An Overview on Effect of Religiosity and Spirituality on Health

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Abstract: Spirituality/religion serves important roles in coping, survival and maintaining overall wellbeing within cultures and communities, especially when diagnosed with a chronic disease that can have a profound effect on physical and mental health. However, spirituality/religion can be problematic to some patients and cause caregiving difficulties.

Keywords: Religiosity and spirituality, mental health.

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Introduction:

Religiosity and spirituality are intricate constructs that describe peoples' fundamental beliefs about existence that form attitudes and behavior across many different cultures (1).

Although spirituality and religion are closely related, definitions differ and as such for the purposes of measurement can be considered as two separate constructs (2).

Spirituality is defined as that relating to or consisting of or having the nature of spirit. The nature of spirit is intangible or immaterial. The English word 'spirit' comes from the Latin *'spiritus'* meaning breath. The spiritual realm deals with the perceived eternal realities regarding man's ultimate nature, in contrast to what is temporal or worldly. Spirituality involves as its central tenet a connection to something greater than oneself, which includes an emotional experience of religious awe and reverence (3).

Spirituality is therefore an individual's experience of and relationship with a fundamental, nonmaterial aspect of the universe that may be referred to in many ways – God, Higher Power, the Force, Mystery and the Transcendent and forms the way by which an individual finds meaning and relates to life, the universe and everything. (3).

Spirituality is defined as a set of inner experiences and feelings through which a person inwardly seeks meaning and purpose as well as relationships to self, family, others, society, nature and the significant or sacred (4).

Religiosity forms only a part of a person's spiritual quest. Religion is an organized belief system promulgated and sustained by a human institution, ethnic group, tribe or culture and involves definite rules of behaviour, practices and rituals. The English word religion comes from the Latin 'religio' meaning reverence, though a deeper study reveals it to be a combination of two words, 'Re' meaning return and 'Ligare' meaning 'to bind'. Though closely related, religions probably originated as a way of meeting humanity's possible innate need for spirituality (3).

Religiosity is often defined as the adherence to beliefs, doctrines, ethics, rituals, texts and practices associated with a higher power either alone or among organized groups (5).

Spirituality and **Religiosity** are not interchangeable or always linked. Therefore a person may have religion without spirituality or spirituality without religion. (3).

Although there is some overlap in definitions where many believe spirituality to encompass religious practices, studies investigating opinion suggest both religious leaders and laypeople consider religion as beliefs based on rules associated with organized practice whereas spirituality is more personal, internal and independent of communal relationships (6).

Religiosity can be considered as a "formal construct of sacred belief, rooted in an institutional and community context" which often involves "service attendance, prayer and/or meditation, and devotion to shared tenets practices and believes"; while spirituality is "one's search for meaning, purpose, and significant relationships in life" (7).

Consequently, a person does not need to be religious to be considered spiritual because non-religious individuals can be spiritual and have higher life purpose separate from religious doctrines (7).

On the other hand, Hill and colleagues argued that religiosity and spirituality can generally be defined as any feelings, thoughts, experiences, and/or behaviours that "arise from a pursuit for the 'sacred'", with the latter tending to refer to personal experiences and beliefs and the former implying group or social practices and doctrines with the term sacred referring to a divine being, or object, ultimate reality, or truth perceived by a person (8).

However, other researchers defined religion as "beliefs, practices, and rituals related to the *transcendent*, where the transcendent is God, Allah, or a Higher Power in Western religious traditions, or to Brahman, manifestations of Brahman, Buddha, Dao, or ultimate truth/reality in Eastern traditions. Religion often involves the mystical or supernatural and can be practised in the community or individually, in private (9)".

Historically, religion and spirituality have been considered important determinants of health. Physical, intellectual, emotional, social and spiritual parts of an individual continuously interact with one another making a person who they are (10).

Religion is a social phenomenon involving social institutions who adhere to certain rituals and practices, whereas spirituality is a more personal experience that can be associated with religion but which is becoming increasingly viewed as being more independent (11).

Religion or spirituality can be conceptualized as (1) a coping mechanism, (2) a source of social support, and (3) a tool for behavioural control (12). This is partly because religion or spirituality can affect how individuals or communities make their ethical decisions and how religious practices could produce psychophysical impacts (10).

- **Effect of religiosity and spirituality on health:**

For thousands of years, religions have helped people understand their place in the world and cope with the stressors and existential challenges of everyday life. Religion is considered to be one of the most important social forces that can shape people's behavior (13). Psychology, sociology and epidemiology, among other disciplines, have acknowledged the pivotal role of religion in many aspects of life. In particular, religion has become an important construct in research as a coping mechanism for various life stressors. Religion can also help individuals ameliorate the pain of loss and enhance their wellbeing (WB) (14).

Consequently, the integration of religion, and its value system(s) into an individual's life, often brings a realization and stability in ones' daily sense of trust and thought organization in relation to others and not only to themselves. However, not all the scientific communities do share these optimistic associations between religion/spirituality and well-being. For example, some researchers claimed that religion and spirituality are invisible social determinants of health and have no place in modern medicine. Hence, medicine is seen strictly as pure science while strengthening the biomedical approach to health to the detriment of a theological or/and philosophical perspectives. This outlook depicts religion/spirituality as a "universal obsessional psychosis" (Freud, cited in (15).

