC is associated with elevated all-cause mortality in adolescent, adult, and geriatric populations, highlighting its influential role in human health across the lifespan (Länsimies et al., 2017; Piironen et al., 2020; Tan et al., 2013). Intriguingly, while SOC is widely established as a strong predictor of all-cause mortality, it is a weak and inconsistent predictor of cause-specific mortality (Geulayov et al., 2015; Lynch et al., 1997; Nilsen et al., 2016), and leading mortality risk factors (Haukkala et al., 2013; Super et al., 2014; Wainwright et al., 2008). Given the pattern of findings, it is probable that the potential causal mechanism between SOC and mortality is nonsomatic (e.g., psychosocial or behavioural; Eriksson & Lindström, 2006; Piironen et al., 2020). Stronger SOC predicts better psychological well-being, as well as fewer depressive and anxiety symptoms, which suggests that SOC may have an indirect effect on mortality mediated by psychological well-being (Länsimies et al., 2017; Piironen et al., 2020).

However, it is unclear whether the three dimensions of SOC have unique relationships with health outcomes, as much of the literature on SOC and health has neglected to disaggregate between the three dimensions (Eriksson & Lindström, 2006; Lämsimies et al., 2017; Piironen et al., 2020).

**Religion/Spirituality and Sense of Coherence.** The coherency hypothesis, which postulates that SOC mediates the association between R/S and health, received empirical support between 1990 and 2020 (Garssen et al., 2020; George et al., 2000). R/S has long been theorized to be a crucial source of meaning in life, and nonreligion is often thought to be associated with, or even analogous to, nihilism (Crescioni & Baumeister, 2013; Speed et al., 2018; Vail et al., 2010). To clarify, the notion that religious frameworks hold purview over the construction of meanings in life is largely refuted by contemporary literature (Ahmadi et al., 2019; Bacon et al., 2015; Caldwell-Harris et al., 2010; Saarelainen, 2016), but a moderate, positive association between R/S and SOC was consistently found across a variety of social and cultural contexts (Jeserich et al., 2023). Consistent with previous literature on R/S and meaning in life, a meta-analysis suggests that R/S is most predictive of the motivational dimension of SOC (Jeserich et al., 2023). In simple terms, higher levels of R/S are generally associated with higher SOC, which may provide R/S affiliates an advantage in terms of psychological well-being. However, counterindications have emerged in the literature, highlighting several discrepancies within the R/S-SOC research (Caldwell-Harris et al., 2010; Speed et al., 2018; Zwingmann et al., 2017).

Logically, if higher R/S is associated with higher SOC, nonreligious individuals should report a SOC deficit relative to R/S affiliates; however, researchers have failed to

find any deficit in the three dimensions of SOC among nonreligious individuals relative to R/S affiliates (Ahmadi et al., 2019; Caldwell-Harris et al., 2010; Saarelainen, 2016; Speed et al., 2018; Wilkinson & Coleman, 2009; although, cf. Merakou et al., 2016, dissenting). Furthermore, while R/S affiliates are purportedly advantaged in terms of psychological well-being due to SOC, they do not consistently report better psychological well-being (Baker et al., 2018; Garssen et al., 2020; Hodapp & Zwingmann, 2019; Speed et al., 2020; Walker et al., 2020). In light of this discrepancy, some have suggested that the an R/S worldview may also introduce rigid SOC, which is a life orientation characterized by a simple, fundamentalist worldview that is prone to deteriorate when exposed to adversity (Antonovsky, 1987; Jeserich et al., 2023; Zwingmann et al., 2017). In other words, while R/S is associated with SOC, it may also be linked to qualitative changes in how SOC relates to well-being, as R/S tend to promote many other beliefs and worldviews beyond those captured by SOC measures. At a minimum, future research on the coherency hypothesis could benefit from examining fundamental beliefs (e.g., primal world beliefs; Kerry et al., 2025) as competing explanations of the observed R/S-health relationship.

### ***Coping Effectiveness***

**Definition.** First conceptualized by Lazarus and Folkman (1984), coping effectiveness is defined as the capability of specific coping modalities to manage and resolve situational and everyday stress. A closely related but distinct concept is coping efficacy, which primarily focuses on confidence in one's ability to manage and resolve life stress (Bandura, 1997). In a way, coping effectiveness and efficacy can be seen as objective and subjective measures of coping, respectively.

**Coping Effectiveness and Health.** The ability to manage and resolve stressors is crucial to achieving optimal health (Park & Iacocca, 2013; Scott-Sheldon et al., 2008). Much of the literature on coping effectiveness has focused on contrasting the effectiveness of various coping modalities in response to acute and chronic stressors (Dullius et al., 2021; Finkelstein-Fox et al., 2019; Luo & Mohammed, 2023). A consistent and universal classification of coping strategies and modalities remains contested, making it challenging to draw generalizable conclusions regarding their health effects (Didymus, 2016; Nicholls & Polman, 2007; Norris et al., 2017; Skinner et al., 2003). However, the health effects of coping modalities appear to be driven by their ability to both alleviate distress and maintain adaptive psychosocial functioning (Cooper et al., 2017; Moskowitz et al., 2009). On this basis, some psychologists have distinguished between positive and negative coping modalities: positive coping modalities are characterized by adaptive coping behaviours that alleviate distress and retain functioning, such as physical exercise, positive reappraisal, and problem-focused coping (Lazarus & Folkman, 1984; Lo Buono et al., 2016; Nicholls & Polman, 2007). In contrast, negative coping modalities are characterized by maladaptive coping behaviours that focus solely on alleviating distress or retaining functioning while compromising the other, such as emotional suppression, substance use, and binge eating (Finkelstein-Fox et al., 2019; Luo & Mohammed, 2023). The positive/negative coping modality classification is of considerable utility in coping-health research as a reliable indicator of the health effects of any given coping modality, with positive coping modalities consistently associated with better mental and physical health outcomes (Finkelstein-Fox et al., 2019; Lo Buono et al., 2016; Luo & Mohammed, 2023).

**Religious Coping.** R/S beliefs and values are often mobilized in managing and resolving life stress, which is thought to either augment the effectiveness of existing coping modalities or constitute a distinct coping modality (Imran et al., 2022; Reynolds et al., 2016). Evidence suggests that the connection between R/S and health is, at least in part, due to the role of religious coping in moderating the stress induced by adversity (Bradshaw & Ellison, 2010; Ellison et al., 2019; Lechner et al., 2013; Lorenz et al., 2019; White et al., 2018). Such adaptations may take shape positively or negatively: positive religious coping is characterized by comfort and a sense of meaning through a perceived partnership with god(s), whereas negative religious coping is characterized by feelings of abandonment, a strained and doubtful relationship with god(s), and belief in a punitive deity (Bjorck & Thurman, 2007; Park et al., 2018). When investigated separately, negative religious coping was often associated with poorer adjustment and health outcomes, while positive religious coping was often associated with better health outcomes (Ahles et al., 2016; Bjorck & Thurman, 2007; Brewster et al., 2016; Koenig, 2018). However, meta-analyses published in 2016 and 2022 have found that when researchers elect to investigate positive and negative religious coping simultaneously, the relationship between positive religious coping and health outcomes is largely mixed and inconsistent (Imran et al., 2022; Reynolds et al., 2016), which points to a potential interdependent relationship between both forms of religious coping, as one may modify or offset the effect of the other (Park et al., 2018). Another caveat to this collection of findings is that while there is substantial evidence for the role and benefits of religious coping when facing severe stressors (e.g., chronic illness and epidemics; Imran et al., 2022; Reynolds et al., 2016), findings suggest that its effect may become noticeably more

limited when researchers examine milder stressors, such as daily stress (Bjorck & Thurman, 2007; Brewster et al., 2016; Ellison et al., 2019).

### ***Social Engagement***

**Definition.** Social engagement refers to one's degree of participation in various social roles and relationships (Avison et al., 2007). The conceptualization of social engagement is intended to capture one's interpersonal life in its entirety, encompassing the quantity and quality of relationships, interpersonal networks, and social roles.

Whereas social support concerns elements of interpersonal life that can serve as important assets in overcoming stress and adversity, social engagement focuses on the totality of one's interpersonal life, regardless of its effects or roles (Avison et al., 2007; Becofsky et al., 2015; Uchino, 2006).

**Social Engagement and Health.** Decades of public health and epidemiological research have led to a broad consensus on the crucial role of social engagement in promoting psychological and physiological health (Becofsky et al., 2015; Lamblin et al., 2017; Wickramaratne et al., 2022). While the desired level of social engagement may vary considerably from person to person, the detrimental effects of social isolation and loneliness are well-established across all stages of life (Lapane et al., 2022; Leigh-Hunt et al., 2017; Loades et al., 2020; Park et al., 2020; Yang et al., 2013). Interventions and programs targeting social isolation and loneliness often yield improvements in health outcomes (Cahill et al., 2020; Ibrahim et al., 2021; Newlin et al., 2015). The theoretical connection between social engagement and health arises from three distinct hypotheses: (a) social engagement may shape individual health behaviours through social health norms, (b) engagement within social networks may increase the availability of

instrumental social support, thus facilitating overall well-being, and (c) engagement within social networks may also improve access to emotional and moral support, buffering the health impact of daily stress (Larrabee Sonderlund et al., 2019; Uchino, 2006; Uchino et al., 2013; Wickramaratne et al., 2022). Granted, the magnitude of health effects arising from social engagement is often determined by gender, socioeconomic status, and the quality and nature of social engagement, adding a layer of nuance to the theoretical connection (Garcia et al., 2019; Larrabee Sonderlund et al., 2019; Seeman et al., 2014; Wickramaratne et al., 2022; Yang et al., 2014). Still, the overall relationship between social engagement and health is clear: higher levels of social engagement are consistently associated with better psychological and physiological health outcomes (Larrabee Sonderlund et al., 2019; Wickramaratne et al., 2022).

**Religion/Spirituality and Social Engagement.** The unique social effects of R/S have been a focal point of research efforts (Graham & Haidt, 2010; Hayward & Elliott, 2009; Park et al., 2011; Siegel et al., 2001). Krause (2008) argued that church-based social support differs sufficiently from other forms of social support, both in its mechanisms and dynamics, to constitute its own domain. This was echoed by a collection of empirical findings that lend support to the Spirituality as Support Enhancement (SSE) mechanism: the idea that R/S context in social engagement builds prosocial and reciprocal interpersonal relationships by instilling a sense of similarity and trustworthiness among attendees (Galen, 2012; Graham & Haidt, 2010; Hayward & Elliott, 2009; Idler et al., 2017; Peterson, 2011). Studies using path-modelling techniques further support the crucial role of the SSE mechanism in the relationship between R/S and health (Pirutinsky et al., 2011; Salsman et al., 2005). Additionally, findings related to

the SSE mechanism are among the most robust in the BABE literature and may represent a possible mechanism of BABE (Borges et al., 2021; Litalien et al., 2021). To summarize, the SSE-health pathway posits that R/S elements create unique prosocial relationships among R/S affiliates and augment and enhance the health benefits of social engagement.

Logically, suppose the R/S context is imperative to the health benefits of religious social engagement, then it follows that social engagement in religious contexts should yield health benefits distinct from those in other contexts (Galen, 2017). On this note, critics have noted a persistent failure to compare health benefits arising from social engagement in religious and other social contexts, pointing to comparable effects of organizations and activities that are not explicitly religious (e.g., sporting teams, retail shopping, or square dancing; Chang et al., 2011; Gero et al., 2018; Schuurmans-Stekhoven, 2013; Zeng & He, 2023; although, cf. Idler et al., 2017, dissenting). Furthermore, when researchers separate R/S-specific effects from social engagement by controlling for social behaviours and demographics, R/S indicators were weaker predictors of health than group involvement and demographic factors (Galen & Kloet, 2010; Kim et al., 2014). Taken together, these findings suggest that R/S enhancement of social engagement, as proposed by the SSE mechanism, may not translate to dissimilar health outcomes compared to social engagement in other contexts. Thus, the observed health benefits may be better explained by the inherent benefits of social engagement in general (Larrabee Sonderlund et al., 2019; Wickramaratne et al., 2022).

Furthermore, the SSE-health pathway is further confounded by the disparities in the social desirability and availability of religious and nonreligious social activities in

religious countries (Stavrova et al., 2013; Stroope & Baker, 2018). In religious nations, religious individuals tend to receive more approval and recognition from their social environment, whereas their nonreligious counterparts often face considerable stigma and social sanctions (Stark & Maier, 2008; Stavrova et al., 2013). In essence, religiosity may serve as a proxy for sociocultural integration, which is a more parsimonious explanation for the observed health effects of R/S context in social engagement (Galen, 2017).

### **Current Study**

Despite the volume of the SSE-health literature, few have examined whether R/S context in social engagement is associated with distinct health benefits beyond those explained by social engagement in general. Essentially, the existing literature implicitly assumes that health benefits arising from R/S social engagement are attributable to the religious context. This assumption is problematic, given that social mechanisms to account for the relationship are parsimonious explanations of such effects (see Figure 1). Essentially, while R/S social engagement is expected to be predictive of health, is it associated with “extra” health *more than* what general social engagement provides?

The current study examined whether the relationship between R/S social engagement and health is retained after general social engagement is included in the same models. My underlying logic is that if the associations between social engagement and health are stronger in the presence of an R/S context, then the saturation of R/S context in social engagement should significantly predict health outcomes even after accounting for general social engagement metrics.

The 2020 General Social Survey (GSS) was collected during the COVID-19 pandemic, during which all provinces and territories implemented highly restrictive

movement and social gathering measures (Canadian Institute for Health Information, 2022). Though necessary, these lockdown measures have severe and far-reaching consequences on the mental health of the general population, ranging from elevated mental disorder symptomology to the onset or relapse of psychiatric disorders (de Lima et al., 2020; Jin et al., 2021; Kar et al., 2020). Individuals affected by lockdown measures used various coping strategies and resources to manage such unprecedented adversity, with some yielding better outcomes than others (Cheng et al., 2023; Minahan et al., 2020; Yee et al., 2021). Thus, coping styles and resources are crucial in explaining the variance in health outcomes amid the COVID-19 pandemic. Framed differently, the exceptional adversity associated with the COVID-19 pandemic provided researchers with a unique context to examine the efficacy of various coping strategies, as its effects became increasingly pronounced and observable given the magnitude of the crisis. This is of relevance to R/S-specific coping strategies and resources, as their role and benefits are better established for individuals facing severe stressors, such as chronic illness, epidemics, and natural disasters (Bulisig & Aruta, 2022; Liu et al., 2025; Stone et al., 2003; Sipon et al., 2014). As such, data collected during the pandemic should be advantageous for analyses of coping efficacy and resources in the context of R/S.

The current study addressed the following research questions:

**Research Question 1:** Is there a significant relationship between R/S social engagement indicators and health outcomes when the effects of the general social engagement indicators are accounted for?

**Hypothesis 1 (H1):** R/S social engagement indicators will improve model fit over models containing only general social engagement indicators.

**Research Question 2:** How will the observed relationship between R/S social engagement indicators and health outcomes change with the sequential and simultaneous addition of the general social engagement indicators?

**Hypothesis 2 (H2):** When general social engagement indicators are added to the model sequentially and simultaneously, the coefficients of R/S social engagement indicators will be smaller in magnitude.

**Hypothesis 3 (H3):** R/S social engagement indicators will have a small effect size or larger ( $| \text{Standardized Mean Difference (SMD)} | \geq 0.20$ ), after the inclusion of general social engagement.

## **Method**

### **Data**

Data from the Public Use Microdata File (PUMF) of the 2020 GSS Social Identity (Cycle 35) was used for the analysis. The 2020 GSS was chosen because it was the most recent Cycle of the GSS that contained all relevant variables. The GSS is a series of annual cross-sectional surveys administered by Statistics Canada to monitor societal changes in the living conditions and well-being of Canadians and investigate current and emerging social policy issues (Social and Aboriginal Statistics Division, 2019). The 2020 GSS focused on the identity, belonging, attachment, and pride of Canadians in their respective social and cultural environments, incorporating questions that examined social networks, community participation, knowledge and appreciation of Canadian history and symbols, shared values, and trust in people and institutions. Data were collected from August 17, 2020, to February 7, 2021, via computer-assisted interviews and electronic questionnaires. The target population of the 2020 GSS was all persons aged 15 or older

residing within one of the ten provinces of Canada, excluding institutionalized individuals and those living on reserves. The 2020 GSS employed a two-stage, provincially stratified random sampling design: a household was randomly selected at the first stage, followed by the age-order selection of one person from within the household as the survey respondent. The 2020 GSS oversampled visible minorities, who were similarly sampled using two-stage stratified random sampling, with additional strata introduced in the first stage based on six minority groups of interest, a three-category income variable and a two-category education variable in addition to ten provincial strata, resulting in a total of 229 strata covering more than 98% of Canadian households (Statistics Canada, 2020). Households without a serviceable telephone number and mailing address were excluded from the sampling frame, but the survey estimates can be weighted to account for individuals living in these households. The 2020 GSS included responses from 34,044 participants, comprising 19,473 individuals obtained through the original sampling strategy and 14,571 individuals obtained through the additional sampling strategy used to oversample visible minorities, with an overall response rate of 40.8% (Statistics Canada, 2020).

### **Ethics Statement**

The current study is based solely on publicly available secondary data provided and regulated by Statistics Canada, which is explicitly exempted from institutional ethics review under section 2.2 of the Tri-Council Policy Statement on ethical conduct for research involving humans (Canadian Institutes of Health Research et al., 2014). The Statistics Act prohibits Statistics Canada from releasing personally identifying information without the respondent's consent or authorization under the Act (*Statistics*

*Act*, 1985, s 19). Thus, all PUMFs are subjected to extensive disclosure risk analyses prior to their release to prevent both direct and residual disclosure of personally identifiable data. Variables that may lead to the identification of respondents were aggregated into broader categories or suppressed when necessary (Statistics Canada, 2020). As a result of these mechanisms, the 2020 GSS PUMF is fully anonymized, and the risk of identifying individual respondents is minimal.

## **Measures**

### ***Inclusion Criteria***

Respondents of the 2020 GSS were asked, “What is your religion?” and were given the option to select one denomination or religion regardless of whether they were practicing members of that group. Statistics Canada defines religion as a person’s self-identified connection or affiliation with any religiously defined community or system of belief, such as religious denomination, group, body, sect, or cult, which can, but does not always, take the form of a formal membership in religious organizations or groups<sup>3</sup> (Statistics Canada, 2021). This definition aligns with internationally recognized standards for measuring religion in population censuses (UN Department of Economic and Social Affairs, 2017). In the PUMF file, this information was collapsed into a binary variable indicating whether the respondent had self-identified as a member of a specific religious affiliation. Because nonreligious individuals are significantly less likely to report regular attendance at religious services and activities, all analyses were restricted to respondents who self-identify as R/S affiliates, allowing for an effective comparison of the effects of

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<sup>3</sup> Interested parties may consult the Census of Population Data Dictionary for a list of religions captured by Statistics Canada: <https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/app/index-eng.cfm?>

religious and nonreligious activities (Galen & Kloet, 2011). All analyses also excluded individuals under 25 years of age. This decision was made because children of religious individuals may not have agency over attending religious services (Conway et al., 2023; Ellison & Sherkat, 1995; Ott & Vonk, 2025; Stroope et al., 2023). Ideally, this exclusion should be limited to individuals under 18, but the 2020 GSS PUMF contains age only as a categorical variable in 10-year increments; thus, excluding individuals under 18 is possible only by excluding all individuals aged 25 or younger. With these exclusions, a total of 22,908 respondents were included in the imputed data analysis, and a minimum of 7,258 respondents were included in the complete case analysis.

### ***Covariates***

The 2020 GSS contained a range of sociodemographic variables that were controlled for in all regression models, including age (*25-34* = reference, *35-44*, *45-54*, *55-64*, *65-74*, *75 and older*), sex assigned at birth (*female* = reference, *male*), marital status (*married/common-law* = reference, *widowed/separated/divorced*, *single*), education (*high school or less* = reference, *college or less than Bachelor's*, *Bachelor's or higher*), region (*Atlantic* = reference, *Quebec*, *Ontario*, *Prairies*, *British Columbia*), visible minority status (*non-minority* = reference, *visible minority*), and total family income (in units of \$25,000). The selection of covariates was guided by contemporary studies on the subject matter (Idler et al., 2017; Reddish & Tong, 2021; Stroope & Baker, 2018; Zeng & He, 2023).

### ***Predictors***

R/S social engagement was captured using the following three variables: frequency of religious attendance (*1 = not at all* to *5 = at least once a week*); most active

in religious organization (0 = *no*; 1 = *yes*), and proportion of friends contacted in the past month who shared the same religion (1 = *none* to 5 = *all*).

General social engagement was captured using the following five variables: frequency of activities and meetings in person (1 = *not in the past year* to 5 = *at least once a week*); frequency of activities and meetings through the internet (1 = *not in the past year* to 5 = *at least once a week*); number of other friends (1 = *no other friend* to 6 = *80 or more other friends*); number of close friends (scale from 1 = *none* to 12 = *30 or more close friends*); and satisfaction with the frequency of communicating with friends (scale from 1 = *very dissatisfied* to 5 = *very satisfied*).

The selected social engagement measures represent different facets of respondents' social engagement: general social engagement measures capture the quantity and quality of social engagement, and R/S social engagement measures capture the saturation of religious context in respondents' social engagement.

### ***Outcome***

Three single-item self-report measures were selected as health outcomes in the current proposal. While these lack depth compared to validated measures on specific dimensions of health, this type of outcome measure has been extensively used in R/S and health literature (Dilmaghani, 2018; Garssen et al., 2020; Speed, 2022; Speed & Lamont, 2021; Walker et al., 2020) and is common for population health research (Bourke et al., 2025; Shimonovich et al., 2024). The measures included self-rated health (scale from 1 = *poor* to 5 = *excellent*); self-rated mental health (scale from 1 = *poor* to 5 = *excellent*); and life satisfaction (scale from 0 = *very dissatisfied* to 10 = *very satisfied*).

## Data Analysis

All statistical analyses were performed using Stata 17 software (StataCorp, 2021). Survey-weighted hierarchical linear regression was used as the primary analytical tool, along with simultaneous equation modelling for *post hoc* coefficient comparison. The  $\alpha$ -level was set at .05, and the effect sizes for predictors were discussed in the context of *SMD* using conventional standards:  $|SMD| < 0.20$  is trivial,  $|SMD| < 0.50$  is small,  $|SMD| < 0.80$  is medium, and  $|SMD| \geq 0.80$  is large (Andrade, 2020; Cohen, 1988). Post hoc power analysis conducted using G\*Power 3.1 indicated an achieved power of  $1-\beta \approx 1.00$  for detecting  $\Delta R^2 \approx .02$  at  $\alpha = 0.05$ , with 51 predictors total and 9 tested predictors in the hierarchical regression model (Faul et al., 2009)<sup>4</sup>.

The survey design of the 2020 GSS has several implications for statistical inference. As random sampling was carried out within each stratum, the probabilities of being sampled were unequal across individuals in the sampling frame (Statistics Canada, 2017, 2020). Additionally, since participation in the 2020 GSS was voluntary, the probabilities of nonresponses were also unequal among selected respondents. Therefore, parameter estimates need to account for varying probabilities of being sampled and nonresponse across demographic groups. Moreover, statistical inferences from probability samples need to account for sampling errors, which is particularly relevant for the 2020 GSS, as its multistage cluster sampling design is known to yield higher sampling error than simple random sampling (Kerry & Bland, 1998; Statistics Canada, 2017, 2020). To ensure accurate estimation of population parameters, the 2020 GSS PUMF includes person-level weights that correct point estimates to account for varying

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<sup>4</sup> $\beta$  here refers to the probability of making a type II error.

probabilities of being sampled and nonresponse, and bootstrap weights that correct variance estimates to account for sampling errors. Multicollinearity screening was carried out using the variance inflation factor. All regression models employed heteroskedasticity-consistent standard errors due to survey-weighting, which addresses issues of heteroskedasticity and non-random error in cluster sampling (Shao, 2007).

### ***Simultaneous Equation Modelling and Coefficient Comparison***

The analysis uses simultaneous equation modelling to conduct *post hoc* coefficient comparisons, an approach similar to that proposed by Kwan and Chan (2011). A simultaneous equation model is a model comprising a set of two or more simultaneous linear equations, often involving more than one dependent variable to account for the potential relationships among them. In the proposed analysis, simultaneous equation models were used to replicate the survey-weighted multilevel regression models: each block of the regression model was replicated as a simultaneous equation, and all equations within each model shared the same dependent variable. *Post hoc* coefficient comparisons were then carried out across simultaneous equations in each model using Wald  $\chi^2$  tests. This approach bears the unique advantage of allowing for the application of bootstrap weights while facilitating coefficient comparisons.

### ***Missing Data and Multiple Imputation***

In the 2020 GSS, Statistics Canada introduced a new format for electronic questionnaires, allowing respondents to skip entire question blocks. This resulted in an elevated overall nonresponse rate of 40.7% and question-specific nonresponse rates (Statistics Canada, personal communication, December 16, 2024). Consequently, the following four variables in the analysis were flagged for exhibiting elevated nonresponse

rates (> 30%): most active in religious organization (0 = *no*; 1 = *yes*); frequency of activities and meetings in person (scale from 1 = *not in the past year* to 5 = *at least once a week*); frequency of activities and meetings through the internet (scale from 1 = *not in the past year* to 5 = *at least once a week*); and proportion of friends contacted in the past month who shared the same religion (scale from 1 = *none* to 5 = *all*). Differences between respondents and nonrespondents<sup>5</sup> in various sociodemographic characteristics were illustrated in Table 2. Given the rate of missing data and observed differences in demographic characteristics between respondents and nonrespondents (see Table 2), the exclusion of these nonrespondents from the analysis may result in potential biases in statistical inferences (Lall, 2016; van Buuren, 2021). Therefore, missing values were imputed using multiple imputation by chained equations (MICE), producing 25 imputed datasets following 10 iterations of chained equations, and analyses were carried out using both imputed and observed data. Variables that may be associated with missingness were included in the imputation model to support multiple imputation. Interested parties may consult Appendix A for a description of the missing data procedures used to generate and analyze the imputed data.

### ***Model Structure***

Recall that the goal of the current study is to examine whether R/S social engagement yields distinct health benefits beyond those attributable to social engagement in general. To this end, two series of multilevel hierarchical regression models were employed. Model series one examined whether the R/S context adds to the health benefits

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<sup>5</sup> Nonrespondents are defined as cases with no valid response for one or more of the four aforementioned variables with elevated response rates, but otherwise complete.

of social engagement by entering general social engagement indicators first and R/S social engagement last. The model structure for model series one was as follows:

**Block 1:** A health outcome was regressed onto the covariates.

**Block 2:** A health outcome was regressed onto the covariates and general social engagement.

**Block 3:** A health outcome was regressed onto the covariates, general social engagement, and R/S social engagement.

Model series two had R/S social engagement indicators entered first, followed by general social engagement entered individually, and ended with a final block containing all covariates and general social engagement. This was followed up by *post hoc* coefficient comparisons, which examined the relative level of importance of general social engagement by identifying coefficient changes in R/S social engagement after their inclusion. The model structure for model series two was as follows:

**Block 1:** A health outcome was regressed onto the covariates.

**Block 2:** A health outcome was regressed onto the covariates and R/S social engagement.

**Block 3a:** A health outcome was regressed onto the covariates, R/S social engagement, and in-person civic engagement.

**Block 3b:** Online civic engagement was added to the model to replace in-person civic engagement.

**Block 3c:** The number of close friends was added to the model to replace online civic engagement.

**Block 3d:** The number of other friends was added to the model to replace the number of close friends.

**Block 3e:** The level of satisfaction with communication with friends was added to the model to replace the number of other friends.

**Block 4:** A health outcome was regressed onto the covariates and all social engagement measures (i.e., R/S and general).

Model series two was designed to offer a continued examination of the underlying social mechanisms by disaggregating across various measures of general social engagement. By allowing each measure to report its unique impact on the relationship between R/S social engagement and health, I can infer whether general social engagement measures is more relevant to predicting health than measures of the saturation of R/S context social engagement.

## **Results**

### **Multiple Imputation Diagnostics**

Stata 17 software was used to perform MICE for missing values in the analysis. Summary statistics for respondents and nonrespondents of predictor variables are illustrated in Table 2. Convergence diagnostics were carried out using trace plots, which revealed no apparent trend in imputed values across iterations. Additional checks for the plausibility of imputed values were then performed by visually inspecting their distributions, which were similar to those of the observed values.

The imputed data analyses have a greater sample size ( $N = 22,908$ ; cf.  $N = 7,258$ , for the complete case analyses), representing over 18 million religious adherents in Canada. Consequently, all imputed data analysis models were well-powered ( $1 - \beta \approx 1.00$ ;

Faul et al., 2009). Descriptive statistics for all covariates and predictors in imputed data analyses, calculated by averaging proportions and means across the 25 imputed datasets, are available in Table 3. Interested parties may consult Appendix B for results from the complete case analyses.

### **Model Series One**

Model series one provided an overall test of the contribution of R/S social engagement measures to explaining additional variability in self-rated health, self-rated mental health, and life satisfaction. These health outcomes were first regressed onto covariates in Block 1, with general social engagement and R/S social engagement entered in Blocks 2 and 3, respectively.

#### ***Self-Rated Health***

Self-rated health was regressed onto covariates in Block 1,  $D_I(21, 335270.0)^6 = 19.66, p < .001, R^2 = .060$ , general social engagement in Block 2,  $D_I(21, 8826.3) = 11.12, p < .001, R^2 = .104, \Delta R^2 = .044$ , R/S social engagement in Block 3,  $D_I(9, 7113.1) = 2.82, p = .003, R^2 = .109, \Delta R^2 = .005$  (see Table 4). Consistent with H1, R/S social engagement significantly improved model fit in predicting self-rated health. The findings from the complete case analysis were similar to those from analysis of imputed data in terms of effect sizes, but was not statistically significant, which did not support H1, as R/S social engagement did not improve model fit in predicting self-rated health when entered in Block 3,  $F(9, 499) = 1.08, p = .377, R^2 = .099, \Delta R^2 = .003$  (See Table 13).

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<sup>6</sup> Note that  $df2$  varied across tests as it accounts for the relative increase in variance due to missingness (i.e.,  $\bar{r}$ ; see Equation 36, Appendix A), which varied as tested predictors have varying degrees of missingness.

### ***Self-Rated Mental Health***

Self-rated mental health was regressed onto covariates in Block 1,  $D_I(21, 539115.6) = 34.58, p < .001, R^2 = 0.096$ , general social engagement in Block 2,  $D_I(21, 9304.6) = 13.47, p < .001, R^2 = .148, \Delta R^2 = .052$ , R/S social engagement in Block 3,  $D_I(9, 6110.1) = 3.36, p < .001, R^2 = .153, \Delta R^2 = .005$  (see Table 5). Consistent with H1, entering R/S social engagement significantly improved model fit in predicting self-rated mental health. Once again, the findings from the complete case analysis were similar to those from analysis of imputed data in terms of effect sizes, but was not statistically significant, which did not support H1, as R/S social engagement did not improve model fit in predicting self-rated mental health when entered in Block 3,  $F(9, 499) = 1.43, p = .174, R^2 = .166, \Delta R^2 = .004$  (see Table 13).

### ***Satisfaction with Life***

Satisfaction with life was regressed onto covariates in Block 1,  $D_I(21, 360507.4) = 19.90, p < .001, R^2 = .067$ , general social engagement in Block 2,  $D_I(21, 10399.8) = 19.59, p < .001, R^2 = .142, \Delta R^2 = .075$ , R/S social engagement in Block 3,  $D_I(9, 4574.0) = 3.15, p < .001, R^2 = .148, \Delta R^2 = .005$  (see Table 6). Consistent with H1, entering the R/S social engagement significantly improved model fit in predicting satisfaction with life. Again, the findings from the complete case analysis were similar to those from analysis of imputed data in terms of effect sizes, but was not statistically significant, which did not support H1, as R/S social engagement did not improve model fit in predicting satisfaction with life when entered in Block 3,  $F(9, 499) = 1.54, p = .132, R^2 = .159, \Delta R^2 = .005$  (see Table 13).

To summarize, I examined the contribution of R/S social engagement in predicting health outcomes while accounting for the contribution of the general social engagement in model series one. While the findings from imputed data analysis across three health outcomes were consistent with H1, insofar as they were statistically significant, the contribution of R/S social engagement to model fit was smaller than that of its generic counterpart, regardless of whether they were entered before or after general social engagement (see Tables 13 and 14). Because my analyses had high power, I would emphasize that the effect sizes were trivial. While there are some discrepancies between results from analyses of imputed data and complete cases, they do not reflect meaningful differences in the observed relationships and are likely artifacts of reduced statistical power in complete case analyses.

### **Model Series Two**

Model series two provided a continued exploration of the contribution of R/S social engagement in predicting self-rated health, self-rated mental health, and life satisfaction. The focus of model series two was on the relationships between each R/S social engagement measure and health outcomes, and on whether these relationships were affected by the inclusion of general social engagement measures in the model. The health outcomes were first regressed onto covariates in Block 1, then R/S social engagement was entered in Block 2, followed by general social engagement entered sequentially in Block 3a through 3e, and lastly, general social engagement measures were entered simultaneously in Block 4. To better differentiate between groups defined by predictors, narrative descriptors are used to describe the levels of predictors for the rest of the results section. For R/S attendance, terms non-attender (*Not at all*), annual attendee (*At least*

once a year), occasional attendee (*At least three times a year*), monthly attendee (*At least monthly*), and weekly attendee (*At least weekly*) are used. For friends contacted last month who shared the same religion, the terms not insulated (*None*), somewhat insulated (*A few*), partially insulated (*About half*), mostly insulated (*Most*), and completely insulated (*All*) are used.

### ***Self-Rated Health***

Self-rated health was regressed onto covariates in Block 1,  $D_I(21, 335270.0) = 19.66, p < .001, R^2 = .060$ ; R/S social engagement in Block 2,  $D_I(9, 5564.5) = 5.06, p < .001, R^2 = .069, \Delta R^2 = .008$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $D_I(5, 8148.6) = 8.83, p < .001, R^2 = .076, \Delta R^2 = .008$ , number of other friends in Block 3b,  $D_I(4, 94857.2) = 6.51, p < .001, R^2 = .073, \Delta R^2 = .004$ , satisfaction with frequency of communication in Block 3c,  $D_I(4, 12757.3) = 53.14, p < .001, R^2 = .101, \Delta R^2 = .032$ , frequency of in-person activities in Block 3d,  $D_I(4, 622.9) = 3.57, p = .007, R^2 = .072, \Delta R^2 = .004$ , and frequency of online activities in Block 3e,  $D_I(4, 513.1) = 0.14, p = .968, R^2 = .069, \Delta R^2 = .001$ ; and lastly, general social engagement simultaneously in Block 4,  $D_I(21, 8476.9) = 10.31, p < .001, R^2 = .109, \Delta R^2 = .040$  (see Tables 7 and 14). Overall, the relationship between R/S social engagement and self-rated health appears to be attenuated the most with the inclusion of the number of close friends and satisfaction with the frequency of communication in the model (see Table 8).

When controlling for the covariates in Block 2, religious attendance and contact with friends of the same religion significantly predicted better self-rated health, whereas being most active in religious organizations did not. Compared to non-attendees,

occasional attendees,  $t = 4.02$ ,  $p < .001$ ,  $b = 0.19$ , 95% CI [0.10, 0.28],  $SMD = 0.18$ , monthly attendees  $t = 3.15$ ,  $p = .002$ ,  $b = 0.13$ , 95% CI [0.05, 0.21],  $SMD = 0.13$ , and weekly attendees,  $t = 4.57$ ,  $p < .001$ ,  $b = 0.19$ , 95% CI [0.11, 0.27],  $SMD = 0.18$ , reported better self-rated health. Compared to not insulated respondents, mostly insulated respondents,  $t = 2.02$ ,  $p = .044$ ,  $b = 0.13$ , 95% CI [0.00, 0.25],  $SMD = 0.13$ , and completely insulated respondents,  $t = 2.83$ ,  $p = .005$ ,  $b = 0.18$ , 95% CI [0.06, 0.31],  $SMD = 0.17$ , reported better self-rated health. All observed relationships in Block 2 fell below the conventional threshold for practical significance.

In contrast, the findings from the complete case analysis showed that, compared to non-attendees, monthly attendees,  $t = 2.29$ ,  $p = .022$ ,  $b = 0.13$ , 95% CI [0.02, 0.24],  $SMD = 0.13$ , and weekly attendees,  $t = 2.42$ ,  $p = .016$ ,  $b = 0.19$ , 95% CI [0.03, 0.25],  $SMD = 0.20$ , reported better self-rated health. Compared to not insulated respondents, mostly insulated respondents,  $t = 2.08$ ,  $p = .038$ ,  $b = 0.18$ , 95% CI [0.01, 0.36],  $SMD = 0.19$ , and completely insulated respondents,  $t = 2.00$ ,  $p = .046$ ,  $b = 0.20$ , 95% CI [0.00, 0.39],  $SMD = 0.20$ , reported better self-rated health. Notably, the effect size estimates for the highest level of religious attendance and contact with religious friends exceeded the conventional threshold for practical significance in Block 2, indicating a small practical effect for both R/S predictors.

Overall, relationships between the two significant R/S predictors and self-rated health weakened, in both imputed data and complete case analyses, when general social engagement was included in the model, consistent with H2 (see Tables 8, 15, and B6). Likewise, the simultaneous entry of general social engagement measures in Block 4 resulted in significant declines in how well levels of religious attendance and contact with

friends of the same religion predicted self-rated health. Specifically, the observed difference in self-rated health between non-attendees and occasional attendees,  $F(1, 1685.6) = 5.29, p = .022, b = 0.03, 95\% \text{ CI } [0.00, 0.05], SMD = 0.02$ , monthly attendees,  $F(1, 1153.3) = 7.52, p = .006, b = 0.03, 95\% \text{ CI } [0.01, 0.06], SMD = 0.02$ , and weekly attendees,  $F(1, 594.2) = 24.43, p < .001, b = 0.05, 95\% \text{ CI } [0.03, 0.08], SMD = 0.05$ , had decreased in Block 4. The observed difference in self-rated health between not insulated respondents and mostly insulated respondents,  $F(1, 320.1) = 7.73, p = .006, b = 0.04, 95\% \text{ CI } [0.01, 0.07], SMD = 0.04$ , and completely insulated respondents,  $F(1, 304.1) = 7.50, p = .007, b = 0.04, 95\% \text{ CI } [0.01, 0.07], SMD = 0.04$ , had also decreased in Block 4 (see Figures 2 and 3). When controlling for covariates and general social engagement measures, both religious attendance and contact with friends of the same religion remained predictive of self-rated health. Compared to non-attendees, occasional attendees,  $t = 3.36, p = .001, b = 0.16, 95\% \text{ CI } [0.07, 0.26], SMD = 0.16$ , monthly attendees,  $t = 2.42, p = .015, b = 0.10, 95\% \text{ CI } [0.02, 0.18], SMD = 0.10$ , and weekly attendees,  $t = 3.24, p = .001, b = 0.13, 95\% \text{ CI } [0.05, 0.21], SMD = 0.13$ , reported better self-rated health (see Table 7). Compared to not insulated respondents, only completely insulated respondents reported better self-rated health,  $t = 2.26, p = .024, b = 0.14, 95\% \text{ CI } [0.02, 0.27], SMD = 0.14$ . None of the R/S predictors were observed to have a practically significant effect on self-rated health in Block 4.

Similarly, the results from the complete case analysis also indicated declines in the magnitudes of observed relationships between R/S predictors and self-rated health from Block 2 to Block 4. Specifically, the observed difference in self-rated health between non-attendees and monthly attendees,  $t = 2.22, p = .027, b = 0.04, 95\% \text{ CI } [0.00,$

0.07],  $SMD = 0.04$ , and weekly attendees,  $t = 2.43$ ,  $p = .016$ ,  $b = 0.04$ , 95% CI [0.01, 0.07],  $SMD = 0.04$ , had decreased in Block 4. The observed difference in self-rated health between not insulated respondents and mostly insulated respondents,  $t = 2.61$ ,  $p = .009$ ,  $b = 0.07$ , 95% CI [0.02, 0.12],  $SMD = 0.07$ , and completely insulated respondents,  $t = 2.54$ ,  $p = .012$ ,  $b = 0.07$ , 95% CI [0.02, 0.12],  $SMD = 0.07$ , had also decreased in Block 4. However, none of the R/S predictors predicted self-rated health in Block 4 of the . Compared to non-attendees, monthly attendees,  $t = 1.61$ ,  $p = .107$ ,  $b = 0.09$ , 95% CI [-0.02, 0.20],  $SMD = 0.09$ , and weekly attendees,  $t = 1.75$ ,  $p = .080$ ,  $b = 0.10$ , 95% CI [-0.01, 0.21],  $SMD = 0.10$ , did not report better self-rated health. Compared to not insulated respondents, mostly insulated respondents,  $t = 1.27$ ,  $p = .205$ ,  $b = 0.11$ , 95% CI [-0.06, 0.29],  $SMD = 0.11$ , and completely insulated respondents,  $t = 1.29$ ,  $p = .198$ ,  $b = 0.13$ , 95% CI [-0.07, 0.32],  $SMD = 0.13$ , also did not report better self-rated health.

### ***Self-Rated Mental Health***

Self-rated mental health was regressed onto covariates in Block 1,  $D_I(21, 539115.6) = 34.58$ ,  $p < .001$ ,  $R^2 = .096$ ; R/S social engagement in Block 2,  $D_I(9, 7298.0) = 5.66$ ,  $p < .001$ ,  $R^2 = .105$ ,  $\Delta R^2 = .009$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $D_I(5, 7760.9) = 16.73$ ,  $p < .001$ ,  $R^2 = .117$ ,  $\Delta R^2 = .012$ , number of other friends in Block 3b,  $D_I(4, 68681.3) = 11.53$ ,  $p < .001$ ,  $R^2 = .111$ ,  $\Delta R^2 = .007$ , satisfaction with frequency of communication in Block 3c,  $D_I(4, 12359.1) = 62.85$ ,  $p < .001$ ,  $R^2 = .144$ ,  $\Delta R^2 = .039$ , frequency of in-person activities in Block 3d,  $D_I(4, 619.5) = 1.09$ ,  $p = .359$ ,  $R^2 = .106$ ,  $\Delta R^2 = .001$ , and frequency of online activities in Block 3e,  $D_I(4, 614.3) = 0.25$ ,  $p = .907$ ,  $R^2 = .105$ ,  $\Delta R^2 = .001$ ; and lastly, general social engagement simultaneously in Block 4,  $D_I(21, 8905.2) = 12.71$ ,  $p < .001$ ,

$R^2 = .153$ ,  $\Delta R^2 = .048$  (see Tables 9 and 14). Overall, the relationship between R/S social engagement and self-rated mental health appears to decline the most with the inclusion of the number of close friends and satisfaction with the frequency of communication in the model (see Table 10).

When controlling for the covariates in Block 2, religious attendance and contact with friends of the same religion significantly predicted better self-rated mental health, whereas being most active in religious organizations did not. Compared to non-attendees, occasional attendees,  $t = 3.41$ ,  $p = .001$ ,  $b = 0.16$ , 95% CI [0.07, 0.25],  $SMD = 0.15$ , and weekly attendees,  $t = 3.66$ ,  $p < .001$ ,  $b = 0.14$ , 95% CI [0.07, 0.22],  $SMD = 0.13$ , reported better self-rated mental health. Compared to not insulated respondents, somewhat insulated respondents,  $t = 2.01$ ,  $p = .045$ ,  $b = 0.14$ , 95% CI [0.00, 0.28],  $SMD = 0.13$ , partially insulated respondents,  $t = 2.53$ ,  $p = .012$ ,  $b = 0.18$ , 95% CI [0.04, 0.31],  $SMD = 0.17$ , mostly insulated respondents,  $t = 3.15$ ,  $p = .002$ ,  $b = 0.21$ , 95% CI [0.08, 0.34],  $SMD = 0.20$ , and completely insulated respondents,  $t = 3.88$ ,  $p < .001$ ,  $b = 0.27$ , 95% CI [0.13, 0.40],  $SMD = 0.26$ , reported better self-rated mental health. Notably, the effect size estimates observed for the highest two levels of contact with friends of the same religion exceeded the conventional threshold for practical significance, indicating a small practical effect.

