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Religion/Spirituality, Mental Health, and the Lifespan: Findings from a Representative Sample of Canadian Adults

Roxana Manoiu[1], Nicole G. Hammond[2] , Stephanie Yamin[1] and
Arne Stinchcombe[3]

[1]Faculty of Human Sciences, Saint Paul University, Ottawa, Ontario, Canada, [2]School of Epidemiology and Public
Health, University of Ottawa, Ottawa, Ontario, Canada and [3]School of Psychology, University of Ottawa, Ottawa,
Ontario, Canada

Résumé

Les théories du développement de l'adulte et du vieillissement suggèrent que les personnes âgées se tournent vers la religion et la spiritualité (R/S) pour donner un sens et un but à leur vie, et pour les aider à faire face aux expériences négatives. Nous avons analysé la relation entre la R/S, la santé mentale positive et la maladie mentale (c.-à-d. la détresse psychologique) à l'âge adulte, et la possibilité d'un rôle modérateur de l'âge. Les données de l'Enquête sur la santé dans les collectivités canadiennes – Santé mentale (ESCC-SM) de 2012, une étude nationale sur la santé de la population, ont été utilisées. Le modèle de régression linéaire multivariée a révélé une interaction significative R/S × âge pour la santé mentale positive ($p = 0.001$). Bien que la R/S soit associée à une santé mentale positive chez tous les participants, la relation entre la R/S et la santé mentale positive était plus forte chez les personnes plus âgées. Aucune relation statistiquement significative n'a été observée entre la R/S et la détresse psychologique. Les résultats soulignent l'importance de la R/S pour une santé mentale positive tout au long de la vie adulte. Les relations différentielles entre la R/S, la santé mentale positive et la maladie mentale mettent en évidence l'utilité du double-continuum de la santé mentale et de la maladie mentale afin de comprendre leurs déterminants respectifs.

Abstract

Theories of adult development and aging suggest that older adults turn towards religion and spirituality (R/S) to increase meaning and purpose in life, and to assist in coping with adverse experience. We sought to examine the relationship between R/S and positive mental health and mental illness (i.e., psychological distress) in adulthood, and to determine the potential moderating role of age. Data from the 2012 Canadian Community Health Survey – Mental Health (CCHS-MH), a national population health study, were used. A multivariable linear regression model revealed a significant R/S by age interaction for positive mental health ($p = 0.001$). Although R/S was associated with positive mental health among all participants, there was a stronger relationship between R/S and positive mental health for older adults. No statistically significant relationship between R/S and psychological distress was observed. Findings highlight the importance of R/S to positive mental health across the adult lifespan. The differential relationships among R/S, positive mental health, and mental illness underscore the utility of using the dual-continua of mental health and mental illness in order to understand their respective determinants.

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Promoting mental health and reducing mental illness have been identified as global health priorities (World Health Organization, 2002). Mental illness can be understood as significant changes in cognition, emotion regulation, and behavior, which may be caused by underlying psychological, biological, and developmental dysfunctions (American Psychiatric Association, 2013). Mental illness also involves clinically significant disturbances in social, occupational, and daily life activities (American Psychiatric Association, 2013).

It is estimated that one in five Canadians are affected by mental illness every year (Smetanin et al., 2011). The most prevalent forms of mental illness in Canada are depression and anxiety (Public Health Agency of Canada, 2015). Mental illness is a major cause of disability and, in Canada, it has been estimated that mental illness accounts for more than $6 billion in lost productivity per year (Smetanin et al., 2011). Cross-sectional data suggest that the prevalence of depression is higher among women and young adults and that the prevalence of depression

progressively decreases across the adult lifespan (Pearson, Janz, & Ali, 2015; Statistics Canada, 2016).

Conversely, mental health is defined as a positive state of well-being, where one is able to cope with everyday life stressors and make contributions to society (World Health Organization, 2014). Positive mental health is characterized by a cluster of positive indicators related to the subjective experience of an individual, such as their lived experiences of positive feelings (i.e., emotional well-being) and positive functioning (i.e., psychological well-being and social well-being; Keyes, 2009). Positive mental health consists of individuals' subjective appraisal of their own happiness, life satisfaction, and psychological/social well-being (Keyes, 1998). The absence of positive mental health has been linked to poor academic performance, suicidal behaviour, chronic disease, and mortality (Keyes, 2007; 2012; Keyes & Simoes, 2012).

The distinction between mental health and mental illness is captured within the dual-continua model of mental health and mental illness (Keyes, 2009). The dual-continua model suggests that a person may experience high positive mental health while experiencing no signs of mental illness, whereas others may experience poor mental health while concurrently living with symptoms of mental illness (Keyes, 2009). On the one hand, flourishing individuals are those with positive mental health who exhibit high levels of well-being, positive emotions (e.g., happiness, sense of life satisfaction, peacefulness), and positive functioning (e.g., trusting relationships, satisfaction with oneself, feeling of belonging to a community, feeling that their life is useful towards the community) (Keyes, 2002; 2009). On the other hand, languishing individuals (i.e., individuals without mental health) experience feelings of emptiness, stagnation, and exhibit lower life satisfaction and well-being (Keyes, 2002; Keyes, 2005).

In a cross-sectional study of Dutch participants whose ages ranged across the adult lifespan, Westerhof and Keyes (2010) examined whether mental illness and mental health varied simultaneously by age group. Consistent with existing literature (e.g., Beekman, Copeland, & Prince, 1999), older adults were found to exhibit fewer symptoms of mental illness, except for participants in the oldest-old age category, who, the authors suggest, likely experience differences in life circumstances. In terms of positive mental health, the authors concluded that older participants report a similar degree of mental health as do younger participants. These findings align with more recent data showing consistent rates of flourishing across the lifespan (Gilmour, 2014).

Within the last 20 years, there has been a growing interest in the factors that promote mental health and, in particular, the relationship between religion and/or spirituality and mental health (Dein, 2014). Although religion and spirituality are often studied together (Koenig, 2009), it should be noted that there are differences between these constructs. There is no single accepted definition of spirituality; however, Pargament, Mahoney, Exline, Jones, and Shafranske (2013) suggest that spirituality may involve the ongoing search for the sacred and a belief in a higher power. Koenig, King, and Carson (2012) describe spirituality as a connection with the transcendent, which may be found within an organized religion, meditation, or the self. Spirituality may also involve the search for and connection with the transcendent, a higher power, and/or supernatural and mystical forces (Koenig et al., 2012). It is often considered an individualistic concept, oriented towards the self, as it is less observable than religion (Koenig, McCullough, & Larson, 2001). Religion, on the other hand, is often understood as formal practices involving agreed-upon behaviours (Koenig et al., 2001) that take place within the context of institutions and traditions

(Pargament et al., 2013). Pargament et al. (2013) argue that the primary goal of religion is to facilitate spirituality. Given these differences and similarities, it is challenging to tease apart the independent effects of these two constructs within research (Baiden & Fuller-Thomson, 2016; Fuller-Thomson, Agbeyaka, LaFond, & Bern-Klug, 2016; Gilmour, 2014; Koenig, 2009); as such, we refer to religion/spirituality (R/S) throughout this study.

R/S has been shown to be positively associated with well-being, hope, optimism, and increased life satisfaction (Lifshitz, Nimrod, & Bachner, 2018). Based on Canadian data, Dilmaghani (2018) also noted that religiosity brought forward a sense of belonging, means for self-improvement, and a sense of direction and meaning in life. Further, R/S is associated with increased social and emotional support, health behaviours, positive cognitive appraisals, a sense of meaning, and higher self-esteem (Dein, 2006; 2018). Although R/S is associated with mental health outcomes throughout the lifespan (Bailly et al., 2018), the literature specifically highlights its positive role in the lives of older adults (Damianakis & Marziali, 2012; Wink, Dillon, & Larsen, 2005). In particular, evidence suggests that aging is a determinant of mental health (Fuller-Thomson et al., 2016) and that the importance of R/S increases over the lifespan (Koenig & Cohen, 2006; Wink & Dillon, 2002). Older adults who report being religious and/or spiritual are more likely to report higher levels of well-being, meaningful experiences, and positive emotions; lower levels of anxiety; and greater vitality (Fry, 2000; Lawler-Row & Elliott, 2009; Lee, 2011; Sadler & Biggs, 2007).

Some authors suggest that one may turn towards R/S in efforts to cope with life stressors, which tend to occur in older age, including the onset of chronic disease, loss of family and friends, and existential and financial issues (Koenig, 2006). Others suggest that as individuals age, their personal resources decline and they look to external coping resources (Baltes & Smith, 1999). Some lines of evidence point to greater involvement in and importance of religion and spirituality among older people (Argue, Johnson, & White, 1999; Wink & Dillon, 2001). In line with these findings, Tornstam's (1989) theory of gerotranscendence posits that aging is a developmental stage that involves a natural shift from a rational and materialistic world-view to one that is focused on the cosmic and transcendental, and often accompanied by increased satisfaction (Wadensten, 2007).

Consistent with the theory of gerotranscendence and with definitions of R/S, it may be that R/S becomes increasingly important with aging. Indeed, a clinically informed qualitative study of recovery from depression among older adults showed that participants who were admitted to a psychiatric hospital discovered new world views and ways of living, which often involved acceptance of the self and a heightened sense of spirituality (Tanaka, 2018). Agli, Bailly, and Ferrand (2015) noted that faith, religious and spiritual practices, and maintaining social functioning are associated with a slowing of cognitive decline and increasing quality of life among persons with dementia (Agli et al., 2015). In older samples, R/S has been shown to be positively linked to quality of life (Sawatzy, Ratner, & Chiu, 2005), well-being, acceptance of death, and confidence, as well as satisfaction with the aging process (Shaw, Gullifer, & Wood, 2016).