However, in Block 2 of the complete case analysis, only contact with friends of the same religion predicted self-rated mental health. Compared to not insulated respondents, mostly insulated respondents,  $t = 2.12$ ,  $p = .034$ ,  $b = 0.21$ , 95% CI [0.15, 0.40],  $SMD = 0.21$ , and completely insulated respondents,  $t = 2.48$ ,  $p = .013$ ,  $b = 0.26$ , 95% CI [0.05, 0.46],  $SMD = 0.26$ , reported better self-rated mental health. Similar to

results from imputed data analysis, effect size estimates from complete case analysis also indicated a small practical effect at the two highest levels of contact with religious friends.

Overall, relationships between the two significant R/S predictors and self-rated mental health weakened, in both imputed data and complete case analysis, when general social engagements were entered into the model, consistent with H2 (see Tables 10, 16, and B8). Likewise, the simultaneous entry of general social engagement measures in Block 4 resulted in significant declines in how well levels of religious attendance and contact with friends of the same religion predicted self-rated mental health. Specifically, the observed difference in self-rated mental health between non-attendees and occasional attendees,  $F(1, 3744.8) = 7.80, p = .005, b = 0.03, 95\% \text{ CI } [0.01, 0.06], SMD = 0.03$ , and weekly attendees,  $F(1, 825.9) = 25.17, p < .001, b = 0.06, 95\% \text{ CI } [0.03, 0.08], SMD = 0.06$ , had decreased in Block 4. The observed difference in self-rated mental health between not insulated respondents and somewhat insulated respondents,  $F(1, 334.5) = 5.89, p = .016, b = 0.04, 95\% \text{ CI } [0.01, 0.07], SMD = 0.04$ , partially insulated respondents,  $F(1, 294.9) = 9.81, p = .002, b = 0.05, 95\% \text{ CI } [0.02, 0.08], SMD = 0.05$ , mostly insulated respondents,  $F(1, 349.0) = 13.95, p < .001, b = 0.05, 95\% \text{ CI } [0.02, 0.08], SMD = 0.05$ , and completely insulated respondents,  $F(1, 256.6) = 10.50, p = .001, b = 0.05, 95\% \text{ CI } [0.02, 0.08], SMD = 0.05$ , had also decreased in Block 4 (see Figures 4 and 5). When controlling for covariates and general social engagement measures, religious attendance and contact with religious friends remained predictive of self-rated mental health. Compared to non-attendees, occasional attendees,  $t = 2.62, p = .009, b = 0.13, 95\% \text{ CI } [0.03, 0.22], SMD = 0.12$ , and weekly attendees,  $t = 2.23, p = .026, b =$

0.09, 95% CI [0.01, 0.16],  $SMD = 0.09$ , reported better self-rated mental health.

Compared to not insulated respondents, mostly insulated respondents,  $t = 2.39$ ,  $p = .018$ ,  $b = 0.16$ , 95% CI [0.03, 0.28],  $SMD = 0.15$ , and completely insulated respondents,  $t = 3.26$ ,  $p = .001$ ,  $b = 0.22$ , 95% CI [0.09, 0.35],  $SMD = 0.21$ , reported better self-rated mental health. Similar to the results from Block 2, only contact with religious friends surpassed the conventional threshold for practical significance, with a small practical effect indicated for reporting being completely insulated.

Likewise, the results from the complete case analysis also indicated declines in the magnitudes of observed relationships between R/S predictors and self-rated mental health from Block 2 to Block 4. Specifically, the observed difference in self-rated mental health between not insulated respondents and mostly insulated respondents,  $t = 3.73$ ,  $p < .001$ ,  $b = 0.11$ , 95% CI [0.05, 0.16],  $SMD = 0.11$ , and completely insulated respondents,  $t = 2.79$ ,  $p = .005$ ,  $b = 0.08$ , 95% CI [0.02, 0.14],  $SMD = 0.08$ , had decreased in Block 4. However, none of the R/S predictors predicted self-rated mental health in Block 4, as mostly insulated respondents,  $t = 1.07$ ,  $p = .287$ ,  $b = 0.10$ , 95% CI [-0.09, 0.29],  $SMD = 0.10$ , and completely insulated respondents,  $t = 1.73$ ,  $p = .085$ ,  $b = 0.17$ , 95% CI [-0.02, 0.37],  $SMD = 0.17$ , did not report better self-rated mental health when compared to not insulated respondent.

### **Satisfaction with Life**

Satisfaction with life was regressed onto covariates in Block 1,  $D_I(21, 360507.4) = 19.90$ ,  $p < .001$ ,  $R^2 = .067$ ; R/S social engagement in Block 2,  $D_I(9, 4832.0) = 6.13$ ,  $p < .001$ ,  $R^2 = .077$ ,  $\Delta R^2 = .010$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $D_I(5, 8669.1) = 20.64$ ,  $p < .001$ ,  $R^2 = .096$ ,  $\Delta$

$R^2 = .018$ , number of other friends in Block 3b,  $D_I(4, 61333.2) = 15.58, p < .001, R^2 = .086, \Delta R^2 = .008$ , satisfaction with frequency of communication in Block 3c,  $D_I(4, 12761.1) = 90.77, p < .001, R^2 = .134, \Delta R^2 = .057$ , frequency of in-person activities in Block 3d,  $D_I(4, 650.7) = 2.96, p = .019, R^2 = .081, \Delta R^2 = .003$ , and frequency of online activities in Block 3e,  $D_I(4, 664.9) = 0.78, p = .540, R^2 = .078, \Delta R^2 = .001$ ; and lastly, general social engagement simultaneously in Block 4,  $D_I(21, 9921.9) = 18.38, p < .001, R^2 = .148, \Delta R^2 = .070$  (see Tables 11 and 14). Overall, the relationship between R/S social engagement and satisfaction with life appears to decline the most with the inclusion of the number of close friends and satisfaction with the frequency of communication (see Table 12).

When controlling for the covariates in Block 2, religious attendance and contact with friends of the same religion significantly predicted higher satisfaction with life, whereas being most active in religious organizations did not. Compared to non-attendees, occasional attendees,  $t = 3.62, p < .001, b = 0.32, 95\% \text{ CI } [0.15, 0.49], SMD = 0.15$ , monthly attendees,  $t = 2.37, p = .018, b = 0.20, 95\% \text{ CI } [0.03, 0.37], SMD = 0.10$ , and weekly attendees,  $t = 4.75, p < .001, b = 0.38, 95\% \text{ CI } [0.22, 0.53], SMD = 0.18$ , reported higher satisfaction with life. Compared to not insulated respondents, somewhat insulated respondents,  $t = 2.16, p = .031, b = 0.28, 95\% \text{ CI } [0.03, 0.54], SMD = 0.13$ , partially insulated respondents,  $t = 2.62, p = .009, b = 0.37, 95\% \text{ CI } [0.09, 0.64], SMD = 0.18$ , mostly insulated respondents,  $t = 2.85, p = .005, b = 0.36, 95\% \text{ CI } [0.11, 0.61], SMD = 0.17$ , and completely insulated respondents,  $t = 3.36, p = .001, b = 0.46, 95\% \text{ CI } [0.19, 0.73], SMD = 0.22$ , reported higher satisfaction with life. Notably, contact with religious friends was shown to have a small practical effect on life satisfaction at its highest level.

Similarly, the results from Block 2 of the complete case analysis also found religious attendance and contact with religious friends to be predictive of life satisfaction. Compared to non-attendees, occasional attendees,  $t = 2.11$ ,  $p = .036$ ,  $b = 0.25$ , 95% CI [0.02, 0.49],  $SMD = 0.14$ , and weekly attendees,  $t = 2.45$ ,  $p = .015$ ,  $b = 0.37$ , 95% CI [0.05, 0.46],  $SMD = 0.14$ , reported higher satisfaction with life. Compared to not insulated respondents, partially insulated respondents,  $t = 2.70$ ,  $p = .007$ ,  $b = 0.48$ , 95% CI [0.13, 0.83],  $SMD = 0.26$ , mostly insulated respondents,  $t = 2.48$ ,  $p = .013$ ,  $b = 0.42$ , 95% CI [0.09, 0.75],  $SMD = 0.23$ , and completely insulated respondents,  $t = 2.70$ ,  $p = .007$ ,  $b = 0.50$ , 95% CI [0.17, 0.67],  $SMD = 0.27$ , reported higher satisfaction with life. Notably, in contrast with results from imputed data analysis, contact with religious friends had a stronger relationship with satisfaction with life in complete case analysis, with its two highest levels achieving a small practical effect.

Overall, relationships between two significant R/S predictors and satisfaction with life weakened, in both imputed data and complete case analysis, when general social engagement measures were entered into the model, consistent with H2 (see Tables 12, 17, and B10). Likewise, the simultaneous entry of general social engagement measures resulted in significant declines in how well religious attendance and contact with religious friends predicted satisfaction with life. Specifically, the observed difference in satisfaction with life between non-attendees and occasional attendees,  $F(1, 3744.8) = 7.80$ ,  $p = .005$ ,  $b = 0.08$ , 95% CI [0.02, 0.14],  $SMD = 0.04$ , monthly attendees,  $F(1, 2121.4) = 10.10$ ,  $p = .002$ ,  $b = 0.09$ , 95% CI [0.03, 0.15],  $SMD = 0.04$ , and weekly attendees,  $F(1, 825.9) = 25.17$ ,  $p < .001$ ,  $b = 0.13$ , 95% CI [0.08, 0.18],  $SMD = 0.06$ , had decreased in Block 4. The observed difference in satisfaction with life between not

insulated respondents and somewhat insulated respondents,  $F(1, 334.5) = 5.89, p = .016, b = 0.09, 95\% \text{ CI } [0.02, 0.16], SMD = 0.04$ , partially insulated respondents,  $F(1, 294.9) = 9.81, p = .002, b = 0.12, 95\% \text{ CI } [0.04, 0.20], SMD = 0.06$ , mostly insulated respondents,  $F(1, 349.0) = 13.95, p < .001, b = 0.13, 95\% \text{ CI } [0.06, 0.20], SMD = 0.06$ , and completely insulated respondents,  $F(1, 256.6) = 10.50, p = .001, b = 0.12, 95\% \text{ CI } [0.05, 0.20], SMD = 0.06$ , had also decreased in Block 4 (see Figures 6 and 7). When controlling for covariates and general social engagement measures, religious attendance and contact with religious friends remained predictive of satisfaction with life. Compared to non-attendeess, occasional attendees,  $t = 2.59, p = .010, b = 0.24, 95\% \text{ CI } [0.06, 0.42], SMD = 0.12$ , and weekly attendees,  $t = 3.11, p = .002, b = 0.25, 95\% \text{ CI } [0.09, 0.40], SMD = 0.12$ , reported higher life satisfaction. Compared to not insulated respondents, only completely insulated respondents reported higher satisfaction with life,  $t = 2.57, p = .010, b = 0.33, 95\% \text{ CI } [0.08, 0.59], SMD = 0.16$ . Notably, none of the R/S predictors had a practically significant effect on satisfaction with life in Block 4 of the imputed data analysis.

Likewise, the results from the complete case analysis also indicated declines in the magnitudes of observed relationships between R/S predictors and satisfaction with life from Block 2 to Block 4. Specifically, the observed difference in satisfaction with life between non-attendeess and occasional attendees,  $t = 2.34, p = .020, b = 0.09, 95\% \text{ CI } [0.01, 0.17], SMD = 0.04$ , and weekly attendees,  $t = 2.71, p = .007, b = 0.09, 95\% \text{ CI } [0.02, 0.15], SMD = 0.04$ , had decreased in Block 4. The observed difference in satisfaction with life between not insulated respondents and partially insulated respondents,  $t = 3.67, p < .001, b = 0.26, 95\% \text{ CI } [0.12, 0.40], SMD = 0.06$ , mostly insulated respondents,  $t = 3.78, p < .001, b = 0.26, 95\% \text{ CI } [0.12, 0.39], SMD = 0.06$ , and

completely insulated respondents,  $t = 3.15$ ,  $p = .002$ ,  $b = 0.22$ , 95% CI [0.08, 0.36],  $SMD = 0.06$ , had also decreased in Block 4. However, none of the R/S predictors predicted satisfaction with life in Block 4. Compared to non-attendees, occasional attendees,  $t = 1.34$ ,  $p = .182$ ,  $b = 0.16$ , 95% CI [-0.07, 0.39],  $SMD = 0.09$ , and weekly attendees,  $t = 1.59$ ,  $p = .112$ ,  $b = 0.17$ , 95% CI [-0.04, 0.37],  $SMD = 0.10$ , did not report higher satisfaction with life. Compared to not insulated respondents, partially insulated respondents,  $t = 1.26$ ,  $p = .207$ ,  $b = 0.22$ , 95% CI [-0.12, 0.56],  $SMD = 0.12$ , mostly insulated respondents,  $t = 0.95$ ,  $p = .343$ ,  $b = 0.16$ , 95% CI [-0.17, 0.49],  $SMD = 0.09$ , and completely insulated respondents,  $t = 1.50$ ,  $p = .135$ ,  $b = 0.28$ , 95% CI [-0.09, 0.64],  $SMD = 0.16$ , also did not report higher satisfaction with life.

## Summary

I examined the social basis of BABE by exploring the collective contribution of R/S social engagement in improving model fit in model series one, and the relationship between individual R/S social engagement measures and health outcomes in model series two. Overall, there are several findings of note: First, the addition of R/S social engagement measures made statistically significant, albeit trivial contributions towards model fit, consistently explaining less than 1% of additional variability in health outcomes, regardless of the order of entry; second, when controlling for covariates, religious attendance and contact with religious friends significantly predicted health outcomes, and in a number of instances, showed a small practical effect ( $SMD \approx 0.20$ ); and third, introducing general social engagement into models generally diminished the observed effect of R/S social engagement, and consequently, the observed effect sizes almost consistently fell below the conventional threshold for practical significance ( $SMD$

$\geq 0.20$ ). While both model series in imputed data analysis reported significant findings supportive of H1, H2, and H3 in some instances, weak observed effects, combined with high power, cast doubts on their practical significance. For both model series, results from complete case analysis were less supportive of the tested hypotheses than those from imputed data analysis. Given the weak observed effect, this discrepancy is likely due to diminished power in complete case analysis.

### **Discussion**

The current study examined whether R/S social engagement was associated with distinct health benefits beyond those explained by social engagement in general. Specifically, I examined: 1) the collective contribution of the R/S social engagement measures towards model fit in predicting health outcomes, and 2) the relationships between individual R/S social engagement measures and health outcomes, and whether it is diminished by the inclusion of general social engagement measures in the model. Overall, H1 was consistently supported across the three health outcomes examined, with H2 and H3 also garnered sporadic support. However, R/S social engagement measures contributed minimally to model fit and were mostly weak predictors of health outcomes across all models. The distinct benefits of R/S social engagement did emerge as expected, but these effects tended to be of questionable practicality.

#### **Religion/Spirituality is Less Consequential than Expected**

Collectively, R/S social engagement measures consistently explained less than 1% of additional variance across all three health outcomes. This was true regardless of whether R/S social engagement measures were entered before or after general social engagement measures. In contrast, general social engagement measures explained 4-8%

of additional variance in both model series for all three health outcomes. When general social engagement measures were entered in Block 3 of model series two, the number of close friends and satisfaction with the frequency of communication consistently explained more additional variance, across all health outcomes, than all three R/S social engagement measures combined. Overall, the findings from analyses of imputed data supported H1 but also highlighted that R/S social engagement measures played a relatively limited role in predicting health outcomes. The findings from the complete case analysis are consistent with those of the imputed data analysis.

BABE literature has explored a diverse set of explanatory mechanisms to account for the health benefits attributed to R/S, all of which share a common feature: they connect R/S and health through a third variable with an established connection with health. It has been widely established that a sense of coherence, coping effectiveness, and social engagement play crucial roles in determining one's health status across a variety of sociocultural contexts (Becofsky et al., 2015; Dullius et al., 2021; Länsimies et al., 2017; Park & Iacocca, 2013; Piironen et al., 2020; Wickramaratne et al., 2022). Essentially, the theoretical mechanism of BABE is that R/S serves as a unique sociocultural context in which the effects of these determinants on health are amplified. This theoretical mechanism is most plausible for social engagement, since its function as a determinant of health is known to be influenced by sociocultural contexts (Becofsky et al., 2015; Borges et al., 2021; Garcia et al., 2019; Litalien et al., 2021; Wickramaratne et al., 2022). In other words, social engagement, as a mechanism of BABE, not only has the most robust findings but also has the greatest potential for its function, as a sociocultural determinant of health, to be influenced by R/S beliefs and behaviours.

Granted, the observed contribution of R/S social engagement to predicting health is non-zero, but it is trivial-to-small (Cohen, 1988; Gignac & Szodorai, 2016). To make this point explicit, my analyses were deliberately designed to garner support for the distinct benefits of R/S social engagement: I limited my sample to R/S affiliates, who are more likely to benefit from R/S social engagement (Galen & Kloet, 2011; Speed & Fowler, 2021); I used a population-based sample collected during the COVID-19 pandemic, when distinct benefits associated with R/S social engagement should be increasingly observable (Liu et al., 2025; Stone et al., 2003), and lastly; I used self-report health measures that are widely used in BABE literature (Dilmaghani, 2018; Garssen et al., 2020; Walker et al., 2020). Yet, in model series one, R/S social engagement measures never explained more than 0.6% additional variance in any of the three health outcomes examined. Given that the current study used proxy measures of health (i.e., self-rated health), an additional 0.6% in variance explained does not appear to be a significant contribution to the overall measure of wellness. When viewed in the context of emerging contraindications questioning the SSE mechanism, findings from the current study suggest that SSE may not be as practically consequential as previously believed relative to other factors shaping the health impact of social engagement, such as frequency, network size, and satisfaction (Baker et al., 2018; Cragun et al., 2016; Galen, 2017; Galen & Kloet, 2011; Schuurmans-Stekhoven, 2013; Speed et al., 2020; Speed & Lamont, 2023; Stroope & Baker, 2018).

### **When do the Spirituality Enhancements Manifest?**

One of the longstanding challenges in the critical examination of the underlying mechanisms of BABE is the lack of statistical power to further partition the limited main

effects of R/S involvement on health (Cragun et al., 2016; Garssen et al., 2020; Hodapp & Zwingmann, 2019; Shattuck & Muehlenbein, 2018; Speed, 2022; Speed & Fowler, 2021). In the current study, when comparing levels of R/S social engagement, the minimum achieved statistical power to detect trivial effects ( $d < 0.10$ ) was  $\sim 0.89$ . In other words, the current study was well-powered to explore how the inclusion of general social engagement measures impacted the observed relationship between R/S social engagement and health outcomes.

Generally, when controlling only for demographic covariates, religious attendance and contact with religious friends consistently predicted better outcomes across the three health measures in imputed data analysis, whereas being most active in religious organizations did not. Consistent with H2, the inclusion of general social engagement measures weakened the relationship between R/S social engagement and health outcomes. Consequently, when controlling for demographic covariates and general social engagement, almost none of the R/S social engagement measures achieved a practically significant effect on any of the three health outcomes in imputed data analysis. The findings from complete case analysis tend to show slightly larger effect sizes for R/S social engagement measures when controlling only for covariates, and more pronounced declines in effect sizes following the introduction of general social engagement measures. Overall, the findings of the current study provided little support for the existence of the SSE mechanism.

### ***Overlaps with Social Engagement in General***

The central premise of the SSE mechanism is that the presence of R/S context creates a mechanistically and effectually distinct relationship between R/S social

engagement and health compared to social engagement in general. However, the findings from the current study showed that the relationships between R/S social engagement and health outcomes were significantly weakened when general social engagement was included in the models, suggesting substantial overlap between R/S social engagement and social engagement in general. Specifically, among the five tested measures of general social engagement, the number of close friends and satisfaction with the frequency of communication with friends tend to weaken the relationship between R/S social engagement and health the most. Overall, R/S social engagement measures were weaker predictors of health outcomes than general social engagement measures.

The magnitude of the health-promoting effect of social engagement is jointly determined by its quantity (i.e., frequency and network size) and quality (i.e., satisfaction; Garcia et al., 2019; Larrabee Sonderlund et al., 2019; Park et al., 2020; Seeman et al., 2014; Wickramaratne et al., 2022; Yang et al., 2014), and, as my findings have shown, this appeared to be true for R/S affiliates and social engagement as well. In essence, the mechanism underlying the relationship between social engagement and health was not significantly different in the R/S context or among R/S affiliates. The size of the interpersonal network was predictive of health, and having an interpersonal network consist predominantly of R/S affiliates appeared to be associated with few practically significant differences in health outcomes. Similarly, the frequency of social activities and R/S attendance were also comparable predictors of health. Framed differently, the results from the current study offered little support for the mechanical or effectual distinction in the health-promoting effect of social engagement purported induced by R/S context, which ostensibly contradicts the central premise of the SSE mechanism.

### ***Religious Attendance and Organizational Involvement***

The estimated effect sizes for religious attendance and being most active in religious organizations consistently fell short of the conventional threshold for practical significance across all three health outcomes in the imputed data analysis, regardless of which covariates were present in the model. Furthermore, in both imputed data and complete case analyses, higher attendance was not consistently associated with better health outcomes across categories of religious attendance, with those who reported attending three times a year and weekly reporting similar health outcomes.

While the mechanism of BABE remains poorly understood, the R/S-health relationship envisioned by BABE literature has been clear and unambiguous: R/S causally promotes health, and greater involvement in R/S presumably leads to better health outcomes (Koenig, 2018; Koenig et al., 2012; Papaleontiou-Louca, 2021; Schuurmans-Stekhoven, 2016, 2013; Speed, 2022). And across the R/S dimensions, the organizational behavioural dimension was found to be predictive of better health outcomes across a wide array of psychological and physiological health measures (AbdAleati et al., 2014; Bonelli & Koenig, 2013; Idler, 2014; Idler et al., 2017; Koenig, 2018; Koenig et al., 2012; Rogers & Crimmins, 2011; Salsman et al., 2015; Unterrainer et al., 2012). Framed differently, religious attendance and involvement in religious organizations are arguably the most consistent R/S predictors of health in the BABE literature. Consequently, testing them has the greatest potential to confirm the purported effect of R/S on health, and, by extension, the SSE mechanism.

The use of cross-sectional data precluded me from directly testing the SSE mechanism. However, the more critical issue here is that the observed relationships

between religious attendance and health outcomes are not practically significant and being active in religious organizations did not predict better health. As shown in my findings, even when controlling only for demographic covariates, religious attendance and involvement in religious organizations practically do not covary with health outcomes. In a sense, the issue of establishing causation is rendered irrelevant by the lack of covariation between the alleged cause and effect (Shaughnessy et al., 2012). At a minimum, the findings from the current study suggest that the effect of the SSE mechanism on organizational social activities is likely trivial and of questionable practical significance.

There are discrepancies between the results of the imputed data analysis and those of the complete case analysis, illustrating how voluntary response bias may have affected the analysis of the relationship between religious attendance and health. Specifically, in imputed data analysis, the respondents' self-rated health and mental health did not improve consistently across categories of religious attendance, whereas in complete case analysis, respondents' self-rated health improved relatively consistently across categories of religious attendance, with higher attendance associated with better outcomes, though no relationship was observed with self-rated mental health. The cause of this discrepancy likely lies in differences in the demographic characteristics of respondents and nonrespondents. As shown in Tables 2, 3, and B1, nonrespondents appear to report lower social engagement across all contexts. Crucially, because health status also determines one's ability to participate socially (Kim et al., 2025; Koenig & Vaillant, 2009; Speed & Lamont, 2023), imputed data analysis may have captured a group of R/S affiliates who are less likely to respond to questions pertaining to social engagement due to limited

ability for social participation due to poor physical or mental health, remediating the potential voluntary response bias. Hence, the “attend three times a year” category in religious attendance may have reflected whether respondents are healthy enough to achieve the desired level of social engagement. In essence, the observed relationship between religious attendance and health in imputed data analysis may be artifacts of two distinct relationships, which are: 1) the relationship between health status and capacity for social engagement, and 2) the relationship between religious attendance and health. Although in the case of self-rated mental health, the observed relationship might be better explained by differences in capacity for social engagement, as no relationship was found in complete case analysis.

### ***Contact with Religious Friends***

Unlike findings pertaining to religious attendance, when controlling only for demographic covariates, contact with religious friends sporadically showed practically significant relationships with self-rated mental health and satisfaction with life in both the imputed data and the complete case analysis. Furthermore, more contact with religious friends was consistently associated with better health outcomes across its categories, consistent with the predictions of the BABE literature. However, when general social engagement measures were entered into the model, the effect size estimates for contact with religious friends largely dropped below the conventional threshold for practical significance in imputed data analysis. When controlling for demographic covariates and general social engagement, only the highest level of contact with religious friends had a small practical effect on self-rated mental health ( $d = 0.21$ ) in imputed data analysis. In contrast, contact with religious friends did not have a practically significant effect on any

health outcomes tested in complete case models containing general social engagement measures.

Previous research exploring the SSE mechanism has largely been conducted in the context of organized religious activity (Graham & Haidt, 2010; Koenig, 2018; Koenig et al., 2012; Krause, 2008), though the SSE mechanism was also thought to apply to interpersonal relationships more broadly (Galen, 2017; Peterson, 2011; Pirutinsky et al., 2011; Schuurmans-Stekhoven, 2013). However, the findings from the current study showed that the purported effect of SSE in interpersonal relationships ostensibly requires someone to have exclusively contacted friends of the same religion over the past month to produce a small practical effect solely in self-rated mental health. In other words, the purported effect of the SSE mechanism appears to manifest narrowly and requires a very high dose to achieve a small practical effect. While intriguing, this small practical effect was also overshadowed by the fact that the purported effect of the SSE mechanism practically failed to materialize in every other tested relationship. Interpreted generously, the findings of the current study were marginally supportive of BABE and the SSE mechanism, but I would emphasize that the practical significance of observed relationships between R/S social engagement and health fell far short of the theoretical prediction of BABE literature.

### **Limitations**

The current study has several limitations worth noting. First, using Statistics Canada survey data meant I was limited in the variables I could use to assess social engagement and health outcomes. Although the measures used were comparable to those widely adopted by BABE literature, using standardized measures of social engagement

and health would strengthen the analyses. Second, because the 2020 GSS was collected in the Canadian population during the COVID-19 pandemic, findings of the current study may not be generalizable to other cultural settings or time periods. Third, because the 2020 GSS was cross-sectional, I cannot make causal inferences about the SSE mechanism. Fourth, using the PUMF version of the 2020 GSS meant I could not assess how the relationship between R/S social engagement and health varies across religious traditions, which may be more helpful for clarifying the social basis of BABE. Lastly, the current study may have also omitted possible adjustment variables, which, when included, may reveal practically significant relationships predicted by SSE mechanisms. However, I am unsure as to what those variables might be, as my covariate selection is comparable to that in the existing BABE literature and reflects the theoretical prediction of how the SSE mechanism functions as a causal mechanism of BABE. While residual confounding cannot be ruled out definitively, it is unlikely that unmeasured variables would fully account for the observed small-to-trivial effect sizes.

### **Conclusion**

The objective of the current study was to assess the social basis of BABE by examining whether R/S social engagement is associated with distinct health benefits beyond those explained by social engagement in general. In designing the current study, I made an explicit effort to incorporate definitions, measurements, and analytical designs commonly used in the BABE literature. I deliberately made a number of analytical decisions to maximize the likelihood of producing findings supportive of BABE. I leveraged a large population-level sample of Canadians, which ensured adequate statistical power to detect trivial-to-small effects. I used multiple imputations to address

missing data, which minimized the risk of biases due to nonresponse. Yet, despite my efforts, the findings of the current study offered little support for the distinct health benefits of R/S social engagement. Of the 12 relationships tested across two model series, three R/S social engagement measures, and three health outcomes, only one emerged with a small practical effect. Evidently, R/S social engagement is associated with few health benefits beyond those explained by general social engagement, even in a nationally representative sample of religious affiliates. Findings from the current study, when considered in the context of the growing research critiquing BABE, suggest that SSE may not be as relevant as once thought.

Secularization will likely continue for the foreseeable future, both in Canada and globally, and so will the influence of religion and spirituality on the sociocultural dynamics of societies worldwide (Kasselstrand et al., 2023). The current study, by no means, discounts the importance of studying the influence of R/S upon beliefs, behaviours, and societies. With respect to the relationship between R/S and health, the current study affirmed the broader understanding that there is undoubtedly some form of relationship between R/S and health, but a great deal of theoretical exploration is needed to understand why such a relationship exists. By testing the key theoretical predictions of the SSE mechanism, the current study highlighted the dangers of omitting confounders and making premature causal inferences in psychological research. To meaningfully advance the field of religion and health, future studies should strive to engage in theory-driven exploration of the social and psychological processes that drive the observed R/S-health relationship.

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**Table 1***List of Variables by Type and Imputation Method*

| Variable Name                                | Missingness | Imputation Method |
|----------------------------------------------|-------------|-------------------|
| <i>Covariates</i>                            |             |                   |
| Age group of respondents                     | 0.00%       | N/A               |
| Gender                                       | 0.00%       | N/A               |
| Marital Status                               | 0.30%       | MLOGIT            |
| Highest Degree                               | 3.25%       | PMM               |
| Province of Residence                        | 0.00%       | N/A               |
| Visible Minority Status                      | 7.40%       | LOGIT             |
| Family Income (Before Tax)                   | 0.00%       | N/A               |
| Labour Force Status                          | 3.15%       | MLOGIT            |
| <i>Predictors</i>                            |             |                   |
| Frequency of Religious Attendance            | 6.03%       | PMM               |
| Friends Contacted Last Month – Same Religion | 32.80%      | PMM               |
| Most Active in R/S Organizations             | 44.68%      | LOGIT             |
| Number of Close Friends                      | 12.99%      | PMM               |
| Number of Other Friends                      | 0.80%       | PMM               |
| Satisfaction with Communication              | 4.35%       | PMM               |
| Frequency of In-person Activities            | 44.68%      | PMM               |
| Frequency of Online Activities               | 44.68%      | PMM               |
| <i>Outcomes</i>                              |             |                   |
| Self-rated Health                            | 5.76%       | PMM               |
| Self-rated Mental Health                     | 5.72%       | PMM               |
| Life Satisfaction                            | 5.92%       | PMM               |
| <i>Auxiliary</i>                             |             |                   |
| Frequency of Private R/S Participation       | 6.09%       | PMM               |
| Religiosity                                  | 6.83%       | PMM               |
| Children of Respondent in Household          | 0.00%       | N/A               |
| Household Size                               | 0.00%       | N/A               |
| Ownership of the Dwelling                    | 7.34%       | LOGIT             |
| Number of Disability Types                   | 0.00%       | N/A               |
| Trust in People in General                   | 5.09%       | LOGIT             |
| Sense of Belonging to Local Community        | 4.89%       | PMM               |

*Note.* Missingness = percentage of missing values; PMM = predictive mean-matching; LOGIT = logistic regression; MLOGIT = multinomial logistic regression; R/S = Religion/Spirituality

**Table 2***Demographic Characteristics of Respondents and Nonrespondents*

| Variable Name                  | Respondents<br>( <i>N</i> = 9,653) | Nonrespondents<br>( <i>N</i> = 14,137) | Incomplete<br>Cases<br>( <i>N</i> = 10,254) |
|--------------------------------|------------------------------------|----------------------------------------|---------------------------------------------|
| Self-Rated Health              | 3.72/0.87                          | 3.56/0.99                              | N/A                                         |
| Self-Rated Mental Health       | 3.82/0.97                          | 3.71/1.10                              | N/A                                         |
| Satisfaction with Life         | 7.61/1.71                          | 7.24/2.11                              | N/A                                         |
| <i>Age</i>                     |                                    |                                        |                                             |
| 15-24                          | 15.80%                             | 12.36%                                 | N/A                                         |
| 25-34                          | 16.09%                             | 16.15%                                 | N/A                                         |
| 35-44                          | 16.65%                             | 15.00%                                 | N/A                                         |
| 45-54                          | 15.23%                             | 16.04%                                 | N/A                                         |
| 55-64                          | 16.08%                             | 17.70%                                 | N/A                                         |
| 65-74                          | 12.05%                             | 14.29%                                 | N/A                                         |
| 75+                            | 8.10%                              | 8.46%                                  | N/A                                         |
| <i>Sex</i>                     |                                    |                                        |                                             |
| Female                         | 52.40%                             | 49.56%                                 | N/A                                         |
| Male                           | 47.60%                             | 50.44%                                 | N/A                                         |
| <i>Marital Status</i>          |                                    |                                        |                                             |
| Married/Common-Law             | 62.23%                             | 58.05%                                 | N/A                                         |
| Widowed/Separated/Divorced     | 11.45%                             | 14.84%                                 | N/A                                         |
| Single                         | 26.32%                             | 27.11%                                 | N/A                                         |
| <i>Level of Education</i>      |                                    |                                        |                                             |
| High School or Less            | 28.18%                             | 38.05%                                 | N/A                                         |
| Less than Bachelor's           | 29.14%                             | 34.64%                                 | N/A                                         |
| Bachelor's or Higher           | 42.68%                             | 27.32%                                 | N/A                                         |
| <i>Region of Residence</i>     |                                    |                                        |                                             |
| Atlantic                       | 5.35%                              | 6.83%                                  | N/A                                         |
| Quebec                         | 21.56%                             | 24.32%                                 | N/A                                         |
| Ontario                        | 42.34%                             | 39.42%                                 | N/A                                         |
| Prairies                       | 17.50%                             | 15.80%                                 | N/A                                         |
| British Columbia               | 13.25%                             | 13.62%                                 | N/A                                         |
| <i>Visible Minority Status</i> |                                    |                                        |                                             |
| Non-Minority                   | 73.43%                             | 80.11%                                 | N/A                                         |
| Visible Minority               | 26.57%                             | 19.89%                                 | N/A                                         |
| <i>Annual Income</i>           |                                    |                                        |                                             |
| <\$24,999                      | 7.24%                              | 10.34%                                 | N/A                                         |
| \$25,000-\$49,999              | 12.57%                             | 16.80%                                 | N/A                                         |
| \$50,000-\$74,999              | 15.65%                             | 16.23%                                 | N/A                                         |
| \$75,000-\$99,999              | 13.84%                             | 15.64%                                 | N/A                                         |
| >\$100,000                     | 50.70%                             | 41.00%                                 | N/A                                         |
| <i>Labour Force Status</i>     |                                    |                                        |                                             |
| Unemployed                     | 6.29%                              | 5.37%                                  | N/A                                         |

| Variable Name                               | Respondents<br>(N = 9,653) | Nonrespondents<br>(N = 14,137) | Incomplete<br>Cases<br>(N = 10,254) |
|---------------------------------------------|----------------------------|--------------------------------|-------------------------------------|
| Not in Labour Force                         | 30.64%                     | 35.38%                         | N/A                                 |
| Employed                                    | 63.07%                     | 59.25%                         | N/A                                 |
| <i>Religious Affiliation</i>                |                            |                                |                                     |
| Nonreligious                                | 24.00%                     | 40.43%                         | N/A                                 |
| Religious                                   | 76.00%                     | 59.57%                         | N/A                                 |
| <i>Number of Close Friends</i>              |                            |                                |                                     |
| None                                        | 3.44%                      | 7.34%                          | N/A                                 |
| 1-4                                         | 55.83%                     | 65.92%                         | N/A                                 |
| 5-9                                         | 19.80%                     | 14.45%                         | N/A                                 |
| 10-19                                       | 16.49%                     | 9.78%                          | N/A                                 |
| 20-29                                       | 3.37%                      | 1.52%                          | N/A                                 |
| >30                                         | 1.07%                      | 0.98%                          | N/A                                 |
| <i>Number of Other Friends</i>              |                            |                                |                                     |
| None                                        | 1.95%                      | 5.97%                          | N/A                                 |
| 1-19                                        | 54.08%                     | 64.55%                         | N/A                                 |
| 20-49                                       | 25.42%                     | 18.78%                         | N/A                                 |
| 50-79                                       | 9.97%                      | 6.11%                          | N/A                                 |
| >80                                         | 8.59%                      | 4.59%                          | N/A                                 |
| <i>Satisfaction with Communication</i>      |                            |                                |                                     |
| Very Dissatisfied                           | 0.66%                      | 0.77%                          | N/A                                 |
| Dissatisfied                                | 6.22%                      | 6.13%                          | N/A                                 |
| Neither                                     | 15.28%                     | 19.51%                         | N/A                                 |
| Satisfied                                   | 49.70%                     | 47.90%                         | N/A                                 |
| Very Satisfied                              | 28.14%                     | 25.69%                         | N/A                                 |
| <i>Religious Attendance</i>                 |                            |                                |                                     |
| Not at all                                  | 45.17%                     | 71.98%                         | N/A                                 |
| Once or Twice a Year                        | 15.53%                     | 13.40%                         | N/A                                 |
| Three Times a Year                          | 9.27%                      | 5.19%                          | N/A                                 |
| Monthly or more                             | 9.79%                      | 3.53%                          | N/A                                 |
| Weekly or more                              | 20.24%                     | 5.91%                          | N/A                                 |
| <i>1. Contact with Religious Friends</i>    |                            |                                |                                     |
| None                                        | 5.42%                      | N/A                            | N/A                                 |
| A few                                       | 23.10%                     | N/A                            | N/A                                 |
| About half                                  | 17.97%                     | N/A                            | N/A                                 |
| Most                                        | 37.48%                     | N/A                            | N/A                                 |
| All                                         | 16.03%                     | N/A                            | N/A                                 |
| <i>2. Most Active in R/S Organizations</i>  |                            |                                |                                     |
| Most Active in Other Organizations          | 91.50%                     | N/A                            | N/A                                 |
| Most Active in R/S Organizations            | 8.50%                      | N/A                            | N/A                                 |
| <i>3. Frequency of In-person Activities</i> |                            |                                |                                     |
| Not in the Past Year                        | 24.96%                     | N/A                            | N/A                                 |
| Once or Twice a Year                        | 16.50%                     | N/A                            | N/A                                 |
| Monthly                                     | 14.50%                     | N/A                            | N/A                                 |

| Variable Name                           | Respondents<br>(N = 9,653) | Nonrespondents<br>(N = 14,137) | Incomplete<br>Cases<br>(N = 10,254) |
|-----------------------------------------|----------------------------|--------------------------------|-------------------------------------|
| A Few Times a Month                     | 15.82%                     | N/A                            | N/A                                 |
| Weekly or more                          | 28.22%                     | N/A                            | N/A                                 |
| <i>4.Frequency of Online Activities</i> |                            |                                |                                     |
| Not in the Past Year                    | 50.54%                     | N/A                            | N/A                                 |
| Once or Twice a Year                    | 9.38%                      | N/A                            | N/A                                 |
| Monthly                                 | 11.60%                     | N/A                            | N/A                                 |
| A Few Times a Month                     | 12.41%                     | N/A                            | N/A                                 |
| Weekly or more                          | 16.07%                     | N/A                            | N/A                                 |

*Note.* Respondents = complete cases; Nonrespondents = cases with no valid response for variables 1 to 4, but otherwise complete; Incomplete Cases = cases with no valid response for variables 1 to 4, and at least one other analysis variable.