In his theoretical model outlining the relationship between R/S and health, Krause (2018) suggests that R/S can impact health and well-being by: buffering stress through, for example, religious coping responses; facilitating the provision and receipt of emotional support; and supporting growth through adversity. He highlights the importance of R/S in helping to maintain or rediscover a sense of meaning when faced with adversity. Others have

recognized R/S as a potential source of strength for individuals coping with stressors (Bozard & Sanders, 2011). When considering the evidence highlighting the growing importance of R/S across the lifespan (e.g., Koenig & Cohen, 2006; Wink & Dillon, 2002), it is unsurprising that researchers have found a stronger effect of R/S on health among older age groups (Krause, Pargament, Hill, Wong, & Ironson, 2017). Considering the operationalization of positive mental health (described previously) as well as the already established importance of meaning to mental health, specifically among older adult populations (Fry, 2000; Lawler-Row & Elliott, 2009; Lee, 2011; Sadler & Biggs, 2007), it follows that R/S would be associated with both mental health and mental illness outcomes, an effect that would be strongest among older adults.

Recently, important Canadian work has further elucidated the relationship between R/S and mental health in large population health samples. For example, Dilmaghani (2018) examined participants' ($n = 20,868$) responses to the question "In general, how important are religious or spiritual beliefs in your daily life?" in relation to three single-item outcomes capturing mental well-being. The author categorized participants as either highly religious, of average religiosity, or secularized. In comparison with participants categorized as of average religiosity, highly religious participants and secularized participants showed favourable mental health outcomes. Subsequent work by Speed, Barry, and Cragun (2020) examined the relationship between R/S and mental health outcomes, including positive mental health and psychological distress, in the 2012 Canadian Community Health Survey–Mental Health (CCHS-MH) Component. The results of their analysis indicated that R/S was associated with better mental health outcomes and that social support attenuated those observed relationships.

Evidence suggests that Canada is becoming an increasingly secular society (Pew Research Center, 2013). Given the links between R/S and health, it was of interest to examine the role of R/S on mental health and mental illness across the lifespan within an increasingly secular context. Although important Canadian work has highlighted the positive effect of R/S on health outcomes (e.g., Speed & Fowler, 2021), age has not been explored as a potential effect modifier of the relationships between R/S and mental health and illness. Examining age as a moderator would lend support to the theory of gerotranscendence and augment our knowledge of R/S within the context of an aging population. Therefore, the purpose of this study was to examine the relationship among R/S, mental health, and mental illness in a sample of Canadian adults. Consistent with the aforementioned literature, it was hypothesized that individuals who report drawing strength from R/S beliefs would be more likely to have positive mental health and less likely to report psychological distress. We also hypothesized that the mental health promoting effect of R/S would depend on age, and be most pronounced among older adults (i.e., those 65 years and older).

Method

Study Sample

Data for this study were drawn from the 2012 CCHS-MH Component, a national cross-sectional population health study conducted by Statistics Canada. The CCHS-MH samples persons living within the ten provinces of Canada over a 12-month period. Various groups were excluded from the sample, such as indigenous persons living on reserves, full-time members of the armed forces, and individuals residing in institutional settings (e.g., prisons, long-term care), groups that altogether represent approximately 3 per cent of the entire Canadian population (Statistics Canada, 2018). The full sampling strategy is described elsewhere (Statistics Canada, 2018). The 2012 CCHS-MH respondent level response rate was 86.3 per cent (Statistics Canada, 2018). The sample for this study included respondents 25 years of age and older ($n = 25,113$), and after removal of missing data through listwise deletion, the analytic samples were 20,019 and 18,200 for the analyses involving psychological distress and positive mental health, respectively.

The CCHS utilizes a complex sampling strategy with unequal selection probability, which permits computation of estimates that are representative of the Canadian population, increasing the generalizability of study results when survey weights which consider the CCHS-MH design effect are used. Survey weights were applied to all analyses presented here. We computed normalized survey weights (mean = 1.00), as has been done by others who have used the CCHS-MH (Fuller-Thomson et al., 2016). Normalized survey weights help to protect against artificial increases in the likelihood of observing statistically significant results (Fuller-Thomson et al., 2016). The normalized weights were then divided by the square root of the CCHS-MH design effect to obtain the analytic weights, accounting for clustering of the complex survey design. This two-step approach has been used by others who have used the CCHS (Orr, Potter, Ma, & Colman, 2017). Data were accessed using the CCHS Public Use Microdata file (PUMF), a publicly available data set. Trained interviewers collected participant information through the use of computer assisted personal interviewing (CAPI) and computer assisted telephone interviewing (CATI). This analysis of the data was approved by the Saint Paul University research ethics board (REB).