**Table 3***Descriptive Statistics for Imputed Data Analyses (N = 22,908)*


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|                                |        |
|--------------------------------|--------|
| <i>Age</i>                     |        |
| 25-34                          | 13.58% |
| 35-44                          | 17.21% |
| 45-54                          | 18.17% |
| 55-64                          | 21.58% |
| 65-74                          | 16.94% |
| 75+                            | 12.53% |
| <i>Sex</i>                     |        |
| Female                         | 53.82% |
| Male                           | 46.18% |
| <i>Marital Status</i>          |        |
| Married/Common-Law             | 68.66% |
| Widowed/Separated/Divorced     | 17.54% |
| Single                         | 13.80% |
| <i>Level of Education</i>      |        |
| High School or Less            | 29.66% |
| Less than Bachelor's           | 34.25% |
| Bachelor's or Higher           | 36.09% |
| <i>Region of Residence</i>     |        |
| Atlantic                       | 7.19%  |
| Quebec                         | 25.50% |
| Ontario                        | 40.09% |
| Prairies                       | 16.49% |
| British Colombia               | 10.73% |
| <i>Visible Minority Status</i> |        |
| Non-Minority                   | 75.34% |
| Visible Minority               | 24.66% |
| <i>Annual Income</i>           |        |
| <\$24,999                      | 8.30%  |
| \$25,000-\$49,999              | 16.24% |
| \$50,000-\$74,999              | 16.60% |
| \$75,000-\$99,999              | 16.22% |
| >\$100,000                     | 42.65% |
| <i>Labour Force Status</i>     |        |
| Unemployed                     | 4.72%  |
| Not in Labour Force            | 36.67% |
| Employed                       | 58.61% |
| <i>Number of Close Friends</i> |        |
| None                           | 8.99%  |
| 1-4                            | 60.49% |
| 5-9                            | 14.76% |
| 10-19                          | 12.14% |

|                                          |           |
|------------------------------------------|-----------|
| 20-29                                    | 2.49%     |
| >30                                      | 1.12%     |
| <i>Number of Other Friends</i>           |           |
| None                                     | 7.49%     |
| 1-19                                     | 57.40%    |
| 20-49                                    | 21.34%    |
| 50-79                                    | 7.79%     |
| >80                                      | 5.97%     |
| <i>Satisfaction with Communication</i>   |           |
| Very Dissatisfied                        | 0.71%     |
| Dissatisfied                             | 5.38%     |
| Neither                                  | 17.09%    |
| Satisfied                                | 50.13%    |
| Very Satisfied                           | 26.68%    |
| <i>Frequency of In-person Activities</i> |           |
| Not in the Past Year                     | 29.14%    |
| Once or Twice a Year                     | 17.39%    |
| Monthly                                  | 14.92%    |
| A Few Times a Month                      | 14.43%    |
| Weekly or more                           | 24.13%    |
| <i>Frequency of Online Activities</i>    |           |
| Not in the Past Year                     | 56.80%    |
| Once or Twice a Year                     | 9.56%     |
| Monthly                                  | 10.28%    |
| A Few Times a Month                      | 10.29%    |
| Weekly or more                           | 13.08%    |
| <i>Religious Attendance</i>              |           |
| Not at all                               | 46.71%    |
| Once or Twice a Year                     | 16.75%    |
| Three Times a Year                       | 9.46%     |
| Monthly or more                          | 8.93%     |
| Weekly or more                           | 18.14%    |
| <i>Contact with Religious Friends</i>    |           |
| None                                     | 6.31%     |
| A few                                    | 21.37%    |
| About half                               | 16.57%    |
| Most                                     | 34.98%    |
| All                                      | 20.77%    |
| <i>Most Active in R/S Organizations</i>  |           |
| Most Active in Other Organizations       | 91.85%    |
| Most Active in R/S Organizations         | 8.15%     |
| Self-Rated Health                        | 3.65/1.03 |
| Self-Rated Mental Health                 | 3.94/1.05 |
| Satisfaction with Life                   | 7.62/2.08 |

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*Note.* All descriptive statistics are presented as either proportions or mean/standard deviation; R/S = Religion/Spirituality

**Table 4***Results for Self-Rated Health in Model Series One (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |                |                |
|--------------------------------------------------------|----------------------------------------------|----------------|----------------|
|                                                        | Block 1                                      | Block 2        | Block 3        |
| Constant                                               | 3.17/0.09 ***                                | 2.77/0.24 ***  | 2.67/0.23 ***  |
| <b><i>Covariates</i></b>                               |                                              |                |                |
| <i>Age (25-34 = Base)</i>                              |                                              |                |                |
| 35-44                                                  | -0.05/0.05                                   | -0.02/0.05     | -0.02/0.05     |
| 45-54                                                  | -0.04/0.05                                   | -0.03/0.05     | -0.03/0.05     |
| 55-64                                                  | -0.05/0.05                                   | -0.04/0.05     | -0.05/0.05     |
| 65-74                                                  | 0.07/0.05                                    | 0.06/0.05      | 0.05/0.05      |
| 75+                                                    | 0.06/0.06                                    | 0.04/0.06      | 0.01/0.06      |
| <i>Sex (Female = Base)</i>                             |                                              |                |                |
| Male                                                   | 0.05/0.02 †                                  | 0.06/0.02 *    | 0.06/0.02 **   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |                |                |
| Widowed/Separated/Divorced                             | -0.12/0.04 **                                | -0.14/0.03 *** | -0.13/0.03 *** |
| Single                                                 | -0.16/0.04 ***                               | -0.17/0.04 *** | -0.16/0.04 *** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |                |                |
| Less than Bachelor's                                   | 0.09/0.03 **                                 | 0.08/0.03 **   | 0.08/0.03 **   |
| Bachelor's or Higher                                   | 0.16/0.03 ***                                | 0.15/0.03 ***  | 0.15/0.03 ***  |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |                |                |
| Quebec                                                 | 0.18/0.03 ***                                | 0.19/0.03 ***  | 0.19/0.03 ***  |
| Ontario                                                | -0.01/0.03                                   | 0.01/0.03      | 0.01/0.03      |
| Prairies                                               | 0.04/0.03                                    | 0.06/0.03 †    | 0.06/0.03 †    |
| British Colombia                                       | 0.05/0.05                                    | 0.08/0.05 †    | 0.09/0.04 *    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |                |                |
| Visible Minority                                       | 0.16/0.04 ***                                | 0.16/0.04 ***  | 0.13/0.04 **   |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |                |                |
| \$25,000-\$49,999                                      | 0.21/0.05 ***                                | 0.21/0.05 ***  | 0.21/0.05 ***  |
| \$50,000-\$74,999                                      | 0.28/0.06 ***                                | 0.25/0.05 ***  | 0.26/0.05 ***  |
| \$75,000-\$99,999                                      | 0.30/0.06 ***                                | 0.27/0.05 ***  | 0.27/0.05 ***  |
| >\$100,000                                             | 0.40/0.06 ***                                | 0.37/0.05 ***  | 0.37/0.05 ***  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |                |                |
| Not in Labour Force                                    | -0.08/0.07                                   | -0.11/0.07     | -0.12/0.07 †   |
| Employed                                               | 0.11/0.06 †                                  | 0.08/0.06      | 0.08/0.06      |
| <b><i>General Social Engagement</i></b>                |                                              |                |                |
| <i>Number of Close Friends (None = Base)</i>           |                                              |                |                |
| 1-4                                                    |                                              | 0.04/0.05      | 0.03/0.05      |
| 5-9                                                    |                                              | 0.09/0.07      | 0.08/0.06      |
| 10-19                                                  |                                              | 0.13/0.06 *    | 0.12/0.06 †    |
| 20-29                                                  |                                              | 0.21/0.09 *    | 0.19/0.09 *    |
| >30                                                    |                                              | 0.28/0.14 *    | 0.25/0.15 †    |
| <i>Number of Other Friends (None = Base)</i>           |                                              |                |                |
| 1-19                                                   |                                              | 0.12/0.05 *    | 0.11/0.05 *    |

|                                                                                                                 | <i>b</i> Coefficients/Robust Standard Errors |                        |                        |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------|------------------------|
|                                                                                                                 | Block 1                                      | Block 2                | Block 3                |
| 20-49                                                                                                           |                                              | 0.17/0.06**            | 0.16/0.06**            |
| 50-79                                                                                                           |                                              | 0.10/0.07              | 0.09/0.07              |
| >80                                                                                                             |                                              | 0.13/0.07 <sup>†</sup> | 0.13/0.07 <sup>†</sup> |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                               |                                              |                        |                        |
| Dissatisfied                                                                                                    |                                              | -0.07/0.23             | -0.07/0.22             |
| Neither                                                                                                         |                                              | -0.02/0.22             | -0.01/0.21             |
| Satisfied                                                                                                       |                                              | 0.13/0.22              | 0.13/0.21              |
| Very Satisfied                                                                                                  |                                              | 0.43/0.22 <sup>†</sup> | 0.43/0.21*             |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                          |                                              |                        |                        |
| Once or Twice a Year                                                                                            |                                              | 0.08/0.04 <sup>†</sup> | 0.07/0.04              |
| Monthly                                                                                                         |                                              | 0.11/0.04*             | 0.10/0.05*             |
| A Few Times a Month                                                                                             |                                              | 0.12/0.05*             | 0.11/0.05*             |
| Weekly or more                                                                                                  |                                              | 0.14/0.04**            | 0.13/0.04**            |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                             |                                              |                        |                        |
| Once or Twice a Year                                                                                            |                                              | -0.04/0.06             | -0.04/0.06             |
| Monthly                                                                                                         |                                              | -0.02/0.05             | -0.02/0.05             |
| A Few Times a Month                                                                                             |                                              | -0.04/0.05             | -0.04/0.05             |
| Weekly or more                                                                                                  |                                              | -0.04/0.05             | -0.04/0.05             |
| <b><i>R/S Social Engagement</i></b>                                                                             |                                              |                        |                        |
| <i>Religious Attendance (Not at all = Base)</i>                                                                 |                                              |                        |                        |
| Once or Twice a Year                                                                                            |                                              |                        | 0.04/0.03              |
| Three Times a Year                                                                                              |                                              |                        | 0.16/0.05**            |
| Monthly or more                                                                                                 |                                              |                        | 0.10/0.04*             |
| Weekly or more                                                                                                  |                                              |                        | 0.13/0.04**            |
| <i>Contact with Religious Friends (None = Base)</i>                                                             |                                              |                        |                        |
| A few                                                                                                           |                                              |                        | 0.08/0.06              |
| About half                                                                                                      |                                              |                        | 0.06/0.06              |
| Most                                                                                                            |                                              |                        | 0.09/0.06              |
| All                                                                                                             |                                              |                        | 0.14/0.06*             |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                             |                                              |                        |                        |
| Most Active in R/S Organizations                                                                                |                                              |                        | -0.04/0.06             |
| <i>Note.</i> <sup>†</sup> $p < .10$ ; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$ ; R/S = Religion/Spirituality |                                              |                        |                        |

**Table 5***Results for Self-Rated Mental Health in Model Series One (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |                |                |
|--------------------------------------------------------|----------------------------------------------|----------------|----------------|
|                                                        | Block 1                                      | Block 2        | Block 3        |
| Constant                                               | 3.05/0.09 ***                                | 2.51/0.21 ***  | 2.37/0.21 ***  |
| <b><i>Covariates</i></b>                               |                                              |                |                |
| <i>Age (25-34 = Base)</i>                              |                                              |                |                |
| 35-44                                                  | 0.16/0.05 **                                 | 0.20/0.05 ***  | 0.20/0.05 ***  |
| 45-54                                                  | 0.38/0.05 ***                                | 0.39/0.05 ***  | 0.39/0.05 ***  |
| 55-64                                                  | 0.52/0.05 ***                                | 0.52/0.05 ***  | 0.52/0.05 ***  |
| 65-74                                                  | 0.72/0.06 ***                                | 0.71/0.05 ***  | 0.70/0.05 ***  |
| 75+                                                    | 0.77/0.06 ***                                | 0.74/0.06 ***  | 0.72/0.06 ***  |
| <i>Sex (Female = Base)</i>                             |                                              |                |                |
| Male                                                   | 0.12/0.02 ***                                | 0.13/0.02 ***  | 0.14/0.02 ***  |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |                |                |
| Widowed/Separated/Divorced                             | -0.17/0.03 ***                               | -0.19/0.03 *** | -0.18/0.03 *** |
| Single                                                 | -0.21/0.04 ***                               | -0.22/0.04 *** | -0.20/0.04 *** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |                |                |
| Less than Bachelor's                                   | 0.04/0.03                                    | 0.03/0.03      | 0.04/0.03      |
| Bachelor's or Higher                                   | 0.10/0.03 **                                 | 0.10/0.03 **   | 0.11/0.03 **   |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |                |                |
| Quebec                                                 | 0.30/0.03 ***                                | 0.32/0.03 ***  | 0.30/0.03 ***  |
| Ontario                                                | -0.01/0.03                                   | 0.02/0.03      | 0.02/0.03      |
| Prairies                                               | 0.06/0.03 †                                  | 0.08/0.03 *    | 0.08/0.03 *    |
| British Colombia                                       | 0.00/0.05                                    | 0.04/0.05      | 0.05/0.05      |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |                |                |
| Visible Minority                                       | 0.34/0.03 ***                                | 0.32/0.03 ***  | 0.30/0.04 ***  |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |                |                |
| \$25,000-\$49,999                                      | 0.16/0.05 **                                 | 0.16/0.05 **   | 0.16/0.05 **   |
| \$50,000-\$74,999                                      | 0.23/0.05 ***                                | 0.21/0.05 ***  | 0.21/0.05 ***  |
| \$75,000-\$99,999                                      | 0.27/0.06 ***                                | 0.24/0.06 ***  | 0.24/0.06 ***  |
| >\$100,000                                             | 0.28/0.06 ***                                | 0.24/0.06 ***  | 0.24/0.06 ***  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |                |                |
| Not in Labour Force                                    | -0.04/0.07                                   | -0.06/0.07     | -0.07/0.07     |
| Employed                                               | 0.07/0.06                                    | 0.04/0.06      | 0.04/0.06      |
| <b><i>General Social Engagement</i></b>                |                                              |                |                |
| <i>Number of Close Friends (None = Base)</i>           |                                              |                |                |
| 1-4                                                    |                                              | 0.05/0.05      | 0.04/0.05      |
| 5-9                                                    |                                              | 0.10/0.06      | 0.08/0.06      |
| 10-19                                                  |                                              | 0.22/0.06 **   | 0.20/0.06 **   |
| 20-29                                                  |                                              | 0.21/0.09 *    | 0.19/0.09 *    |
| >30                                                    |                                              | 0.27/0.13 *    | 0.23/0.13 †    |
| <i>Number of Other Friends (None = Base)</i>           |                                              |                |                |
| 1-19                                                   |                                              | 0.13/0.05 *    | 0.13/0.05 *    |

|                                                                                                      | <i>b</i> Coefficients/Robust Standard Errors |             |             |
|------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------|-------------|
|                                                                                                      | Block 1                                      | Block 2     | Block 3     |
| 20-49                                                                                                |                                              | 0.19/0.06** | 0.19/0.06** |
| 50-79                                                                                                |                                              | 0.21/0.07** | 0.21/0.07** |
| >80                                                                                                  |                                              | 0.16/0.07*  | 0.16/0.07*  |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                    |                                              |             |             |
| Dissatisfied                                                                                         |                                              | -0.05/0.20  | -0.04/0.19  |
| Neither                                                                                              |                                              | 0.10/0.19   | 0.10/0.18   |
| Satisfied                                                                                            |                                              | 0.30/0.19   | 0.30/0.18   |
| Very Satisfied                                                                                       |                                              | 0.58/0.19** | 0.58/0.18** |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                               |                                              |             |             |
| Once or Twice a Year                                                                                 |                                              | 0.04/0.04   | 0.03/0.04   |
| Monthly                                                                                              |                                              | 0.05/0.05   | 0.05/0.05   |
| A Few Times a Month                                                                                  |                                              | 0.04/0.05   | 0.04/0.05   |
| Weekly or more                                                                                       |                                              | 0.07/0.04   | 0.06/0.04   |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                  |                                              |             |             |
| Once or Twice a Year                                                                                 |                                              | -0.04/0.05  | -0.04/0.05  |
| Monthly                                                                                              |                                              | -0.03/0.05  | -0.03/0.05  |
| A Few Times a Month                                                                                  |                                              | -0.04/0.05  | -0.04/0.05  |
| Weekly or more                                                                                       |                                              | -0.05/0.05  | -0.06/0.05  |
| <b><i>R/S Social Engagement</i></b>                                                                  |                                              |             |             |
| <i>Religious Attendance (Not at all = Base)</i>                                                      |                                              |             |             |
| Once or Twice a Year                                                                                 |                                              |             | -0.01/0.03  |
| Three Times a Year                                                                                   |                                              |             | 0.13/0.05** |
| Monthly or more                                                                                      |                                              |             | 0.00/0.04   |
| Weekly or more                                                                                       |                                              |             | 0.09/0.04*  |
| <i>Contact with Religious Friends (None = Base)</i>                                                  |                                              |             |             |
| A few                                                                                                |                                              |             | 0.10/0.07   |
| About half                                                                                           |                                              |             | 0.13/0.07†  |
| Most                                                                                                 |                                              |             | 0.16/0.07*  |
| All                                                                                                  |                                              |             | 0.22/0.07** |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                  |                                              |             |             |
| Most Active in R/S Organizations                                                                     |                                              |             | 0.00/0.06   |
| <i>Note. † p &lt; .10; * p &lt; .05; ** p &lt; .01; *** p &lt; .001; R/S = Religion/Spirituality</i> |                                              |             |             |

**Table 6***Results for Satisfaction with Life in Model Series One (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |               |               |
|--------------------------------------------------------|----------------------------------------------|---------------|---------------|
|                                                        | Block 1                                      | Block 2       | Block 3       |
| Constant                                               | 6.69/0.19***                                 | 5.06/0.46***  | 4.82/0.44***  |
| <b><i>Covariates</i></b>                               |                                              |               |               |
| <i>Age (25-34 = Base)</i>                              |                                              |               |               |
| 35-44                                                  | -0.03/0.09                                   | 0.05/0.09     | 0.05/0.09     |
| 45-54                                                  | 0.09/0.09                                    | 0.11/0.09     | 0.11/0.09     |
| 55-64                                                  | 0.25/0.09**                                  | 0.27/0.09**   | 0.25/0.09**   |
| 65-74                                                  | 0.74/0.10***                                 | 0.69/0.09***  | 0.67/0.09***  |
| 75+                                                    | 0.83/0.12***                                 | 0.77/0.11***  | 0.72/0.11***  |
| <i>Sex (Female = Base)</i>                             |                                              |               |               |
| Male                                                   | 0.04/0.05                                    | 0.05/0.05     | 0.06/0.05     |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |               |               |
| Widowed/Separated/Divorced                             | -0.64/0.08***                                | -0.67/0.07*** | -0.65/0.07*** |
| Single                                                 | -0.70/0.08***                                | -0.72/0.08*** | -0.70/0.08*** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |               |               |
| Less than Bachelor's                                   | 0.05/0.06                                    | 0.03/0.06     | 0.03/0.06     |
| Bachelor's or Higher                                   | 0.06/0.07                                    | 0.06/0.07     | 0.06/0.07     |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |               |               |
| Quebec                                                 | -0.10/0.06                                   | -0.05/0.06    | -0.05/0.06    |
| Ontario                                                | -0.23/0.06***                                | -0.17/0.06**  | -0.17/0.06**  |
| Prairies                                               | -0.28/0.07***                                | -0.23/0.07*** | -0.23/0.07*** |
| British Colombia                                       | -0.25/0.09**                                 | -0.15/0.09    | -0.13/0.09    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |               |               |
| Visible Minority                                       | 0.21/0.07**                                  | 0.18/0.07**   | 0.11/0.07     |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |               |               |
| \$25,000-\$49,999                                      | 0.27/0.11*                                   | 0.27/0.11*    | 0.27/0.11*    |
| \$50,000-\$74,999                                      | 0.51/0.12***                                 | 0.45/0.11***  | 0.45/0.11***  |
| \$75,000-\$99,999                                      | 0.39/0.12**                                  | 0.31/0.12**   | 0.31/0.12**   |
| >\$100,000                                             | 0.64/0.12***                                 | 0.56/0.11***  | 0.56/0.11***  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |               |               |
| Not in Labour Force                                    | 0.37/0.15*                                   | 0.30/0.14*    | 0.28/0.14*    |
| Employed                                               | 0.56/0.13***                                 | 0.49/0.13***  | 0.48/0.13***  |
| <b><i>General Social Engagement</i></b>                |                                              |               |               |
| <i>Number of Close Friends (None = Base)</i>           |                                              |               |               |
| 1-4                                                    |                                              | 0.34/0.11**   | 0.33/0.11**   |
| 5-9                                                    |                                              | 0.53/0.12***  | 0.51/0.12***  |
| 10-19                                                  |                                              | 0.55/0.13***  | 0.52/0.13***  |
| 20-29                                                  |                                              | 0.71/0.19***  | 0.68/0.19***  |
| >30                                                    |                                              | 0.43/0.43     | 0.35/0.42     |
| <i>Number of Other Friends (None = Base)</i>           |                                              |               |               |
| 1-19                                                   |                                              | 0.20/0.11†    | 0.20/0.11†    |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|
|                                                                                     | Block 1                                      | Block 2      | Block 3      |
| 20-49                                                                               |                                              | 0.38/0.11**  | 0.37/0.11**  |
| 50-79                                                                               |                                              | 0.26/0.13*   | 0.24/0.13†   |
| >80                                                                                 |                                              | 0.38/0.14**  | 0.36/0.14**  |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                   |                                              |              |              |
| Dissatisfied                                                                        |                                              | 0.03/0.43    | 0.05/0.41    |
| Neither                                                                             |                                              | 0.43/0.42    | 0.45/0.40    |
| Satisfied                                                                           |                                              | 1.00/0.41*   | 1.00/0.40*   |
| Very Satisfied                                                                      |                                              | 1.55/0.42*** | 1.55/0.40*** |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>              |                                              |              |              |
| Once or Twice a Year                                                                |                                              | 0.19/0.08*   | 0.18/0.08*   |
| Monthly                                                                             |                                              | 0.22/0.09*   | 0.19/0.09*   |
| A Few Times a Month                                                                 |                                              | 0.23/0.09**  | 0.21/0.09*   |
| Weekly or more                                                                      |                                              | 0.23/0.08**  | 0.20/0.08*   |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                 |                                              |              |              |
| Once or Twice a Year                                                                |                                              | -0.08/0.09   | -0.07/0.09   |
| Monthly                                                                             |                                              | -0.05/0.10   | -0.05/0.10   |
| A Few Times a Month                                                                 |                                              | -0.14/0.09   | -0.15/0.09   |
| Weekly or more                                                                      |                                              | -0.18/0.09*  | -0.21/0.09*  |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |
| <i>Religious Attendance (Not at all = Base)</i>                                     |                                              |              |              |
| Once or Twice a Year                                                                |                                              |              | -0.03/0.06   |
| Three Times a Year                                                                  |                                              |              | 0.24/0.09*   |
| Monthly or more                                                                     |                                              |              | 0.11/0.08    |
| Weekly or more                                                                      |                                              |              | 0.25/0.08**  |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |
| A few                                                                               |                                              |              | 0.19/0.13    |
| About half                                                                          |                                              |              | 0.25/0.13†   |
| Most                                                                                |                                              |              | 0.23/0.12†   |
| All                                                                                 |                                              |              | 0.33/0.13*   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |
| Most Active in R/S Organizations                                                    |                                              |              | 0.08/0.13    |

Note. †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; R/S = Religion/Spirituality

**Table 7***Results for Self-Rated Health in Model Series Two, Block 1, 2, and 4 (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |                        |                         |
|--------------------------------------------------------|----------------------------------------------|------------------------|-------------------------|
|                                                        | Block 1                                      | Block 2                | Block 4                 |
| Constant                                               | 3.17/0.09***                                 | 3.00/0.10***           | 2.67/0.23***            |
| <b><i>Covariates</i></b>                               |                                              |                        |                         |
| <i>Age (25-34 = Base)</i>                              |                                              |                        |                         |
| 35-44                                                  | -0.05/0.05                                   | -0.05/0.05             | -0.02/0.05              |
| 45-54                                                  | -0.04/0.05                                   | -0.05/0.05             | -0.03/0.05              |
| 55-64                                                  | -0.05/0.05                                   | -0.06/0.05             | -0.05/0.05              |
| 65-74                                                  | 0.07/0.05                                    | 0.06/0.05              | 0.05/0.05               |
| 75+                                                    | 0.06/0.06                                    | 0.02/0.06              | 0.01/0.06               |
| <i>Sex (Female = Base)</i>                             |                                              |                        |                         |
| Male                                                   | 0.05/0.02 <sup>†</sup>                       | 0.05/0.02*             | 0.06/0.02**             |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |                        |                         |
| Widowed/Separated/Divorced                             | -0.12/0.04**                                 | -0.11/0.04**           | -0.13/0.03***           |
| Single                                                 | -0.16/0.04***                                | -0.14/0.04**           | -0.16/0.04***           |
| <i>Level of Education (High School or Less = Base)</i> |                                              |                        |                         |
| Less than Bachelor's                                   | 0.09/0.03**                                  | 0.09/0.03**            | 0.08/0.03**             |
| Bachelor's or Higher                                   | 0.16/0.03***                                 | 0.15/0.03***           | 0.15/0.03***            |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |                        |                         |
| Quebec                                                 | 0.18/0.03***                                 | 0.18/0.03***           | 0.19/0.03***            |
| Ontario                                                | -0.01/0.03                                   | -0.01/0.03             | 0.01/0.03               |
| Prairies                                               | 0.04/0.03                                    | 0.04/0.03              | 0.06/0.03 <sup>†</sup>  |
| British Colombia                                       | 0.05/0.05                                    | 0.06/0.04              | 0.09/0.04*              |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |                        |                         |
| Visible Minority                                       | 0.16/0.04***                                 | 0.12/0.04**            | 0.13/0.04**             |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |                        |                         |
| \$25,000-\$49,999                                      | 0.21/0.05***                                 | 0.20/0.05***           | 0.21/0.05***            |
| \$50,000-\$74,999                                      | 0.28/0.06***                                 | 0.28/0.06***           | 0.26/0.05***            |
| \$75,000-\$99,999                                      | 0.30/0.06***                                 | 0.30/0.06***           | 0.27/0.05***            |
| >\$100,000                                             | 0.40/0.06***                                 | 0.40/0.06***           | 0.37/0.05***            |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |                        |                         |
| Not in Labour Force                                    | -0.08/0.07                                   | -0.09/0.07             | -0.12/0.07 <sup>†</sup> |
| Employed                                               | 0.11/0.06 <sup>†</sup>                       | 0.10/0.06              | 0.08/0.06               |
| <b><i>R/S Social Engagement</i></b>                    |                                              |                        |                         |
| <i>Religious Attendance (Not at all = Base)</i>        |                                              |                        |                         |
| Once or Twice a Year                                   |                                              | 0.06/0.03 <sup>†</sup> | 0.04/0.03               |
| Three Times a Year                                     |                                              | 0.19/0.05***           | 0.16/0.05**             |
| Monthly or more                                        |                                              | 0.13/0.04**            | 0.10/0.04*              |
| Weekly or more                                         |                                              | 0.19/0.04***           | 0.13/0.04**             |
| <i>Contact with Religious Friends (None = Base)</i>    |                                              |                        |                         |
| A few                                                  |                                              | 0.11/0.07              | 0.08/0.06               |
| About half                                             |                                              | 0.10/0.07              | 0.06/0.06               |

|                                                                                                                 | <i>b</i> Coefficients/Robust Standard Errors |             |                        |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|-------------|------------------------|
|                                                                                                                 | Block 1                                      | Block 2     | Block 4                |
| Most                                                                                                            |                                              | 0.13/0.06*  | 0.09/0.06              |
| All                                                                                                             |                                              | 0.18/0.06** | 0.14/0.06*             |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                             |                                              |             |                        |
| Most Active in R/S Organizations                                                                                |                                              | -0.02/0.06  | -0.04/0.06             |
| <b><i>General Social Engagement</i></b>                                                                         |                                              |             |                        |
| <i>Number of Close Friends (None = Base)</i>                                                                    |                                              |             |                        |
| 1-4                                                                                                             |                                              |             | 0.03/0.05              |
| 5-9                                                                                                             |                                              |             | 0.08/0.06              |
| 10-19                                                                                                           |                                              |             | 0.12/0.06 <sup>†</sup> |
| 20-29                                                                                                           |                                              |             | 0.19/0.09*             |
| >30                                                                                                             |                                              |             | 0.25/0.15 <sup>†</sup> |
| <i>Number of Other Friends (None = Base)</i>                                                                    |                                              |             |                        |
| 1-19                                                                                                            |                                              |             | 0.11/0.05*             |
| 20-49                                                                                                           |                                              |             | 0.16/0.06**            |
| 50-79                                                                                                           |                                              |             | 0.09/0.07              |
| >80                                                                                                             |                                              |             | 0.13/0.07 <sup>†</sup> |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                               |                                              |             |                        |
| Dissatisfied                                                                                                    |                                              |             | -0.07/0.22             |
| Neither                                                                                                         |                                              |             | -0.01/0.21             |
| Satisfied                                                                                                       |                                              |             | 0.13/0.21              |
| Very Satisfied                                                                                                  |                                              |             | 0.43/0.21*             |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                          |                                              |             |                        |
| Once or Twice a Year                                                                                            |                                              |             | 0.07/0.04              |
| Monthly                                                                                                         |                                              |             | 0.10/0.05*             |
| A Few Times a Month                                                                                             |                                              |             | 0.11/0.05*             |
| Weekly or more                                                                                                  |                                              |             | 0.13/0.04**            |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                             |                                              |             |                        |
| Once or Twice a Year                                                                                            |                                              |             | -0.04/0.06             |
| Monthly                                                                                                         |                                              |             | -0.02/0.05             |
| A Few Times a Month                                                                                             |                                              |             | -0.04/0.05             |
| Weekly or more                                                                                                  |                                              |             | -0.04/0.05             |
| <i>Note. <sup>†</sup> p &lt; .10; * p &lt; .05; ** p &lt; .01; *** p &lt; .001; R/S = Religion/Spirituality</i> |                                              |             |                        |

**Table 8**

*Results for Self-Rated Health in Model Series Two, Block 3a through 3f (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |              |               |               |              |
|--------------------------------------------------------|----------------------------------------------|--------------|---------------|---------------|--------------|
|                                                        | Block 3a                                     | Block 3b     | Block 3c      | Block 3d      | Block 3e     |
| Constant                                               | 2.90/0.11***                                 | 2.86/0.11*** | 2.83/0.23***  | 2.94/0.11***  | 3.01/0.10*** |
| <i>Age (25-34 = Base)</i>                              |                                              |              |               |               |              |
| 35-44                                                  | -0.04/0.05                                   | -0.04/0.05   | -0.04/0.05    | -0.05/0.05    | -0.05/0.05   |
| 45-54                                                  | -0.04/0.05                                   | -0.04/0.05   | -0.04/0.05    | -0.05/0.05    | -0.05/0.05   |
| 55-64                                                  | -0.05/0.05                                   | -0.05/0.05   | -0.06/0.05    | -0.05/0.05    | -0.06/0.05   |
| 65-74                                                  | 0.07/0.05                                    | 0.07/0.05    | 0.05/0.05     | 0.06/0.05     | 0.06/0.05    |
| 75+                                                    | 0.03/0.06                                    | 0.03/0.06    | 0.01/0.06     | 0.02/0.06     | 0.02/0.06    |
| <i>Sex (Female = Base)</i>                             |                                              |              |               |               |              |
| Male                                                   | 0.06/0.02*                                   | 0.05/0.02*   | 0.06/0.02**   | 0.05/0.02*    | 0.05/0.02*   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |              |               |               |              |
| Widowed/Separated/Divorced                             | -0.12/0.04**                                 | -0.11/0.04** | -0.13/0.04*** | -0.12/0.04**  | -0.11/0.04** |
| Single                                                 | -0.14/0.04**                                 | -0.14/0.04** | -0.16/0.04*** | -0.15/0.04*** | -0.14/0.04** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |              |               |               |              |
| Less than Bachelor's                                   | 0.08/0.03*                                   | 0.08/0.03**  | 0.09/0.03**   | 0.09/0.03**   | 0.09/0.03**  |
| Bachelor's or Higher                                   | 0.12/0.03***                                 | 0.13/0.03*** | 0.17/0.03***  | 0.14/0.03***  | 0.15/0.03*** |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |              |               |               |              |
| Quebec                                                 | 0.19/0.03***                                 | 0.19/0.03*** | 0.19/0.03***  | 0.18/0.03***  | 0.18/0.03*** |
| Ontario                                                | -0.01/0.03                                   | -0.01/0.03   | 0.01/0.03     | -0.01/0.03    | -0.01/0.03   |
| Prairies                                               | 0.04/0.03                                    | 0.04/0.03    | 0.07/0.03*    | 0.04/0.03     | 0.04/0.03    |
| British Colombia                                       | 0.06/0.04                                    | 0.07/0.05    | 0.10/0.04*    | 0.07/0.04     | 0.07/0.04    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |              |               |               |              |
| Visible Minority                                       | 0.13/0.04***                                 | 0.13/0.04*** | 0.10/0.04**   | 0.14/0.04***  | 0.12/0.04**  |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |              |               |               |              |
| \$25,000-\$49,999                                      | 0.20/0.05***                                 | 0.20/0.05*** | 0.22/0.05***  | 0.20/0.05***  | 0.20/0.05*** |
| \$50,000-\$74,999                                      | 0.27/0.06***                                 | 0.27/0.06*** | 0.26/0.05***  | 0.27/0.05***  | 0.28/0.06*** |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |                        |                        |              |                        |
|-------------------------------------------------------------------------------------|----------------------------------------------|------------------------|------------------------|--------------|------------------------|
|                                                                                     | Block 3a                                     | Block 3b               | Block 3c               | Block 3d     | Block 3e               |
| \$75,000-\$99,999                                                                   | 0.28/0.06***                                 | 0.30/0.06***           | 0.29/0.05***           | 0.30/0.06*** | 0.30/0.06***           |
| >\$100,000                                                                          | 0.37/0.06***                                 | 0.39/0.06***           | 0.39/0.05***           | 0.39/0.06*** | 0.40/0.06***           |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                              |                        |                        |              |                        |
| Not in Labour Force                                                                 | -0.09/0.07                                   | -0.08/0.07             | -0.11/0.07             | -0.10/0.07   | -0.09/0.07             |
| Employed                                                                            | 0.09/0.06                                    | 0.09/0.06              | 0.08/0.06              | 0.09/0.06    | 0.10/0.06              |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |                        |                        |              |                        |
| <i>Religious Attendance (Not at all = Base)</i>                                     |                                              |                        |                        |              |                        |
| 1. Once or Twice a Year                                                             | 0.05/0.03                                    | 0.05/0.03              | 0.05/0.03 <sup>†</sup> | 0.05/0.03    | 0.06/0.03 <sup>†</sup> |
| 2. Three Times a Year                                                               | 0.17/0.05***                                 | 0.18/0.05***           | 0.18/0.05***           | 0.18/0.05*** | 0.19/0.05***           |
| 3. Monthly or more                                                                  | 0.12/0.04**                                  | 0.12/0.04**            | 0.12/0.04**            | 0.12/0.04**  | 0.13/0.04**            |
| 4. Weekly or more                                                                   | 0.17/0.04***                                 | 0.17/0.04***           | 0.16/0.04***           | 0.17/0.04*** | 0.19/0.04***           |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |                        |                        |              |                        |
| 5. A few                                                                            | 0.09/0.06                                    | 0.09/0.07              | 0.10/0.07              | 0.11/0.07    | 0.11/0.07              |
| 6. About half                                                                       | 0.07/0.06                                    | 0.08/0.07              | 0.08/0.07              | 0.09/0.07    | 0.10/0.07              |
| 7. Most                                                                             | 0.10/0.06                                    | 0.11/0.06 <sup>†</sup> | 0.11/0.06 <sup>†</sup> | 0.13/0.06*   | 0.13/0.06*             |
| 8. All                                                                              | 0.17/0.06*                                   | 0.18/0.06**            | 0.15/0.06*             | 0.18/0.06**  | 0.18/0.06**            |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |                        |                        |              |                        |
| 9. Most Active in R/S Organizations                                                 | -0.04/0.06                                   | -0.03/0.06             | -0.02/0.06             | -0.03/0.06   | -0.02/0.06             |
| <b><i>General Social Engagement</i></b>                                             |                                              |                        |                        |              |                        |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |                        |                        |              |                        |
| 1-4                                                                                 | 0.12/0.05*                                   |                        |                        |              |                        |
| 5-9                                                                                 | 0.23/0.06***                                 |                        |                        |              |                        |
| 10-19                                                                               | 0.28/0.06***                                 |                        |                        |              |                        |
| 20-29                                                                               | 0.37/0.09***                                 |                        |                        |              |                        |
| >30                                                                                 | 0.39/0.14**                                  |                        |                        |              |                        |
| <i>Number of Other Friends (None = Base)</i>                                        |                                              |                        |                        |              |                        |
| 1-19                                                                                |                                              | 0.13/0.05*             |                        |              |                        |
| 20-49                                                                               |                                              | 0.23/0.06***           |                        |              |                        |
| 50-79                                                                               |                                              | 0.18/0.06**            |                        |              |                        |

|                                                                        |                      | <i>b</i> Coefficients/Robust Standard Errors    |                     |                     |                    |            |
|------------------------------------------------------------------------|----------------------|-------------------------------------------------|---------------------|---------------------|--------------------|------------|
|                                                                        |                      | Block 3a                                        | Block 3b            | Block 3c            | Block 3d           | Block 3e   |
| >80                                                                    |                      |                                                 | 0.25/0.07***        |                     |                    |            |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                      |                                                 |                     |                     |                    |            |
| Dissatisfied                                                           |                      |                                                 |                     | -0.06/0.22          |                    |            |
| Neither                                                                |                      |                                                 |                     | 0.00/0.22           |                    |            |
| Satisfied                                                              |                      |                                                 |                     | 0.15/0.22           |                    |            |
| Very Satisfied                                                         |                      |                                                 |                     | 0.46/0.22*          |                    |            |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                      |                                                 |                     |                     |                    |            |
| Once or Twice a Year                                                   |                      |                                                 |                     |                     | 0.07/0.04          |            |
| Monthly                                                                |                      |                                                 |                     |                     | 0.11/0.05*         |            |
| A Few Times a Month                                                    |                      |                                                 |                     |                     | 0.13/0.05*         |            |
| Weekly or more                                                         |                      |                                                 |                     |                     | 0.15/0.04**        |            |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                      |                                                 |                     |                     |                    |            |
| Once or Twice a Year                                                   |                      |                                                 |                     |                     |                    | -0.03/0.06 |
| Monthly                                                                |                      |                                                 |                     |                     |                    | 0.00/0.05  |
| A Few Times a Month                                                    |                      |                                                 |                     |                     |                    | -0.02/0.05 |
| Weekly or more                                                         |                      |                                                 |                     |                     |                    | -0.02/0.05 |
| <i>Coefficient Comparisons</i>                                         |                      | <i>b</i> Coefficients [95% Confidence Interval] |                     |                     |                    |            |
| <i>(cf. Block 2)</i>                                                   |                      | Block 3a                                        | Block 3b            | Block 3c            | Block 3d           | Block 3e   |
| 1                                                                      | 0.01 [0.00, 0.01]*   | 0.01 [0.00, 0.01]**                             | 0.00 [-0.01, 0.02]  | 0.01 [0.00, 0.01]†  | 0.00 [0.00, 0.00]  |            |
| 2                                                                      | 0.02 [0.01, 0.03]**  | 0.01 [0.00, 0.02]**                             | 0.01 [-0.01, 0.03]  | 0.01 [0.00, 0.01]   | 0.00 [-0.01, 0.00] |            |
| 3                                                                      | 0.01 [0.00, 0.02]**  | 0.01 [0.00, 0.02]*                              | 0.01 [-0.01, 0.03]  | 0.01 [0.00, 0.03]*  | 0.00 [0.00, 0.00]  |            |
| 4                                                                      | 0.02 [0.01, 0.03]*** | 0.02 [0.01, 0.03]***                            | 0.02 [0.01, 0.04]** | 0.02 [0.01, 0.03]** | 0.00 [-0.01, 0.01] |            |
| 5                                                                      | 0.02 [0.01, 0.03]**  | 0.02 [0.01, 0.03]**                             | 0.01 [-0.01, 0.03]  | 0.00 [-0.01, 0.01]  | 0.00 [0.00, 0.00]  |            |
| 6                                                                      | 0.03 [0.01, 0.04]**  | 0.02 [0.01, 0.03]**                             | 0.01 [-0.01, 0.04]  | 0.00 [-0.01, 0.01]  | 0.00 [0.00, 0.01]  |            |
| 7                                                                      | 0.03 [0.01, 0.04]*** | 0.02 [0.01, 0.03]**                             | 0.02 [0.00, 0.04]   | 0.00 [-0.01, 0.01]  | 0.00 [0.00, 0.01]  |            |
| 8                                                                      | 0.02 [0.00, 0.03]*   | 0.00 [-0.01, 0.01]                              | 0.03 [0.01, 0.06]** | 0.00 [-0.01, 0.01]  | 0.00 [-0.01, 0.01] |            |
| 9                                                                      | 0.01 [0.00, 0.03]*   | 0.01 [0.00, 0.01]                               | 0.00 [-0.02, 0.02]  | 0.01 [0.00, 0.02]   | 0.00 [-0.01, 0.01] |            |

Note. †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; R/S = Religion/Spirituality; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

**Table 9**

*Results for Self-Rated Mental Health in Model Series Two, Block 1, 2, and 4 (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |               |               |
|--------------------------------------------------------|----------------------------------------------|---------------|---------------|
|                                                        | Block 1                                      | Block 2       | Block 4       |
| Constant                                               | 3.05/0.09***                                 | 2.84/0.11***  | 2.37/0.21***  |
| <b><i>Covariates</i></b>                               |                                              |               |               |
| <i>Age (25-34 = Base)</i>                              |                                              |               |               |
| 35-44                                                  | 0.16/0.05**                                  | 0.16/0.05**   | 0.20/0.05***  |
| 45-54                                                  | 0.38/0.05***                                 | 0.37/0.05***  | 0.39/0.05***  |
| 55-64                                                  | 0.52/0.05***                                 | 0.51/0.05***  | 0.52/0.05***  |
| 65-74                                                  | 0.72/0.06***                                 | 0.71/0.05***  | 0.70/0.05***  |
| 75+                                                    | 0.77/0.06***                                 | 0.73/0.06***  | 0.72/0.06***  |
| <i>Sex (Female = Base)</i>                             |                                              |               |               |
| Male                                                   | 0.12/0.02***                                 | 0.13/0.02***  | 0.14/0.02***  |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |               |               |
| Widowed/Separated/Divorced                             | -0.17/0.03***                                | -0.16/0.03*** | -0.18/0.03*** |
| Single                                                 | -0.21/0.04***                                | -0.19/0.04*** | -0.20/0.04*** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |               |               |
| Less than Bachelor's                                   | 0.04/0.03                                    | 0.04/0.03     | 0.04/0.03     |
| Bachelor's or Higher                                   | 0.10/0.03**                                  | 0.10/0.03**   | 0.11/0.03**   |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |               |               |
| Quebec                                                 | 0.30/0.03***                                 | 0.29/0.03***  | 0.30/0.03***  |
| Ontario                                                | -0.01/0.03                                   | -0.01/0.03    | 0.02/0.03     |
| Prairies                                               | 0.06/0.03†                                   | 0.06/0.03†    | 0.08/0.03*    |
| British Colombia                                       | 0.00/0.05                                    | 0.01/0.05     | 0.05/0.05     |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |               |               |
| Visible Minority                                       | 0.34/0.03***                                 | 0.30/0.04***  | 0.30/0.04***  |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |               |               |
| \$25,000-\$49,999                                      | 0.16/0.05**                                  | 0.15/0.05**   | 0.16/0.05**   |
| \$50,000-\$74,999                                      | 0.23/0.05***                                 | 0.23/0.05***  | 0.21/0.05***  |
| \$75,000-\$99,999                                      | 0.27/0.06***                                 | 0.27/0.06***  | 0.24/0.06***  |
| >\$100,000                                             | 0.28/0.06***                                 | 0.27/0.06***  | 0.24/0.06***  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |               |               |
| Not in Labour Force                                    | -0.04/0.07                                   | -0.05/0.07    | -0.07/0.07    |
| Employed                                               | 0.07/0.06                                    | 0.06/0.06     | 0.04/0.06     |
| <b><i>R/S Social Engagement</i></b>                    |                                              |               |               |
| <i>Religious Attendance (Not at all = Base)</i>        |                                              |               |               |
| Once or Twice a Year                                   |                                              | 0.01/0.03     | -0.01/0.03    |
| Three Times a Year                                     |                                              | 0.16/0.05**   | 0.13/0.05**   |
| Monthly or more                                        |                                              | 0.04/0.04     | 0.00/0.04     |
| Weekly or more                                         |                                              | 0.14/0.04***  | 0.09/0.04*    |
| <i>Contact with Religious Friends (None = Base)</i>    |                                              |               |               |

|                                                                                                                 | <i>b</i> Coefficients/Robust Standard Errors |              |                        |
|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------|------------------------|
|                                                                                                                 | Block 1                                      | Block 2      | Block 4                |
| A few                                                                                                           |                                              | 0.14/0.07*   | 0.10/0.07              |
| About half                                                                                                      |                                              | 0.18/0.07*   | 0.13/0.07 <sup>†</sup> |
| Most                                                                                                            |                                              | 0.21/0.07**  | 0.16/0.07*             |
| All                                                                                                             |                                              | 0.27/0.07*** | 0.22/0.07**            |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                             |                                              |              |                        |
| Most Active in R/S Organizations                                                                                |                                              | 0.01/0.06    | 0.00/0.06              |
| <b><i>General Social Engagement</i></b>                                                                         |                                              |              |                        |
| <i>Number of Close Friends (None = Base)</i>                                                                    |                                              |              |                        |
| 1-4                                                                                                             |                                              |              | 0.04/0.05              |
| 5-9                                                                                                             |                                              |              | 0.08/0.06              |
| 10-19                                                                                                           |                                              |              | 0.20/0.06**            |
| 20-29                                                                                                           |                                              |              | 0.19/0.09*             |
| >30                                                                                                             |                                              |              | 0.23/0.13 <sup>†</sup> |
| <i>Number of Other Friends (None = Base)</i>                                                                    |                                              |              |                        |
| 1-19                                                                                                            |                                              |              | 0.13/0.05*             |
| 20-49                                                                                                           |                                              |              | 0.19/0.06**            |
| 50-79                                                                                                           |                                              |              | 0.21/0.07**            |
| >80                                                                                                             |                                              |              | 0.16/0.07*             |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                               |                                              |              |                        |
| Dissatisfied                                                                                                    |                                              |              | -0.04/0.19             |
| Neither                                                                                                         |                                              |              | 0.10/0.18              |
| Satisfied                                                                                                       |                                              |              | 0.30/0.18              |
| Very Satisfied                                                                                                  |                                              |              | 0.58/0.18**            |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                          |                                              |              |                        |
| Once or Twice a Year                                                                                            |                                              |              | 0.03/0.04              |
| Monthly                                                                                                         |                                              |              | 0.05/0.05              |
| A Few Times a Month                                                                                             |                                              |              | 0.04/0.05              |
| Weekly or more                                                                                                  |                                              |              | 0.06/0.04              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                             |                                              |              |                        |
| Once or Twice a Year                                                                                            |                                              |              | -0.04/0.05             |
| Monthly                                                                                                         |                                              |              | -0.03/0.05             |
| A Few Times a Month                                                                                             |                                              |              | -0.04/0.05             |
| Weekly or more                                                                                                  |                                              |              | -0.06/0.05             |
| <i>Note. <sup>†</sup> p &lt; .10; * p &lt; .05; ** p &lt; .01; *** p &lt; .001; R/S = Religion/Spirituality</i> |                                              |              |                        |

**Table 10**

*Results for Self-Rated Mental Health in Model Series Two, Block 3a through 3f (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |               |               |               |               |
|--------------------------------------------------------|----------------------------------------------|---------------|---------------|---------------|---------------|
|                                                        | Block 3a                                     | Block 3b      | Block 3c      | Block 3d      | Block 3e      |
| Constant                                               | 2.71/0.11***                                 | 2.66/0.11***  | 2.53/0.21***  | 2.80/0.11***  | 2.84/0.11***  |
| <i>Age (25-34 = Base)</i>                              |                                              |               |               |               |               |
| 35-44                                                  | 0.17/0.05**                                  | 0.17/0.05**   | 0.18/0.05***  | 0.16/0.05**   | 0.16/0.05**   |
| 45-54                                                  | 0.38/0.05***                                 | 0.38/0.05***  | 0.38/0.05***  | 0.37/0.05***  | 0.37/0.05***  |
| 55-64                                                  | 0.53/0.05***                                 | 0.53/0.05***  | 0.51/0.05***  | 0.51/0.05***  | 0.51/0.05***  |
| 65-74                                                  | 0.72/0.05***                                 | 0.72/0.06***  | 0.69/0.05***  | 0.71/0.05***  | 0.71/0.05***  |
| 75+                                                    | 0.74/0.06***                                 | 0.75/0.06***  | 0.71/0.06***  | 0.73/0.06***  | 0.73/0.06***  |
| <i>Sex (Female = Base)</i>                             |                                              |               |               |               |               |
| Male                                                   | 0.13/0.02***                                 | 0.13/0.02***  | 0.14/0.02***  | 0.13/0.02***  | 0.13/0.02***  |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |               |               |               |               |
| Widowed/Separated/Divorced                             | -0.17/0.03***                                | -0.16/0.03*** | -0.18/0.03*** | -0.16/0.03*** | -0.16/0.03*** |
| Single                                                 | -0.19/0.04***                                | -0.18/0.04*** | -0.21/0.04*** | -0.19/0.04*** | -0.19/0.04*** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |               |               |               |               |
| Less than Bachelor's                                   | 0.03/0.03                                    | 0.03/0.03     | 0.05/0.03     | 0.04/0.03     | 0.05/0.03     |
| Bachelor's or Higher                                   | 0.07/0.03*                                   | 0.08/0.03*    | 0.13/0.03***  | 0.10/0.03**   | 0.11/0.03**   |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |               |               |               |               |
| Quebec                                                 | 0.30/0.03***                                 | 0.30/0.03***  | 0.29/0.03***  | 0.28/0.03***  | 0.29/0.03***  |
| Ontario                                                | -0.01/0.03                                   | -0.01/0.03    | 0.02/0.03     | -0.01/0.03    | -0.01/0.03    |
| Prairies                                               | 0.06/0.03                                    | 0.06/0.03†    | 0.09/0.03**   | 0.06/0.03†    | 0.06/0.03†    |
| British Colombia                                       | 0.01/0.05                                    | 0.02/0.05     | 0.05/0.05     | 0.01/0.05     | 0.01/0.05     |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |               |               |               |               |
| Visible Minority                                       | 0.32/0.04***                                 | 0.32/0.04***  | 0.27/0.03***  | 0.31/0.04***  | 0.30/0.04***  |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |               |               |               |               |
| \$25,000-\$49,999                                      | 0.14/0.05**                                  | 0.15/0.05**   | 0.17/0.05**   | 0.15/0.05**   | 0.15/0.05**   |
| \$50,000-\$74,999                                      | 0.22/0.05***                                 | 0.23/0.05***  | 0.22/0.05***  | 0.23/0.05***  | 0.23/0.05***  |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |              |              |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|--------------|--------------|
|                                                                                     | Block 3a                                     | Block 3b     | Block 3c     | Block 3d     | Block 3e     |
| \$75,000-\$99,999                                                                   | 0.25/0.06***                                 | 0.26/0.06*** | 0.26/0.06*** | 0.27/0.06*** | 0.27/0.06*** |
| >\$100,000                                                                          | 0.25/0.06***                                 | 0.26/0.06*** | 0.27/0.06*** | 0.27/0.06*** | 0.27/0.06*** |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                              |              |              |              |              |
| Not in Labour Force                                                                 | -0.05/0.07                                   | -0.04/0.07   | -0.07/0.07   | -0.05/0.07   | -0.05/0.07   |
| Employed                                                                            | 0.05/0.06                                    | 0.06/0.06    | 0.05/0.06    | 0.06/0.06    | 0.06/0.06    |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |              |              |
| <i>Religious Attendance (Not at all = Base)</i>                                     |                                              |              |              |              |              |
| 1. Once or Twice a Year                                                             | 0.00/0.03                                    | 0.00/0.03    | 0.01/0.03    | 0.01/0.03    | 0.01/0.03    |
| 2. Three Times a Year                                                               | 0.14/0.05**                                  | 0.14/0.05**  | 0.14/0.05**  | 0.15/0.05**  | 0.16/0.05**  |
| 3. Monthly or more                                                                  | 0.02/0.04                                    | 0.03/0.04    | 0.02/0.04    | 0.03/0.04    | 0.04/0.04    |
| 4. Weekly or more                                                                   | 0.12/0.04**                                  | 0.12/0.04**  | 0.11/0.04**  | 0.13/0.04**  | 0.14/0.04*** |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |              |              |
| 5. A few                                                                            | 0.11/0.07                                    | 0.11/0.07†   | 0.12/0.07†   | 0.14/0.07*   | 0.14/0.07*   |
| 6. About half                                                                       | 0.14/0.07*                                   | 0.15/0.07*   | 0.16/0.07*   | 0.18/0.07*   | 0.18/0.07*   |
| 7. Most                                                                             | 0.17/0.07**                                  | 0.19/0.07**  | 0.19/0.07**  | 0.21/0.07**  | 0.21/0.07**  |
| 8. All                                                                              | 0.25/0.07***                                 | 0.27/0.07*** | 0.23/0.07**  | 0.27/0.07*** | 0.27/0.07*** |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |              |              |
| 9. Most Active in R/S Organizations                                                 | 0.00/0.06                                    | 0.00/0.06    | 0.02/0.06    | 0.01/0.06    | 0.02/0.06    |
| <b><i>General Social Engagement</i></b>                                             |                                              |              |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |              |              |              |              |
| 1-4                                                                                 | 0.14/0.05**                                  |              |              |              |              |
| 5-9                                                                                 | 0.26/0.06***                                 |              |              |              |              |
| 10-19                                                                               | 0.40/0.06***                                 |              |              |              |              |
| 20-29                                                                               | 0.42/0.08***                                 |              |              |              |              |
| >30                                                                                 | 0.41/0.12**                                  |              |              |              |              |
| <i>Number of Other Friends (None = Base)</i>                                        |                                              |              |              |              |              |
| 1-19                                                                                |                                              | 0.15/0.05**  |              |              |              |
| 20-49                                                                               |                                              | 0.28/0.05*** |              |              |              |
| 50-79                                                                               |                                              | 0.32/0.06*** |              |              |              |

|                                                                        |  | <i>b</i> Coefficients/Robust Standard Errors    |                                |                                |                                |                    |
|------------------------------------------------------------------------|--|-------------------------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------|
|                                                                        |  | Block 3a                                        | Block 3b                       | Block 3c                       | Block 3d                       | Block 3e           |
| >80                                                                    |  |                                                 | 0.29/0.07***                   |                                |                                |                    |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |  |                                                 |                                |                                |                                |                    |
| Dissatisfied                                                           |  |                                                 |                                | -0.04/0.19                     |                                |                    |
| Neither                                                                |  |                                                 |                                | 0.10/0.19                      |                                |                    |
| Satisfied                                                              |  |                                                 |                                | 0.32/0.19 <sup>†</sup>         |                                |                    |
| Very Satisfied                                                         |  |                                                 |                                | 0.62/0.19**                    |                                |                    |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |  |                                                 |                                |                                |                                |                    |
| Once or Twice a Year                                                   |  |                                                 |                                |                                | 0.04/0.04                      |                    |
| Monthly                                                                |  |                                                 |                                |                                | 0.07/0.05                      |                    |
| A Few Times a Month                                                    |  |                                                 |                                |                                | 0.06/0.05                      |                    |
| Weekly or more                                                         |  |                                                 |                                |                                | 0.08/0.04*                     |                    |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |  |                                                 |                                |                                |                                |                    |
| Once or Twice a Year                                                   |  |                                                 |                                |                                |                                | -0.04/0.05         |
| Monthly                                                                |  |                                                 |                                |                                |                                | -0.01/0.05         |
| A Few Times a Month                                                    |  |                                                 |                                |                                |                                | -0.01/0.05         |
| Weekly or more                                                         |  |                                                 |                                |                                |                                | -0.04/0.05         |
| <i>Coefficient Comparisons</i><br>( <i>cf.</i> Block 2)                |  | <i>b</i> Coefficients [95% Confidence Interval] |                                |                                |                                |                    |
|                                                                        |  | Block 3a                                        | Block 3b                       | Block 3c                       | Block 3d                       | Block 3e           |
| 1                                                                      |  | 0.01 [0.00, 0.02]*                              | 0.01 [0.01, 0.02]**            | 0.01 [-0.01, 0.02]             | 0.00 [0.00, 0.01]              | 0.00 [0.00, 0.00]  |
| 2                                                                      |  | 0.02 [0.01, 0.03]**                             | 0.01 [0.00, 0.02]**            | 0.01 [-0.01, 0.03]             | 0.00 [0.00, 0.01]              | 0.00 [-0.01, 0.00] |
| 3                                                                      |  | 0.02 [0.01, 0.03]**                             | 0.01 [0.00, 0.02]*             | 0.01 [-0.01, 0.03]             | 0.01 [0.00, 0.02]              | 0.00 [0.00, 0.00]  |
| 4                                                                      |  | 0.03 [0.01, 0.04]***                            | 0.02 [0.01, 0.03]***           | 0.03 [0.01, 0.05]***           | 0.01 [0.00, 0.02] <sup>†</sup> | 0.00 [-0.01, 0.01] |
| 5                                                                      |  | 0.03 [0.01, 0.04]**                             | 0.02 [0.01, 0.04]**            | 0.01 [-0.01, 0.04]             | 0.00 [-0.01, 0.01]             | 0.00 [0.00, 0.00]  |
| 6                                                                      |  | 0.03 [0.02, 0.05]***                            | 0.03 [0.01, 0.04]***           | 0.02 [-0.01, 0.04]             | 0.00 [0.00, 0.01]              | 0.00 [0.00, 0.00]  |
| 7                                                                      |  | 0.04 [0.02, 0.05]***                            | 0.02 [0.01, 0.04]***           | 0.02 [0.00, 0.05] <sup>†</sup> | 0.00 [-0.01, 0.01]             | 0.00 [0.00, 0.01]  |
| 8                                                                      |  | 0.02 [0.01, 0.04]**                             | 0.00 [-0.01, 0.01]             | 0.04 [0.01, 0.07]**            | 0.00 [-0.01, 0.01]             | 0.00 [0.00, 0.01]  |
| 9                                                                      |  | 0.02 [0.00, 0.04]*                              | 0.01 [0.00, 0.02] <sup>†</sup> | 0.00 [-0.03, 0.02]             | 0.00 [0.00, 0.01]              | 0.00 [-0.02, 0.01] |

Note. <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; R/S = Religion/Spirituality; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

**Table 11***Results for Satisfaction with Life in Model Series Two, Block 1, 2, and 4 (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |                |                |
|--------------------------------------------------------|----------------------------------------------|----------------|----------------|
|                                                        | Block 1                                      | Block 2        | Block 4        |
| Constant                                               | 6.69/0.19 ***                                | 6.28/0.21 ***  | 4.82/0.44 ***  |
| <b><i>Covariates</i></b>                               |                                              |                |                |
| <i>Age (25-34 = Base)</i>                              |                                              |                |                |
| 35-44                                                  | -0.03/0.09                                   | -0.04/0.09     | 0.05/0.09      |
| 45-54                                                  | 0.09/0.09                                    | 0.08/0.09      | 0.11/0.09      |
| 55-64                                                  | 0.25/0.09 **                                 | 0.24/0.09 **   | 0.25/0.09 **   |
| 65-74                                                  | 0.74/0.10 ***                                | 0.71/0.10 ***  | 0.67/0.09 ***  |
| 75+                                                    | 0.83/0.12 ***                                | 0.75/0.12 ***  | 0.72/0.11 ***  |
| <i>Sex (Female = Base)</i>                             |                                              |                |                |
| Male                                                   | 0.04/0.05                                    | 0.05/0.05      | 0.06/0.05      |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |                |                |
| Widowed/Separated/Divorced                             | -0.64/0.08 ***                               | -0.62/0.08 *** | -0.65/0.07 *** |
| Single                                                 | -0.70/0.08 ***                               | -0.66/0.08 *** | -0.70/0.08 *** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |                |                |
| Less than Bachelor's                                   | 0.05/0.06                                    | 0.05/0.06      | 0.03/0.06      |
| Bachelor's or Higher                                   | 0.06/0.07                                    | 0.04/0.07      | 0.06/0.07      |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |                |                |
| Quebec                                                 | -0.10/0.06                                   | -0.09/0.07     | -0.05/0.06     |
| Ontario                                                | -0.23/0.06 ***                               | -0.23/0.06 *** | -0.17/0.06 **  |
| Prairies                                               | -0.28/0.07 ***                               | -0.29/0.07 *** | -0.23/0.07 *** |
| British Colombia                                       | -0.25/0.09 **                                | -0.23/0.09 *   | -0.13/0.09     |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |                |                |
| Visible Minority                                       | 0.21/0.07 **                                 | 0.12/0.07 †    | 0.11/0.07      |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |                |                |
| \$25,000-\$49,999                                      | 0.27/0.11 *                                  | 0.26/0.11 *    | 0.27/0.11 *    |
| \$50,000-\$74,999                                      | 0.51/0.12 ***                                | 0.50/0.11 ***  | 0.45/0.11 ***  |
| \$75,000-\$99,999                                      | 0.39/0.12 **                                 | 0.38/0.12 **   | 0.31/0.12 **   |
| >\$100,000                                             | 0.64/0.12 ***                                | 0.63/0.12 ***  | 0.56/0.11 ***  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                              |                |                |
| Not in Labour Force                                    | 0.37/0.15 *                                  | 0.35/0.15 *    | 0.28/0.14 *    |
| Employed                                               | 0.56/0.13 ***                                | 0.54/0.13 ***  | 0.48/0.13 ***  |
| <b><i>R/S Social Engagement</i></b>                    |                                              |                |                |
| <i>Religious Attendance (Not at all = Base)</i>        |                                              |                |                |
| Once or Twice a Year                                   |                                              | 0.03/0.06      | -0.03/0.06     |
| Three Times a Year                                     |                                              | 0.32/0.09 ***  | 0.24/0.09 *    |
| Monthly or more                                        |                                              | 0.20/0.08 *    | 0.11/0.08      |
| Weekly or more                                         |                                              | 0.38/0.08 ***  | 0.25/0.08 **   |
| <i>Contact with Religious Friends (None = Base)</i>    |                                              |                |                |
| A few                                                  |                                              | 0.28/0.13 *    | 0.19/0.13      |

|                                                                                                      | <i>b</i> Coefficients/Robust Standard Errors |              |               |
|------------------------------------------------------------------------------------------------------|----------------------------------------------|--------------|---------------|
|                                                                                                      | Block 1                                      | Block 2      | Block 4       |
| About half                                                                                           |                                              | 0.37/0.14 ** | 0.25/0.13 †   |
| Most                                                                                                 |                                              | 0.36/0.13 ** | 0.23/0.12 †   |
| All                                                                                                  |                                              | 0.46/0.14 ** | 0.33/0.13 *   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                  |                                              |              |               |
| Most Active in R/S Organizations                                                                     |                                              | 0.08/0.13    | 0.08/0.13     |
| <b><i>General Social Engagement</i></b>                                                              |                                              |              |               |
| <i>Number of Close Friends (None = Base)</i>                                                         |                                              |              |               |
| 1-4                                                                                                  |                                              |              | 0.33/0.11 **  |
| 5-9                                                                                                  |                                              |              | 0.51/0.12 *** |
| 10-19                                                                                                |                                              |              | 0.52/0.13 *** |
| 20-29                                                                                                |                                              |              | 0.68/0.19 *** |
| >30                                                                                                  |                                              |              | 0.35/0.42     |
| <i>Number of Other Friends (None = Base)</i>                                                         |                                              |              |               |
| 1-19                                                                                                 |                                              |              | 0.20/0.11 †   |
| 20-49                                                                                                |                                              |              | 0.37/0.11 **  |
| 50-79                                                                                                |                                              |              | 0.24/0.13 †   |
| >80                                                                                                  |                                              |              | 0.36/0.14 **  |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                    |                                              |              |               |
| Dissatisfied                                                                                         |                                              |              | 0.05/0.41     |
| Neither                                                                                              |                                              |              | 0.45/0.40     |
| Satisfied                                                                                            |                                              |              | 1.00/0.40 *   |
| Very Satisfied                                                                                       |                                              |              | 1.55/0.40 *** |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                               |                                              |              |               |
| Once or Twice a Year                                                                                 |                                              |              | 0.18/0.08 *   |
| Monthly                                                                                              |                                              |              | 0.19/0.09 *   |
| A Few Times a Month                                                                                  |                                              |              | 0.21/0.09 *   |
| Weekly or more                                                                                       |                                              |              | 0.20/0.08 *   |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                  |                                              |              |               |
| Once or Twice a Year                                                                                 |                                              |              | -0.07/0.09    |
| Monthly                                                                                              |                                              |              | -0.05/0.10    |
| A Few Times a Month                                                                                  |                                              |              | -0.15/0.09    |
| Weekly or more                                                                                       |                                              |              | -0.21/0.09 *  |
| <i>Note. † p &lt; .10; * p &lt; .05; ** p &lt; .01; *** p &lt; .001; R/S = Religion/Spirituality</i> |                                              |              |               |

**Table 12**

*Results for Satisfaction with Life in Model Series Two, Block 3a through 3f (N = 22,908)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |               |               |               |               |
|--------------------------------------------------------|----------------------------------------------|---------------|---------------|---------------|---------------|
|                                                        | Block 3a                                     | Block 3b      | Block 3c      | Block 3d      | Block 3e      |
| Constant                                               | 5.81/0.23***                                 | 5.91/0.23***  | 5.30/0.44***  | 6.14/0.22***  | 6.31/0.21***  |
| <i>Age (25-34 = Base)</i>                              |                                              |               |               |               |               |
| 35-44                                                  | 0.00/0.09                                    | -0.01/0.09    | 0.01/0.09     | -0.04/0.09    | -0.04/0.09    |
| 45-54                                                  | 0.11/0.09                                    | 0.11/0.09     | 0.09/0.09     | 0.08/0.09     | 0.08/0.09     |
| 55-64                                                  | 0.27/0.09**                                  | 0.27/0.09**   | 0.22/0.09*    | 0.24/0.09**   | 0.23/0.09**   |
| 65-74                                                  | 0.73/0.10***                                 | 0.74/0.10***  | 0.66/0.09***  | 0.71/0.10***  | 0.70/0.10***  |
| 75+                                                    | 0.79/0.12***                                 | 0.80/0.12***  | 0.69/0.11***  | 0.76/0.12***  | 0.74/0.12***  |
| <i>Sex (Female = Base)</i>                             |                                              |               |               |               |               |
| Male                                                   | 0.06/0.05                                    | 0.05/0.05     | 0.06/0.05     | 0.05/0.05     | 0.05/0.05     |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |               |               |               |               |
| Widowed/Separated/Divorced                             | -0.64/0.08***                                | -0.61/0.08*** | -0.65/0.07*** | -0.63/0.08*** | -0.63/0.08*** |
| Single                                                 | -0.67/0.08***                                | -0.64/0.08*** | -0.70/0.08*** | -0.66/0.08*** | -0.66/0.08*** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |               |               |               |               |
| Less than Bachelor's                                   | 0.00/0.06                                    | 0.03/0.06     | 0.06/0.06     | 0.04/0.06     | 0.05/0.06     |
| Bachelor's or Higher                                   | -0.03/0.07                                   | 0.00/0.07     | 0.10/0.07     | 0.03/0.07     | 0.05/0.07     |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |               |               |               |               |
| Quebec                                                 | -0.07/0.07                                   | -0.06/0.07    | -0.08/0.06    | -0.09/0.07    | -0.09/0.07    |
| Ontario                                                | -0.24/0.06***                                | -0.23/0.06*** | -0.17/0.06**  | -0.23/0.06*** | -0.23/0.06*** |
| Prairies                                               | -0.29/0.07***                                | -0.29/0.07*** | -0.22/0.07**  | -0.30/0.07*** | -0.29/0.07*** |
| British Colombia                                       | -0.24/0.09**                                 | -0.22/0.09*   | -0.13/0.09    | -0.23/0.09*   | -0.22/0.09*   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |               |               |               |               |
| Visible Minority                                       | 0.16/0.07*                                   | 0.16/0.07*    | 0.05/0.07     | 0.15/0.07*    | 0.12/0.07†    |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                              |               |               |               |               |
| \$25,000-\$49,999                                      | 0.22/0.11*                                   | 0.25/0.11*    | 0.30/0.11**   | 0.25/0.11*    | 0.26/0.11*    |
| \$50,000-\$74,999                                      | 0.47/0.11***                                 | 0.50/0.11***  | 0.47/0.11***  | 0.50/0.11***  | 0.50/0.11***  |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |              |              |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|--------------|--------------|
|                                                                                     | Block 3a                                     | Block 3b     | Block 3c     | Block 3d     | Block 3e     |
| \$75,000-\$99,999                                                                   | 0.32/0.12**                                  | 0.37/0.12**  | 0.35/0.12**  | 0.38/0.12**  | 0.38/0.12**  |
| >\$100,000                                                                          | 0.56/0.12***                                 | 0.61/0.12*** | 0.62/0.11*** | 0.62/0.11*** | 0.63/0.12*** |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                              |              |              |              |              |
| Not in Labour Force                                                                 | 0.34/0.15*                                   | 0.37/0.14*   | 0.29/0.14*   | 0.34/0.15*   | 0.35/0.14*   |
| Employed                                                                            | 0.52/0.13***                                 | 0.53/0.13*** | 0.51/0.13*** | 0.54/0.13*** | 0.54/0.13*** |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |              |              |
| <i>Religious Attendance (Not at all = Base)</i>                                     |                                              |              |              |              |              |
| 1. Once or Twice a Year                                                             | 0.00/0.06                                    | 0.00/0.06    | 0.01/0.06    | 0.01/0.06    | 0.03/0.06    |
| 2. Three Times a Year                                                               | 0.27/0.09**                                  | 0.29/0.09**  | 0.28/0.09**  | 0.30/0.09**  | 0.32/0.09*** |
| 3. Monthly or more                                                                  | 0.16/0.08†                                   | 0.18/0.08*   | 0.16/0.08*   | 0.17/0.08*   | 0.20/0.08*   |
| 4. Weekly or more                                                                   | 0.32/0.08***                                 | 0.32/0.08*** | 0.30/0.08*** | 0.34/0.08*** | 0.39/0.08*** |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |              |              |
| 5. A few                                                                            | 0.21/0.13                                    | 0.23/0.13†   | 0.25/0.13*   | 0.28/0.13*   | 0.28/0.13*   |
| 6. About half                                                                       | 0.29/0.14*                                   | 0.31/0.14*   | 0.31/0.13*   | 0.36/0.14**  | 0.36/0.14**  |
| 7. Most                                                                             | 0.27/0.13*                                   | 0.31/0.13*   | 0.30/0.12*   | 0.36/0.13**  | 0.36/0.13**  |
| 8. All                                                                              | 0.40/0.14**                                  | 0.46/0.14**  | 0.36/0.13**  | 0.46/0.14**  | 0.45/0.14**  |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |              |              |
| 9. Most Active in R/S Organizations                                                 | 0.05/0.13                                    | 0.06/0.13    | 0.09/0.12    | 0.07/0.13    | 0.10/0.13    |
| <b><i>General Social Engagement</i></b>                                             |                                              |              |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |              |              |              |              |
| 1-4                                                                                 | 0.56/0.11***                                 |              |              |              |              |
| 5-9                                                                                 | 0.91/0.12***                                 |              |              |              |              |
| 10-19                                                                               | 0.97/0.12***                                 |              |              |              |              |
| 20-29                                                                               | 1.19/0.19***                                 |              |              |              |              |
| >30                                                                                 | 0.76/0.44†                                   |              |              |              |              |
| <i>Number of Other Friends (None = Base)</i>                                        |                                              |              |              |              |              |
| 1-19                                                                                |                                              | 0.32/0.11**  |              |              |              |
| 20-49                                                                               |                                              | 0.65/0.11*** |              |              |              |
| 50-79                                                                               |                                              | 0.54/0.13*** |              |              |              |

|                                                                        |                      | <i>b</i> Coefficients/Robust Standard Errors    |                      |                      |                     |                     |
|------------------------------------------------------------------------|----------------------|-------------------------------------------------|----------------------|----------------------|---------------------|---------------------|
|                                                                        |                      | Block 3a                                        | Block 3b             | Block 3c             | Block 3d            | Block 3e            |
| >80                                                                    |                      |                                                 | 0.68/0.13***         |                      |                     |                     |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                      |                                                 |                      |                      |                     |                     |
|                                                                        | Dissatisfied         |                                                 |                      | 0.07/0.42            |                     |                     |
|                                                                        | Neither              |                                                 |                      | 0.47/0.41            |                     |                     |
|                                                                        | Satisfied            |                                                 |                      | 1.08/0.41**          |                     |                     |
|                                                                        | Very Satisfied       |                                                 |                      | 1.66/0.41***         |                     |                     |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                      |                                                 |                      |                      |                     |                     |
|                                                                        | Once or Twice a Year |                                                 |                      |                      | 0.19/0.09*          |                     |
|                                                                        | Monthly              |                                                 |                      |                      | 0.23/0.09*          |                     |
|                                                                        | A Few Times a Month  |                                                 |                      |                      | 0.25/0.09**         |                     |
|                                                                        | Weekly or more       |                                                 |                      |                      | 0.24/0.08**         |                     |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                      |                                                 |                      |                      |                     |                     |
|                                                                        | Once or Twice a Year |                                                 |                      |                      |                     | -0.05/0.09          |
|                                                                        | Monthly              |                                                 |                      |                      |                     | 0.01/0.11           |
|                                                                        | A Few Times a Month  |                                                 |                      |                      |                     | -0.08/0.10          |
|                                                                        | Weekly or more       |                                                 |                      |                      |                     | -0.15/0.09†         |
| <i>Coefficient Comparisons</i>                                         |                      | <i>b</i> Coefficients [95% Confidence Interval] |                      |                      |                     |                     |
| <i>(cf. Block 2)</i>                                                   |                      | Block 3a                                        | Block 3b             | Block 3c             | Block 3d            | Block 3e            |
| 1                                                                      |                      | 0.03 [0.01, 0.05]**                             | 0.02 [0.01, 0.04]**  | 0.02 [-0.01, 0.05]   | 0.01 [0.00, 0.02]†  | 0.00 [-0.01, 0.01]  |
| 2                                                                      |                      | 0.05 [0.01, 0.08]**                             | 0.03 [0.01, 0.05]**  | 0.04 [-0.01, 0.09]†  | 0.01 [0.00, 0.03]†  | 0.00 [-0.01, 0.01]  |
| 3                                                                      |                      | 0.04 [0.01, 0.07]**                             | 0.02 [0.01, 0.04]*   | 0.04 [-0.01, 0.08]   | 0.03 [0.01, 0.05]** | 0.00 [-0.01, 0.01]  |
| 4                                                                      |                      | 0.05 [0.03, 0.08]***                            | 0.05 [0.04, 0.07]*** | 0.07 [0.03, 0.11]*** | 0.03 [0.01, 0.06]** | -0.01 [-0.03, 0.00] |
| 5                                                                      |                      | 0.07 [0.03, 0.11]**                             | 0.05 [0.02, 0.08]**  | 0.03 [-0.03, 0.09]   | 0.00 [-0.01, 0.02]  | 0.00 [-0.01, 0.01]  |
| 6                                                                      |                      | 0.08 [0.04, 0.12]***                            | 0.06 [0.03, 0.09]*** | 0.05 [-0.01, 0.11]   | 0.00 [-0.01, 0.02]  | 0.00 [-0.01, 0.01]  |
| 7                                                                      |                      | 0.09 [0.05, 0.12]***                            | 0.05 [0.02, 0.08]*** | 0.06 [0.00, 0.12]*   | 0.00 [-0.01, 0.02]  | 0.00 [-0.01, 0.01]  |
| 8                                                                      |                      | 0.06 [0.02, 0.10]**                             | 0.00 [-0.03, 0.02]   | 0.09 [0.03, 0.16]**  | 0.00 [-0.02, 0.02]  | 0.01 [-0.01, 0.02]  |
| 9                                                                      |                      | 0.03 [-0.01, 0.07]                              | 0.02 [0.00, 0.04]    | -0.01 [-0.06, 0.05]  | 0.01 [0.00, 0.03]   | -0.02 [-0.04, 0.00] |

Note. †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; R/S = Religion/Spirituality; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

**Table 13***Summary of Model Series One Block Statistics in Imputed Data and Complete Case**Analysis*

| <b>Self-Rated Health</b>        | <b>Imputed Data<br/>(N = 22,908)</b> | <b>Complete Case<br/>(N = 7,260)</b> |
|---------------------------------|--------------------------------------|--------------------------------------|
| <b>Block Statistics</b>         |                                      |                                      |
| Block 1                         |                                      |                                      |
| $R^2$                           | .060***                              | .049***                              |
| Block 2                         |                                      |                                      |
| $R^2$                           | .104***                              | .096***                              |
| $\Delta R^2$                    | .044***                              | .086***                              |
| Block 3                         |                                      |                                      |
| $R^2$                           | .109***                              | .099***                              |
| $\Delta R^2$                    | .005**                               | .003                                 |
| <b>Self-Rated Mental Health</b> | <b>Imputed Data<br/>(N = 22,908)</b> | <b>Complete Case<br/>(N = 7,258)</b> |
| <b>Block Statistics</b>         |                                      |                                      |
| Block 1                         |                                      |                                      |
| $R^2$                           | .096***                              | .102***                              |
| Block 2                         |                                      |                                      |
| $R^2$                           | .148***                              | .162***                              |
| $\Delta R^2$                    | .052***                              | .060***                              |
| Block 3                         |                                      |                                      |
| $R^2$                           | .153***                              | .166***                              |
| $\Delta R^2$                    | .005***                              | .004                                 |
| <b>Life Satisfaction</b>        | <b>Imputed Data<br/>(N = 22,908)</b> | <b>Complete Case<br/>(N = 7,262)</b> |
| <b>Block Statistics</b>         |                                      |                                      |
| Block 1                         |                                      |                                      |
| $R^2$                           | .067***                              | .069***                              |
| Block 2                         |                                      |                                      |
| $R^2$                           | .142***                              | .154***                              |
| $\Delta R^2$                    | .075***                              | .086***                              |
| Block 3                         |                                      |                                      |
| $R^2$                           | .148***                              | .159***                              |
| $\Delta R^2$                    | .005***                              | .005                                 |

Note. †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 14***Summary of Model Series Two Block Statistics in Imputed Data and Complete Case**Analysis*

| <b>Self-Rated Health</b>        | <b>Imputed Data<br/>(N = 22,908)</b> | <b>Complete Case<br/>(N = 7,260)</b> |
|---------------------------------|--------------------------------------|--------------------------------------|
| <b>Block Statistics</b>         |                                      |                                      |
| Block 1                         |                                      |                                      |
| $R^2$                           | .060***                              | .049***                              |
| Block 2                         |                                      |                                      |
| $R^2$                           | .069***                              | .055***                              |
| $\Delta R^2$                    | .008***                              | .006                                 |
| Block 3a                        |                                      |                                      |
| $R^2$                           | .076***                              | .063***                              |
| $\Delta R^2$                    | .008***                              | .009                                 |
| Block 3b                        |                                      |                                      |
| $R^2$                           | .073***                              | .059***                              |
| $\Delta R^2$                    | .004***                              | .004                                 |
| Block 3c                        |                                      |                                      |
| $R^2$                           | .101***                              | .089***                              |
| $\Delta R^2$                    | .032***                              | .034***                              |
| Block 3d                        |                                      |                                      |
| $R^2$                           | .072***                              | .059***                              |
| $\Delta R^2$                    | .004**                               | .004*                                |
| Block 3e                        |                                      |                                      |
| $R^2$                           | .069***                              | .056***                              |
| $\Delta R^2$                    | .001                                 | .001                                 |
| Block 4                         |                                      |                                      |
| $R^2$                           | .109***                              | .100***                              |
| $\Delta R^2$                    | .040***                              | .045***                              |
| <b>Self-Rated Mental Health</b> | <b>Imputed Data<br/>(N = 22,908)</b> | <b>Complete Case<br/>(N = 7,258)</b> |
| <b>Block Statistics</b>         |                                      |                                      |
| Block 1                         |                                      |                                      |
| $R^2$                           | .096***                              | .102***                              |
| Block 2                         |                                      |                                      |
| $R^2$                           | .105***                              | .108***                              |
| $\Delta R^2$                    | .009***                              | .006*                                |
| Block 3a                        |                                      |                                      |
| $R^2$                           | .117***                              | .125***                              |
| $\Delta R^2$                    | .012***                              | .017***                              |
| Block 3b                        |                                      |                                      |
| $R^2$                           | .111***                              | .118***                              |
| $\Delta R^2$                    | .007***                              | .010***                              |

| Self-Rated Mental Health                                                   | Imputed Data<br>( <i>N</i> = 22,908) | Complete Case<br>( <i>N</i> = 7,258) |
|----------------------------------------------------------------------------|--------------------------------------|--------------------------------------|
| Block Statistics                                                           |                                      |                                      |
| Block 3c                                                                   |                                      |                                      |
| $R^2$                                                                      | .144***                              | .149***                              |
| $\Delta R^2$                                                               | .039***                              | .041***                              |
| Block 3d                                                                   |                                      |                                      |
| $R^2$                                                                      | .106***                              | .110***                              |
| $\Delta R^2$                                                               | .001                                 | .002                                 |
| Block 3e                                                                   |                                      |                                      |
| $R^2$                                                                      | .105***                              | .110***                              |
| $\Delta R^2$                                                               | .001                                 | .001                                 |
| Block 4                                                                    |                                      |                                      |
| $R^2$                                                                      | .153***                              | .166***                              |
| $\Delta R^2$                                                               | .048***                              | .058***                              |
| Life Satisfaction                                                          | Imputed Data<br>( <i>N</i> = 22,908) | Complete Case<br>( <i>N</i> = 7,262) |
| Block Statistics                                                           |                                      |                                      |
| Block 1                                                                    |                                      |                                      |
| $R^2$                                                                      | .067***                              | .069***                              |
| Block 2                                                                    |                                      |                                      |
| $R^2$                                                                      | .077***                              | .078***                              |
| $\Delta R^2$                                                               | .010***                              | .009**                               |
| Block 3a                                                                   |                                      |                                      |
| $R^2$                                                                      | .096***                              | .098***                              |
| $\Delta R^2$                                                               | .018***                              | .020***                              |
| Block 3b                                                                   |                                      |                                      |
| $R^2$                                                                      | .086***                              | .089***                              |
| $\Delta R^2$                                                               | .008***                              | .010***                              |
| Block 3c                                                                   |                                      |                                      |
| $R^2$                                                                      | .134***                              | .140***                              |
| $\Delta R^2$                                                               | .057***                              | .061***                              |
| Block 3d                                                                   |                                      |                                      |
| $R^2$                                                                      | .081***                              | .082***                              |
| $\Delta R^2$                                                               | .003*                                | .003*                                |
| Block 3e                                                                   |                                      |                                      |
| $R^2$                                                                      | .078***                              | .080***                              |
| $\Delta R^2$                                                               | .001                                 | .002                                 |
| Block 4                                                                    |                                      |                                      |
| $R^2$                                                                      | .148***                              | .159***                              |
| $\Delta R^2$                                                               | .070***                              | .081***                              |
| Note. <sup>†</sup> $p < .10$ ; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$ |                                      |                                      |

*Summary of Results for Self-Rated Health from Blocks 1, 2, and 4 from Model Series Two in Imputed Data (N = 22,908) and*

### Complete Case Analysis ( $N = 7,260$ )

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |              |              |              |               |              |
|--------------------------------------------------------|----------------------------------------------|--------------|--------------|--------------|---------------|--------------|
|                                                        | Block 1                                      |              | Block 2      |              | Block 4       |              |
|                                                        | IDA                                          | CCA          | IDA          | CCA          | IDA           | CCA          |
| Constant                                               | 3.17/0.09***                                 | 3.21/0.16*** | 3.00/0.10*** | 3.00/0.18*** | 2.67/0.23***  | 2.57/0.35*** |
| <i>Covariates</i>                                      |                                              |              |              |              |               |              |
| <i>Age (25-34 = Base)</i>                              |                                              |              |              |              |               |              |
| 35-44                                                  | -0.05/0.05                                   | -0.01/0.07   | -0.05/0.05   | -0.01/0.07   | -0.02/0.05    | 0.03/0.07    |
| 45-54                                                  | -0.04/0.05                                   | -0.01/0.07   | -0.05/0.05   | -0.02/0.07   | -0.03/0.05    | -0.01/0.07   |
| 55-64                                                  | -0.05/0.05                                   | -0.04/0.07   | -0.06/0.05   | -0.05/0.07   | -0.05/0.05    | -0.03/0.07   |
| 65-74                                                  | 0.07/0.05                                    | -0.03/0.08   | 0.06/0.05    | -0.04/0.08   | 0.05/0.05     | -0.06/0.08   |
| 75+                                                    | 0.06/0.06                                    | 0.03/0.10    | 0.02/0.06    | -0.01/0.10   | 0.01/0.06     | -0.02/0.10   |
| <i>Sex (Female = Base)</i>                             |                                              |              |              |              |               |              |
| Male                                                   | 0.05/0.02†                                   | 0.06/0.04    | 0.05/0.02*   | 0.06/0.04†   | 0.06/0.02**   | 0.07/0.04†   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |              |              |              |               |              |
| Widowed/Separated/Divorced                             | -0.12/0.04**                                 | -0.03/0.06   | -0.11/0.04** | -0.02/0.06   | -0.13/0.03*** | -0.06/0.05   |
| Single                                                 | -0.16/0.04***                                | -0.08/0.07   | -0.14/0.04** | -0.07/0.07   | -0.16/0.04*** | -0.11/0.06†  |
| <i>Level of Education (High School or Less = Base)</i> |                                              |              |              |              |               |              |
| Less than Bachelor's                                   | 0.09/0.03**                                  | 0.00/0.05    | 0.09/0.03**  | 0.00/0.05    | 0.08/0.03**   | 0.00/0.05    |
| Bachelor's or Higher                                   | 0.16/0.03***                                 | 0.13/0.05*   | 0.15/0.03*** | 0.13/0.05*   | 0.15/0.03***  | 0.14/0.05**  |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |              |              |              |               |              |
| Quebec                                                 | 0.18/0.03***                                 | 0.18/0.05*** | 0.18/0.03*** | 0.19/0.05*** | 0.19/0.03***  | 0.22/0.05*** |
| Ontario                                                | -0.01/0.03                                   | 0.01/0.05    | -0.01/0.03   | 0.01/0.05    | 0.01/0.03     | 0.03/0.05    |
| Prairies                                               | 0.04/0.03                                    | 0.08/0.05    | 0.04/0.03    | 0.08/0.05    | 0.06/0.03†    | 0.12/0.05*   |
| British Colombia                                       | 0.05/0.05                                    | 0.01/0.06    | 0.06/0.04    | 0.02/0.06    | 0.09/0.04*    | 0.06/0.06    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |              |              |              |               |              |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |              |              |              |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|--------------|--------------|--------------|
|                                                                                     | Block 1                                      |              | Block 2      |              | Block 4      |              |
|                                                                                     | IDA                                          | CCA          | IDA          | CCA          | IDA          | CCA          |
| Visible Minority                                                                    | 0.16/0.04***                                 | 0.12/0.05*   | 0.12/0.04**  | 0.09/0.05†   | 0.13/0.04**  | 0.08/0.05    |
| <i>Annual Income (&lt;\$24,999 = Base)</i>                                          |                                              |              |              |              |              |              |
| \$25,000-\$49,999                                                                   | 0.21/0.05***                                 | 0.16/0.11    | 0.20/0.05*** | 0.15/0.11    | 0.21/0.05*** | 0.19/0.11†   |
| \$50,000-\$74,999                                                                   | 0.28/0.06***                                 | 0.30/0.11**  | 0.28/0.06*** | 0.30/0.11**  | 0.26/0.05*** | 0.31/0.10**  |
| \$75,000-\$99,999                                                                   | 0.30/0.06***                                 | 0.31/0.11**  | 0.30/0.06*** | 0.30/0.11**  | 0.27/0.05*** | 0.30/0.11**  |
| >\$100,000                                                                          | 0.40/0.06***                                 | 0.40/0.11*** | 0.40/0.06*** | 0.40/0.11*** | 0.37/0.05*** | 0.40/0.10*** |
| <i>Labour Force Status(Unemployed = Base)</i>                                       |                                              |              |              |              |              |              |
| Not in Labour Force                                                                 | -0.08/0.07                                   | 0.00/0.11    | -0.09/0.07   | -0.01/0.10   | -0.12/0.07†  | -0.06/0.11   |
| Employed                                                                            | 0.11/0.06†                                   | 0.10/0.10    | 0.10/0.06    | 0.09/0.09    | 0.08/0.06    | 0.06/0.10    |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |              |              |              |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                              |              |              |              |              |              |
| 1. Once or Twice a Year                                                             |                                              |              | 0.06/0.03†   | 0.03/0.05    | 0.04/0.03    | 0.01/0.05    |
| 2. Three Times a Year                                                               |                                              |              | 0.19/0.05*** | 0.10/0.06    | 0.16/0.05**  | 0.07/0.06    |
| 3. Monthly or more                                                                  |                                              |              | 0.13/0.04**  | 0.13/0.06*   | 0.10/0.04*   | 0.09/0.06    |
| 4. Weekly or more                                                                   |                                              |              | 0.19/0.04*** | 0.14/0.06*   | 0.13/0.04**  | 0.10/0.06†   |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |              |              |              |
| 5. A few                                                                            |                                              |              | 0.11/0.07    | 0.14/0.09    | 0.08/0.06    | 0.07/0.09    |
| 6. About half                                                                       |                                              |              | 0.10/0.07    | 0.13/0.09    | 0.06/0.06    | 0.06/0.09    |
| 7. Most                                                                             |                                              |              | 0.13/0.06*   | 0.18/0.09*   | 0.09/0.06    | 0.11/0.09    |
| 8. All                                                                              |                                              |              | 0.18/0.06**  | 0.20/0.10*   | 0.14/0.06*   | 0.13/0.10    |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |              |              |              |
| 9. Most Active in R/S Organizations                                                 |                                              |              | -0.02/0.06   | -0.01/0.06   | -0.04/0.06   | -0.02/0.06   |
| <b><i>General Social Engagement</i></b>                                             |                                              |              |              |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |              |              |              |              |              |
| 1-4                                                                                 |                                              |              |              |              | 0.03/0.05    | -0.04/0.11   |
| 5-9                                                                                 |                                              |              |              |              | 0.08/0.06    | 0.01/0.12    |
| 10-19                                                                               |                                              |              |              |              | 0.12/0.06†   | 0.09/0.12    |
| 20-29                                                                               |                                              |              |              |              | 0.19/0.09*   | 0.13/0.13    |

|                                                                        | <i>b</i> Coefficients/Robust Standard Errors |     |         |     |                         |                         |
|------------------------------------------------------------------------|----------------------------------------------|-----|---------|-----|-------------------------|-------------------------|
|                                                                        | Block 1                                      |     | Block 2 |     | Block 4                 |                         |
|                                                                        | IDA                                          | CCA | IDA     | CCA | IDA                     | CCA                     |
| >30                                                                    |                                              |     |         |     | 0.25/0.15 <sup>†</sup>  | -0.06/0.22              |
| <i>Number of Other Friends (None = Base)</i>                           |                                              |     |         |     |                         |                         |
| 1-19                                                                   |                                              |     |         |     | 0.11/0.05 <sup>*</sup>  | 0.21/0.15               |
| 20-49                                                                  |                                              |     |         |     | 0.16/0.06 <sup>**</sup> | 0.25/0.15 <sup>†</sup>  |
| 50-79                                                                  |                                              |     |         |     | 0.09/0.07               | 0.17/0.15               |
| >80                                                                    |                                              |     |         |     | 0.13/0.07 <sup>†</sup>  | 0.23/0.16               |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                                              |     |         |     |                         |                         |
| Dissatisfied                                                           |                                              |     |         |     | -0.07/0.22              | -0.01/0.26              |
| Neither                                                                |                                              |     |         |     | -0.01/0.21              | 0.05/0.26               |
| Satisfied                                                              |                                              |     |         |     | 0.13/0.21               | 0.22/0.26               |
| Very Satisfied                                                         |                                              |     |         |     | 0.43/0.21 <sup>*</sup>  | 0.49/0.26 <sup>†</sup>  |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                                              |     |         |     |                         |                         |
| Once or Twice a Year                                                   |                                              |     |         |     | 0.07/0.04               | 0.11/0.06 <sup>†</sup>  |
| Monthly                                                                |                                              |     |         |     | 0.10/0.05 <sup>*</sup>  | 0.14/0.06 <sup>*</sup>  |
| A Few Times a Month                                                    |                                              |     |         |     | 0.11/0.05 <sup>*</sup>  | 0.16/0.06 <sup>**</sup> |
| Weekly or more                                                         |                                              |     |         |     | 0.13/0.04 <sup>**</sup> | 0.09/0.06 <sup>†</sup>  |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                                              |     |         |     |                         |                         |
| Once or Twice a Year                                                   |                                              |     |         |     | -0.04/0.06              | -0.07/0.06              |
| Monthly                                                                |                                              |     |         |     | -0.02/0.05              | -0.07/0.06              |
| A Few Times a Month                                                    |                                              |     |         |     | -0.04/0.05              | -0.05/0.06              |
| Weekly or more                                                         |                                              |     |         |     | -0.04/0.05              | -0.09/0.06 <sup>†</sup> |