Covariates

To control for variables already known to be related to mental health and mental illness (Gilmour, 2014; Hooten, 2016), and to account for age-related differences in socio-demographic variables, several covariates were entered into the model.

Age

Participants were asked to report their chronological age in years. To maintain participants' anonymity, the PUMF contains age groups based on 5-year increments (e.g., 25–29). Given our interest in R/S and mental health across the adult lifespan, participants were grouped into three categories to approximate stages of adult development characterized elsewhere in the literature (Wink & Dillon, 2002): young/middle adulthood (i.e., 25–44 years), late middle adulthood (i.e., 45–64 years), and older adulthood (i.e., ≥ 65 years). Similar age categories have been used in previous research using the CCHS-MH (Gilmour, 2014). Note that the results presented here remain unchanged when age is treated as a continuous variable within the models.

Sex

In the survey, participants were asked to indicate their sex as male or female.

Other covariates

Household income was measured by asking participants to report their total household income from all sources. There were five income category brackets: "< 20k", "20–39k", "40–59k",

"60–79k", and "> 80k". Participants' education (i.e., "< secondary school graduation", "secondary school graduation", "some post-secondary", "post-secondary graduation") and marital/relationship status ("single/separated/divorced", "widowed", and "married and common law") were collected. Participants' race/ethnicity was described as white or non-white. Chronic pain was assessed using a single item which asked participants about the extent that pain prevented daily activities (e.g., "no pain or discomfort", "pain prevents no or few activities", and "pain prevents some or most activities"). Close relationships were captured by asking participants whether their relationships provided" them with a sense of emotional security and well-being; responses ranged from, "strongly agree" to "strongly disagree". For the purpose of this study, "strongly agree" and "agree" were collapsed to indicate presence of close relationships. Lifetime prevalence of selected mental health/substance abuse disorders was assessed by asking whether participants had ever been diagnosed with the selected conditions (e.g., major depressive episode, alcohol dependence) by a health professional (yes/no).

Predictor: Strength from R/S

In order to measure strength from R/S, participants were asked one question: "To what extent do your religious or spiritual beliefs give you the strength to face everyday difficulties?". Response options were as follows: "a lot", "some", "a little", or "not at all" (Fuller-Thomson et al., 2016).

Outcomes

Positive mental health

In order to measure positive mental health, participants completed the Mental Health Continuum-Short Form (MHC-SF) (Lamers, Glas, Westerhif, & Bohlmeijer, 2012). The MHC-SF consists of 14 items: 3 of the items measure emotional well-being, and 11 of the items measure positive functioning. The MHC-SF has been shown to have high internal validity, high internal reliability ($\alpha = 0.89$), and moderate test–retest reliability (Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011). An example of a question administered to measure emotional well-being is "In the past month, how often did you feel happy?" An example of a question used to measure positive functioning is "In the past month, how often did you feel good at managing the responsibilities of your daily life?" For each item, response options ranged from, "0-never", "1-once or twice", "2-about once a week", "3-about 2 or 3 times a week", "4-almost every day", and "5-every day". The continuous score for positive mental health was used herein and ranged from 0 to 70, with higher scores reflective of greater positive mental health.

Psychological distress

Kessler's Psychological Distress Scale (K6) is a six-item measure used to assess symptoms related to major depressive disorder (MDD) and generalized anxiety disorder (GAD) based on the *Diagnostic and Statistical Manual of Mental Disorders, 3rd edition, revised* (DSM-III-R) (Kessler et al., 2002). The K6 has shown construct validity across genders (Drapeau et al., 2010) and has been validated in a large community sample (Khan, Chien, & Burton, 2014). Scale items include: "During the past month, how much did these feelings usually interfere with your life or activities" and "During the past month, that is, from now to yesterday, about

how often did you feel sad or depressed?" The response options ranged from: "4-all of the time", "3-most of the time", "2-some of the time", "1-a little of the time", to "0-none of the time". Items were summed in order to obtain a total score which ranged from 0 to 24, where higher scores represented a higher degree of psychological distress. Considering the clinical relevance of the K6 and previous validation work (Prochaska, Sung, Max, Shi, & Ong, 2012), scores < 5 represented low distress, scores from 5 to 13 represented moderate distress, and scores >13 represented severe distress. The moderate and severe categories were merged in order to indicate presence of elevated psychological distress.