*Note.* <sup>†</sup>  $p < .10$ ; <sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ ; <sup>\*\*\*</sup>  $p < .001$ ; R/S = Religion/Spirituality; IDA = Imputed Data Analysis; CCA = Complete Case Analysis

**Table 16**

*Summary of Results for Self-Rated Mental Health from Blocks 1, 2, and 4 from Model Series Two in Imputed Data (N = 22,908) and Complete Case Analysis (N = 7,258)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |              |               |              |               |              |
|--------------------------------------------------------|----------------------------------------------|--------------|---------------|--------------|---------------|--------------|
|                                                        | Block 1                                      |              | Block 2       |              | Block 4       |              |
|                                                        | IDA                                          | CCA          | IDA           | CCA          | IDA           | CCA          |
| Constant                                               | 3.05/0.09***                                 | 3.12/0.16*** | 2.84/0.11***  | 2.91/0.18*** | 2.37/0.21***  | 2.39/0.35*** |
| <b>Covariates</b>                                      |                                              |              |               |              |               |              |
| <i>Age (25-34 = Base)</i>                              |                                              |              |               |              |               |              |
| 35-44                                                  | 0.16/0.05**                                  | 0.16/0.08*   | 0.16/0.05**   | 0.16/0.08*   | 0.20/0.05***  | 0.22/0.08**  |
| 45-54                                                  | 0.38/0.05***                                 | 0.30/0.08*** | 0.37/0.05***  | 0.29/0.07*** | 0.39/0.05***  | 0.31/0.07*** |
| 55-64                                                  | 0.52/0.05***                                 | 0.47/0.07*** | 0.51/0.05***  | 0.46/0.07*** | 0.52/0.05***  | 0.48/0.07*** |
| 65-74                                                  | 0.72/0.06***                                 | 0.61/0.08*** | 0.71/0.05***  | 0.61/0.08*** | 0.70/0.05***  | 0.59/0.08*** |
| 75+                                                    | 0.77/0.06***                                 | 0.64/0.10*** | 0.73/0.06***  | 0.61/0.10*** | 0.72/0.06***  | 0.60/0.09*** |
| <i>Sex (Female = Base)</i>                             |                                              |              |               |              |               |              |
| Male                                                   | 0.12/0.02***                                 | 0.13/0.04**  | 0.13/0.02***  | 0.13/0.04*** | 0.14/0.02***  | 0.14/0.04*** |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |              |               |              |               |              |
| Widowed/Separated/Divorced                             | -0.17/0.03***                                | -0.16/0.06** | -0.16/0.03*** | -0.15/0.06** | -0.18/0.03*** | -0.18/0.05** |
| Single                                                 | -0.21/0.04***                                | -0.12/0.07†  | -0.19/0.04*** | -0.10/0.07   | -0.20/0.04*** | -0.13/0.07†  |
| <i>Level of Education (High School or Less = Base)</i> |                                              |              |               |              |               |              |
| Less than Bachelor's                                   | 0.04/0.03                                    | -0.09/0.05†  | 0.04/0.03     | -0.08/0.05   | 0.04/0.03     | -0.08/0.05†  |
| Bachelor's or Higher                                   | 0.10/0.03**                                  | 0.02/0.05    | 0.10/0.03**   | 0.03/0.05    | 0.11/0.03**   | 0.04/0.05    |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |              |               |              |               |              |
| Quebec                                                 | 0.30/0.03***                                 | 0.34/0.05*** | 0.29/0.03***  | 0.34/0.05*** | 0.30/0.03***  | 0.37/0.05*** |
| Ontario                                                | -0.01/0.03                                   | 0.07/0.05    | -0.01/0.03    | 0.07/0.05    | 0.02/0.03     | 0.10/0.05*   |
| Prairies                                               | 0.06/0.03†                                   | 0.09/0.05†   | 0.06/0.03†    | 0.09/0.05†   | 0.08/0.03*    | 0.13/0.05*   |
| British Colombia                                       | 0.00/0.05                                    | -0.11/0.07   | 0.01/0.05     | -0.09/0.07   | 0.05/0.05     | -0.05/0.07   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |              |               |              |               |              |

|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |              |              |              |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|--------------|--------------|--------------|
|                                                                                     | Block 1                                      |              | Block 2      |              | Block 4      |              |
|                                                                                     | IDA                                          | CCA          | IDA          | CCA          | IDA          | CCA          |
| Visible Minority                                                                    | 0.34/0.03***                                 | 0.35/0.05*** | 0.30/0.04*** | 0.32/0.05*** | 0.30/0.04*** | 0.30/0.05*** |
| <i>Annual Income (&lt;\$24,999 = Base)</i>                                          |                                              |              |              |              |              |              |
| \$25,000-\$49,999                                                                   | 0.16/0.05**                                  | 0.16/0.11    | 0.15/0.05**  | 0.14/0.11    | 0.16/0.05**  | 0.16/0.10    |
| \$50,000-\$74,999                                                                   | 0.23/0.05***                                 | 0.23/0.10*   | 0.23/0.05*** | 0.23/0.10*   | 0.21/0.05*** | 0.22/0.10*   |
| \$75,000-\$99,999                                                                   | 0.27/0.06***                                 | 0.35/0.10**  | 0.27/0.06*** | 0.34/0.10**  | 0.24/0.06*** | 0.31/0.10**  |
| >\$100,000                                                                          | 0.28/0.06***                                 | 0.36/0.10*** | 0.27/0.06*** | 0.36/0.10*** | 0.24/0.06*** | 0.33/0.10**  |
| <i>Labour Force Status(Unemployed = Base)</i>                                       |                                              |              |              |              |              |              |
| Not in Labour Force                                                                 | -0.04/0.07                                   | 0.04/0.11    | -0.05/0.07   | 0.02/0.11    | -0.07/0.07   | -0.02/0.10   |
| Employed                                                                            | 0.07/0.06                                    | 0.02/0.09    | 0.06/0.06    | 0.01/0.09    | 0.04/0.06    | -0.02/0.09   |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |              |              |              |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                              |              |              |              |              |              |
| 1. Once or Twice a Year                                                             |                                              |              | 0.01/0.03    | -0.01/0.05   | -0.01/0.03   | -0.04/0.05   |
| 2. Three Times a Year                                                               |                                              |              | 0.16/0.05**  | 0.11/0.07    | 0.13/0.05**  | 0.07/0.06    |
| 3. Monthly or more                                                                  |                                              |              | 0.04/0.04    | 0.00/0.06    | 0.00/0.04    | -0.04/0.06   |
| 4. Weekly or more                                                                   |                                              |              | 0.14/0.04*** | 0.09/0.05    | 0.09/0.04*   | 0.04/0.05    |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |              |              |              |
| 5. A few                                                                            |                                              |              | 0.14/0.07*   | 0.14/0.10    | 0.10/0.07    | 0.04/0.09    |
| 6. About half                                                                       |                                              |              | 0.18/0.07*   | 0.19/0.10†   | 0.13/0.07†   | 0.09/0.10    |
| 7. Most                                                                             |                                              |              | 0.21/0.07**  | 0.21/0.10*   | 0.16/0.07*   | 0.10/0.09    |
| 8. All                                                                              |                                              |              | 0.27/0.07*** | 0.26/0.10*   | 0.22/0.07**  | 0.17/0.10†   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |              |              |              |
| 9. Most Active in R/S Organizations                                                 |                                              |              | 0.01/0.06    | 0.04/0.06    | 0.00/0.06    | 0.03/0.06    |
| <b><i>General Social Engagement</i></b>                                             |                                              |              |              |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |              |              |              |              |              |
| 1-4                                                                                 |                                              |              |              |              | 0.04/0.05    | -0.06/0.11   |
| 5-9                                                                                 |                                              |              |              |              | 0.08/0.06    | 0.02/0.11    |
| 10-19                                                                               |                                              |              |              |              | 0.20/0.06**  | 0.14/0.12    |
| 20-29                                                                               |                                              |              |              |              | 0.19/0.09*   | 0.11/0.13    |

|                                                                        | <i>b</i> Coefficients/Robust Standard Errors |     |         |     |                         |                        |
|------------------------------------------------------------------------|----------------------------------------------|-----|---------|-----|-------------------------|------------------------|
|                                                                        | Block 1                                      |     | Block 2 |     | Block 4                 |                        |
|                                                                        | IDA                                          | CCA | IDA     | CCA | IDA                     | CCA                    |
| >30                                                                    |                                              |     |         |     | 0.23/0.13 <sup>†</sup>  | 0.06/0.17              |
| <i>Number of Other Friends (None = Base)</i>                           |                                              |     |         |     |                         |                        |
| 1-19                                                                   |                                              |     |         |     | 0.13/0.05 <sup>*</sup>  | 0.25/0.15 <sup>†</sup> |
| 20-49                                                                  |                                              |     |         |     | 0.19/0.06 <sup>**</sup> | 0.35/0.16 <sup>*</sup> |
| 50-79                                                                  |                                              |     |         |     | 0.21/0.07 <sup>**</sup> | 0.36/0.16 <sup>*</sup> |
| >80                                                                    |                                              |     |         |     | 0.16/0.07 <sup>*</sup>  | 0.26/0.17              |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                                              |     |         |     |                         |                        |
| Dissatisfied                                                           |                                              |     |         |     | -0.04/0.19              | -0.08/0.26             |
| Neither                                                                |                                              |     |         |     | 0.10/0.18               | 0.14/0.25              |
| Satisfied                                                              |                                              |     |         |     | 0.30/0.18               | 0.32/0.24              |
| Very Satisfied                                                         |                                              |     |         |     | 0.58/0.18 <sup>**</sup> | 0.58/0.24 <sup>*</sup> |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                                              |     |         |     |                         |                        |
| Once or Twice a Year                                                   |                                              |     |         |     | 0.03/0.04               | 0.08/0.06              |
| Monthly                                                                |                                              |     |         |     | 0.05/0.05               | 0.10/0.06 <sup>†</sup> |
| A Few Times a Month                                                    |                                              |     |         |     | 0.04/0.05               | 0.06/0.06              |
| Weekly or more                                                         |                                              |     |         |     | 0.06/0.04               | 0.06/0.05              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                                              |     |         |     |                         |                        |
| Once or Twice a Year                                                   |                                              |     |         |     | -0.04/0.05              | 0.02/0.05              |
| Monthly                                                                |                                              |     |         |     | -0.03/0.05              | -0.10/0.06             |
| A Few Times a Month                                                    |                                              |     |         |     | -0.04/0.05              | 0.00/0.06              |
| Weekly or more                                                         |                                              |     |         |     | -0.06/0.05              | -0.08/0.05             |

*Note.* <sup>†</sup>  $p < .10$ ; <sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ ; <sup>\*\*\*</sup>  $p < .001$ ; R/S = Religion/Spirituality; IDA = Imputed Data Analysis; CCA = Complete Case Analysis

*Summary of Results for Satisfaction with Life from Blocks 1, 2, and 4 from Model Series Two in Imputed Data (N = 22,908) and*

*Complete Case Analysis (N = 7,262)*

|                                                        | <i>b</i> Coefficients/Robust Standard Errors |               |               |               |               |               |
|--------------------------------------------------------|----------------------------------------------|---------------|---------------|---------------|---------------|---------------|
|                                                        | Block 1                                      |               | Block 2       |               | Block 4       |               |
|                                                        | IDA                                          | CCA           | IDA           | CCA           | IDA           | CCA           |
| Constant                                               | 6.69/0.19***                                 | 7.08/0.27***  | 6.28/0.21***  | 6.59/0.32***  | 4.82/0.44***  | 4.68/0.55***  |
| <i>Covariates</i>                                      |                                              |               |               |               |               |               |
| <i>Age (25-34 = Base)</i>                              |                                              |               |               |               |               |               |
| 35-44                                                  | -0.03/0.09                                   | -0.28/0.14*   | -0.04/0.09    | -0.29/0.14*   | 0.05/0.09     | -0.18/0.13    |
| 45-54                                                  | 0.09/0.09                                    | 0.05/0.13     | 0.08/0.09     | 0.03/0.13     | 0.11/0.09     | 0.05/0.12     |
| 55-64                                                  | 0.25/0.09**                                  | 0.21/0.13     | 0.24/0.09**   | 0.18/0.13     | 0.25/0.09**   | 0.22/0.12†    |
| 65-74                                                  | 0.74/0.10***                                 | 0.41/0.16*    | 0.71/0.10***  | 0.38/0.16*    | 0.67/0.09***  | 0.34/0.14*    |
| 75+                                                    | 0.83/0.12***                                 | 0.67/0.19***  | 0.75/0.12***  | 0.60/0.18**   | 0.72/0.11***  | 0.57/0.17**   |
| <i>Sex (Female = Base)</i>                             |                                              |               |               |               |               |               |
| Male                                                   | 0.04/0.05                                    | 0.00/0.07     | 0.05/0.05     | 0.02/0.07     | 0.06/0.05     | 0.00/0.07     |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                              |               |               |               |               |               |
| Widowed/Separated/Divorced                             | -0.64/0.08***                                | -0.45/0.11*** | -0.62/0.08*** | -0.43/0.11*** | -0.65/0.07*** | -0.50/0.11*** |
| Single                                                 | -0.70/0.08***                                | -0.74/0.13*** | -0.66/0.08*** | -0.70/0.12*** | -0.70/0.08*** | -0.78/0.11*** |
| <i>Level of Education (High School or Less = Base)</i> |                                              |               |               |               |               |               |
| Less than Bachelor's                                   | 0.05/0.06                                    | -0.07/0.10    | 0.05/0.06     | -0.06/0.10    | 0.03/0.06     | -0.05/0.09    |
| Bachelor's or Higher                                   | 0.06/0.07                                    | 0.00/0.11     | 0.04/0.07     | -0.01/0.11    | 0.06/0.07     | 0.04/0.11     |
| <i>Region of Residence (Atlantic = Base)</i>           |                                              |               |               |               |               |               |
| Quebec                                                 | -0.10/0.06                                   | -0.03/0.10    | -0.09/0.07    | 0.00/0.11     | -0.05/0.06    | 0.05/0.10     |
| Ontario                                                | -0.23/0.06***                                | -0.12/0.09    | -0.23/0.06*** | -0.11/0.09    | -0.17/0.06**  | -0.06/0.09    |
| Prairies                                               | -0.28/0.07***                                | -0.21/0.11†   | -0.29/0.07*** | -0.22/0.11*   | -0.23/0.07*** | -0.14/0.11    |
| British Colombia                                       | -0.25/0.09**                                 | -0.35/0.12**  | -0.23/0.09*   | -0.31/0.12**  | -0.13/0.09    | -0.22/0.11*   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                              |               |               |               |               |               |

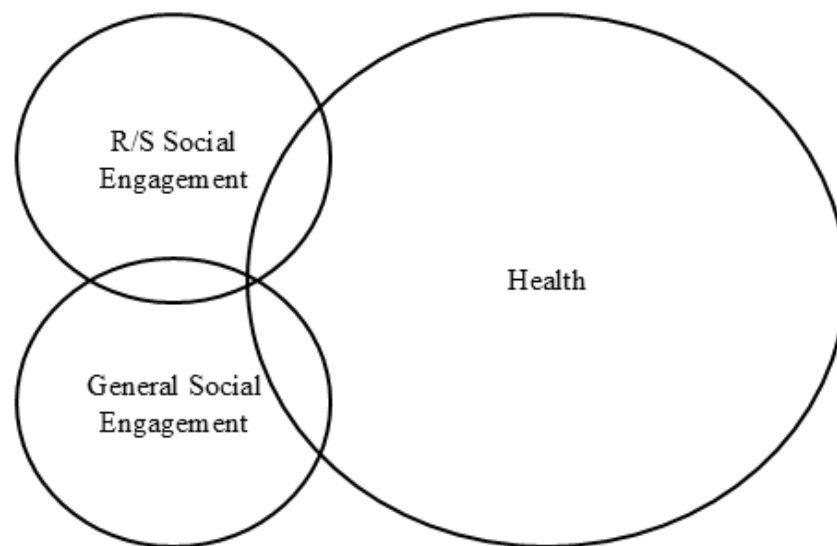
|                                                                                     | <i>b</i> Coefficients/Robust Standard Errors |              |              |             |              |             |
|-------------------------------------------------------------------------------------|----------------------------------------------|--------------|--------------|-------------|--------------|-------------|
|                                                                                     | Block 1                                      |              | Block 2      |             | Block 4      |             |
|                                                                                     | IDA                                          | CCA          | IDA          | CCA         | IDA          | CCA         |
| Visible Minority                                                                    | 0.21/0.07**                                  | 0.25/0.09**  | 0.12/0.07†   | 0.17/0.09†  | 0.11/0.07    | 0.13/0.09   |
| <i>Annual Income (&lt;\$24,999 = Base)</i>                                          |                                              |              |              |             |              |             |
| \$25,000-\$49,999                                                                   | 0.27/0.11*                                   | -0.01/0.19   | 0.26/0.11*   | -0.03/0.19  | 0.27/0.11*   | 0.03/0.19   |
| \$50,000-\$74,999                                                                   | 0.51/0.12***                                 | 0.28/0.19    | 0.50/0.11*** | 0.27/0.19   | 0.45/0.11*** | 0.26/0.18   |
| \$75,000-\$99,999                                                                   | 0.39/0.12**                                  | 0.29/0.19    | 0.38/0.12**  | 0.27/0.19   | 0.31/0.12**  | 0.26/0.18   |
| >\$100,000                                                                          | 0.64/0.12***                                 | 0.46/0.18*   | 0.63/0.12*** | 0.46/0.18*  | 0.56/0.11*** | 0.42/0.17*  |
| <i>Labour Force Status(Unemployed = Base)</i>                                       |                                              |              |              |             |              |             |
| Not in Labour Force                                                                 | 0.37/0.15*                                   | 0.51/0.19**  | 0.35/0.15*   | 0.48/0.18*  | 0.28/0.14*   | 0.35/0.18*  |
| Employed                                                                            | 0.56/0.13***                                 | 0.56/0.16*** | 0.54/0.13*** | 0.55/0.16** | 0.48/0.13*** | 0.45/0.16** |
| <b><i>R/S Social Engagement</i></b>                                                 |                                              |              |              |             |              |             |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                              |              |              |             |              |             |
| 1. Once or Twice a Year                                                             |                                              |              | 0.03/0.06    | 0.00/0.10   | -0.03/0.06   | -0.07/0.10  |
| 2. Three Times a Year                                                               |                                              |              | 0.32/0.09*** | 0.25/0.12*  | 0.24/0.09*   | 0.16/0.12   |
| 3. Monthly or more                                                                  |                                              |              | 0.20/0.08*   | 0.18/0.11†  | 0.11/0.08    | 0.08/0.10   |
| 4. Weekly or more                                                                   |                                              |              | 0.38/0.08*** | 0.25/0.10*  | 0.25/0.08**  | 0.17/0.10   |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                              |              |              |             |              |             |
| 5. A few                                                                            |                                              |              | 0.28/0.13*   | 0.32/0.18†  | 0.19/0.13    | 0.09/0.17   |
| 6. About half                                                                       |                                              |              | 0.37/0.14**  | 0.48/0.18** | 0.25/0.13†   | 0.22/0.17   |
| 7. Most                                                                             |                                              |              | 0.36/0.13**  | 0.42/0.17*  | 0.23/0.12†   | 0.16/0.17   |
| 8. All                                                                              |                                              |              | 0.46/0.14**  | 0.50/0.18** | 0.33/0.13*   | 0.28/0.19   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                              |              |              |             |              |             |
| 9. Most Active in R/S Organizations                                                 |                                              |              | 0.08/0.13    | 0.10/0.12   | 0.08/0.13    | 0.10/0.11   |
| <b><i>General Social Engagement</i></b>                                             |                                              |              |              |             |              |             |
| <i>Number of Close Friends (None = Base)</i>                                        |                                              |              |              |             |              |             |
| 1-4                                                                                 |                                              |              |              |             | 0.33/0.11**  | 0.16/0.19   |
| 5-9                                                                                 |                                              |              |              |             | 0.51/0.12*** | 0.39/0.20†  |
| 10-19                                                                               |                                              |              |              |             | 0.52/0.13*** | 0.47/0.21*  |
| 20-29                                                                               |                                              |              |              |             | 0.68/0.19*** | 0.52/0.30†  |

|                                                                        | <i>b</i> Coefficients/Robust Standard Errors |     |         |     |                        |                        |
|------------------------------------------------------------------------|----------------------------------------------|-----|---------|-----|------------------------|------------------------|
|                                                                        | Block 1                                      |     | Block 2 |     | Block 4                |                        |
|                                                                        | IDA                                          | CCA | IDA     | CCA | IDA                    | CCA                    |
| >30                                                                    |                                              |     |         |     | 0.35/0.42              | 0.88/0.28**            |
| <i>Number of Other Friends (None = Base)</i>                           |                                              |     |         |     |                        |                        |
| 1-19                                                                   |                                              |     |         |     | 0.20/0.11 <sup>†</sup> | 0.65/0.29*             |
| 20-49                                                                  |                                              |     |         |     | 0.37/0.11**            | 0.80/0.29**            |
| 50-79                                                                  |                                              |     |         |     | 0.24/0.13 <sup>†</sup> | 0.57/0.31 <sup>†</sup> |
| >80                                                                    |                                              |     |         |     | 0.36/0.14**            | 0.75/0.32*             |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                                              |     |         |     |                        |                        |
| Dissatisfied                                                           |                                              |     |         |     | 0.05/0.41              | 0.25/0.41              |
| Neither                                                                |                                              |     |         |     | 0.45/0.40              | 0.75/0.39 <sup>†</sup> |
| Satisfied                                                              |                                              |     |         |     | 1.00/0.40*             | 1.28/0.38**            |
| Very Satisfied                                                         |                                              |     |         |     | 1.55/0.40***           | 1.75/0.39***           |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                                              |     |         |     |                        |                        |
| Once or Twice a Year                                                   |                                              |     |         |     | 0.18/0.08*             | 0.20/0.11 <sup>†</sup> |
| Monthly                                                                |                                              |     |         |     | 0.19/0.09*             | 0.13/0.11              |
| A Few Times a Month                                                    |                                              |     |         |     | 0.21/0.09*             | 0.27/0.11*             |
| Weekly or more                                                         |                                              |     |         |     | 0.20/0.08*             | 0.06/0.10              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                                              |     |         |     |                        |                        |
| Once or Twice a Year                                                   |                                              |     |         |     | -0.07/0.09             | -0.10/0.11             |
| Monthly                                                                |                                              |     |         |     | -0.05/0.10             | -0.03/0.11             |
| A Few Times a Month                                                    |                                              |     |         |     | -0.15/0.09             | -0.16/0.12             |
| Weekly or more                                                         |                                              |     |         |     | -0.21/0.09*            | -0.24/0.10*            |

*Note.* <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; R/S = Religion/Spirituality; IDA = Imputed Data Analysis; CCA = Complete Case Analysis

**Figure 1**

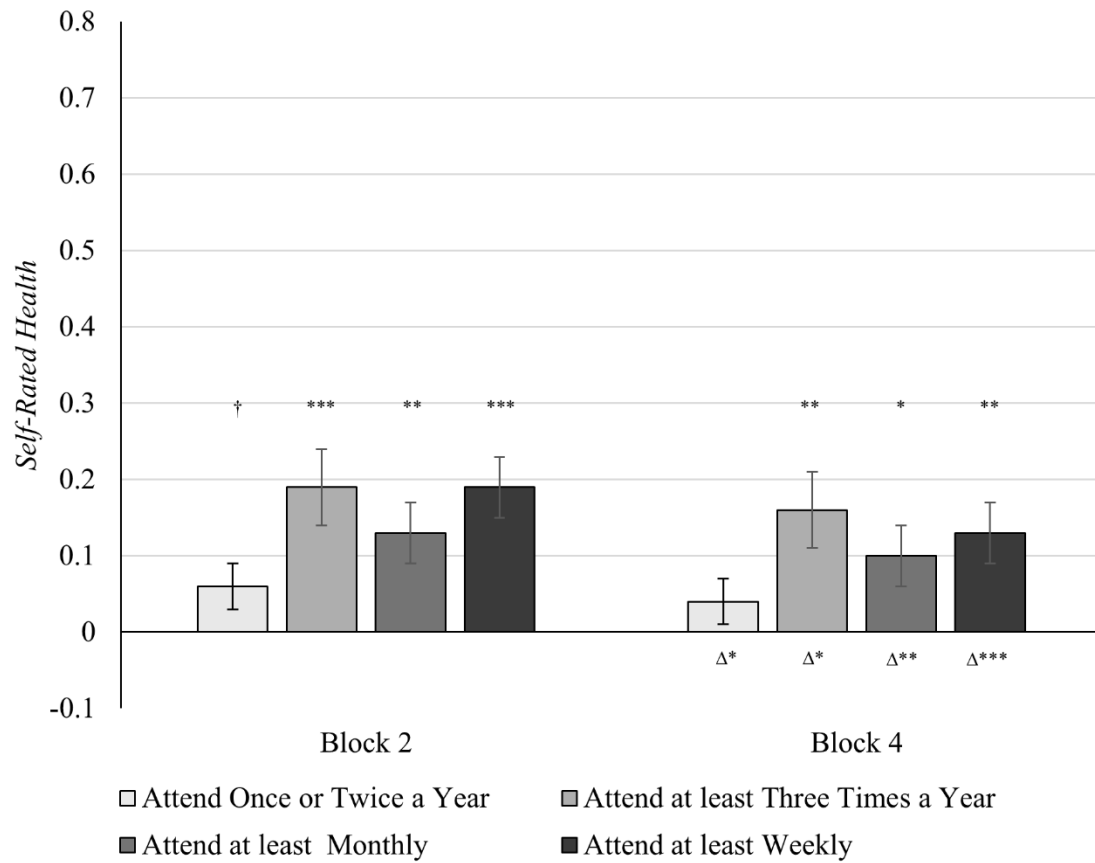
*Venn Diagram Illustrating the Hypothesized Relationship Between Variables of Interest*



*Note.* R/S = Religion/Spirituality

**Figure 2**

*Coefficient Changes between Blocks 2 and 4 in Religious Attendance Predicting Self-Rated Health, Reported in b-coefficients (Not at all = Reference)*

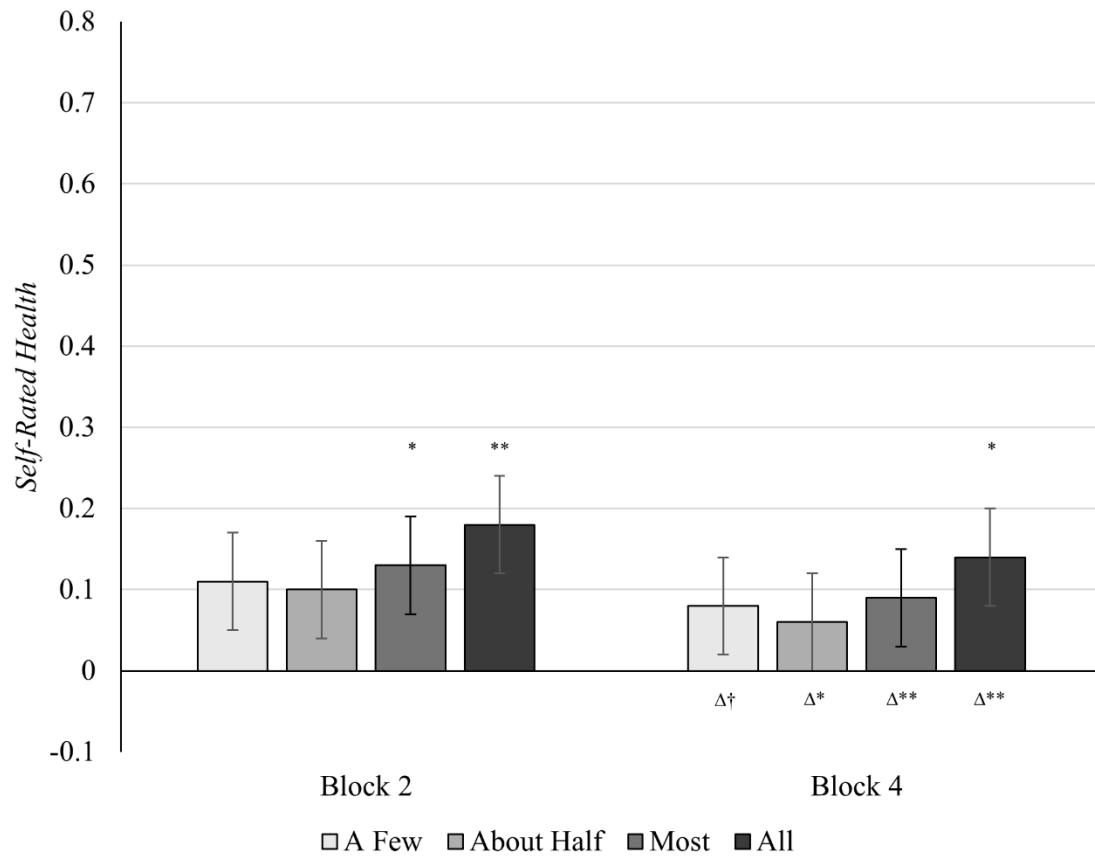


*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4; †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

**Figure 3**

*Coefficient Changes between Blocks 2 and 4 in Contact with Religious Friends*

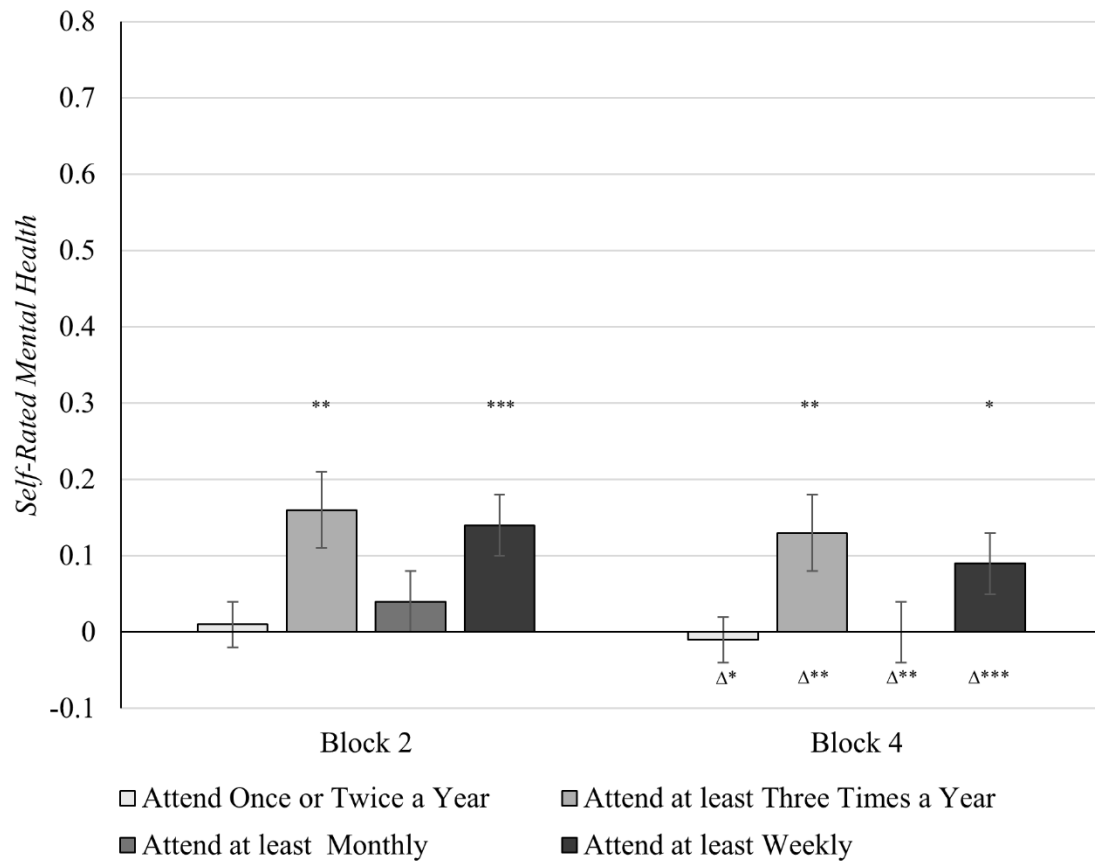
*Predicting Self-Rated Health, Reported in b-coefficients (None = Reference)*



*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4;  $^\dagger p < .10$ ;  $* p < .05$ ;  $** p < .01$ ;  $*** p < .001$ .

**Figure 4**

*Coefficient Changes between Blocks 2 and 4 in Religious Attendance Predicting Self-Rated Mental Health, Reported in b-coefficients (Not at all = Reference)*

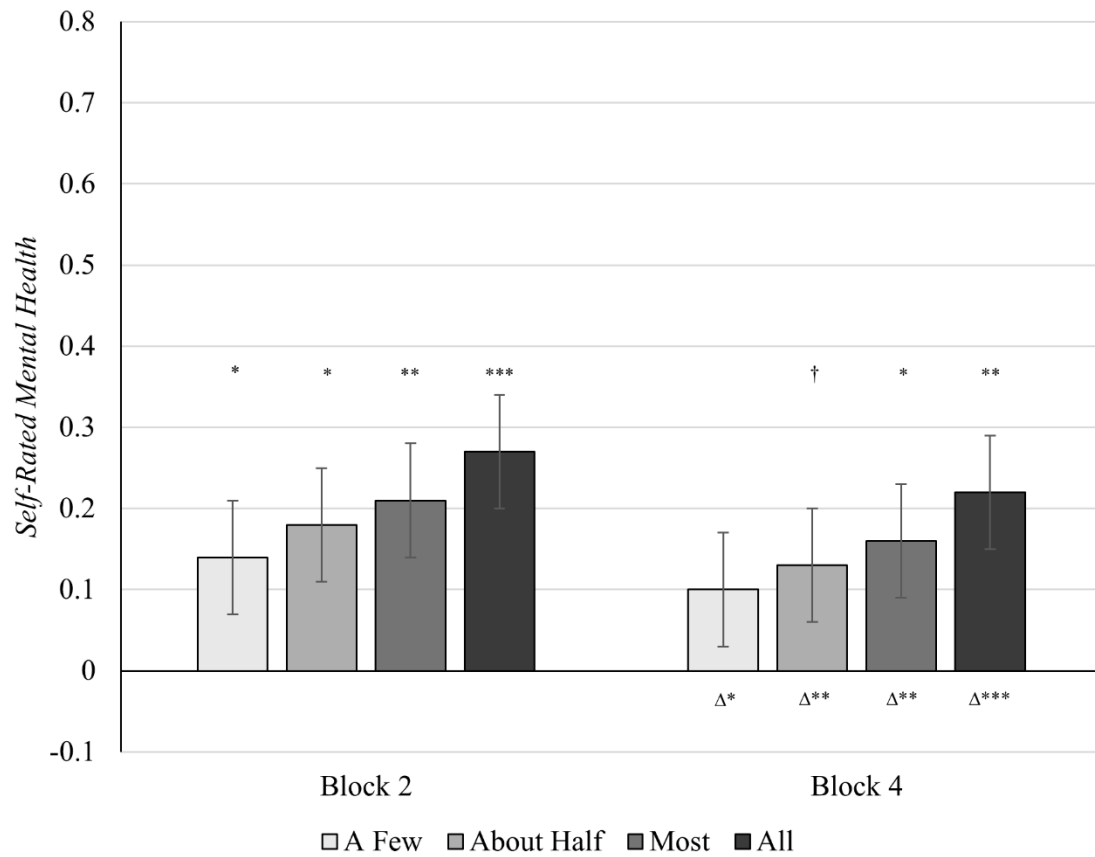


*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4;  $^{\dagger} p < .10$ ;  $^* p < .05$ ;  $^{**} p < .01$ ;  $^{***} p < .001$ .

**Figure 5**

*Coefficient Changes between Blocks 2 and 4 in Contact with Religious Friends*

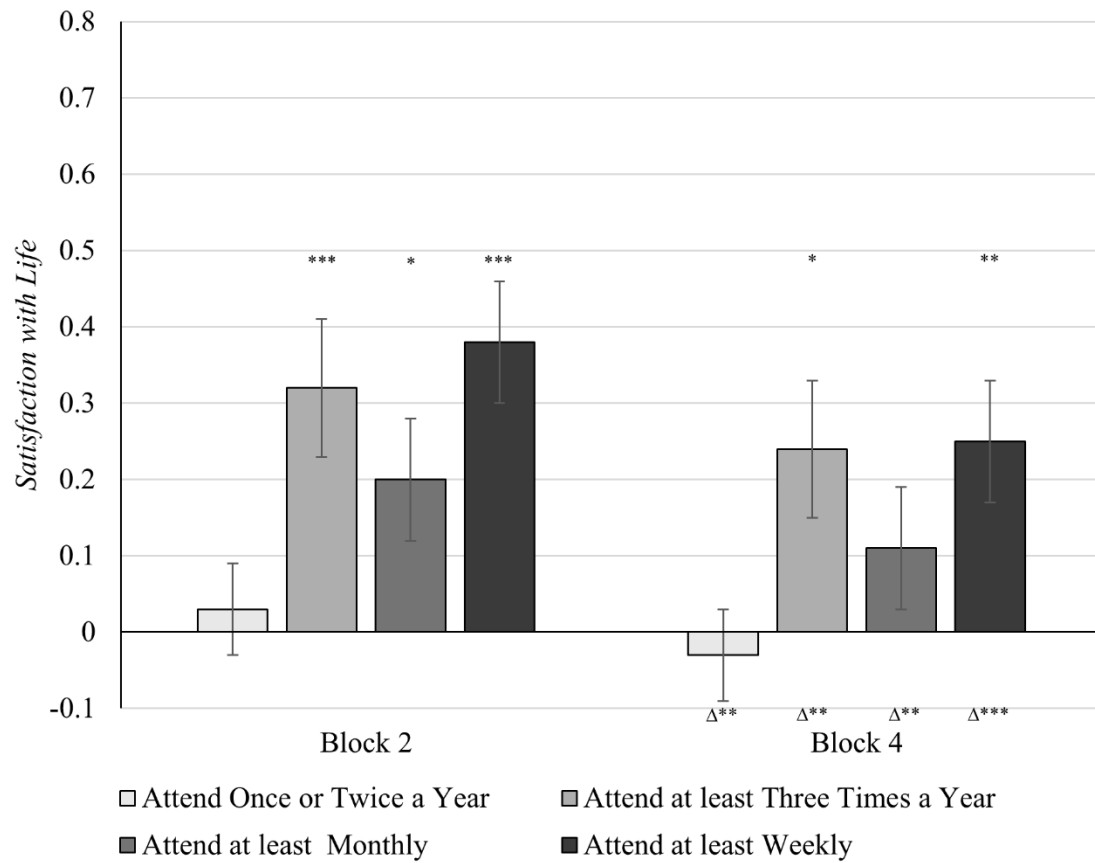
*Predicting Self-Rated Mental Health, Reported in b-coefficients (None = Reference)*



*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4; †  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

**Figure 6**

*Coefficient Changes between Blocks 2 and 4 in Religious Attendance Predicting Satisfaction with Life, Reported in b-coefficients (Not at all = Reference)*

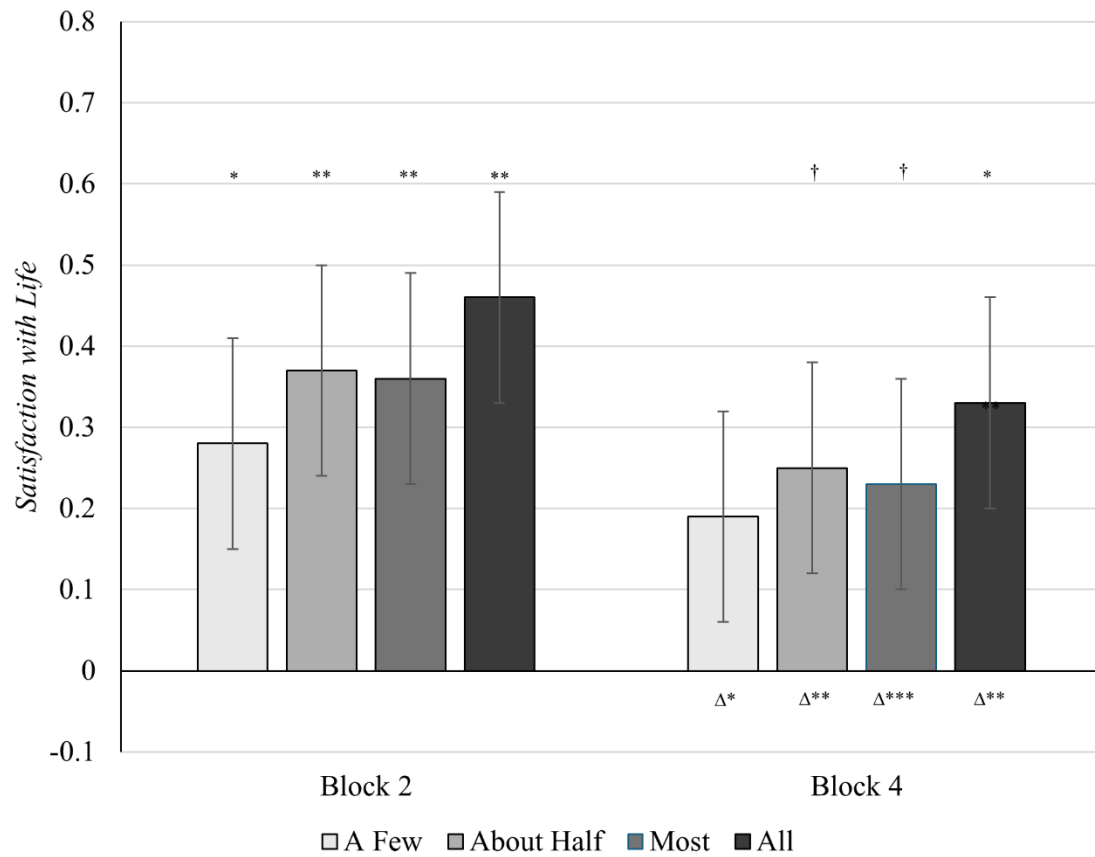


*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4;  $^{\dagger} p < .10$ ;  $^* p < .05$ ;  $^{**} p < .01$ ;  $^{***} p < .001$ .

**Figure 7**

*Coefficient Changes between Blocks 2 and 4 in Contact with Religious Friends*

*Predicting Satisfaction with Life, Reported in b-coefficients (None = Reference)*



*Note.* Symbols above Block 2 and Block 4 indicate the statistical significance of coefficients; Symbols below Block 4 indicate the statistical significance of changes in coefficients from Block 2 to Block 4;  $^{\dagger} p < .10$ ;  $^* p < .05$ ;  $^{**} p < .01$ ;  $^{***} p < .001$ .

## Appendix A

Missing data is a common issue in survey-based research and can occur either intentionally as part of the survey design (e.g., sampling frame or questionnaire branching) or unintentionally due to factors beyond the researcher's control (e.g., nonresponse; Graham, 2012). The occurrence of missing data typically presents two forms of missingness: unit-level missingness, where data are missing for some sampling units (e.g., due to sampling exclusion or refusal to consent); and item-level missingness, where data are missing for some survey items (e.g., due to questions not being displayed or nonresponse; van Buuren, 2021). Unit-level missingness is primarily addressed by statistical weights, which adjust estimates to account for the varying probabilities of being sampled for each sampling unit, this can be expressed as:

$$w_l^D = 1/\pi_l^D \quad (1)$$

Here, the statistical weight  $w_l^D$  of a sampling unit  $l$  is the inverse of its probability of being sampled  $\pi_l^D$ , given the sampling design  $D^7$  (Statistics Canada, 2017). In contrast, item-level missingness is primarily addressed by data imputation techniques (van Buuren, 2021).

The intentionality and levels of missingness illustrate the cause and extent of the missing data problem; however, an assessment of the missing data mechanism is necessary to determine the implications of the missing data problem for statistical inferences (Little & Rubin, 2020; van Buuren, 2021). Presuming that every data point has

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<sup>7</sup> Interested parties may consult the methodology of the Canadian Labour Force Survey for an overview of the weighting and estimation procedures commonly used in survey products of Statistics Canada: <https://www150.statcan.gc.ca/n1/pub/71-526-x/2017001/chapt6-eng.htm#a63>

a non-zero probability of being missing, the implications of missingness on statistical inferences can be assessed by examining the variance of this probability and whether it depends on observed or unobserved data, which can be expressed as:

$$\Pr(R \mid Y_{\text{obs}}, Y_{\text{mis}}, \psi) \quad (2)$$

where  $R$  is an  $N \times q$  matrix containing the locations of missing data in the population data  $Y$  ( $1 = \text{observed}$ ,  $0 = \text{missing}$ ), the distribution of missing data within  $R$  is dependent on observed data ( $Y_{\text{obs}}$ ), unobserved data ( $Y_{\text{mis}}$ ), and the overall probability of being missing ( $\psi$ ). Depending on the mechanism through which the probability of a value being missing is determined, missing data can be a) consequential, as it induces biases in statistical inferences made through observed data, and b) nonignorable, as the role of missing data in determining the probability of being missing cannot be ignored (van Buuren, 2021).

The missing data model illustrated by Equation 2 forms the basis for the three missing data mechanisms identified in Rubin (1976), which describe the three processes that govern the probability of being missing: missing completely at random (MCAR), missing at random (MAR), and missing not at random (MNAR).

Suppose all data points have equal probabilities of being missing. In this case, the probability that a value is missing is independent of both the observed and unobserved data, and the data is said to be MCAR. Formally, an MCAR mechanism can be expressed as a simplification of Equation 2:

$$\Pr(R = 0 \mid \psi) \quad (3)$$

where the distribution of missing data in  $R$  depends only on  $\psi$ , the overall probability of being missing. MCAR presents an ideal, albeit unlikely, scenario in which the observed data can be treated as a random sample from the complete data. The implication of

MCAR is that missing data are inconsequential and ignorable, aside from the loss of statistical power due to reduced sample size (Little & Rubin, 2020; van Buuren, 2021). An example of MCAR is a survey administered to a random sample of the population, where every member of the population has an equal probability of being sampled.

Suppose that the probability of missingness varies across data points but is equal within distinct groups of data points defined by the observed data. In this case, the probability of a value being missing depends on the observed data, and the data is said to be MAR. Formally, a MAR mechanism can also be expressed as a simplification of Equation 2:

$$\Pr(R = 0 \mid Y_{\text{obs}}, \psi) \quad (4)$$

where the distribution of missing data in  $R$  is dependent on  $\psi$  and the observed data  $Y_{\text{obs}}$ . MAR presents a more realistic scenario in which missing data are consequential, but ignorable, as it still permits accurate estimation of the parameters of  $Y$  using observed data via techniques such as statistical weight and imputation (Little & Rubin, 2020; van Buuren, 2021). An example of MAR is a demographic survey administered to a sample of the population, in which the probability of being sampled is known to be higher for members of certain demographic groups.

Suppose the probability of being missing varies across all data points, even within groups defined by the observed data. In that case, the probability of a value being missing depends on both observed and unobserved data, and the data is said to be MNAR, which can be expressed by Equation 2 without simplification:

$$\Pr(R = 0 \mid Y_{\text{obs}}, Y_{\text{mis}}, \psi) \quad (5)$$

where the distribution of missing data in  $R$  is dependent on  $\psi$ ,  $Y_{\text{obs}}$ , and the unobserved data  $Y_{\text{mis}}$ . MNAR presents the most challenging scenario in which missing data are consequential and nonignorable, as they hinder the accurate estimation of the parameters of  $Y$ , given their role in determining the probability of being missing (Little & Rubin, 2020; van Buuren, 2021). An example of MNAR is a self-report depression questionnaire administered to a group of clinically depressed patients, where the severity of depressive symptoms determines the likelihood of completing said questionnaire. Addressing MNAR requires sophisticated techniques in which the researcher models the missing-data mechanism to assess the impact of MNAR on parameter estimation (Collins et al., 2001; van Buuren, 2021).

Unfortunately, the missing data mechanisms cannot be ascertained from the data alone: it is impossible to test for MNAR versus MAR since such a test would require unobserved data, and while there are some attempts at developing a test for MAR versus MCAR, their practical values remain unclear (Enders, 2022; van Buuren, 2021). That said, we can increase the likelihood of producing plausible imputations by expanding the data with additional data that are strongly predictive of the probability of missing, which can be accomplished through further data collection or the addition of auxiliary variables (Collins et al., 2001; Hardt et al., 2012). In other words, increasing the amount of observed data improves the plausibility of assuming MAR, which serves as a natural starting point for data imputation (van Buuren, 2021).

### **Complete Case Analysis**

The most common method of handling missing data, complete case analysis excludes all sampling units with missing values in the variables of interest from the

analysis (Ross et al., 2020). When the data are MCAR, complete case analysis provides a convenient and straightforward approach to handling missing data, producing unbiased estimates at the cost of a reduced sample size (King et al., 2001; Ross et al., 2020). However, the assumption of MCAR is restrictive and often unrealistic, and can lead to biases and imprecision when the assumption of MCAR does not hold (Lall, 2016; Ross et al., 2020; van Buuren, 2021). That said, a complete case analysis is not always inferior to an imputed-data analysis and can still produce unbiased estimates when data are MAR or MNAR under certain conditions (Hughes et al., 2019; von Hippel, 2007; White & Carlin, 2010). Therefore, existing guidelines for reporting missing data analyses generally recommend performing and reporting complete case analyses when imputed data analyses are conducted (Enders, 2022; van Buuren, 2021). In the current analysis, results from the complete case analysis are reported in Appendix B.

### **Imputation with Univariate Missing Data**

In short, imputation is a statistical procedure that replaces missing data with synthetic data drawn from the posterior distribution of the missing data, approximated using observed data, which can be expressed as:

$$P(Y_{\text{mis}} | Y_{\text{obs}}, R) \quad (6)$$

where  $R$  is omittable if:

$$P(Y | Y_{\text{obs}}, R = 1) = P(Y | Y_{\text{obs}}, R = 0) \quad (7)$$

So, if the distribution of  $Y$  is identical in complete and missing data (i.e., missing data is ignorable, and thus MAR), then the modelling of the posterior distribution requires only observed data (Little & Rubin, 2020; van Buuren, 2021). Framed differently, assuming a MAR mechanism implies that the posterior distribution can be correctly specified without

explicitly modelling the missingness mechanism, thus providing a natural starting point for imputation techniques.

In single imputation, synthetic data is drawn once to replace missing values, and analyses are then performed using techniques for complete data. Let  $y$  be the values in variable  $Y$ , with imputed values denoted as  $\hat{y}$ . Let  $X$  be an  $N \times k$  matrix containing the observed values of the predictors in the imputation models for  $Y$ , with observed values of the predictors in rows with missing  $y$  denoted as  $X_{\text{mis}}$ . For imputation using normal linear models, this process can be expressed as:

$$\hat{y} = \hat{\beta}_0 + X_{\text{mis}}\hat{\beta}_1 \quad (8)$$

where  $\hat{\beta}_0$  is the least square estimate of the intercept, and  $\hat{\beta}_1$  are the least square estimates of the coefficients of the predictors (van Buuren, 2021). This technique is termed regression imputation, where missing values are imputed based on the observed relationship between the predictors and the variable with missing values. However, there are two main issues with regression imputation: the imputed values would reaffirm any existing relationships between variables in the imputation model, resulting in inflated correlation estimates; and without any mechanism to account for variances, the variability of imputed data would be underestimated (Little & Rubin, 2020; van Buuren, 2021; Zhang, 2016). In simpler terms, the variance in values imputed by regression imputation is determined by the fraction of variance in  $y_{\text{obs}}$  explained by  $X$ , which does not capture the uncertainty of missing data unless  $X$  can predict  $y_{\text{obs}}$  with near perfection. To address these shortfalls, stochastic regression imputation reintroduces the error term into the process:

$$\hat{y} = \hat{\beta}_0 + X_{\text{mis}}\hat{\beta}_1 + \epsilon \quad (9)$$

where  $\epsilon$  is randomly drawn from a normal distribution with a mean of zero and a standard deviation equal to the variance of the residuals, expressed as  $\epsilon \sim N(0, \hat{\sigma}^2)$ . By adding random noise proportional to the distribution of observed values, stochastic regression can produce unbiased correlation estimates while preserving existing relationships between variables (Little & Rubin, 2020; van Buuren, 2021; Zhang, 2016). Nevertheless, the underestimation of variability remains an issue in stochastic regression imputation, which is reflected in Equation 9: the intercept ( $\hat{\beta}_0$ ), the slopes ( $\hat{\beta}_1$ ), and the variance of the residuals ( $\hat{\sigma}^2$ ) are treated as known, which does not reflect the uncertainty of these parameters, given that they were estimated from finite observed data. Intuitively, this could be resolved by randomly drawing  $\hat{\beta}_0$ ,  $\hat{\beta}_1$ , and  $\hat{\sigma}^2$  from their posterior distribution instead, but if imputed data is only drawn once, this is rather ineffectual (Little & Rubin, 2020; van Buuren, 2021). In other words, being unable to account for parameter uncertainty is an inherent limitation of single imputation.

In the case of multiple imputation, synthetic data is drawn multiple times to replace missing data, generating multiple complete datasets. To capture parameter uncertainty, each imputed dataset uses a different draw of  $\hat{\beta}_0$ ,  $\hat{\beta}_1$ , and  $\hat{\sigma}^2$  from their posterior distribution, this can be expressed as:

$$\dot{y} = \dot{\beta}_0 + X_{\text{mis}}\dot{\beta}_1 + \epsilon \quad (10)$$

where  $\epsilon \sim N(0, \hat{\sigma}^2)$ . This technique is termed Bayesian multiple imputation using normal linear models, which accounts for the uncertainty of the imputation model and provides an accurate estimation of variability (Little & Rubin, 2020; van Buuren, 2021).

Normal linear models are helpful for introducing the concept of imputation and are suitable for imputations of continuous variables. However, psychological science is

dominated by ordinal variables (Blanca et al., 2018; Sullivan & Artino, 2013), for which normal linear model imputation performs poorly, often imputing implausible values that disregard the observed level of measurement and data range (van Buuren, 2021). To resolve this, Rubin (1986) and Little (1988) proposed that, instead of taking  $\hat{y}$  as imputed values, use  $\hat{y}$  as a basis to select a donor from the observed data, so that the level of measurement and data range are respected during the imputation process. This can be expressed as:

$$\hat{y}_i = X_{\text{obs}} \hat{\beta} \text{ is matched to } \hat{y}_j = X_{\text{mis}} \hat{\beta} \quad (11)$$

So, the imputation model estimates the predictive means of  $y$  for both sampling units with observed  $y$  ( $\hat{y}_i$ ) and sampling units with missing  $y$  ( $\hat{y}_j$ ), effectively condensing the relevant characteristics of the donor and the recipient into a single number, which can then be used for matching. This technique, termed predictive mean matching, effectively combines the normal linear model and nearest-neighbour imputation approaches. With predictive means calculated, we could select the sampling unit with the closest predictive mean as the donor. But recent simulation studies have shown that only matching one donor could result in biases in imputation and generally recommend matching between 3 to 10 prospective donors with the closest predictive mean and randomly selecting one of them to be the donor (Breiman et al., 2017; Morris et al., 2014; Schenker & Taylor, 1996). Hence, in the current study, each missing value is matched to five donors, and the imputed values are randomly drawn from these five donors.

Notably, Equation 11 matches the donor and the recipient using predictive means calculated via the least square estimates of  $\beta$  again, which does not account for parameter

uncertainty. This can be resolved by randomly drawing  $\beta$  from its posterior distribution instead:

$$\dot{y}_i = X_{\text{obs}} \dot{\beta} \text{ is matched to } \dot{y}_j = X_{\text{mis}} \dot{\beta} \quad (12)$$

This is referred to as type 2 matching, where both  $\dot{y}_i$  and  $\dot{y}_j$  varies stochastically to account for parameter uncertainty, whereas Equation 11 is referred to as type 0 matching. In practice, type 2 matching can be insensitive to random draws of  $\beta$  when there are fewer variables in the imputation model, leading to a subset of donors being matched too often (Andridge & Little, 2010; Little, 1988; van Buuren, 2021). To resolve this, Little (1988) proposed that:

$$\hat{y}_i = X_{\text{obs}} \hat{\beta} \text{ is matched to } \dot{y}_j = X_{\text{mis}} \dot{\beta} \quad (13)$$

where only  $\dot{y}_j$  varies stochastically. This is referred to as type 1 matching, which is commonly used as the default matching method for predictive mean matching (StataCorp, 2021; van Buuren, 2021).

Predictive mean matching performs well with both continuous and ordinal variables; however, as it still leverages a normal linear model at its core, it is unsuitable for imputing binary or categorical variables that lack a specific ordering. The imputation of these variables would instead rely on logistic regression, which can be expressed as:

$$\Pr(y_i = 1 \mid X_{\text{mis}}, \hat{\beta}) = \frac{\exp(X_{\text{mis}} \hat{\beta})}{1 + \exp(X_{\text{mis}} \hat{\beta})} \quad (14)$$

and multinomial logistic regression, which can be expressed as:

$$\Pr(y_i = c \mid X_{\text{mis}}, \hat{\beta}_k) = \frac{\exp(X_{\text{mis}} \hat{\beta}_c)}{\sum_{k=1}^K \exp(X_{\text{mis}} \hat{\beta}_k)} \quad (15)$$

So, for binary variables, the outcome probability is modelled using the iteratively reweighted least squares estimates  $\hat{\beta}$ , and  $X_{\text{mis}}$ , the observed values of the predictors for

the sampling unit with missing  $y$ . Whereas for categorical variables with  $C$  unordered categories, the outcome probability is modelled per category  $c$  using their respective  $\hat{\beta}$ , and  $X_{\text{mis}}$  (Long, 1997; McCullagh & Nelder, 1999; van Buuren, 2021). Once again, the iteratively reweighted least squares estimate  $\hat{\beta}$  does not account for parameter uncertainty. Intuitively, this can be resolved by randomly drawing  $\beta$  from its posterior distribution, but this would require extensive modelling in the context of logistics regression (van Buuren, 2021). Although, assuming parameter vector  $\beta$  follows a multivariate normal distribution, we can use an approximate Bayesian imputation method instead to account for parameter uncertainty, where  $\dot{\beta}$  can be obtained via:

$$\dot{\beta} = \hat{\beta} + \dot{z}_1 V^{1/2} \quad (16)$$

where  $\dot{z}_1 \sim N(0,1)$ , and  $V^{1/2}$  is the unscaled estimated covariance matrix of  $\hat{\beta}$  after Cholesky decomposition (Aitkin, 2008; van Buuren, 2021; Venables & Ripley, 2011).

### **Imputation with Multivariate Missing Data**

In practice, missing data can be present across multiple variables with different levels of measurement. An intuitive solution might be to rank variables by their level of missingness and start the imputation process with the variable with the least missingness. Formally, this process begins with the specification of the imputation model:

$$P(Y_1^{\text{obs}} | X) \quad (17)$$

where observed  $y$  is regressed onto matrix  $X$ , which contains fully observed covariates.

This is then followed by the imputation of the variable with the least missingness, defined as:

$$\dot{Y}_1 \sim P(Y_1^{\text{mis}} | X, \dot{\phi}_1) \quad (18)$$

where  $\dot{\phi}_1$  is a single random draw from its posterior distribution  $P(\dot{\phi}_1 | X)$ . So, the first variable with missing values would be imputed using only the complete variables, but when imputing the following variable on the list:

$$\dot{Y}_2 \sim P(Y_2^{\text{mis}} | X, \dot{Y}_1, \dot{\phi}_2) \quad (19)$$

Where  $\dot{\phi}_2$  is a single random draw from its posterior distribution  $P(\dot{\phi}_2 | X, \dot{Y}_1)$ . The imputed values from the first variable are used to impute the second variable; thus, variables with more missing data would include more predictors in their imputation model. This process would continue until all variables with missing values are imputed. This technique is termed monotone data imputation, which imputes multivariate missing data through a sequence of univariate imputations specified per variable (Rubin, 1987). While fast and flexible, monotone data imputation requires multivariate missing data to follow a monotone pattern, that is, if a sampling unit has missing data in one variable, it would also have missing data in any other variable with a higher degree of missingness (Little & Rubin, 2020; van Buuren, 2021). This is because non-monotone missing data introduces additional observed data later in the sequence of monotone data imputation, which it cannot account for, since it only takes one pass through the data. To resolve this, van Buuren (2007) proposed that the imputation process can start by filling in all missing values using random draws from observed data to create ideal conditions for variable-by-variable univariate imputations, which can be expressed as:

$$\dot{Y}_j^t \sim P(Y_j^{\text{mis}} | Y_j^{\text{obs}}, \dot{Y}_{-j}^t, R, \dot{\phi}_j^t) \quad (20)$$

where  $t$  identifies the iteration,  $j$  identifies the variables specified in the imputation model with  $j = 1, \dots, p$ , and  $\dot{\phi}_j^t$  is a single random draw from its posterior distribution

$P(\phi_j^t \mid Y_j^{\text{obs}}, \dot{Y}_{-j}^t, R)$ . Here,  $\dot{Y}_{-j}^t$  is the currently complete data at this stage except  $Y_j$  and defined as:

$$\dot{Y}_{-j}^t = (\dot{Y}_1^t, \dots, \dot{Y}_{j-1}^t, \dot{Y}_{j+1}^{t-1}, \dots, \dot{Y}_p^{t-1}) \quad (21)$$

So, in the first iteration, missing values in each variable are imputed using both observed data and randomly drawn values. These imputed values would then be used in the second iteration, alongside observed data, to generate incrementally better imputations, and the process would continue for a pre-determined number of iterations specified by the user. This technique is termed multiple imputation by chained equations, which is one of the most widely used multiple imputation procedures (Little & Rubin, 2020; van Buuren, 2021). Typically, the imputed values in the first 5 to 20 iterations can vary quite drastically between iterations, after which the variance in imputed values between iterations would equal its variance within iterations, and this is referred to as the convergence of chained equations (van Buuren, 2007, 2021; van Buuren et al., 1999). Hence, in the current analysis, the chained equations were set to execute for 10 iterations, and 25 imputed datasets were then obtained at the end of the 10<sup>th</sup> iteration. To ensure that convergence was achieved before obtaining the imputed datasets, trace plots were used to examine the changes in the distribution of imputed values across iterations. The distribution of observed and imputed values in the imputed dataset was also assessed via scatter plots to evaluate the plausibility of imputations.

### ***Auxiliary Variables***

In addition to the analysis variables identified in the method section, seven auxiliary variables were selected for inclusion in the imputation model. These auxiliary variables were selected as they are correlates of the covariates, predictors, and outcome

variables (Hardt et al., 2012; van Buuren, 2021). These variables were included in the imputation models to improve precision and minimize bias but excluded from the main analysis models (Hardt et al., 2012). The following variables were selected: frequency of religious participation on one's own (scale from 1 = *not at all* to 6 = *at least once a day*); the importance of religious or spiritual beliefs in the way they live their lives (scale from 1 = *not at all important* to 5 = *very important*); children of respondents living in households (0 = *no*; 1 = *yes*); household size (scale from 1 = *living alone* to 6 = *6 or more members*); ownership of dwelling (0 = *no*; 1 = *yes*); number of disability types (0 = *no disability*, 1 = *has one type of disability*, 2 = *has two or three types of disabilities*, and 3 = *more than three types of disability*); trust people in general (0 = *no*; 1 = *yes*); and sense of belonging in local community (scale from 1 = *poor* to 5 = *excellent*).

### **Imputed Data Analysis**

Let  $Q$  represent the quantity of interest of a given population. Since the imputed data were drawn multiple times to account for parameter uncertainty, this generates a posterior distribution of  $Q$ , expressed as  $P(Q | Y_{\text{obs}})$ , as there is now a range of possible values of  $Q$  under varying  $Y_{\text{mis}}$ .  $P(Q | Y_{\text{obs}})$  can be further decomposed into two parts:

$$P(Q | Y_{\text{obs}}) = \int P(Q | Y_{\text{obs}}, Y_{\text{mis}})P(Y_{\text{mis}} | Y_{\text{obs}})dY_{\text{mis}} \quad (22)$$

where  $P(Q | Y_{\text{obs}}, Y_{\text{mis}})$  is the hypothetical complete data posterior distribution of  $Q$ , and  $P(Y_{\text{mis}} | Y_{\text{obs}})$  is the posterior distribution of the missing data modelled using observed data. So, the posterior mean of  $P(Q | Y_{\text{obs}})$  is the average of  $Q$  over multiply imputed data.

As  $Q$  is estimated over varying  $Y_{\text{mis}}$ , the posterior variance of  $P(Q | Y_{\text{obs}})$  consists of two variance components, expressed as:

$$V(Q | Y_{\text{obs}}) = E[V(Q | Y_{\text{obs}}, Y_{\text{mis}}) | Y_{\text{obs}}] + V[E(Q | Y_{\text{obs}}, Y_{\text{mis}}) | Y_{\text{obs}}] \quad (23)$$

So, the posterior variance of  $P(Q | Y_{\text{obs}})$  is the sum of the average posterior variance of  $Q$  within imputations, and the variance in the posterior mean of  $Q$  between imputations.

Equations 22 and 23 serve as the foundation for analytical procedures using multiply imputed data (Rubin, 1987; van Buuren, 2021).

### *Single Parameter Estimates*

What follows Equations 22 and 23 is a set of procedures known as Rubin's rules (Rubin, 1987), which combine results from analyses performed across multiply imputed datasets. Let  $\theta$  be the estimated parameter of interest, and  $\theta_i$  be said parameter estimated from the imputed dataset  $i$ . Using Rubin's rules, effect estimates can be combined using:

$$\theta = \frac{1}{m} \left( \sum_{i=1}^m \theta_i \right) \quad (24)$$

where  $m$  is the number of imputed datasets and  $\theta_i$  is the estimated statistic of interest (e.g., mean difference) obtained from the analysis of the  $i$ th imputed dataset ( $i = 1, \dots, m$ ). In essence, the pooled effect estimate using Rubin's rules is the average of the individual effect estimates in each imputed dataset. To calculate the variance of the estimated statistic (to obtain correct p-values and confidence intervals), the two sources of variance identified in Equation 23 (i.e., within and between imputation variance) must both be accounted for. The average within-imputation variance is defined as

$$W = \frac{1}{m} \left( \sum_{i=1}^m W_i \right) \quad (25)$$

where  $W_i$  is the estimated variance of  $\theta_i$  (e.g., the square of the estimated standard error), while the between-imputation variance is defined as:

$$B = \frac{\sum_{i=1}^m (\theta_i - \theta)^2}{m - 1} \quad (26)$$

In simpler terms, the within-imputation variance  $W$  is the average estimated variance across imputed datasets, and the between-imputation variance  $B$  is the average estimated variance of effect estimates over imputed datasets (i.e., the degree to which the estimated effect varies across the  $m$  imputed datasets). The final estimate of the variance of  $\theta$  is given by:

$$T = W + B + \frac{B}{m} \quad (27)$$

This estimated variance reflects both the average within-imputation variance and the average between-imputation variance in the pooled effect estimate  $\theta$ . The total variance estimate is then adjusted by a factor of  $B/m$ , to account for the extra simulation variance as the pooled effect estimate  $\theta$  is estimated for a finite number of imputed datasets  $m$ . Significance testing of a single parameter can be carried out using a univariate Wald test (Rubin, 1987; van Buuren, 2021), which is defined as:

$$Wald_{\text{pooled}} = \frac{(\theta - \theta_0)^2}{\sqrt{T}} \quad (28)$$

$\theta_0$  is the specified parameter value under the null.  $Wald_{\text{pooled}}$  have an approximate  $t$ -distribution, which can be used to compute the  $p$ -value. Rubin (1987) provided the following formula for degrees of freedom ( $df$ ) for the pooled Wald test:

$$df_{old} = \frac{m - 1}{\lambda^2} = (m - 1) \left(1 + \frac{1}{r}\right)^2 \quad (29)$$

where  $\lambda$  is the proportion of total variance attributable to missingness, and  $r$  is the relative increase in variance attributable to missingness.  $\lambda$  and  $r$  can be calculated using the following formulas:

$$\lambda = \frac{B + \frac{B}{m}}{T} \quad (30)$$

$$r = \frac{B + \frac{B}{m}}{W} \quad (31)$$

Both  $\lambda$  and  $r$  are indicators for the severity of missingness, and their relationship is given by  $r = \lambda/(1 - \lambda)$ .

However, the original  $df$  formula in Rubin (1987) was shown to produce higher  $df$  for pooled results relative to  $df$  in each imputed dataset (Barnard & Rubin, 1999; van Buuren, 2021). To address this, an adjusted  $df$  formula was introduced in Barnard and Rubin (1999):

$$df_{\text{Adjusted}} = \frac{df_{\text{old}} df_{\text{Observed}}}{df_{\text{old}} + df_{\text{Observed}}} \quad (32)$$

In this case,  $df_{\text{Observed}}$  is defined as:

$$df_{\text{Observed}} = \frac{(n - k) + 1}{(n - k) + 3} * (n - k)(1 - \lambda) \quad (33)$$

where  $n$  is the sample size in the imputed dataset, and  $k$  is the number of parameters (i.e., regressors) to be fitted.

### ***Multiparameter Estimates***

Building upon Rubin (1987), Li et al. (1991) developed an adaptation of Rubin's rules for simultaneous significance testing of multiple parameters with a set of equations that effectively serve as the multivariate extensions of Equations 24-33. This remains the most promising solution in recent simulation studies for  $R^2$  and  $\Delta R^2$  significance testing (Grund et al., 2016; van Ginkel, 2019; Yu & Enders, 2017). In Li's method, the pooled  $R^2$  is calculated using Equation 24, and the significance testing for which can then be carried out using a multivariate Wald test, which is defined as:

$$D_1 = \frac{(\theta - \theta_0)}{\tilde{T}} * \frac{(\theta - \theta_0)}{k} \quad (34)$$

where  $\theta - \theta_0$  is a  $1 \times k$  matrix consisting of regression coefficients of the tested predictors subtracted by their population coefficients under the null hypothesis. The total variance  $T$  calculated using Equation 4 can be unreliable when between-imputation variance  $B$  is a considerable proportion of  $T$ . Thus, a more stable estimate of the total variance,  $\tilde{T}$ , is used here, which is defined as:

$$\tilde{T} = (1 + \bar{r})W \quad (35)$$

where  $\bar{r}$  is the average relative increase in variance due to missingness, and  $W$  is a  $k \times k$  matrix containing the within-imputation variance matrix of the tested predictors. The output,  $\tilde{T}$ , is also a  $k \times k$  matrix. The value of  $\bar{r}$  can be obtained using the following formula:

$$\bar{r} = \frac{\left(1 + \frac{1}{m}\right) \text{tr}(BW^{-1})}{k} \quad (36)$$

where  $B$  is a  $k \times k$  matrix containing the between-imputation variance matrix of the tested predictors.  $D_1$  has an approximate  $F$ -distribution with  $k$  and  $\nu_1$  degrees of freedom, defined as:

$$\nu_1 = \begin{cases} 4 + (t - 4)[1 + (1 - 2t^{-1})\bar{r}^{-1}]^2 & \text{if } t = k(m - 1) > 4 \\ t(1 + k^{-1})(1 + \bar{r}^{-1})^2/2 & \text{otherwise} \end{cases} \quad (37)$$

And the  $p$ -value for  $D_1$  is:

$$p = \Pr[F_{k, \nu_1} > D_1] \quad (38)$$

It is important to note that  $\nu_1$  is obtained under the assumption of an infinite sample size, which results in inflated  $df$  in smaller sample sizes (e.g.,  $n < 50$ ; Reiter, 2007). However, given the large sample size of the proposed analysis, the inflation of  $df$  should be

minimal. In the context of  $R^2$  significance testing,  $D_1$  is effectively testing whether the coefficients of the tested predictors jointly equal zero.

As demonstrated by van Ginkel (2019), the methods above are suited for testing the significance of pooled  $\Delta R^2$  as well. This is achieved by redefining  $\theta - \theta_0$ ,  $W$ ,  $B$ , and  $\bar{r}$  to only contain estimators of the newly added predictors. In the context of Equation 34-38, this is equivalent to testing whether the coefficients of the newly added predictors jointly equal zero.

## Appendix B

This Appendix contains results from the complete case analyses. These models followed analytical procedures identical to those used in the imputed data analysis, but only included respondents who provided valid responses to all covariates, predictors, and at least one outcome variable of interest. One other distinction is that the following models applied both person-level and bootstrap weights, as complete case analyses require both for correcting point and variance estimates. Descriptive statistics for complete case analyses are available in Table B1.

### Model Series One

#### *Self-Rated Health*

Self-rated health was regressed onto covariates in Block 1,  $F(21, 499) = 6.06, p < .001, R^2 = .049$ , general social engagement in Block 2,  $F(21, 499) = 6.60, p < .001, R^2 = .096, \Delta R^2 = .048$ , R/S social engagement in Block 3,  $F(9, 499) = 1.08, p = .377, R^2 = .099, \Delta R^2 = .003$ . Inconsistent with H1, entering the R/S social engagement did not significantly improve model fit in predicting self-rated health (see Table B2).

#### *Self-Rated Mental Health*

Self-rated mental health was regressed onto covariates in Block 1,  $F(21, 499) = 15.54, p < .001, R^2 = .102$ , general social engagement in Block 2,  $F(21, 499) = 8.67, p < .001, R^2 = .162, \Delta R^2 = .060$ , R/S social engagement in Block 3,  $F(9, 499) = 1.43, p = .174, R^2 = .166, \Delta R^2 = .004$ . Inconsistent with H1, entering the R/S social engagement did not significantly improve model fit in predicting self-rated mental health (see Table B3).

### ***Satisfaction with Life***

Satisfaction with life was regressed onto covariates in Block 1,  $F(21, 499) = 9.99$ ,  $p < .001$ ,  $R^2 = .069$ , general social engagement in Block 2,  $F(21, 499) = 11.90$ ,  $p < .001$ ,  $R^2 = .154$ ,  $\Delta R^2 = .086$ , R/S social engagement in Block 3,  $F(9, 499) = 1.54$ ,  $p = .132$ ,  $R^2 = .159$ ,  $\Delta R^2 = .005$ . Inconsistent with H1, entering the R/S social engagement did not significantly improve model fit in predicting satisfaction with life (see Table B4).

### **Model Series Two**

#### ***Self-Rated Health***

Self-rated health was regressed onto covariates in Block 1,  $F(21, 499) = 6.08$ ,  $p < .001$ ,  $R^2 = .049$ ; R/S social engagement in Block 2,  $F(9, 499) = 1.88$ ,  $p = .053$ ,  $R^2 = .055$ ,  $\Delta R^2 = .006$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $F(5, 499) = 5.78$ ,  $p < .001$ ,  $R^2 = .063$ ,  $\Delta R^2 = .009$ , number of other friends in Block 3b,  $F(4, 499) = 2.10$ ,  $p = .079$ ,  $R^2 = .059$ ,  $\Delta R^2 = .004$ , satisfaction with frequency of communication in Block 3c,  $F(4, 499) = 23.90$ ,  $p < .001$ ,  $R^2 = .089$ ,  $\Delta R^2 = .034$ , frequency of in-person activities in Block 3d,  $F(4, 499) = 2.60$ ,  $p = .036$ ,  $R^2 = .059$ ,  $\Delta R^2 = .004$ , and frequency of online activities in Block 3e,  $F(4, 499) = 0.74$ ,  $p = .567$ ,  $R^2 = .056$ ,  $\Delta R^2 = .001$ ; and lastly, general social engagement simultaneously in Block 4,  $F(21, 499) = 6.16$ ,  $p < .001$ ,  $R^2 = .100$ ,  $\Delta R^2 = .045$  (see Table B5).

When controlling for the covariates, religious attendance and contact with religious friends predicted self-rated health, whereas being most active in religious organizations did not. Compared to those who reported never attending religious services, those who reported attending at least monthly,  $t = 2.29$ ,  $p = .022$ ,  $b = 0.13$ , 95% CI [0.02, 0.24],  $SMD = 0.13$ , or at least weekly,  $t = 2.42$ ,  $p = .016$ ,  $b = 0.14$ , 95% CI [0.03, 0.25],

$SMD = 0.14$ , reported better self-rated health. Compared to those who reported that none of the friends they contacted over the past month shared their religion, those who reported that most,  $t = 2.08$ ,  $p = .038$ ,  $b = 0.18$ , 95% CI [0.01, 0.36],  $SMD = 0.19$ , or all,  $t = 2.00$ ,  $p = .046$ ,  $b = 0.20$ , 95% CI [0.00, 0.39],  $SMD = 0.20$ , of the friends contacted over the past month shared their religion reported better self-rated health.

Overall, relationships between two significant R/S predictors and self-rated health weakened when general social engagement measures were entered into the model, consistent with H2 (see Table B6). Likewise, the simultaneous entry of general social engagement measures resulted in significant declines in how well religious attendance and contact with religious friends predicted self-rated health from Block 2 to Block 4. Specifically, attending at least monthly,  $t = 2.22$ ,  $p = .027$ ,  $b = 0.04$ , 95% CI [0.00, 0.07],  $SMD = 0.04$ , and at least weekly,  $t = 2.43$ ,  $p = .016$ ,  $b = 0.04$ , 95% CI [0.01, 0.07],  $SMD = 0.04$ , were weaker predictors of self-rated health. Reporting most,  $t = 2.61$ ,  $p = .009$ ,  $b = 0.07$ , 95% CI [0.02, 0.12],  $SMD = 0.07$ , and all,  $t = 2.54$ ,  $p = .012$ ,  $b = 0.07$ , 95% CI [0.02, 0.12],  $SMD = 0.07$ , of their friends contacted in the past month sharing the same religion were also weaker predictors of self-rated health. When controlling for the covariates and general social engagement measures, none of the R/S predictors predicted self-rated health in Block 4. Compared to those who reported never attending religious services, those who at least monthly,  $t = 1.61$ ,  $p = .107$ ,  $b = 0.09$ , 95% CI [-0.02, 0.20],  $SMD = 0.09$ , or at least weekly,  $t = 1.75$ ,  $p = .080$ ,  $b = 0.10$ , 95% CI [-0.01, 0.21],  $SMD = 0.10$ , did not report better self-rated health. Compared to those who reported that none of the friends they contacted over the past month shared their religion, those who reported that most,  $t = 1.27$ ,  $p = .205$ ,  $b = 0.11$ , 95% CI [-0.06, 0.29],  $SMD = 0.11$ , or all,  $t = 1.29$ ,

$p = .198$ ,  $b = 0.13$ , 95% CI  $[-0.07, 0.32]$ ,  $SMD = 0.13$ , of the friends they contacted over the past month shared their religion also did not report better self-rated health.

### ***Self-Rated Mental Health***

Self-rated mental health was regressed onto covariates in Block 1,  $F(21, 499) = 15.54$ ,  $p < .001$ ,  $R^2 = .102$ ; R/S social engagement in Block 2,  $F(9, 499) = 1.91$ ,  $p = .048$ ,  $R^2 = .108$ ,  $\Delta R^2 = .006$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $F(5, 499) = 11.66$ ,  $p < .001$ ,  $R^2 = .125$ ,  $\Delta R^2 = .017$ , number of other friends in Block 3b,  $F(4, 499) = 7.08$ ,  $p < .001$ ,  $R^2 = .118$ ,  $\Delta R^2 = .010$ , satisfaction with frequency of communication in Block 3c,  $F(4, 499) = 25.94$ ,  $p < .001$ ,  $R^2 = .149$ ,  $\Delta R^2 = .041$ , frequency of in-person activities in Block 3d,  $F(4, 499) = 1.03$ ,  $p = .389$ ,  $R^2 = .110$ ,  $\Delta R^2 = .002$ , and frequency of online activities in Block 3e,  $F(4, 499) = 0.89$ ,  $p = .472$ ,  $R^2 = .110$ ,  $\Delta R^2 = .001$ ; and lastly, general social engagement simultaneously in Block 4,  $F(21, 499) = 8.64$ ,  $p < .001$ ,  $R^2 = .166$ ,  $\Delta R^2 = .058$  (see Table B7).

When controlling for the covariates, only contact with friends of the same religion predicted self-rated mental health, whereas religious attendance and being most active in religious organizations did not. Compared to those who reported that none of the friends they contacted over the past month shared their religion, those who reported that most,  $t = 2.12$ ,  $p = .034$ ,  $b = 0.21$ , 95% CI  $[0.15, 0.40]$ ,  $SMD = 0.21$ , or all,  $t = 2.48$ ,  $p = .013$ ,  $b = 0.26$ , 95% CI  $[0.05, 0.46]$ ,  $SMD = 0.26$ , of the friends they contacted over the past month shared their religion reported better self-rated mental health.

Overall, the relationship between contact with religious friends and self-rated mental health weakened when general social engagement measures were entered into the model, consistent with H2 (see Table B8). Likewise, the simultaneous entry of general

social engagement measures resulted in significant declines in how well contact with religious friends predicted self-rated mental health from Block 2 to Block 4. Specifically, reporting most,  $t = 3.73, p < .001, b = 0.11, 95\% \text{ CI } [0.05, 0.16], SMD = 0.11$ , or all,  $t = 2.79, p = .005, b = 0.08, 95\% \text{ CI } [0.02, 0.14], SMD = 0.08$ , of the friends they contacted over the past month were weaker predictors of self-rated mental health in Block 4. When controlling for covariates and general social engagement, none of the R/S predictors predicted self-rated mental health in Block 4. As reporting most,  $t = 1.07, p = .287, b = 0.10, 95\% \text{ CI } [-0.09, 0.29], SMD = 0.10$ , or all,  $t = 1.73, p = .085, b = 0.17, 95\% \text{ CI } [-0.02, 0.37], SMD = 0.17$ , of the friends they contacted over the past month did not predict self-rated mental health.

### ***Satisfaction with Life***

Satisfaction with life was regressed onto covariates in Block 1,  $F(21, 499) = 10.01, p < .001, R^2 = .069$ ; R/S social engagement in Block 2,  $F(9, 499) = 2.77, p = .004, R^2 = .078, \Delta R^2 = .009$ ; general social engagement sequentially in Block 3, with number of close friends in Block 3a,  $F(5, 499) = 13.33, p < .001, R^2 = .098, \Delta R^2 = .020$ , number of other friends in Block 3b,  $F(4, 499) = 6.00, p < .001, R^2 = .089, \Delta R^2 = .010$ , satisfaction with frequency of communication in Block 3c,  $F(4, 499) = 38.94, p < .001, R^2 = .140, \Delta R^2 = .061$ , frequency of in-person activities in Block 3d,  $F(4, 499) = 2.44, p = .046, R^2 = .082, \Delta R^2 = .003$ , and frequency of online activities in Block 3e,  $F(4, 499) = 1.21, p = .308, R^2 = .080, \Delta R^2 = .002$ ; and lastly, general social engagement simultaneously in Block 4,  $F(21, 499) = 10.84, p < .001, R^2 = .159, \Delta R^2 = .081$  (see Table B9).

When controlling for the covariates, religious attendance and contact with religious friends predicted satisfaction with life, whereas being most active in religious

organizations did not. Compared to those who reported never attending religious services, those who reported attending at least three times a year,  $t = 2.11$ ,  $p = .036$ ,  $b = 0.25$ , 95% CI [0.02, 0.49],  $SMD = 0.14$ , or at least weekly,  $t = 2.45$ ,  $p = .015$ ,  $b = 0.37$ , 95% CI [0.05, 0.46],  $SMD = 0.14$ , reported higher satisfaction with life. Compared to those who reported that none of the friends they contacted over the past month shared their religion, those who reported that about half,  $t = 2.70$ ,  $p = .007$ ,  $b = 0.48$ , 95% CI [0.13, 0.83],  $SMD = 0.26$ , most,  $t = 2.48$ ,  $p = .013$ ,  $b = 0.42$ , 95% CI [0.09, 0.75],  $SMD = 0.23$ , or all,  $t = 2.70$ ,  $p = .007$ ,  $b = 0.50$ , 95% CI [0.17, 0.67],  $SMD = 0.27$ , of the friends they contacted over the past month shared their religion reported higher satisfaction with life.

Overall, relationships between two significant R/S predictors and satisfaction with life weakened when general social engagement measures were entered into the model, consistent with H2 (see Table B10). Likewise, the simultaneous entry of general social engagement measures resulted in significant declines in how well religious attendance and contact with religious friends predicted satisfaction with life from Block 2 to Block 4. Specifically, attending at least three times a year,  $t = 2.34$ ,  $p = .020$ ,  $b = 0.09$ , 95% CI [0.01, 0.17],  $SMD = 0.04$ , and at least weekly,  $t = 2.71$ ,  $p = .007$ ,  $b = 0.09$ , 95% CI [0.02, 0.15],  $SMD = 0.04$ , were weaker predictors of satisfaction with life. Reporting that about half,  $t = 3.67$ ,  $p < .001$ ,  $b = 0.26$ , 95% CI [0.12, 0.40],  $SMD = 0.06$ , most,  $t = 3.78$ ,  $p < .001$ ,  $b = 0.26$ , 95% CI [0.12, 0.39],  $SMD = 0.06$ , or all,  $t = 3.15$ ,  $p = .002$ ,  $b = 0.22$ , 95% CI [0.08, 0.36],  $SMD = 0.06$ , of the friends they contacted over the past month shared their religion were also weaker predictors of satisfaction with life. When controlling for covariates and general social engagement, none of the R/S predictors predicted

satisfaction with life in Block 4. Compared to those who reported never attending religious services, those who reported attending at least three times a year,  $t = 1.34$ ,  $p = .182$ ,  $b = 0.16$ , 95% CI [-0.07, 0.39],  $SMD = 0.09$ , or at least weekly,  $t = 1.59$ ,  $p = .112$ ,  $b = 0.17$ , 95% CI [-0.04, 0.37],  $SMD = 0.10$ , did not report higher satisfaction with life. Compared to those who reported that none of the friends they contacted over the past month shared their religion, those who reported that about half,  $t = 1.26$ ,  $p = .207$ ,  $b = 0.22$ , 95% CI [-0.12, 0.56],  $SMD = 0.12$ , most,  $t = 0.95$ ,  $p = .343$ ,  $b = 0.16$ , 95% CI [-0.17, 0.49],  $SMD = 0.09$ , or all,  $t = 1.50$ ,  $p = .135$ ,  $b = 0.28$ , 95% CI [-0.09, 0.64],  $SMD = 0.16$ , of the friends they contacted over the past month shared their religion also did not report higher satisfaction with life.