Statistical Analysis

Differences in socio-demographic characteristics by respondent age were explored using χ^2 tests of independence for categorical measures and analysis of variance (ANOVA) for the continuous measures. When treating positive mental health as the outcome, we employed a general linear model (i.e., proc glm), weighted to account for the complex survey methodology, to run a multivariable linear regression model. Given the clinical relevance related to elevated psychological distress, we used weighted logistic regression techniques treating moderate/severe distress as the outcome. In order to examine whether the effect of R/S on positive mental health and psychological distress depended on age (i.e., presence of effect modification), an R/S by age interaction was entered into the multivariable regression models. In the case of a statistically significant interaction term, results were probed using the *slice statement* to obtain least squares means which were then visualized (Tobias & Cai, 2010). A (-2) log likelihood test of the change in model fit was used to assess improvement in the logistic regression model with the inclusion of an R/S by age interaction term. Where there was no evidence of effect modification, non-significant interaction terms were removed, and the main effect models are presented. Data were analysed using SAS 9.4 (SAS Institute, Inc., Cary, NC).

Results

Sample Characteristics

As shown in Table 1, 51.3 per cent of respondents were women and 48.7 per cent were men. Seventy-eight percent of participants were white and 21.7 per cent were visible minorities. The majority of respondents resided in higher earning households (≥ $80,000), had obtained a post-secondary education, were single/separated/divorced, reported having close relationships with others, were free of chronic pain, did not have a lifetime mental health diagnosis, and self-reported receiving "a lot" of strength from R/S in order to face everyday difficulties. There were statistically significant differences among age groups across all socio-demographic characteristics. In particular, older participants had lower household incomes, lower levels of education, and were more likely to be white. Older adults in the analytic sample were more likely to be in pain. Older adults were more likely to report drawing strength from R/S and less likely to report a lifetime mental health diagnosis than younger groups. Twenty-two percent of respondents reported moderate-high psychological distress.

Positive Mental Health

The overall test of the positive mental health model was statistically significant ($F[26, 18,173] = 159.05$, $p < 0.001$), with the model

Table 1. Respondent characteristics by age group (*n*=20,019): Canadian Community Health Survey – Mental Health (2012)

	Total %	% 25–44 Years (*n*=6,677)	% 45–64 Years (*n*=7,678)	% ≥65 Years (*n*=5,664)	*p*
Religion/Spirituality					<0.001
Not at all	26.77	34.27	24.09	17.48	
A little	17.23	18.85	17.90	12.70	
Some	22.91	20.94	24.45	23.64	
A lot	33.08	25.94	33.56	46.17	
Sex					<0.001
Male	48.74	49.87	49.26	45.44	
Female	51.26	50.13	50.74	54.56	
Household income					<0.001
<$20,000	3.98	3.11	4.20	5.25	
$20,000 - $39,999	12.00	9.02	8.39	25.21	
$40,000 - $59,999	18.41	15.30	16.19	29.02	
$60,000 - $79,999	17.62	17.47	17.29	18.59	
≥$80,000	48.00	55.10	53.92	21.93	
Education					<0.001
<Secondary school graduation	14.99	7.77	12.94	33.39	
Secondary school graduation	14.90	13.61	16.12	14.93	
Some post-secondary	4.85	5.29	5.00	3.69	
Post-secondary graduation	65.26	73.34	65.94	47.99	
Marital status					<0.001
Married/common-law	70.00	67.48	74.90	64.95	
Widowed	5.58	0.14	2.44	22.71	
Single/separated/divorced	24.42	32.38	22.65	12.35	
Close relationships					0.020
No	3.04	2.62	3.21	3.50	
Yes	96.96	97.38	96.79	96.50	
Race/Ethnicity					
Visible minority	21.71	30.17	18.60	11.39	<0.001
White	78.29	69.83	81.40	88.61	
Pain					<0.001
No pain	77.62	85.18	75.15	67.75	
Prevents no or few activities	13.23	9.87	13.68	18.95	
Prevents some or most activities	9.15	4.95	11.17	13.29	
Lifetime mental health diagnosis					<0.001
No	66.30	65.06	62.48	76.54	
Yes	33.70	34.94	37.52	23.46	
Psychological distress					<0.001
Low	78.31	74.29	78.98	84.87	
Moderate/severe	21.69	25.71	21.02	15.13	
Positive mental health (Mean [SD]]	54.37 (10.53)	54.04 (11.18)	54.18 (11.08)	55.53 (8.57)	<0.001

Note. Table presents results (*p*-value) of χ^2 tests of independence for categorical variables or analysis of variance (ANOVA) for continuous measures. The measure of positive mental health ranged from 0 to 70, with higher scores reflective of higher positive mental health. Survey weights were applied.