**Table B1***Descriptive Statistics for Complete Case Analyses (N = 7,243)*


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|                                |        |
|--------------------------------|--------|
| <i>Age</i>                     |        |
| 25-34                          | 14.66% |
| 35-44                          | 18.51% |
| 45-54                          | 18.75% |
| 55-64                          | 20.48% |
| 65-74                          | 16.10% |
| 75+                            | 11.50% |
| <i>Sex</i>                     |        |
| Female                         | 54.66% |
| Male                           | 45.34% |
| <i>Marital Status</i>          |        |
| Married/Common-Law             | 72.77% |
| Widowed/Separated/Divorced     | 14.58% |
| Single                         | 12.65% |
| <i>Level of Education</i>      |        |
| High School or Less            | 22.15% |
| Less than Bachelor's           | 32.83% |
| Bachelor's or Higher           | 45.03% |
| <i>Region of Residence</i>     |        |
| Atlantic                       | 6.12%  |
| Quebec                         | 24.01% |
| Ontario                        | 42.18% |
| Prairies                       | 16.61% |
| British Colombia               | 11.08% |
| <i>Visible Minority Status</i> |        |
| Non-Minority                   | 72.63% |
| Visible Minority               | 27.37% |
| <i>Annual Income</i>           |        |
| <\$24,999                      | 6.40%  |
| \$25,000-\$49,999              | 14.08% |
| \$50,000-\$74,999              | 15.24% |
| \$75,000-\$99,999              | 15.69% |
| >\$100,000                     | 48.59% |
| <i>Labour Force Status</i>     |        |
| Unemployed                     | 4.82%  |
| Not in Labour Force            | 33.98% |
| Employed                       | 61.20% |
| <i>Number of Close Friends</i> |        |
| None                           | 3.69%  |
| 1-4                            | 57.80% |
| 5-9                            | 17.77% |
| 10-19                          | 16.12% |

|                                          |           |
|------------------------------------------|-----------|
| 20-29                                    | 3.38%     |
| >30                                      | 1.24%     |
| <i>Number of Other Friends</i>           |           |
| None                                     | 2.37%     |
| 1-19                                     | 54.92%    |
| 20-49                                    | 24.92%    |
| 50-79                                    | 10.57%    |
| >80                                      | 7.22%     |
| <i>Satisfaction with Communication</i>   |           |
| Very Dissatisfied                        | 0.58%     |
| Dissatisfied                             | 5.00%     |
| Neither                                  | 15.98%    |
| Satisfied                                | 49.98%    |
| Very Satisfied                           | 28.45%    |
| <i>Frequency of In-person Activities</i> |           |
| Not in the Past Year                     | 26.08%    |
| Once or Twice a Year                     | 17.58%    |
| Monthly                                  | 15.97%    |
| A Few Times a Month                      | 15.15%    |
| Weekly or more                           | 25.23%    |
| <i>Frequency of Online Activities</i>    |           |
| Not in the Past Year                     | 53.33%    |
| Once or Twice a Year                     | 9.60%     |
| Monthly                                  | 10.96%    |
| A Few Times a Month                      | 12.11%    |
| Weekly or more                           | 14.01%    |
| <i>R/S Attendance</i>                    |           |
| Not at all                               | 33.41%    |
| Once or Twice a Year                     | 17.24%    |
| Three Times a Year                       | 10.94%    |
| Monthly or more                          | 11.87%    |
| Weekly or more                           | 26.54%    |
| <i>Contact with Religious Friends</i>    |           |
| None                                     | 4.31%     |
| A few                                    | 22.85%    |
| About half                               | 17.96%    |
| Most                                     | 37.39%    |
| All                                      | 17.49%    |
| <i>Most Active in R/S Organizations</i>  |           |
| Most Active in Other Organizations       | 88.39%    |
| Most Active in R/S Organizations         | 11.61%    |
| Self-Rated Health                        | 3.73/0.97 |
| Self-Rated Mental Health                 | 4.00/0.99 |
| Satisfaction with Life                   | 7.80/1.84 |

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*Note.* All descriptive statistics are presented as either proportions or mean/standard deviation; R/S = Religion/Spirituality

**Table B2***Results for Self-Rated Health in Model Series One (N = 7,260)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |               |               |
|--------------------------------------------------------|-------------------------------------------|---------------|---------------|
|                                                        | Block 1                                   | Block 2       | Block 3       |
| Constant                                               | 3.21/0.16 ***                             | 2.67/0.34 *** | 2.57/0.35 *** |
| <b><i>Covariates</i></b>                               |                                           |               |               |
| <i>Age (25-34 = Base)</i>                              |                                           |               |               |
| 35-44                                                  | -0.01/0.07                                | 0.04/0.07     | 0.03/0.07     |
| 45-54                                                  | -0.01/0.07                                | 0.00/0.07     | -0.01/0.07    |
| 55-64                                                  | -0.04/0.07                                | -0.03/0.07    | -0.04/0.07    |
| 65-74                                                  | -0.03/0.08                                | -0.04/0.08    | -0.05/0.08    |
| 75+                                                    | 0.03/0.10                                 | 0.00/0.10     | -0.02/0.10    |
| <i>Sex (Female = Base)</i>                             |                                           |               |               |
| Male                                                   | 0.06/0.04                                 | 0.06/0.04 †   | 0.07/0.04 †   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |               |               |
| Widowed/Separated/Divorced                             | -0.03/0.06                                | -0.06/0.05    | -0.06/0.05    |
| Single                                                 | -0.08/0.07                                | -0.11/0.06 †  | -0.11/0.06 †  |
| <i>Level of Education (High School or Less = Base)</i> |                                           |               |               |
| Less than Bachelor's                                   | 0.00/0.05                                 | -0.01/0.05    | 0.00/0.05     |
| Bachelor's or Higher                                   | 0.13/0.05 *                               | 0.14/0.05 *   | 0.14/0.05 *   |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |               |               |
| Quebec                                                 | 0.18/0.05 ***                             | 0.21/0.05 *** | 0.21/0.05 *** |
| Ontario                                                | 0.01/0.05                                 | 0.03/0.05     | 0.03/0.05     |
| Prairies                                               | 0.08/0.05                                 | 0.11/0.05 *   | 0.11/0.05 *   |
| British Colombia                                       | 0.01/0.06                                 | 0.05/0.06     | 0.06/0.06     |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |               |               |
| Visible Minority                                       | 0.12/0.05 *                               | 0.10/0.05 *   | 0.08/0.05     |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |               |               |
| \$25,000-\$49,999                                      | 0.15/0.11                                 | 0.18/0.11 †   | 0.18/0.11 †   |
| \$50,000-\$74,999                                      | 0.30/0.11 **                              | 0.31/0.10 **  | 0.31/0.10 **  |
| \$75,000-\$99,999                                      | 0.31/0.11 **                              | 0.30/0.11 **  | 0.30/0.11 **  |
| >\$100,000                                             | 0.40/0.11 ***                             | 0.39/0.10 *** | 0.40/0.10 *** |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |               |               |
| Not in Labour Force                                    | 0.00/0.11                                 | -0.05/0.11    | -0.06/0.11    |
| Employed                                               | 0.10/0.10                                 | 0.06/0.10     | 0.06/0.10     |
| <b><i>General Social Engagement</i></b>                |                                           |               |               |
| <i>Number of Close Friends (None = Base)</i>           |                                           |               |               |
| 1-4                                                    |                                           | -0.04/0.11    | -0.04/0.11    |
| 5-9                                                    |                                           | 0.01/0.12     | 0.01/0.12     |
| 10-19                                                  |                                           | 0.09/0.12     | 0.08/0.12     |
| 20-29                                                  |                                           | 0.13/0.13     | 0.13/0.13     |
| >30                                                    |                                           | -0.03/0.22    | -0.06/0.22    |
| <i>Number of Other Friends (None = Base)</i>           |                                           |               |               |
| 1-19                                                   |                                           | 0.21/0.15     | 0.21/0.15     |

|                                                                                                                                                                                         | <i>b</i> Coefficients/BRR Standard Errors |                         |                         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------|-------------------------|
|                                                                                                                                                                                         | Block 1                                   | Block 2                 | Block 3                 |
| 20-49                                                                                                                                                                                   |                                           | 0.26/0.15 <sup>†</sup>  | 0.26/0.15 <sup>†</sup>  |
| 50-79                                                                                                                                                                                   |                                           | 0.18/0.15               | 0.17/0.15               |
| >80                                                                                                                                                                                     |                                           | 0.24/0.16               | 0.23/0.16               |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                                                                                                       |                                           |                         |                         |
| Dissatisfied                                                                                                                                                                            |                                           | -0.02/0.26              | -0.01/0.26              |
| Neither                                                                                                                                                                                 |                                           | 0.06/0.25               | 0.05/0.26               |
| Satisfied                                                                                                                                                                               |                                           | 0.24/0.25               | 0.22/0.26               |
| Very Satisfied                                                                                                                                                                          |                                           | 0.50/0.25 <sup>†</sup>  | 0.49/0.26 <sup>†</sup>  |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                                                                                                  |                                           |                         |                         |
| Once or Twice a Year                                                                                                                                                                    |                                           | 0.11/0.06 <sup>†</sup>  | 0.11/0.06 <sup>†</sup>  |
| Monthly                                                                                                                                                                                 |                                           | 0.15/0.06 <sup>**</sup> | 0.15/0.06 <sup>*</sup>  |
| A Few Times a Month                                                                                                                                                                     |                                           | 0.17/0.06 <sup>**</sup> | 0.16/0.06 <sup>**</sup> |
| Weekly or more                                                                                                                                                                          |                                           | 0.10/0.06 <sup>†</sup>  | 0.09/0.06 <sup>†</sup>  |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                                                                                                     |                                           |                         |                         |
| Once or Twice a Year                                                                                                                                                                    |                                           | -0.07/0.06              | -0.07/0.06              |
| Monthly                                                                                                                                                                                 |                                           | -0.07/0.06              | -0.07/0.06              |
| A Few Times a Month                                                                                                                                                                     |                                           | -0.04/0.06              | -0.05/0.06              |
| Weekly or more                                                                                                                                                                          |                                           | -0.09/0.06              | -0.09/0.05 <sup>†</sup> |
| <b><i>R/S Social Engagement</i></b>                                                                                                                                                     |                                           |                         |                         |
| <i>R/S Attendance (Not at all = Base)</i>                                                                                                                                               |                                           |                         |                         |
| Once or Twice a Year                                                                                                                                                                    |                                           |                         | 0.01/0.05               |
| Three Times a Year                                                                                                                                                                      |                                           |                         | 0.07/0.06               |
| Monthly or more                                                                                                                                                                         |                                           |                         | 0.09/0.06               |
| Weekly or more                                                                                                                                                                          |                                           |                         | 0.10/0.06 <sup>†</sup>  |
| <i>Contact with Religious Friends (None = Base)</i>                                                                                                                                     |                                           |                         |                         |
| A few                                                                                                                                                                                   |                                           |                         | 0.08/0.09               |
| About half                                                                                                                                                                              |                                           |                         | 0.07/0.09               |
| Most                                                                                                                                                                                    |                                           |                         | 0.12/0.09               |
| All                                                                                                                                                                                     |                                           |                         | 0.13/0.10               |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                                                                                                     |                                           |                         |                         |
| Most Active in R/S Organizations                                                                                                                                                        |                                           |                         | -0.02/0.06              |
| <i>Note.</i> <sup>†</sup> $p < .10$ ; <sup>*</sup> $p < .05$ ; <sup>**</sup> $p < .01$ ; <sup>***</sup> $p < .001$ ; BRR = Bootstrap Repeated Replicate;<br>R/S = Religion/Spirituality |                                           |                         |                         |

**Table B3***Results for Self-Rated Mental Health in Model Series One (N = 7,258)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |                |               |
|--------------------------------------------------------|-------------------------------------------|----------------|---------------|
|                                                        | Block 1                                   | Block 2        | Block 3       |
| Constant                                               | 3.13/0.16 ***                             | 2.49/0.34 ***  | 2.39/0.35 *** |
| <b><i>Covariates</i></b>                               |                                           |                |               |
| <i>Age (25-34 = Base)</i>                              |                                           |                |               |
| 35-44                                                  | 0.16/0.08 *                               | 0.22/0.08 **   | 0.22/0.08 **  |
| 45-54                                                  | 0.30/0.08 ***                             | 0.31/0.07 ***  | 0.31/0.07 *** |
| 55-64                                                  | 0.47/0.07 ***                             | 0.48/0.07 ***  | 0.48/0.07 *** |
| 65-74                                                  | 0.61/0.08 ***                             | 0.59/0.08 ***  | 0.59/0.08 *** |
| 75+                                                    | 0.64/0.10 ***                             | 0.61/0.09 ***  | 0.60/0.09 *** |
| <i>Sex (Female = Base)</i>                             |                                           |                |               |
| Male                                                   | 0.13/0.04 **                              | 0.13/0.04 ***  | 0.14/0.04 *** |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |                |               |
| Widowed/Separated/Divorced                             | -0.16/0.06 **                             | -0.18/0.05 *** | -0.18/0.05 ** |
| Single                                                 | -0.12/0.07 †                              | -0.14/0.07 *   | -0.13/0.07 †  |
| <i>Level of Education (High School or Less = Base)</i> |                                           |                |               |
| Less than Bachelor's                                   | -0.09/0.05 †                              | -0.09/0.05 †   | -0.08/0.05 †  |
| Bachelor's or Higher                                   | 0.02/0.05                                 | 0.03/0.05      | 0.04/0.05     |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |                |               |
| Quebec                                                 | 0.34/0.05 ***                             | 0.39/0.05 ***  | 0.37/0.05 *** |
| Ontario                                                | 0.07/0.05                                 | 0.09/0.05 †    | 0.09/0.05 *   |
| Prairies                                               | 0.09/0.05 †                               | 0.13/0.05 *    | 0.13/0.05 *   |
| British Colombia                                       | -0.11/0.07                                | -0.06/0.07     | -0.05/0.07    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |                |               |
| Visible Minority                                       | 0.34/0.05 ***                             | 0.32/0.05 ***  | 0.30/0.05 *** |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |                |               |
| \$25,000-\$49,999                                      | 0.16/0.11                                 | 0.17/0.10      | 0.16/0.10     |
| \$50,000-\$74,999                                      | 0.24/0.10 *                               | 0.22/0.10 *    | 0.22/0.10 *   |
| \$75,000-\$99,999                                      | 0.35/0.10 **                              | 0.32/0.10 **   | 0.32/0.10 **  |
| >\$100,000                                             | 0.36/0.10 ***                             | 0.33/0.10 **   | 0.33/0.10 **  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |                |               |
| Not in Labour Force                                    | 0.04/0.11                                 | -0.01/0.10     | -0.02/0.10    |
| Employed                                               | 0.02/0.09                                 | -0.02/0.09     | -0.02/0.09    |
| <b><i>General Social Engagement</i></b>                |                                           |                |               |
| <i>Number of Close Friends (None = Base)</i>           |                                           |                |               |
| 1-4                                                    |                                           | -0.07/0.11     | -0.06/0.11    |
| 5-9                                                    |                                           | 0.01/0.11      | 0.02/0.11     |
| 10-19                                                  |                                           | 0.14/0.12      | 0.14/0.12     |
| 20-29                                                  |                                           | 0.11/0.13      | 0.11/0.13     |
| >30                                                    |                                           | 0.08/0.17      | 0.06/0.17     |
| <i>Number of Other Friends (None = Base)</i>           |                                           |                |               |
| 1-19                                                   |                                           | 0.24/0.15      | 0.25/0.15 †   |

|                                                                                                                                              | <i>b</i> Coefficients/BRR Standard Errors |                        |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------------------|------------------------|
|                                                                                                                                              | Block 1                                   | Block 2                | Block 3                |
| 20-49                                                                                                                                        |                                           | 0.33/0.16*             | 0.35/0.16*             |
| 50-79                                                                                                                                        |                                           | 0.34/0.16*             | 0.36/0.16*             |
| >80                                                                                                                                          |                                           | 0.25/0.17              | 0.26/0.17              |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                                                            |                                           |                        |                        |
| Dissatisfied                                                                                                                                 |                                           | -0.07/0.26             | -0.08/0.26             |
| Neither                                                                                                                                      |                                           | 0.15/0.25              | 0.14/0.25              |
| Satisfied                                                                                                                                    |                                           | 0.34/0.24              | 0.32/0.24              |
| Very Satisfied                                                                                                                               |                                           | 0.60/0.25*             | 0.58/0.24*             |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                                                       |                                           |                        |                        |
| Once or Twice a Year                                                                                                                         |                                           | 0.08/0.06              | 0.08/0.06              |
| Monthly                                                                                                                                      |                                           | 0.10/0.06 <sup>†</sup> | 0.10/0.06 <sup>†</sup> |
| A Few Times a Month                                                                                                                          |                                           | 0.06/0.06              | 0.06/0.06              |
| Weekly or more                                                                                                                               |                                           | 0.06/0.05              | 0.06/0.05              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                                                          |                                           |                        |                        |
| Once or Twice a Year                                                                                                                         |                                           | 0.02/0.05              | 0.02/0.05              |
| Monthly                                                                                                                                      |                                           | -0.10/0.06             | -0.10/0.06             |
| A Few Times a Month                                                                                                                          |                                           | 0.00/0.06              | 0.00/0.06              |
| Weekly or more                                                                                                                               |                                           | -0.08/0.05             | -0.08/0.05             |
| <b><i>R/S Social Engagement</i></b>                                                                                                          |                                           |                        |                        |
| <i>R/S Attendance (Not at all = Base)</i>                                                                                                    |                                           |                        |                        |
| Once or Twice a Year                                                                                                                         |                                           |                        | -0.04/0.05             |
| Three Times a Year                                                                                                                           |                                           |                        | 0.07/0.06              |
| Monthly or more                                                                                                                              |                                           |                        | -0.04/0.06             |
| Weekly or more                                                                                                                               |                                           |                        | 0.04/0.05              |
| <i>Contact with Religious Friends (None = Base)</i>                                                                                          |                                           |                        |                        |
| A few                                                                                                                                        |                                           |                        | 0.04/0.09              |
| About half                                                                                                                                   |                                           |                        | 0.09/0.10              |
| Most                                                                                                                                         |                                           |                        | 0.10/0.09              |
| All                                                                                                                                          |                                           |                        | 0.17/0.10 <sup>†</sup> |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                                                          |                                           |                        |                        |
| Most Active in R/S Organizations                                                                                                             |                                           |                        | 0.03/0.06              |
| Note. <sup>†</sup> $p < .10$ ; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality |                                           |                        |                        |

**Table B4***Results for Satisfaction with Life in Model Series One (N = 7,262)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |                |                |
|--------------------------------------------------------|-------------------------------------------|----------------|----------------|
|                                                        | Block 1                                   | Block 2        | Block 3        |
| Constant                                               | 7.08/0.27 ***                             | 4.87/0.54 ***  | 4.69/0.55 ***  |
| <b><i>Covariates</i></b>                               |                                           |                |                |
| <i>Age (25-34 = Base)</i>                              |                                           |                |                |
| 35-44                                                  | -0.28/0.14 *                              | -0.17/0.13     | -0.18/0.13     |
| 45-54                                                  | 0.05/0.13                                 | 0.06/0.12      | 0.04/0.12      |
| 55-64                                                  | 0.20/0.13                                 | 0.23/0.13 †    | 0.21/0.12 †    |
| 65-74                                                  | 0.40/0.16 *                               | 0.35/0.15 *    | 0.34/0.14 *    |
| 75+                                                    | 0.67/0.19 ***                             | 0.62/0.17 ***  | 0.57/0.17 **   |
| <i>Sex (Female = Base)</i>                             |                                           |                |                |
| Male                                                   | 0.00/0.07                                 | -0.01/0.07     | 0.00/0.07      |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |                |                |
| Widowed/Separated/Divorced                             | -0.45/0.11 ***                            | -0.50/0.11 *** | -0.49/0.11 *** |
| Single                                                 | -0.74/0.13 ***                            | -0.79/0.11 *** | -0.77/0.11 *** |
| <i>Level of Education (High School or Less = Base)</i> |                                           |                |                |
| Less than Bachelor's                                   | -0.08/0.10                                | -0.07/0.10     | -0.06/0.09     |
| Bachelor's or Higher                                   | -0.01/0.11                                | 0.03/0.11      | 0.04/0.10      |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |                |                |
| Quebec                                                 | -0.04/0.10                                | 0.04/0.10      | 0.05/0.10      |
| Ontario                                                | -0.12/0.09                                | -0.08/0.09     | -0.07/0.09     |
| Prairies                                               | -0.21/0.11 †                              | -0.13/0.11     | -0.14/0.11     |
| British Colombia                                       | -0.35/0.12 **                             | -0.24/0.11 *   | -0.22/0.11 †   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |                |                |
| Visible Minority                                       | 0.25/0.09 **                              | 0.18/0.09 *    | 0.13/0.09      |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |                |                |
| \$25,000-\$49,999                                      | -0.01/0.19                                | 0.05/0.18      | 0.03/0.19      |
| \$50,000-\$74,999                                      | 0.29/0.19                                 | 0.27/0.18      | 0.26/0.18      |
| \$75,000-\$99,999                                      | 0.29/0.19                                 | 0.28/0.18      | 0.26/0.18      |
| >\$100,000                                             | 0.47/0.18 *                               | 0.43/0.17 *    | 0.43/0.17 *    |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |                |                |
| Not in Labour Force                                    | 0.51/0.19 **                              | 0.37/0.18 *    | 0.35/0.18 †    |
| Employed                                               | 0.56/0.16 **                              | 0.45/0.16 **   | 0.45/0.16 **   |
| <b><i>General Social Engagement</i></b>                |                                           |                |                |
| <i>Number of Close Friends (None = Base)</i>           |                                           |                |                |
| 1-4                                                    |                                           | 0.15/0.19      | 0.16/0.19      |
| 5-9                                                    |                                           | 0.38/0.20 †    | 0.39/0.20 †    |
| 10-19                                                  |                                           | 0.46/0.21 *    | 0.46/0.21 *    |
| 20-29                                                  |                                           | 0.53/0.30 †    | 0.52/0.30 †    |
| >30                                                    |                                           | 0.92/0.27 **   | 0.87/0.28 **   |
| <i>Number of Other Friends (None = Base)</i>           |                                           |                |                |
| 1-19                                                   |                                           | 0.62/0.29 *    | 0.65/0.29 *    |

|                                                                                     | <i>b</i> Coefficients/BRR Standard Errors |                        |                        |
|-------------------------------------------------------------------------------------|-------------------------------------------|------------------------|------------------------|
|                                                                                     | Block 1                                   | Block 2                | Block 3                |
| 20-49                                                                               |                                           | 0.78/0.29**            | 0.79/0.29**            |
| 50-79                                                                               |                                           | 0.55/0.30 <sup>†</sup> | 0.57/0.31 <sup>†</sup> |
| >80                                                                                 |                                           | 0.75/0.32*             | 0.75/0.32*             |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                   |                                           |                        |                        |
| Dissatisfied                                                                        |                                           | 0.26/0.41              | 0.25/0.41              |
| Neither                                                                             |                                           | 0.77/0.40 <sup>†</sup> | 0.74/0.39 <sup>†</sup> |
| Satisfied                                                                           |                                           | 1.32/0.39**            | 1.27/0.38**            |
| Very Satisfied                                                                      |                                           | 1.80/0.39***           | 1.75/0.39***           |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>              |                                           |                        |                        |
| Once or Twice a Year                                                                |                                           | 0.20/0.11 <sup>†</sup> | 0.19/0.11 <sup>†</sup> |
| Monthly                                                                             |                                           | 0.14/0.10              | 0.13/0.10              |
| A Few Times a Month                                                                 |                                           | 0.29/0.11**            | 0.28/0.10**            |
| Weekly or more                                                                      |                                           | 0.09/0.09              | 0.06/0.10              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                 |                                           |                        |                        |
| Once or Twice a Year                                                                |                                           | -0.11/0.11             | -0.10/0.11             |
| Monthly                                                                             |                                           | -0.02/0.11             | -0.02/0.11             |
| A Few Times a Month                                                                 |                                           | -0.16/0.12             | -0.16/0.12             |
| Weekly or more                                                                      |                                           | -0.20/0.10*            | -0.23/0.10*            |
| <b><i>R/S Social Engagement</i></b>                                                 |                                           |                        |                        |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                           |                        |                        |
| Once or Twice a Year                                                                |                                           |                        | -0.08/0.10             |
| Three Times a Year                                                                  |                                           |                        | 0.16/0.12              |
| Monthly or more                                                                     |                                           |                        | 0.07/0.10              |
| Weekly or more                                                                      |                                           |                        | 0.17/0.10              |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                           |                        |                        |
| A few                                                                               |                                           |                        | 0.09/0.17              |
| About half                                                                          |                                           |                        | 0.22/0.17              |
| Most                                                                                |                                           |                        | 0.16/0.17              |
| All                                                                                 |                                           |                        | 0.28/0.19              |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                           |                        |                        |
| Most Active in R/S Organizations                                                    |                                           |                        | 0.10/0.11              |

Note. <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality

**Table B5***Results for Self-Rated Health in Model Series Two, Block 1, 2, and 4 (N = 7,260)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |               |               |
|--------------------------------------------------------|-------------------------------------------|---------------|---------------|
|                                                        | Block 1                                   | Block 2       | Block 4       |
| Constant                                               | 3.21/0.16 ***                             | 3.00/0.18 *** | 2.57/0.35 *** |
| <b><i>Covariates</i></b>                               |                                           |               |               |
| <i>Age (25-34 = Base)</i>                              |                                           |               |               |
| 35-44                                                  | -0.01/0.07                                | -0.01/0.07    | 0.03/0.07     |
| 45-54                                                  | -0.01/0.07                                | -0.02/0.07    | -0.01/0.07    |
| 55-64                                                  | -0.04/0.07                                | -0.05/0.07    | -0.03/0.07    |
| 65-74                                                  | -0.03/0.08                                | -0.04/0.08    | -0.06/0.08    |
| 75+                                                    | 0.03/0.10                                 | -0.01/0.10    | -0.02/0.10    |
| <i>Sex (Female = Base)</i>                             |                                           |               |               |
| Male                                                   | 0.06/0.04                                 | 0.06/0.04 †   | 0.07/0.04 †   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |               |               |
| Widowed/Separated/Divorced                             | -0.03/0.06                                | -0.02/0.06    | -0.06/0.05    |
| Single                                                 | -0.08/0.07                                | -0.07/0.07    | -0.11/0.06 †  |
| <i>Level of Education (High School or Less = Base)</i> |                                           |               |               |
| Less than Bachelor's                                   | 0.00/0.05                                 | 0.00/0.05     | 0.00/0.05     |
| Bachelor's or Higher                                   | 0.13/0.05 *                               | 0.13/0.05 *   | 0.14/0.05 **  |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |               |               |
| Quebec                                                 | 0.18/0.05 ***                             | 0.19/0.05 *** | 0.22/0.05 *** |
| Ontario                                                | 0.01/0.05                                 | 0.01/0.05     | 0.03/0.05     |
| Prairies                                               | 0.08/0.05                                 | 0.08/0.05     | 0.12/0.05 *   |
| British Colombia                                       | 0.01/0.06                                 | 0.02/0.06     | 0.06/0.06     |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |               |               |
| Visible Minority                                       | 0.12/0.05 *                               | 0.09/0.05 †   | 0.08/0.05     |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |               |               |
| \$25,000-\$49,999                                      | 0.16/0.11                                 | 0.15/0.11     | 0.19/0.11 †   |
| \$50,000-\$74,999                                      | 0.30/0.11 **                              | 0.30/0.11 **  | 0.31/0.10 **  |
| \$75,000-\$99,999                                      | 0.31/0.11 **                              | 0.30/0.11 **  | 0.30/0.11 **  |
| >\$100,000                                             | 0.40/0.11 ***                             | 0.40/0.11 *** | 0.40/0.10 *** |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |               |               |
| Not in Labour Force                                    | 0.00/0.11                                 | -0.01/0.10    | -0.06/0.11    |
| Employed                                               | 0.10/0.10                                 | 0.09/0.09     | 0.06/0.10     |
| <b><i>R/S Social Engagement</i></b>                    |                                           |               |               |
| <i>R/S Attendance (Not at all = Base)</i>              |                                           |               |               |
| Once or Twice a Year                                   |                                           | 0.03/0.05     | 0.01/0.05     |
| Three Times a Year                                     |                                           | 0.10/0.06     | 0.07/0.06     |
| Monthly or more                                        |                                           | 0.13/0.06 *   | 0.09/0.06     |
| Weekly or more                                         |                                           | 0.14/0.06 *   | 0.10/0.06 †   |
| <i>Contact with Religious Friends (None = Base)</i>    |                                           |               |               |
| A few                                                  |                                           | 0.14/0.09     | 0.07/0.09     |
| About half                                             |                                           | 0.13/0.09     | 0.06/0.09     |

|                                                                                                                                              | <i>b</i> Coefficients/BRR Standard Errors |            |                         |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------|-------------------------|
|                                                                                                                                              | Block 1                                   | Block 2    | Block 4                 |
| Most                                                                                                                                         |                                           | 0.18/0.09* | 0.11/0.09               |
| All                                                                                                                                          |                                           | 0.20/0.10* | 0.13/0.10               |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                                                          |                                           |            |                         |
| Most Active in R/S Organizations                                                                                                             |                                           | -0.01/0.06 | -0.02/0.06              |
| <b>General Social Engagement</b>                                                                                                             |                                           |            |                         |
| <i>Number of Close Friends (None = Base)</i>                                                                                                 |                                           |            |                         |
| 1-4                                                                                                                                          |                                           |            | -0.04/0.11              |
| 5-9                                                                                                                                          |                                           |            | 0.01/0.12               |
| 10-19                                                                                                                                        |                                           |            | 0.09/0.12               |
| 20-29                                                                                                                                        |                                           |            | 0.13/0.13               |
| >30                                                                                                                                          |                                           |            | -0.06/0.22              |
| <i>Number of Other Friends (None = Base)</i>                                                                                                 |                                           |            |                         |
| 1-19                                                                                                                                         |                                           |            | 0.21/0.15               |
| 20-49                                                                                                                                        |                                           |            | 0.25/0.15 <sup>†</sup>  |
| 50-79                                                                                                                                        |                                           |            | 0.17/0.15               |
| >80                                                                                                                                          |                                           |            | 0.23/0.16               |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                                                            |                                           |            |                         |
| Dissatisfied                                                                                                                                 |                                           |            | -0.01/0.26              |
| Neither                                                                                                                                      |                                           |            | 0.05/0.26               |
| Satisfied                                                                                                                                    |                                           |            | 0.22/0.26               |
| Very Satisfied                                                                                                                               |                                           |            | 0.49/0.26 <sup>†</sup>  |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                                                       |                                           |            |                         |
| Once or Twice a Year                                                                                                                         |                                           |            | 0.11/0.06 <sup>†</sup>  |
| Monthly                                                                                                                                      |                                           |            | 0.14/0.06*              |
| A Few Times a Month                                                                                                                          |                                           |            | 0.16/0.06**             |
| Weekly or more                                                                                                                               |                                           |            | 0.09/0.06 <sup>†</sup>  |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                                                          |                                           |            |                         |
| Once or Twice a Year                                                                                                                         |                                           |            | -0.07/0.06              |
| Monthly                                                                                                                                      |                                           |            | -0.07/0.06              |
| A Few Times a Month                                                                                                                          |                                           |            | -0.05/0.06              |
| Weekly or more                                                                                                                               |                                           |            | -0.09/0.06 <sup>†</sup> |
| Note. <sup>†</sup> $p < .10$ ; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality |                                           |            |                         |

**Table B6**

*Results for Self-Rated Health in Model Series Two, Block 3a through 3f (N = 7,260)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |              |              |              |              |
|--------------------------------------------------------|-------------------------------------------|--------------|--------------|--------------|--------------|
|                                                        | Block 3a                                  | Block 3b     | Block 3c     | Block 3d     | Block 3e     |
| Constant                                               | 2.97/0.21***                              | 2.80/0.22*** | 2.80/0.32*** | 2.92/0.18*** | 3.01/0.18*** |
| <i>Age (25-34 = Base)</i>                              |                                           |              |              |              |              |
| 35-44                                                  | 0.01/0.07                                 | -0.01/0.07   | 0.02/0.07    | -0.02/0.07   | -0.01/0.07   |
| 45-54                                                  | -0.01/0.07                                | -0.02/0.07   | 0.00/0.07    | -0.02/0.07   | -0.02/0.07   |
| 55-64                                                  | -0.04/0.07                                | -0.04/0.07   | -0.04/0.07   | -0.05/0.07   | -0.04/0.07   |
| 65-74                                                  | -0.04/0.08                                | -0.04/0.08   | -0.05/0.08   | -0.05/0.08   | -0.05/0.08   |
| 75+                                                    | 0.00/0.10                                 | 0.00/0.10    | -0.02/0.10   | -0.01/0.10   | -0.01/0.10   |
| <i>Sex (Female = Base)</i>                             |                                           |              |              |              |              |
| Male                                                   | 0.06/0.04                                 | 0.06/0.04    | 0.07/0.04*   | 0.06/0.04    | 0.06/0.04†   |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |              |              |              |              |
| Widowed/Separated/Divorced                             | -0.03/0.06                                | -0.02/0.06   | -0.05/0.05   | -0.02/0.06   | -0.03/0.06   |
| Single                                                 | -0.08/0.07                                | -0.07/0.07   | -0.10/0.06   | -0.08/0.07   | -0.07/0.07   |
| <i>Level of Education (High School or Less = Base)</i> |                                           |              |              |              |              |
| Less than Bachelor's                                   | 0.00/0.05                                 | 0.00/0.05    | 0.00/0.05    | -0.01/0.05   | 0.00/0.05    |
| Bachelor's or Higher                                   | 0.12/0.05*                                | 0.13/0.05*   | 0.14/0.05**  | 0.12/0.05*   | 0.14/0.06*   |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |              |              |              |              |
| Quebec                                                 | 0.20/0.05***                              | 0.20/0.05*** | 0.20/0.05*** | 0.19/0.05*** | 0.20/0.05*** |
| Ontario                                                | 0.01/0.05                                 | 0.01/0.05    | 0.03/0.05    | 0.01/0.05    | 0.01/0.05    |
| Prairies                                               | 0.08/0.05                                 | 0.08/0.05    | 0.11/0.05*   | 0.08/0.05    | 0.09/0.05    |
| British Colombia                                       | 0.02/0.06                                 | 0.03/0.06    | 0.05/0.06    | 0.03/0.06    | 0.03/0.06    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |              |              |              |              |
| Visible Minority                                       | 0.10/0.05†                                | 0.10/0.05†   | 0.06/0.05    | 0.10/0.05*   | 0.09/0.05†   |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |              |              |              |              |
| \$25,000-\$49,999                                      | 0.15/0.11                                 | 0.15/0.11    | 0.18/0.11†   | 0.16/0.11    | 0.16/0.11    |
| \$50,000-\$74,999                                      | 0.30/0.11**                               | 0.30/0.11**  | 0.31/0.10**  | 0.31/0.10**  | 0.31/0.11**  |

|                                                                                     | <i>b</i> Coefficients/BRR Standard Errors |              |              |              |              |
|-------------------------------------------------------------------------------------|-------------------------------------------|--------------|--------------|--------------|--------------|
|                                                                                     | Block 3a                                  | Block 3b     | Block 3c     | Block 3d     | Block 3e     |
| \$75,000-\$99,999                                                                   | 0.29/0.11*                                | 0.30/0.11**  | 0.31/0.11**  | 0.31/0.11**  | 0.31/0.11**  |
| >\$100,000                                                                          | 0.38/0.11***                              | 0.39/0.11*** | 0.41/0.10*** | 0.41/0.10*** | 0.41/0.11*** |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                           |              |              |              |              |
| Not in Labour Force                                                                 | -0.02/0.10                                | -0.01/0.10   | -0.06/0.11   | -0.02/0.10   | -0.01/0.11   |
| Employed                                                                            | 0.09/0.10                                 | 0.09/0.09    | 0.06/0.10    | 0.09/0.09    | 0.09/0.10    |
| <b><i>R/S Social Engagement</i></b>                                                 |                                           |              |              |              |              |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                           |              |              |              |              |
| 1. Once or Twice a Year                                                             | 0.03/0.05                                 | 0.03/0.05    | 0.02/0.05    | 0.03/0.05    | 0.03/0.05    |
| 2. Three Times a Year                                                               | 0.09/0.06                                 | 0.09/0.06    | 0.09/0.06    | 0.09/0.06    | 0.10/0.06    |
| 3. Monthly or more                                                                  | 0.12/0.06*                                | 0.13/0.06*   | 0.12/0.06*   | 0.11/0.06†   | 0.13/0.06*   |
| 4. Weekly or more                                                                   | 0.13/0.06*                                | 0.13/0.06*   | 0.12/0.06*   | 0.12/0.06*   | 0.14/0.06*   |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                           |              |              |              |              |
| 5. A few                                                                            | 0.11/0.09                                 | 0.11/0.09    | 0.10/0.09    | 0.14/0.09    | 0.14/0.09    |
| 6. About half                                                                       | 0.10/0.09                                 | 0.11/0.09    | 0.09/0.09    | 0.13/0.09    | 0.14/0.09    |
| 7. Most                                                                             | 0.15/0.09†                                | 0.16/0.09†   | 0.14/0.09    | 0.19/0.09*   | 0.19/0.09*   |
| 8. All                                                                              | 0.18/0.10†                                | 0.19/0.10*   | 0.13/0.10    | 0.20/0.10*   | 0.19/0.10†   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                           |              |              |              |              |
| 9. Most Active in R/S Organizations                                                 | -0.02/0.06                                | -0.02/0.06   | -0.02/0.06   | -0.02/0.06   | -0.01/0.06   |
| <b><i>General Social Engagement</i></b>                                             |                                           |              |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                           |              |              |              |              |
| 1-4                                                                                 | 0.01/0.12                                 |              |              |              |              |
| 5-9                                                                                 | 0.13/0.13                                 |              |              |              |              |
| 10-19                                                                               | 0.22/0.12†                                |              |              |              |              |
| 20-29                                                                               | 0.27/0.13*                                |              |              |              |              |
| >30                                                                                 | 0.06/0.23                                 |              |              |              |              |
| <i>Number of Other Friends (None = Base)</i>                                        |                                           |              |              |              |              |
| 1-19                                                                                |                                           | 0.18/0.15    |              |              |              |
| 20-49                                                                               |                                           | 0.29/0.15†   |              |              |              |
| 50-79                                                                               |                                           | 0.22/0.15    |              |              |              |

|                                                                        |                                | <i>b</i> Coefficients/BRR Standard Errors       |                                 |                                |                         |            |
|------------------------------------------------------------------------|--------------------------------|-------------------------------------------------|---------------------------------|--------------------------------|-------------------------|------------|
|                                                                        |                                | Block 3a                                        | Block 3b                        | Block 3c                       | Block 3d                | Block 3e   |
| >80                                                                    |                                |                                                 | 0.31/0.16 <sup>†</sup>          |                                |                         |            |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                                |                                                 |                                 |                                |                         |            |
| Dissatisfied                                                           |                                |                                                 |                                 | -0.02/0.26                     |                         |            |
| Neither                                                                |                                |                                                 |                                 | 0.03/0.26                      |                         |            |
| Satisfied                                                              |                                |                                                 |                                 | 0.23/0.26                      |                         |            |
| Very Satisfied                                                         |                                |                                                 |                                 | 0.50/0.26 <sup>†</sup>         |                         |            |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                                |                                                 |                                 |                                |                         |            |
| Once or Twice a Year                                                   |                                |                                                 |                                 |                                | 0.09/0.06               |            |
| Monthly                                                                |                                |                                                 |                                 |                                | 0.14/0.06 <sup>*</sup>  |            |
| A Few Times a Month                                                    |                                |                                                 |                                 |                                | 0.17/0.06 <sup>**</sup> |            |
| Weekly or more                                                         |                                |                                                 |                                 |                                | 0.10/0.06 <sup>†</sup>  |            |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                                |                                                 |                                 |                                |                         |            |
| Once or Twice a Year                                                   |                                |                                                 |                                 |                                |                         | -0.07/0.05 |
| Monthly                                                                |                                |                                                 |                                 |                                |                         | -0.05/0.06 |
| A Few Times a Month                                                    |                                |                                                 |                                 |                                |                         | 0.00/0.07  |
| Weekly or more                                                         |                                |                                                 |                                 |                                |                         | -0.07/0.05 |
| <i>Coefficient Comparisons</i>                                         |                                | <i>b</i> Coefficients [95% Confidence Interval] |                                 |                                |                         |            |
| <i>(cf. Block 2)</i>                                                   | Block 3a                       | Block 3b                                        | Block 3c                        | Block 3d                       | Block 3e                |            |
| 1                                                                      | 0.00 [-0.01, 0.01]             | 0.00 [-0.01, 0.01]                              | 0.01 [-0.01, 0.04]              | 0.01 [0.00, 0.02]              | 0.00 [0.00, 0.01]       |            |
| 2                                                                      | 0.01 [-0.01, 0.03]             | 0.01 [-0.01, 0.02]                              | 0.01 [-0.01, 0.04]              | 0.01 [0.00, 0.02]              | 0.00 [-0.01, 0.01]      |            |
| 3                                                                      | 0.01 [-0.01, 0.02]             | 0.00 [-0.01, 0.01]                              | 0.01 [-0.01, 0.04]              | 0.02 [0.00, 0.04] <sup>*</sup> | 0.00 [-0.01, 0.01]      |            |
| 4                                                                      | 0.01 [0.00, 0.02]              | 0.01 [0.00, 0.02] <sup>†</sup>                  | 0.02 [0.00, 0.04] <sup>*</sup>  | 0.02 [0.00, 0.04] <sup>*</sup> | 0.00 [-0.02, 0.01]      |            |
| 5                                                                      | 0.03 [0.00, 0.06] <sup>*</sup> | 0.03 [0.01, 0.05] <sup>*</sup>                  | 0.04 [0.00, 0.09] <sup>*</sup>  | 0.00 [-0.02, 0.02]             | 0.00 [-0.02, 0.01]      |            |
| 6                                                                      | 0.03 [0.00, 0.06] <sup>*</sup> | 0.03 [0.00, 0.05] <sup>*</sup>                  | 0.05 [0.01, 0.09] <sup>*</sup>  | 0.00 [-0.01, 0.02]             | 0.00 [-0.01, 0.01]      |            |
| 7                                                                      | 0.03 [0.01, 0.06] <sup>*</sup> | 0.03 [0.01, 0.05] <sup>*</sup>                  | 0.05 [0.01, 0.09] <sup>*</sup>  | 0.00 [-0.02, 0.02]             | 0.00 [-0.01, 0.01]      |            |
| 8                                                                      | 0.01 [-0.01, 0.03]             | 0.00 [-0.01, 0.02]                              | 0.07 [0.02, 0.11] <sup>**</sup> | -0.01 [-0.02, 0.01]            | 0.00 [-0.01, 0.02]      |            |
| 9                                                                      | 0.01 [-0.01, 0.03]             | 0.00 [-0.01, 0.02]                              | 0.01 [-0.01, 0.03]              | 0.00 [-0.01, 0.02]             | 0.00 [-0.02, 0.01]      |            |