Table 2. Multiple linear regression results for the relationship between religion/spirituality and positive mental health

Variable	B	SE	t	p
Intercept	36.68	0.62	58.9	<0.001
Religion/Spirituality x Age[a]				
Not at all x 25–44 years	–			
Not at all x 45–64 years	–			
Not at all x ≥65 years	–			
A little x 25–44 years	–			
A little x 45–64 years	0.75	0.48	1.57	0.117
A little x ≥65 years	1.05	0.69	1.52	0.129
Some x 25–44 years	–			
Some x 45–64 years	1.51	0.45	3.33	0.001
Some x ≥65 years	1.96	0.62	3.17	0.002
A lot x 25–44 years	–			
A lot x 45–64 years	0.39	0.43	0.91	0.364
A lot x ≥65 years	1.80	0.57	3.16	0.002
Household income				
<20k	–			
20–39k	1.48	0.43	3.43	0.001
40k–59k	2.12	0.42	5.08	<0.001
60–79k	2.77	0.42	6.55	<0.001
>=80k	3.82	0.41	9.32	<0.001
Education				
<Secondary school	–			
Secondary school	0.57	0.28	2.05	0.040
Some post-secondary	−.77	0.39	−1.96	0.051
Post-secondary	0.51	0.23	2.20	0.028
Marital status				
Single/separated/divorced	–			
Widowed	0.87	0.39	2.26	0.024
Married/Common law	1.52	0.18	8.35	<0.001
Sex/gender				
Male	–			
Female	−0.73	0.15	−4.84	<0.001
Race/Ethnicity				
Visible minority	–			
White	0.06	0.19	0.30	0.762
Pain				
No pain or discomfort	–			
Pain prevents no or few activities	−1.75	0.22	−7.98	<0.001
Pain prevents some or most activities	−5.29	0.27	−19.92	<0.001
Relationships				
No close relationships	–			
Close relationships vs. no close relationships	14.20	0.44	32.33	<0.001

(Continued)

Table 2. *Continued*

Variable	B	SE	t	p
Mental disorder				
No mental health disorder/ substance use	–			
Mental health disorder/ substance use during life	−4.34	0.16	−27.06	<0.001
Religion/Spirituality				
Not a lot	–			
A little	0.41	0.33	1.25	0.210
Some	1.23	0.32	3.89	<0.001
A lot	3.72	0.31	12.08	<0.001
Age				
25–44 years	–			
45–64 years	−0.30	0.30	−0.97	0.330
≥65 years	0.17	0.46	0.37	0.710

Note. Total scores for continuous positive mental health (outcome) ranged from 0 to 70 with higher scores reflective of greater positive mental health. Referent group denoted by dashes (–). [a]The test of the religion/spirituality by age interaction was statistically significant at $p < 0.05$ (test of the interaction: $F = 3.76$, $p = 0.001$).

explaining 18.54 per cent of the variance in positive mental health. The increase in variance accounted for by the inclusion of the interaction term was 0.10 per cent. There was evidence of a statistically significant R/S by age interaction on positive mental health ($F = 3.76$, $p = 0.001$). The $\eta^2 p$ for the main effects of R/S, age, and the R/S by age interaction are as follows: $\eta^2 p = 0.028$, $\eta^2 p = 0.002$, and $\eta^2 p = 0.001$, respectively. The regression parameter estimates are presented in Table 2, while the estimates of the simple effects (least squares means) are visualized in Figure 1. Figure 1 shows that greater reliance on drawing strength from R/S in order to face everyday difficulties was associated with higher positive mental health among all three age groups, but that the relationship between R/S and positive mental health was most pronounced for respondents 65 years of age and older. Table 3 shows the differences among age groups in estimates of simple effects for positive mental health at levels of R/S; these results show that respondents in the middle (45–64 years) and lowest (25–44 years) age groups have comparable levels of positive mental health at the highest level of R/S ($p = 0.761$, see Table 3).

Psychological Distress

When psychological distress was treated as the outcome, there was a statistically non-significant R/S by age interaction ($p > 0.05$ for all interaction terms); therefore, the R/S by age interaction was removed from the parsimony model. With four levels of R/S and three levels of age, there were six corresponding interaction terms: "a little" and 45–64 years: $p = 0.495$; "a little" and ≥ 65 years: $p = 0.134$; "some" and 45–64 years: $p = 0.442$; "some" and ≥ 65 years: $p = 0.971$; "a lot" and 45–64 years: $p = 0.921$; and "a lot" and ≥ 65 years": $p = 0.739$. In the main effect model (see Table 4) adjusted for covariates, there were no associations between R/S and psychological distress ($p > 0.05$). There was an inverse relationship between age and psychological distress; older respondents were at reduced odds of reporting psychological distress
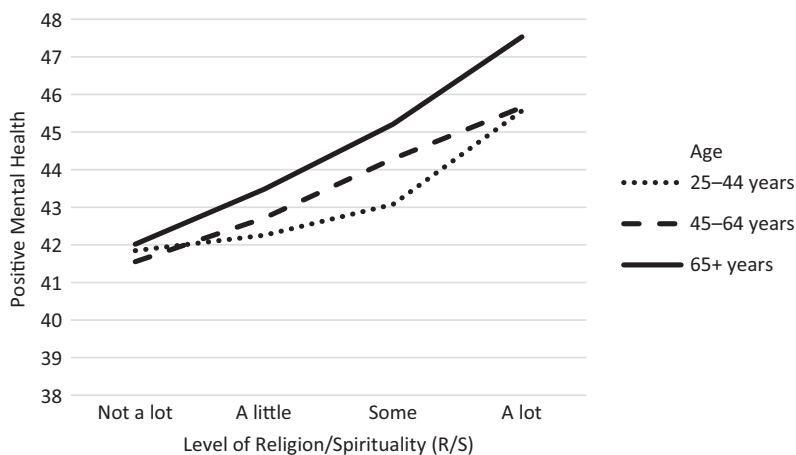
Figure 1. Simple effects of the interaction between religion/spirituality (R/S) and age group on positive mental health

Table 3. Differences between age groups in estimates of simple effects (weighted least squares means [LSM]) for positive mental health at levels of religion/spirituality

	Religion/Spirituality											
	Not At All			A Little			Some			A lot		
	LSM	t	p	LSM	t	p	LSM	t	p	LSM	t	p
Age (years)												
45-64 vs. ≥65	−0.47	−0.99	0.324	−0.77	−1.42	0.156	−0.92	−2.17	0.030	−1.87	−5.57	<0.001
45-64 vs. 25-44	−0.30	−0.97	0.330	0.46	1.22	0.223	1.21	3.56	<0.001	0.09	0.30	0.761
≥65 vs. 25-44	0.17	0.37	0.710	1.22	2.27	0.023	2.13	4.84	<0.001	1.97	5.39	<0.001

(45–64 years: $p < 0.001$; ≥ 65+ years: $p < .001$), compared with respondents in the youngest age category (25–44 years). The overall model reached statistical significance ($\chi^2[20] = 2231.06, p < 0.001$).

Discussion

In this study, we examined whether R/S was associated with positive mental health and psychological distress. In addition, we examined whether the effects of R/S depend on age. The analyses yielded several noteworthy findings.

The analyses showed a significant R/S by age group interaction suggesting that the effects of R/S on positive mental health were dependent on age; the positive relationship between R/S and positive mental health was greatest among participants 65 years of age and older. These results are consistent with findings from pre-existing literature which support the promoting factor of R/S across the adult lifespan (Noronha, 2015; Worthington, 1989). In addition, evidence shows that older adults in particular may draw on R/S (Agli et al., 2015; Colishaw, Niele, Teshuva, Browning, & Kendig, 2013). These findings support theories of aging which point to the importance of R/S during this stage of life (e.g., Erikson, 1982; Erikson, Erikson, & Kivnick, 1989; Tornstam, 1989). Indeed, the literature notes that older adults who report drawing on R/S demonstrate greater resilience when faced with challenges (Reis & Menezes, 2017). R/S has also been shown to act as a buffer against depression and loneliness in older adults with mobility loss (Han & Richardson, 2010).

In terms of psychological distress, we did not observe an interaction between R/S and age, nor did we observe a main effect of R/S. Although some literature points towards a benefit of drawing on R/S in treatment of mental illness (Corrigan, McCorkle, Schell, & Kidder, 2003; Harris et al., 2015), other work suggests that R/S is not necessarily beneficial for persons living with mental illness. For example, when examining the effects of R/S on patients living with schizophrenia, Mohr, Brandt, Borras, Gillieron, and Huguelet (2006) reported that in some cases R/S was seen as being a detriment to treatment, as some patients may experience increased psychotic symptoms, induced spiritual despair, increased suicide attempts, and substance abuse. Our sample was a non-clinical community sample in whom the prevalence of clinically significant psychological distress was lower than in clinical samples. The nature of our sample precluded examination of whether individuals with especially elevated distress have a unique relationship with R/S.

Although we did not observe a statistically significant effect of R/S in the model examining psychological distress, other variables did significantly contribute. It is of note that history of mental illness, absence of close relationship, presence of pain, and low income were among the statistically significant variables in the model. As others have noted, the relationship between R/S and health outcomes is largely dependent upon the variables under

Table 4. Logistic regression results for the relationship between religion/spirituality and psychological distress