*Note.* <sup>†</sup>  $p < .10$ ; <sup>\*</sup>  $p < .05$ ; <sup>\*\*</sup>  $p < .01$ ; <sup>\*\*\*</sup>  $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality  
; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

**Table B7***Results for Self-Rated Mental Health in Model Series Two, Block 1, 2, and 4 (N = 7,258)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |               |               |
|--------------------------------------------------------|-------------------------------------------|---------------|---------------|
|                                                        | Block 1                                   | Block 2       | Block 4       |
| Constant                                               | 3.12/0.16 ***                             | 2.91/0.18 *** | 2.39/0.35 *** |
| <b><i>Covariates</i></b>                               |                                           |               |               |
| <i>Age (25-34 = Base)</i>                              |                                           |               |               |
| 35-44                                                  | 0.16/0.08 *                               | 0.16/0.08 *   | 0.22/0.08 **  |
| 45-54                                                  | 0.30/0.08 ***                             | 0.29/0.07 *** | 0.31/0.07 *** |
| 55-64                                                  | 0.47/0.07 ***                             | 0.46/0.07 *** | 0.48/0.07 *** |
| 65-74                                                  | 0.61/0.08 ***                             | 0.61/0.08 *** | 0.59/0.08 *** |
| 75+                                                    | 0.64/0.10 ***                             | 0.61/0.10 *** | 0.60/0.09 *** |
| <i>Sex (Female = Base)</i>                             |                                           |               |               |
| Male                                                   | 0.13/0.04 **                              | 0.13/0.04 *** | 0.14/0.04 *** |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |               |               |
| Widowed/Separated/Divorced                             | -0.16/0.06 **                             | -0.15/0.06 ** | -0.18/0.05 ** |
| Single                                                 | -0.12/0.07 †                              | -0.10/0.07    | -0.13/0.07 †  |
| <i>Level of Education (High School or Less = Base)</i> |                                           |               |               |
| Less than Bachelor's                                   | -0.09/0.05 †                              | -0.08/0.05    | -0.08/0.05 †  |
| Bachelor's or Higher                                   | 0.02/0.05                                 | 0.03/0.05     | 0.04/0.05     |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |               |               |
| Quebec                                                 | 0.34/0.05 ***                             | 0.34/0.05 *** | 0.37/0.05 *** |
| Ontario                                                | 0.07/0.05                                 | 0.07/0.05     | 0.10/0.05 *   |
| Prairies                                               | 0.09/0.05 †                               | 0.09/0.05 †   | 0.13/0.05 *   |
| British Colombia                                       | -0.11/0.07                                | -0.09/0.07    | -0.05/0.07    |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |               |               |
| Visible Minority                                       | 0.35/0.05 ***                             | 0.32/0.05 *** | 0.30/0.05 *** |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |               |               |
| \$25,000-\$49,999                                      | 0.16/0.11                                 | 0.14/0.11     | 0.16/0.10     |
| \$50,000-\$74,999                                      | 0.23/0.10 *                               | 0.23/0.10 *   | 0.22/0.10 *   |
| \$75,000-\$99,999                                      | 0.35/0.10 **                              | 0.34/0.10 **  | 0.31/0.10 **  |
| >\$100,000                                             | 0.36/0.10 ***                             | 0.36/0.10 *** | 0.33/0.10 **  |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |               |               |
| Not in Labour Force                                    | 0.04/0.11                                 | 0.02/0.11     | -0.02/0.10    |
| Employed                                               | 0.02/0.09                                 | 0.01/0.09     | -0.02/0.09    |
| <b><i>R/S Social Engagement</i></b>                    |                                           |               |               |
| <i>R/S Attendance (Not at all = Base)</i>              |                                           |               |               |
| Once or Twice a Year                                   |                                           | -0.01/0.05    | -0.04/0.05    |
| Three Times a Year                                     |                                           | 0.11/0.07     | 0.07/0.06     |
| Monthly or more                                        |                                           | 0.00/0.06     | -0.04/0.06    |
| Weekly or more                                         |                                           | 0.09/0.05     | 0.04/0.05     |
| <i>Contact with Religious Friends (None = Base)</i>    |                                           |               |               |
| A few                                                  |                                           | 0.14/0.10     | 0.04/0.09     |
| About half                                             |                                           | 0.19/0.10 †   | 0.09/0.10     |

|                                                                                                                                              | <i>b</i> Coefficients/BRR Standard Errors |            |                        |
|----------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|------------|------------------------|
|                                                                                                                                              | Block 1                                   | Block 2    | Block 4                |
| Most                                                                                                                                         |                                           | 0.21/0.10* | 0.10/0.09              |
| All                                                                                                                                          |                                           | 0.26/0.10* | 0.17/0.10 <sup>†</sup> |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                                                          |                                           |            |                        |
| Most Active in R/S Organizations                                                                                                             |                                           | 0.04/0.06  | 0.03/0.06              |
| <b>General Social Engagement</b>                                                                                                             |                                           |            |                        |
| <i>Number of Close Friends (None = Base)</i>                                                                                                 |                                           |            |                        |
| 1-4                                                                                                                                          |                                           |            | -0.06/0.11             |
| 5-9                                                                                                                                          |                                           |            | 0.02/0.11              |
| 10-19                                                                                                                                        |                                           |            | 0.14/0.12              |
| 20-29                                                                                                                                        |                                           |            | 0.11/0.13              |
| >30                                                                                                                                          |                                           |            | 0.06/0.17              |
| <i>Number of Other Friends (None = Base)</i>                                                                                                 |                                           |            |                        |
| 1-19                                                                                                                                         |                                           |            | 0.25/0.15 <sup>†</sup> |
| 20-49                                                                                                                                        |                                           |            | 0.35/0.16*             |
| 50-79                                                                                                                                        |                                           |            | 0.36/0.16*             |
| >80                                                                                                                                          |                                           |            | 0.26/0.17              |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                                                            |                                           |            |                        |
| Dissatisfied                                                                                                                                 |                                           |            | -0.08/0.26             |
| Neither                                                                                                                                      |                                           |            | 0.14/0.25              |
| Satisfied                                                                                                                                    |                                           |            | 0.32/0.24              |
| Very Satisfied                                                                                                                               |                                           |            | 0.58/0.24*             |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                                                       |                                           |            |                        |
| Once or Twice a Year                                                                                                                         |                                           |            | 0.08/0.06              |
| Monthly                                                                                                                                      |                                           |            | 0.10/0.06 <sup>†</sup> |
| A Few Times a Month                                                                                                                          |                                           |            | 0.06/0.06              |
| Weekly or more                                                                                                                               |                                           |            | 0.06/0.05              |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                                                          |                                           |            |                        |
| Once or Twice a Year                                                                                                                         |                                           |            | 0.02/0.05              |
| Monthly                                                                                                                                      |                                           |            | -0.10/0.06             |
| A Few Times a Month                                                                                                                          |                                           |            | 0.00/0.06              |
| Weekly or more                                                                                                                               |                                           |            | -0.08/0.05             |
| Note. <sup>†</sup> $p < .10$ ; * $p < .05$ ; ** $p < .01$ ; *** $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality |                                           |            |                        |

**Table B8**

*Results for Self-Rated Mental Health in Model Series Two, Block 3a through 3f (N = 7,258)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |              |              |              |              |
|--------------------------------------------------------|-------------------------------------------|--------------|--------------|--------------|--------------|
|                                                        | Block 3a                                  | Block 3b     | Block 3c     | Block 3d     | Block 3e     |
| Constant                                               | 2.89/0.21***                              | 2.66/0.23*** | 2.66/0.30*** | 2.86/0.19*** | 2.86/0.19*** |
| <i>Age (25-34 = Base)</i>                              |                                           |              |              |              |              |
| 35-44                                                  | 0.19/0.08*                                | 0.17/0.08*   | 0.20/0.08*   | 0.16/0.08*   | 0.16/0.08*   |
| 45-54                                                  | 0.30/0.07***                              | 0.29/0.07*** | 0.30/0.07*** | 0.28/0.07*** | 0.28/0.07*** |
| 55-64                                                  | 0.48/0.07***                              | 0.47/0.07*** | 0.47/0.07*** | 0.46/0.07*** | 0.46/0.07*** |
| 65-74                                                  | 0.62/0.08***                              | 0.61/0.08*** | 0.59/0.08*** | 0.60/0.08*** | 0.60/0.08*** |
| 75+                                                    | 0.62/0.10***                              | 0.63/0.10*** | 0.60/0.09*** | 0.61/0.10*** | 0.61/0.10*** |
| <i>Sex (Female = Base)</i>                             |                                           |              |              |              |              |
| Male                                                   | 0.13/0.04***                              | 0.13/0.04**  | 0.14/0.04*** | 0.13/0.04*** | 0.13/0.04*** |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |              |              |              |              |
| Widowed/Separated/Divorced                             | -0.16/0.05**                              | -0.14/0.06*  | -0.18/0.05** | -0.15/0.06** | -0.15/0.06** |
| Single                                                 | -0.11/0.07                                | -0.09/0.07   | -0.13/0.07†  | -0.10/0.07   | -0.10/0.07   |
| <i>Level of Education (High School or Less = Base)</i> |                                           |              |              |              |              |
| Less than Bachelor's                                   | -0.08/0.05†                               | -0.08/0.05   | -0.08/0.05   | -0.09/0.05†  | -0.09/0.05†  |
| Bachelor's or Higher                                   | 0.01/0.05                                 | 0.02/0.05    | 0.05/0.05    | 0.02/0.05    | 0.02/0.05    |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |              |              |              |              |
| Quebec                                                 | 0.35/0.05***                              | 0.35/0.05*** | 0.35/0.05*** | 0.34/0.05*** | 0.34/0.05*** |
| Ontario                                                | 0.07/0.05                                 | 0.08/0.05    | 0.09/0.05†   | 0.07/0.05    | 0.07/0.05    |
| Prairies                                               | 0.09/0.05†                                | 0.09/0.05†   | 0.12/0.05*   | 0.09/0.05†   | 0.09/0.05†   |
| British Colombia                                       | -0.10/0.07                                | -0.09/0.07   | -0.06/0.07   | -0.09/0.07   | -0.09/0.07   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |              |              |              |              |
| Visible Minority                                       | 0.33/0.05***                              | 0.33/0.05*** | 0.29/0.05*** | 0.33/0.05*** | 0.33/0.05*** |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |              |              |              |              |
| \$25,000-\$49,999                                      | 0.14/0.10                                 | 0.13/0.11    | 0.17/0.11    | 0.14/0.11    | 0.14/0.11    |
| \$50,000-\$74,999                                      | 0.22/0.10*                                | 0.22/0.10*   | 0.24/0.10*   | 0.23/0.10*   | 0.23/0.10*   |

|                                                                                     | <i>b</i> Coefficients/BRR Standard Errors |             |              |              |              |
|-------------------------------------------------------------------------------------|-------------------------------------------|-------------|--------------|--------------|--------------|
|                                                                                     | Block 3a                                  | Block 3b    | Block 3c     | Block 3d     | Block 3e     |
| \$75,000-\$99,999                                                                   | 0.32/0.10**                               | 0.33/0.10** | 0.34/0.10**  | 0.34/0.10**  | 0.34/0.10**  |
| >\$100,000                                                                          | 0.33/0.10**                               | 0.35/0.10** | 0.37/0.10*** | 0.36/0.10*** | 0.36/0.10*** |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                           |             |              |              |              |
| Not in Labour Force                                                                 | 0.01/0.11                                 | 0.03/0.10   | -0.03/0.10   | 0.02/0.11    | 0.02/0.11    |
| Employed                                                                            | 0.01/0.10                                 | 0.01/0.09   | -0.02/0.09   | 0.01/0.10    | 0.01/0.10    |
| <b><i>R/S Social Engagement</i></b>                                                 |                                           |             |              |              |              |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                           |             |              |              |              |
| 1. Once or Twice a Year                                                             | -0.01/0.05                                | -0.01/0.05  | -0.03/0.05   | -0.01/0.05   | -0.01/0.05   |
| 2. Three Times a Year                                                               | 0.09/0.07                                 | 0.10/0.06   | 0.09/0.06    | 0.10/0.07    | 0.10/0.07    |
| 3. Monthly or more                                                                  | -0.01/0.06                                | -0.01/0.06  | -0.02/0.06   | -0.01/0.06   | -0.01/0.06   |
| 4. Weekly or more                                                                   | 0.07/0.05                                 | 0.07/0.05   | 0.06/0.05    | 0.07/0.05    | 0.07/0.05    |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                           |             |              |              |              |
| 5. A few                                                                            | 0.09/0.10                                 | 0.09/0.10   | 0.09/0.10    | 0.14/0.10    | 0.14/0.10    |
| 6. About half                                                                       | 0.15/0.10                                 | 0.15/0.10   | 0.13/0.10    | 0.19/0.10†   | 0.19/0.10†   |
| 7. Most                                                                             | 0.16/0.10                                 | 0.16/0.10†  | 0.15/0.09    | 0.21/0.10*   | 0.21/0.10*   |
| 8. All                                                                              | 0.24/0.10*                                | 0.26/0.10*  | 0.18/0.10†   | 0.26/0.10*   | 0.26/0.10*   |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                           |             |              |              |              |
| 9. Most Active in R/S Organizations                                                 | 0.03/0.06                                 | 0.03/0.06   | 0.04/0.06    | 0.04/0.06    | 0.04/0.06    |
| <b><i>General Social Engagement</i></b>                                             |                                           |             |              |              |              |
| <i>Number of Close Friends (None = Base)</i>                                        |                                           |             |              |              |              |
| 1-4                                                                                 | 0.00/0.11                                 |             |              |              |              |
| 5-9                                                                                 | 0.17/0.11                                 |             |              |              |              |
| 10-19                                                                               | 0.31/0.12**                               |             |              |              |              |
| 20-29                                                                               | 0.30/0.13*                                |             |              |              |              |
| >30                                                                                 | 0.20/0.17                                 |             |              |              |              |
| <i>Number of Other Friends (None = Base)</i>                                        |                                           |             |              |              |              |
| 1-19                                                                                |                                           | 0.22/0.15   |              |              |              |
| 20-49                                                                               |                                           | 0.39/0.16*  |              |              |              |
| 50-79                                                                               |                                           | 0.43/0.16** |              |              |              |

|                                                                        |                                | <i>b</i> Coefficients/BRR Standard Errors       |                     |                    |                        |                        |
|------------------------------------------------------------------------|--------------------------------|-------------------------------------------------|---------------------|--------------------|------------------------|------------------------|
|                                                                        |                                | Block 3a                                        | Block 3b            | Block 3c           | Block 3d               | Block 3e               |
| >80                                                                    |                                |                                                 | 0.37/0.17*          |                    |                        |                        |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |                                |                                                 |                     |                    |                        |                        |
| Dissatisfied                                                           |                                |                                                 |                     | -0.11/0.25         |                        |                        |
| Neither                                                                |                                |                                                 |                     | 0.10/0.24          |                        |                        |
| Satisfied                                                              |                                |                                                 |                     | 0.31/0.24          |                        |                        |
| Very Satisfied                                                         |                                |                                                 |                     | 0.59/0.24*         |                        |                        |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |                                |                                                 |                     |                    |                        |                        |
| Once or Twice a Year                                                   |                                |                                                 |                     |                    | 0.08/0.06              |                        |
| Monthly                                                                |                                |                                                 |                     |                    | 0.10/0.06 <sup>†</sup> |                        |
| A Few Times a Month                                                    |                                |                                                 |                     |                    | 0.09/0.06              |                        |
| Weekly or more                                                         |                                |                                                 |                     |                    | 0.08/0.05              |                        |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |                                |                                                 |                     |                    |                        |                        |
| Once or Twice a Year                                                   |                                |                                                 |                     |                    |                        | 0.08/0.06              |
| Monthly                                                                |                                |                                                 |                     |                    |                        | 0.10/0.06 <sup>†</sup> |
| A Few Times a Month                                                    |                                |                                                 |                     |                    |                        | 0.09/0.06              |
| Weekly or more                                                         |                                |                                                 |                     |                    |                        | 0.08/0.05              |
| <i>Coefficient Comparisons</i>                                         |                                | <i>b</i> Coefficients [95% Confidence Interval] |                     |                    |                        |                        |
| ( <i>cf.</i> Block 2)                                                  | Block 3a                       | Block 3b                                        | Block 3c            | Block 3d           | Block 3e               |                        |
| 1                                                                      | 0.00 [-0.01, 0.02]             | 0.00 [-0.01, 0.02]                              | 0.02 [-0.01, 0.04]  | 0.00 [0.00, 0.01]  | 0.00 [-0.01, 0.01]     |                        |
| 2                                                                      | 0.01 [-0.01, 0.03]             | 0.01 [-0.01, 0.03]                              | 0.02 [-0.01, 0.05]  | 0.01 [-0.01, 0.02] | 0.00 [-0.01, 0.01]     |                        |
| 3                                                                      | 0.01 [-0.01, 0.03]             | 0.01 [-0.01, 0.02]                              | 0.02 [-0.01, 0.05]  | 0.01 [0.00, 0.03]  | 0.00 [-0.01, 0.01]     |                        |
| 4                                                                      | 0.01 [0.00, 0.03] <sup>†</sup> | 0.02 [0.00, 0.03]*                              | 0.03 [0.01, 0.05]** | 0.01 [0.00, 0.03]  | -0.01 [-0.02, 0.01]    |                        |
| 5                                                                      | 0.04 [0.01, 0.08]**            | 0.04 [0.02, 0.07]**                             | 0.05 [0.00, 0.10]*  | 0.00 [-0.01, 0.02] | 0.00 [-0.01, 0.02]     |                        |
| 6                                                                      | 0.05 [0.02, 0.08]**            | 0.05 [0.02, 0.07]**                             | 0.06 [0.01, 0.11]*  | 0.00 [-0.01, 0.02] | 0.00 [-0.01, 0.01]     |                        |
| 7                                                                      | 0.05 [0.02, 0.08]**            | 0.04 [0.02, 0.07]**                             | 0.06 [0.01, 0.10]*  | 0.00 [-0.01, 0.01] | 0.00 [-0.01, 0.02]     |                        |
| 8                                                                      | 0.02 [-0.01, 0.05]             | 0.00 [-0.02, 0.02]                              | 0.07 [0.03, 0.12]** | 0.00 [-0.02, 0.01] | 0.01 [-0.01, 0.02]     |                        |
| 9                                                                      | 0.01 [-0.01, 0.03]             | 0.02 [0.00, 0.03] <sup>†</sup>                  | 0.00 [-0.02, 0.03]  | 0.00 [-0.01, 0.01] | -0.01 [-0.02, 0.01]    |                        |

Note. <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality  
; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

**Table B9***Results for Satisfaction with Life in Model Series Two, Block 1, 2, and 4 (N = 7,262)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |                |                |
|--------------------------------------------------------|-------------------------------------------|----------------|----------------|
|                                                        | Block 1                                   | Block 2        | Block 4        |
| Constant                                               | 7.08/0.27 ***                             | 6.59/0.32 ***  | 4.68/0.55 ***  |
| <b><i>Covariates</i></b>                               |                                           |                |                |
| <i>Age (25-34 = Base)</i>                              |                                           |                |                |
| 35-44                                                  | -0.28/0.14 *                              | -0.29/0.14 *   | -0.18/0.13     |
| 45-54                                                  | 0.05/0.13                                 | 0.03/0.13      | 0.05/0.12      |
| 55-64                                                  | 0.21/0.13                                 | 0.18/0.13      | 0.22/0.12 †    |
| 65-74                                                  | 0.41/0.16 *                               | 0.38/0.16 *    | 0.34/0.14 *    |
| 75+                                                    | 0.67/0.19 ***                             | 0.60/0.18 **   | 0.57/0.17 **   |
| <i>Sex (Female = Base)</i>                             |                                           |                |                |
| Male                                                   | 0.00/0.07                                 | 0.02/0.07      | 0.00/0.07      |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |                |                |
| Widowed/Separated/Divorced                             | -0.45/0.11 ***                            | -0.43/0.11 *** | -0.50/0.11 *** |
| Single                                                 | -0.74/0.13 ***                            | -0.70/0.12 *** | -0.78/0.11 *** |
| <i>Level of Education (High School or Less = Base)</i> |                                           |                |                |
| Less than Bachelor's                                   | -0.07/0.10                                | -0.06/0.10     | -0.05/0.09     |
| Bachelor's or Higher                                   | 0.00/0.11                                 | -0.01/0.11     | 0.04/0.11      |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |                |                |
| Quebec                                                 | -0.03/0.10                                | 0.00/0.11      | 0.05/0.10      |
| Ontario                                                | -0.12/0.09                                | -0.11/0.09     | -0.06/0.09     |
| Prairies                                               | -0.21/0.11 †                              | -0.22/0.11 *   | -0.14/0.11     |
| British Colombia                                       | -0.35/0.12 **                             | -0.31/0.12 **  | -0.22/0.11 *   |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |                |                |
| Visible Minority                                       | 0.25/0.09 **                              | 0.17/0.09 †    | 0.13/0.09      |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |                |                |
| \$25,000-\$49,999                                      | -0.01/0.19                                | -0.03/0.19     | 0.03/0.19      |
| \$50,000-\$74,999                                      | 0.28/0.19                                 | 0.27/0.19      | 0.26/0.18      |
| \$75,000-\$99,999                                      | 0.29/0.19                                 | 0.27/0.19      | 0.26/0.18      |
| >\$100,000                                             | 0.46/0.18 *                               | 0.46/0.18 *    | 0.42/0.17 *    |
| <i>Labour Force Status (Unemployed = Base)</i>         |                                           |                |                |
| Not in Labour Force                                    | 0.51/0.19 **                              | 0.48/0.18 *    | 0.35/0.18 *    |
| Employed                                               | 0.56/0.16 ***                             | 0.55/0.16 **   | 0.45/0.16 **   |
| <b><i>R/S Social Engagement</i></b>                    |                                           |                |                |
| <i>R/S Attendance (Not at all = Base)</i>              |                                           |                |                |
| Once or Twice a Year                                   |                                           | 0.00/0.10      | -0.07/0.10     |
| Three Times a Year                                     |                                           | 0.25/0.12 *    | 0.16/0.12      |
| Monthly or more                                        |                                           | 0.18/0.11 †    | 0.08/0.10      |
| Weekly or more                                         |                                           | 0.25/0.10 *    | 0.17/0.10      |
| <i>Contact with Religious Friends (None = Base)</i>    |                                           |                |                |
| A few                                                  |                                           | 0.32/0.18 †    | 0.09/0.17      |
| About half                                             |                                           | 0.48/0.18 **   | 0.22/0.17      |

|                                                                                                                                                                                         | <i>b</i> Coefficients/BRR Standard Errors |                         |                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------|--------------------------|
|                                                                                                                                                                                         | Block 1                                   | Block 2                 | Block 4                  |
| Most                                                                                                                                                                                    |                                           | 0.42/0.17 <sup>*</sup>  | 0.16/0.17                |
| All                                                                                                                                                                                     |                                           | 0.50/0.18 <sup>**</sup> | 0.28/0.19                |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i>                                                                                                     |                                           |                         |                          |
| Most Active in R/S Organizations                                                                                                                                                        |                                           | 0.10/0.12               | 0.10/0.11                |
| <b>General Social Engagement</b>                                                                                                                                                        |                                           |                         |                          |
| <i>Number of Close Friends (None = Base)</i>                                                                                                                                            |                                           |                         |                          |
| 1-4                                                                                                                                                                                     |                                           |                         | 0.16/0.19                |
| 5-9                                                                                                                                                                                     |                                           |                         | 0.39/0.20 <sup>†</sup>   |
| 10-19                                                                                                                                                                                   |                                           |                         | 0.47/0.21 <sup>*</sup>   |
| 20-29                                                                                                                                                                                   |                                           |                         | 0.52/0.30 <sup>†</sup>   |
| >30                                                                                                                                                                                     |                                           |                         | 0.88/0.28 <sup>**</sup>  |
| <i>Number of Other Friends (None = Base)</i>                                                                                                                                            |                                           |                         |                          |
| 1-19                                                                                                                                                                                    |                                           |                         | 0.65/0.29 <sup>*</sup>   |
| 20-49                                                                                                                                                                                   |                                           |                         | 0.80/0.29 <sup>**</sup>  |
| 50-79                                                                                                                                                                                   |                                           |                         | 0.57/0.31 <sup>†</sup>   |
| >80                                                                                                                                                                                     |                                           |                         | 0.75/0.32 <sup>*</sup>   |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>                                                                                                                       |                                           |                         |                          |
| Dissatisfied                                                                                                                                                                            |                                           |                         | 0.25/0.41                |
| Neither                                                                                                                                                                                 |                                           |                         | 0.75/0.39 <sup>†</sup>   |
| Satisfied                                                                                                                                                                               |                                           |                         | 1.28/0.38 <sup>**</sup>  |
| Very Satisfied                                                                                                                                                                          |                                           |                         | 1.75/0.39 <sup>***</sup> |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i>                                                                                                                  |                                           |                         |                          |
| Once or Twice a Year                                                                                                                                                                    |                                           |                         | 0.20/0.11 <sup>†</sup>   |
| Monthly                                                                                                                                                                                 |                                           |                         | 0.13/0.11                |
| A Few Times a Month                                                                                                                                                                     |                                           |                         | 0.27/0.11 <sup>*</sup>   |
| Weekly or more                                                                                                                                                                          |                                           |                         | 0.06/0.10                |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>                                                                                                                     |                                           |                         |                          |
| Once or Twice a Year                                                                                                                                                                    |                                           |                         | -0.10/0.11               |
| Monthly                                                                                                                                                                                 |                                           |                         | -0.03/0.11               |
| A Few Times a Month                                                                                                                                                                     |                                           |                         | -0.16/0.12               |
| Weekly or more                                                                                                                                                                          |                                           |                         | -0.24/0.10 <sup>*</sup>  |
| <i>Note.</i> <sup>†</sup> $p < .10$ ; <sup>*</sup> $p < .05$ ; <sup>**</sup> $p < .01$ ; <sup>***</sup> $p < .001$ ; BRR = Bootstrap Repeated Replicate;<br>R/S = Religion/Spirituality |                                           |                         |                          |

**Table B10**

*Results for Satisfaction with Life in Model Series Two, Block 3a through 3f (N = 7,262)*

|                                                        | <i>b</i> Coefficients/BRR Standard Errors |               |                         |               |                        |
|--------------------------------------------------------|-------------------------------------------|---------------|-------------------------|---------------|------------------------|
|                                                        | Block 3a                                  | Block 3b      | Block 3c                | Block 3d      | Block 3e               |
| Constant                                               | 6.30/0.35***                              | 5.99/0.41***  | 5.50/0.48***            | 6.49/0.32***  | 6.61/0.32***           |
| <i>Age (25-34 = Base)</i>                              |                                           |               |                         |               |                        |
| 35-44                                                  | -0.24/0.14 <sup>†</sup>                   | -0.28/0.14*   | -0.20/0.13              | -0.30/0.14*   | -0.29/0.14*            |
| 45-54                                                  | 0.05/0.13                                 | 0.03/0.13     | 0.05/0.12               | 0.02/0.13     | 0.03/0.13              |
| 55-64                                                  | 0.21/0.13                                 | 0.21/0.13     | 0.20/0.12               | 0.17/0.13     | 0.19/0.13              |
| 65-74                                                  | 0.40/0.16*                                | 0.41/0.15**   | 0.34/0.15*              | 0.37/0.15*    | 0.38/0.16*             |
| 75+                                                    | 0.63/0.18**                               | 0.63/0.18**   | 0.57/0.17**             | 0.60/0.18**   | 0.59/0.18**            |
| <i>Sex (Female = Base)</i>                             |                                           |               |                         |               |                        |
| Male                                                   | 0.01/0.07                                 | 0.00/0.07     | 0.03/0.07               | 0.01/0.07     | 0.01/0.07              |
| <i>Marital Status (Married/Common-Law = Base)</i>      |                                           |               |                         |               |                        |
| Widowed/Separated/Divorced                             | -0.46/0.11***                             | -0.42/0.11*** | -0.49/0.11***           | -0.43/0.11*** | -0.44/0.11***          |
| Single                                                 | -0.73/0.12***                             | -0.69/0.12*** | -0.76/0.11***           | -0.72/0.12*** | -0.71/0.12***          |
| <i>Level of Education (High School or Less = Base)</i> |                                           |               |                         |               |                        |
| Less than Bachelor's                                   | -0.07/0.10                                | -0.06/0.10    | -0.06/0.10              | -0.07/0.10    | -0.05/0.10             |
| Bachelor's or Higher                                   | -0.04/0.11                                | -0.01/0.11    | 0.05/0.10               | -0.02/0.11    | 0.01/0.11              |
| <i>Region of Residence (Atlantic = Base)</i>           |                                           |               |                         |               |                        |
| Quebec                                                 | 0.02/0.11                                 | 0.02/0.11     | 0.02/0.10               | 0.00/0.11     | 0.00/0.11              |
| Ontario                                                | -0.12/0.09                                | -0.10/0.09    | -0.07/0.09              | -0.10/0.09    | -0.10/0.09             |
| Prairies                                               | -0.22/0.11*                               | -0.22/0.11*   | -0.14/0.11              | -0.22/0.11*   | -0.22/0.11*            |
| British Colombia                                       | -0.34/0.12**                              | -0.31/0.12**  | -0.22/0.11 <sup>†</sup> | -0.30/0.12*   | -0.30/0.12*            |
| <i>Visible Minority Status (Non-Minority = Base)</i>   |                                           |               |                         |               |                        |
| Visible Minority                                       | 0.20/0.09*                                | 0.20/0.09*    | 0.09/0.09               | 0.19/0.09*    | 0.17/0.09 <sup>†</sup> |
| <i>Annual Income (&lt;\$24,999 = Base)</i>             |                                           |               |                         |               |                        |
| \$25,000-\$49,999                                      | -0.05/0.19                                | -0.04/0.20    | 0.03/0.18               | 0.00/0.19     | -0.02/0.19             |
| \$50,000-\$74,999                                      | 0.25/0.19                                 | 0.25/0.19     | 0.28/0.17               | 0.29/0.18     | 0.28/0.18              |

|                                                                                     | <i>b</i> Coefficients/BRR Standard Errors |                        |                        |                        |                        |
|-------------------------------------------------------------------------------------|-------------------------------------------|------------------------|------------------------|------------------------|------------------------|
|                                                                                     | Block 3a                                  | Block 3b               | Block 3c               | Block 3d               | Block 3e               |
| \$75,000-\$99,999                                                                   | 0.23/0.19                                 | 0.26/0.19              | 0.28/0.18              | 0.30/0.18              | 0.28/0.19              |
| >\$100,000                                                                          | 0.40/0.19*                                | 0.44/0.18*             | 0.47/0.17**            | 0.48/0.18**            | 0.47/0.18*             |
| <i>Labour Force Status (Unemployed = Base)</i>                                      |                                           |                        |                        |                        |                        |
| Not in Labour Force                                                                 | 0.46/0.18*                                | 0.49/0.18**            | 0.36/0.18*             | 0.46/0.18*             | 0.47/0.18*             |
| Employed                                                                            | 0.54/0.16**                               | 0.54/0.16**            | 0.47/0.16**            | 0.54/0.16**            | 0.54/0.16**            |
| <b><i>R/S Social Engagement</i></b>                                                 |                                           |                        |                        |                        |                        |
| <i>R/S Attendance (Not at all = Base)</i>                                           |                                           |                        |                        |                        |                        |
| 1. Once or Twice a Year                                                             | -0.02/0.10                                | -0.01/0.10             | -0.05/0.10             | -0.01/0.10             | -0.01/0.10             |
| 2. Three Times a Year                                                               | 0.22/0.12 <sup>†</sup>                    | 0.23/0.12 <sup>†</sup> | 0.20/0.12 <sup>†</sup> | 0.24/0.12*             | 0.25/0.12*             |
| 3. Monthly or more                                                                  | 0.16/0.11                                 | 0.17/0.11              | 0.13/0.10              | 0.15/0.11              | 0.17/0.11              |
| 4. Weekly or more                                                                   | 0.23/0.10*                                | 0.22/0.10*             | 0.18/0.10 <sup>†</sup> | 0.24/0.11*             | 0.27/0.10**            |
| <i>Contact with Religious Friends (None = Base)</i>                                 |                                           |                        |                        |                        |                        |
| 5. A few                                                                            | 0.22/0.17                                 | 0.23/0.18              | 0.20/0.17              | 0.31/0.17 <sup>†</sup> | 0.33/0.18 <sup>†</sup> |
| 6. About half                                                                       | 0.37/0.18*                                | 0.39/0.18*             | 0.33/0.17 <sup>†</sup> | 0.47/0.18**            | 0.48/0.18**            |
| 7. Most                                                                             | 0.30/0.17 <sup>†</sup>                    | 0.33/0.17*             | 0.28/0.16 <sup>†</sup> | 0.41/0.17*             | 0.42/0.17*             |
| 8. All                                                                              | 0.45/0.18*                                | 0.49/0.19**            | 0.32/0.18 <sup>†</sup> | 0.50/0.18**            | 0.49/0.19**            |
| <i>Most Active in R/S Organizations (Most Active in Other Organizations = Base)</i> |                                           |                        |                        |                        |                        |
| 9. Most Active in R/S Organizations                                                 | 0.07/0.12                                 | 0.09/0.12              | 0.10/0.12              | 0.09/0.12              | 0.12/0.12              |
| <b><i>General Social Engagement</i></b>                                             |                                           |                        |                        |                        |                        |
| <i>Number of Close Friends (None = Base)</i>                                        |                                           |                        |                        |                        |                        |
| 1-4                                                                                 | 0.29/0.19                                 |                        |                        |                        |                        |
| 5-9                                                                                 | 0.69/0.20**                               |                        |                        |                        |                        |
| 10-19                                                                               | 0.78/0.21***                              |                        |                        |                        |                        |
| 20-29                                                                               | 0.87/0.29**                               |                        |                        |                        |                        |
| >30                                                                                 | 1.19/0.27***                              |                        |                        |                        |                        |
| <i>Number of Other Friends (None = Base)</i>                                        |                                           |                        |                        |                        |                        |
| 1-19                                                                                |                                           | 0.56/0.32 <sup>†</sup> |                        |                        |                        |
| 20-49                                                                               |                                           | 0.87/0.32**            |                        |                        |                        |
| 50-79                                                                               |                                           | 0.69/0.33*             |                        |                        |                        |

|                                                                        |  | <i>b</i> Coefficients/BRR Standard Errors       |                     |                                 |                    |                     |
|------------------------------------------------------------------------|--|-------------------------------------------------|---------------------|---------------------------------|--------------------|---------------------|
|                                                                        |  | Block 3a                                        | Block 3b            | Block 3c                        | Block 3d           | Block 3e            |
| >80                                                                    |  |                                                 | 0.96/0.34**         |                                 |                    |                     |
| <i>Satisfaction with Communication (Very Dissatisfied = Base)</i>      |  |                                                 |                     |                                 |                    |                     |
| Dissatisfied                                                           |  |                                                 |                     | 0.25/0.40                       |                    |                     |
| Neither                                                                |  |                                                 |                     | 0.72/0.38 <sup>†</sup>          |                    |                     |
| Satisfied                                                              |  |                                                 |                     | 1.29/0.37**                     |                    |                     |
| Very Satisfied                                                         |  |                                                 |                     | 1.81/0.37***                    |                    |                     |
| <i>Frequency of In-person Activities (Not in the Past Year = Base)</i> |  |                                                 |                     |                                 |                    |                     |
| Once or Twice a Year                                                   |  |                                                 |                     |                                 | 0.16/0.10          |                     |
| Monthly                                                                |  |                                                 |                     |                                 | 0.15/0.10          |                     |
| A Few Times a Month                                                    |  |                                                 |                     |                                 | 0.32/0.11**        |                     |
| Weekly or more                                                         |  |                                                 |                     |                                 | 0.10/0.10          |                     |
| <i>Frequency of Online Activities (Not in the Past Year = Base)</i>    |  |                                                 |                     |                                 |                    |                     |
| Once or Twice a Year                                                   |  |                                                 |                     |                                 |                    | -0.09/0.10          |
| Monthly                                                                |  |                                                 |                     |                                 |                    | 0.04/0.12           |
| A Few Times a Month                                                    |  |                                                 |                     |                                 |                    | -0.07/0.13          |
| Weekly or more                                                         |  |                                                 |                     |                                 |                    | -0.20/0.10*         |
| <i>Coefficient Comparisons</i>                                         |  | <i>b</i> Coefficients [95% Confidence Interval] |                     |                                 |                    |                     |
| <i>(cf. Block 2)</i>                                                   |  | Block 3a                                        | Block 3b            | Block 3c                        | Block 3d           | Block 3e            |
| 1                                                                      |  | 0.01 [-0.02, 0.04]                              | 0.01 [-0.02, 0.03]  | 0.05 [-0.01, 0.10] <sup>†</sup> | 0.01 [-0.01, 0.03] | 0.01 [-0.01, 0.02]  |
| 2                                                                      |  | 0.03 [-0.01, 0.08]                              | 0.02 [-0.01, 0.05]  | 0.05 [-0.01, 0.11] <sup>†</sup> | 0.01 [-0.01, 0.03] | 0.00 [-0.02, 0.02]  |
| 3                                                                      |  | 0.02 [-0.02, 0.06]                              | 0.01 [-0.02, 0.04]  | 0.05 [-0.01, 0.11]              | 0.03 [0.00, 0.06]* | 0.00 [-0.01, 0.02]  |
| 4                                                                      |  | 0.03 [0.00, 0.06] <sup>†</sup>                  | 0.03 [0.01, 0.06]*  | 0.07 [0.02, 0.12]**             | 0.02 [-0.01, 0.05] | -0.02 [-0.04, 0.01] |
| 5                                                                      |  | 0.10 [0.04, 0.17]**                             | 0.09 [0.03, 0.14]** | 0.12 [0.01, 0.23]*              | 0.01 [-0.02, 0.04] | -0.01 [-0.04, 0.02] |
| 6                                                                      |  | 0.11 [0.05, 0.17]**                             | 0.09 [0.03, 0.14]** | 0.15 [0.04, 0.26]**             | 0.01 [-0.02, 0.04] | 0.00 [-0.03, 0.02]  |
| 7                                                                      |  | 0.12 [0.06, 0.18]***                            | 0.08 [0.03, 0.13]** | 0.14 [0.03, 0.25]*              | 0.01 [-0.02, 0.04] | 0.00 [-0.03, 0.02]  |
| 8                                                                      |  | 0.05 [-0.01, 0.11] <sup>†</sup>                 | 0.01 [-0.03, 0.05]  | 0.18 [0.07, 0.29]**             | 0.00 [-0.03, 0.03] | 0.01 [-0.02, 0.03]  |
| 9                                                                      |  | 0.03 [-0.01, 0.07]                              | 0.01 [-0.02, 0.05]  | 0.01 [-0.05, 0.06]              | 0.01 [-0.01, 0.03] | -0.02 [-0.04, 0.01] |

*Note.* <sup>†</sup>  $p < .10$ ; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ ; BRR = Bootstrap Repeated Replicate; R/S = Religion/Spirituality  
; coefficient comparisons show differences between coefficient estimates of the same category between Block 2 and Block 4

## Curriculum Vitae

**Candidate's Full Name:** Yuzhi Yang

**University Attended:**

Dalhousie University (Saint John), Visiting Graduate Research Student, 2025-Present

University of New Brunswick (Saint John), Master of Arts, Experimental Psychology,  
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University of New Brunswick (Fredericton), Diploma in University Teaching, 2023

University of New Brunswick (Saint John), Bachelor of Arts, First Class Honours  
(Psychology), Minor in Criminal Justice, 2019-2023

**Publications:**

Speed, D., Lamont, A., Earle, E., & **Yang, Y.** (2026). A question best addressed in moderation: Religious affiliation and religiosity predicting alcohol consumption in Canadians. *PLOS One*, 21(4), e0340890. <https://doi.org/10.1371/journal.pone.0340890>

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Errington, T. M. (2026). Investigating the replicability of the social and behavioral sciences. *Nature*, 652(8108), 143–150. <https://doi.org/10.1038/s41586-025-10078-y>

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<https://doi.org/10.1371/journal.pone.0301008>

**Manuscript Submitted:**

Speed, D., **Yang, Y.**, Earle, E., MacDonald, J., & Lamont, A. (in press). Playing for a tie: Nonreligion and health. In P. Zuckerman & A. Zamuşinski (Eds.), *Oxford Handbook of Apostasy and Religious Deconversion*. Oxford University Press. Chapter in press

Speed, D., & **Yang, Y.** In god(lessness) we trust? Comparing atheists' and non-atheists' resilience. *Journal of Religion and Health*. Manuscript submitted for publication.

**Conference Presentations:**

Arshinoff, S., Bossom, I., Nasser, A., Tan, J., & **Yang, Y.** (2026). *I finished my research, now what? Exploring the peer-review and publication process in academic psychology journals*. Canadian Psychological Association 87th Annual Convention, Montreal, QC, Canada.

**Yang, Y.**, Lamont, A., Nombro, E., & Woodhall-Melnik, J. (2026). *Subsidized housing and healthcare utilization: A prospective cohort study using linked administrative health data*. Canadian Research Data Centre Network 2026 Conference, Lethbridge, AB, Canada.

**Yang, Y.**, & Speed, D. (2025). *In god(lessness) we trust? Comparing atheists' and non-atheists' resilience* [Oral Presentation]. Canadian Psychological Association 86th Annual Convention, St. John's, NL, Canada.

**Yang, Y.,** Leblanc Haley, T., & Woodhall-Melnik, J. (2025). *Scant protection: Rent regulation and health impact of precarious housing* [Oral Presentation]. Canadian Research Data Centre Network Annual Conference, Ottawa, ON, Canada.

**Yang, Y.,** & Speed, D. (2024). *Mediocrity is the only sin? Exploring a nonmonotonic relationship between religiosity/spirituality and psychological resilience using the 2016 general social survey* [Poster Presentation]. Student Psychology Studies Symposium, University of New Brunswick, Saint John, NB, Canada.

Speed, D., & **Yang, Y.** (2024). *The relationship between religious identity and resilience* [Oral Presentation]. Department of Psychology Colloquium, University of New Brunswick, Saint John, NB, Canada.

Leblanc-Haley, T., & **Yang, Y.** (2023). *Newcomer housing in New Brunswick* [Virtual Presentation]. Key to Home: Diverse Perspectives on Managing the Housing Crisis, Saint John, NB, Canada.

**Yang, Y.,** Law, M., & Vaghri, Z. (2023). *Exploring the impact of the 2011 New Brunswick Mental Health Action Plan* [Plenary Session]. International Summer Course on the Rights of the Child, University de Moncton, Moncton, NB, Canada.

**Yang, Y.,** & Speed, D. (2023). *Jesus, take the wheel! Exploring the association between religiosity/spirituality and resiliency in a Canadian population* [Oral Presentation]. Canadian Psychological Association 84th Annual Convention, Toronto, ON, Canada.

Speed, D., Lamont, A., Earle, E., & **Yang, Y.** (2023). *Some bodies are temples, others are amusement parks: Differences in substance use rates across religious and nonreligious identities* [Oral Presentation]. International Nonreligion and Secularity Research Network (NSRN) conference, Ottawa, ON, Canada.

**Academic Prizes:**

Mitacs Accelerate Grant (2025-2027)

School of Graduate Studies Student Travel Award (2024)

Board of Governors Merit Awards for Graduate Studies (2023)

University of New Brunswick Saint John Campus Scholarship (2022-2023)

New Brunswick Health Research Foundation Summer Studentship Award (2022)

Governor Thomas Carleton Scholarship (2019-2020)