				95% CI		
Variable	B	Wald χ²	OR	Lower	Upper	p
Intercept	0.28	4.00				0.045
Religion/Spirituality						
Not at all			Referent (1.00)			
A little	0.06	0.90	1.06	0.94	1.19	0.342
Some	0.09	2.67	1.10	0.98	1.22	0.102
A lot	0.06	1.07	1.06	0.95	1.17	0.302
Household income						
<20k			Referent (1.00)			
20-39k	−0.23	5.44	0.79	0.65	0.96	0.020
40k-59k	−0.35	12.81	0.71	0.59	0.86	<0.001
60-79k	−0.52	27.63	0.59	0.49	0.72	<0.001
≥80k	−0.86	79.93	0.42	0.35	0.51	<0.001
Education						
<Secondary school			Referent (1.00)			
Secondary school	−0.26	13.31	0.77	0.67	0.89	<0.001
Some post-secondary	0.04	0.16	1.04	0.86	1.25	0.684
Post-secondary	−0.17	7.96	0.85	0.76	0.95	0.005
Marital status						
Single/separated/divorced			Referent (1.00)			
Widowed	−0.24	5.37	0.79	0.65	0.96	0.021
Married/Common law	−0.29	40.82	0.75	0.68	0.82	<0.001
Sex/gender						
Male			Referent (1.00)			
Female	0.26	41.47	1.30	1.20	1.40	<0.001
Culture/Race						
Visible minority			Referent (1.00)			
White	0.04	0.59	1.04	0.94	1.15	0.444
Pain						
No pain or discomfort			Referent (1.00)			
Pain prevents no or few activities	0.72	182.23	2.05	1.84	2.27	<0.001
Pain prevents some or most activities	1.15	362.88	3.15	2.80	3.54	<0.001
Relationships						
No close relationships			Referent (1.00)			
Close relationships vs. no close relationships	−1.28	169.92	0.28	0.23	0.34	<0.001
Age						
25-44			Referent (1.00)			
45-64	−0.48	120.59	0.62	0.57	0.67	<0.001
65+	−1.01	225.70	0.37	0.32	0.42	<0.001
Mental disorder						
No mental health disorder/ substance use			Referent (1.00)			
Mental health disorder/substance use during life	1.21	900.55	3.35	3.10	3.63	<0.001

Note. CI = confidence interval; OR = odds ratio.

investigation (Krause, 2018). The pattern of findings we observed highlights the importance of using the dual-continua model of mental health and mental illness in order to understand their respective determinants.

This study adds to the growing body of literature of R/S, aging, and mental health and has numerous strengths. The data were drawn from a large, representative sample of community-dwelling adult Canadians, with a high response rate. In addition, we accounted for numerous potential confounding variables (e.g., marital status, income, mental health disorders, and substance use) which could bias the associations of interest. Our focus on the dual-continua of mental health and the use of validated outcome measures offers a more complete account of the relationship between R/S and psychological outcomes.

R/S was quantified by asking participants the extent to which they draw strength from R/S to face everyday difficulties. This item aligns with Krause's (2018) view that R/S can promote health by acting as a resource that facilitates coping in the face of adversity. As others have pointed out, aging is associated with an increased risk of adversity related to, for example, health and mobility challenges (Baltes & Smith, 1999), necessitating coping skills in order to maintain positive mental health. It follows that we observed the strongest relationship between R/S and positive mental health among the older adults in the sample.

On the other hand, several authors have pointed out that R/S represents multifaceted and distinct phenomena (e.g., Corrigan et al., 2003; Hill et al., 2000); as such, the relationships between spirituality and mental health as well as between religion and mental health may be differential. Because of our inability to tease apart the construct of R/S, we are unable to determine whether participants based their responses on religion, spirituality, or a combination of the two. Given that spirituality can describe an individualistic experience, researchers note that one may identify with being spiritual without adhering to a religion (Hill et al., 2000). Future research should measure the two constructs separately, so that potential differences between the effects of spirituality versus those of religion on health across the lifespan can be disentangled.

Demographic data suggest that Canada is becoming increasingly secular (Pew Research Centre, 2013). It is possible that the age-dependent effect of R/S is reflective of cohort differences between young, mid-aged, and older adults, rather than of changes related to human development and the aging process. Given that this study is cross-sectional in nature, we cannot assess the temporality of variables nor do these data permit causal inferences. Future research should examine whether the effects observed here are replicable within longitudinal data sets and within other cultural contexts. Finally, the existing literature showing a relationship between R/S and health emphasizes the role of immigration status, ethnicity, and R/S identity, variables that were not captured here (Dilmaghani, 2018; Speed & Fowler, 2021)

The proportion of the Canadian population 65 years of age and older has been increasing over the last 40 years and is projected to continue to increase as members of the baby boomer generation all reach 65 years of age (year 2031) (Statistics Canada, 2012). Data from the 2016 Census of the Canadian population show that there were 5,900,000 persons 65 years of age and older residing in Canada; for the first time in Canadian history, the number of individuals 65 years of age and older outnumber individuals 14 years of age or less (Statistics Canada, 2017). As members of this population continue to age, the likelihood of experiencing age-associated stressors (e.g., illness, loss of spouse) increases, and R/S

may be an important means of coping with such stressors. Longitudinal work is needed to better understand the potential positive effects of R/S across the lifespan. Our study highlights the importance of R/S among all Canadian adults and the fact that R/S is particularly salient in older adults' lives. This study also underlines the importance of quantifying mental health and mental illness separately when examining their determinants. Promoting positive mental health throughout the adult lifespan may involve attending to and supporting spiritual beliefs, traditions, and practices.

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