Nonetheless, with the growing popularity of alternative and complementary medicine, as well as the Hospice movement, there have been increased interests and re-emergence of the importance of religion and spirituality in medicine. For example, in the Hospice movement which is well known as palliative care in Canada, the aim is to improve the quality of life of people dying regardless of their religious or secular beliefs. More recent studies found that religion and spirituality have strong influence on health and how people cope with suffering. Consequently, patients have increasingly expressed the need for non-traditional care based on their cultural, spiritual and religious beliefs and values which involves family participation to be integrated in their health care (16).

In the USA, for instance, religion and spirituality have been mandated in physicians' trainings in the last twenty years (15).

Religion and spirituality do influence health behaviours, and increasingly impact health care services. In addition, health beliefs, behaviour and decisions will change not only according to

cultural, religious/spiritual values, but also according to age, gender and geographical locations (rural versus urban) **(17)**.

Some religious/spiritual functions, such as providing a source of social support and strength in critical times, may be more dominant than others during different stages of health and illness. Whatever the stage in the life cycle, religion in some way may affect one's beliefs and actions and is viewed as a helping mechanism that organizes thoughts and actions. Evidences suggest that the religious lifestyle and experiences are to be valued as producing health through the impetus they give for altering possible harmful lifestyles **(18)**.

Given these definitions, it is not surprising that religion and spirituality have been identified as important coping resources for patients during times of chronic and terminal illness. Here, patients often think about their life, its meaning and the experience of the disease process especially in times of anxiety, pain, loneliness and deprivation, all which challenge ideals and beliefs **(4)**.

Recent studies show differences in self-reported spirituality and religiosity towards these negative emotional experiences. For example, MacLeod and colleagues show that strong religious beliefs are associated with high levels of anxiety in people thinking about their own death compared to those with strong spiritual beliefs who show significantly lower levels of anxiety about their own death **(19)**.

It is important to be aware the effect of potentially life-threatening diagnoses can have on a person's ability to cope with religious and spiritual issues during clinical meetings. Thus, health professionals must have the emotional, social and spiritual resources to both evaluate and carry out their work both individually and as part of a multi-disciplinary team **(2)**.

Recently, associations between spirituality, religion, health and quality of life have been investigated in many areas of healthcare including general medicine, psychology and nursing. Generally, studies show that people with higher levels of spirituality and religiosity have lower levels of depression and anxiety, improved quality of life, a higher pain tolerance and a lower prevalence of chronic disease. Additionally, spiritual and religious people show strong humanitarian attitudes while also interacting in large social networks **(20)**.

❖ **Mental health:**

Since the late 1980s, positive correlations between mental health and religion or spirituality have been substantially documented in North America. Essentially, religious individuals were found to be associated with better coping mechanism compared to their counterparts who are less devout. However, the former would benefit from the latter in terms of: (1) social capital, (2) meaning in life, and (3) optimism in face of adversity. In this context, social capital is defined as the mutual supportive resources that individuals access through their social networks, social participation, trust and reciprocity Fewer studies have provided that religion is positively associated with negative feelings, such as guilt, anxiety, existential uncertainty, perception of a punitive god and struggle with faith **(21)**.

Dilmaghani's unique U-shape relationship between religion or spirituality and mental health is articulating that religion or lack of it improves the "coping" mechanism of individuals against mental illness **(22)**. Dilmaghani reported that both secularized and highly religious individuals tend to rate their mental health as excellent in contrast to those who practice average or no religion. Consequently, she invites scholars to refine their research tools to make a distinction between "[religiously] affiliated groups" and "secular groups". This relationship was confirmed by other studies **(22, 23)**.

On the other hand, a study found a strong association between mental health and healthy normative religious beliefs and practices **(24)**. Koenig concluded that religious involvement might stabilize or reduce the experience of psychotic episodes such as stress, depression, anxiety, and substance abuse among different ethnic and age groups in different geographical locations. Hence, he suggested that clinicians should be able to differentiate when religion or spirituality operates as a resource for a "healthy mental and social functioning", and when it becomes an aggravating factor **(24)**. To some degree, both institutional and personal spirituality/religion were found to positively predict mental health **(25)**.

On mental wellness, a group of researchers confirmed the importance of culture on social development for First Nation Youth in Saskatchewan and argued that cultural connectedness is an essential determinant of health among youth. This finding was further corroborated by a study which compared 30 Christian and 30 Muslim males and found a positive correlation among their religious commitment, purpose of life and personality integration. Those individuals who were more genuinely committed to their religious beliefs had high purpose of life and possessed more integrated personalities implying that religion holds a legitimate place in the formation of mental health and wellbeing. The fact that religion is linked to stronger social networks, social capital may be an important mechanism through which religion exhibits its influences on mental health. To delve deeper, mental health was subdivided into four categories including depression, suicide, anxiety and psychotic disorder for better understanding **(26)**.

Subjective well-being (SWB) and happiness have become important topics in the scientific lexicon of positive psychology. three components of SWB as follows: (1) frequent positive affect, (2) infrequent negative affect and (3) satisfaction with life (SWL). SWB incorporates more subjective factors such as being happy, being connected to one's community and having the ability to cope with adverse life events **(27)**. **McGillivary (28)** viewed SWB as a description of the state of person's life, the satisfaction of individual's goals, wants and needs.

In **Seligman's theory (29),** well-being is defined as a combination of cognitive happiness (i.e., satisfaction), hedonic happiness (i.e., feeling), and eudaimonia (i.e., meaning). Well-being is predicted by five elements: (a) Positive Emotion, (b) Engagement, (c) Relationships, (d) Meaning, and (e) Accomplishment.

There is substantial empirical evidence suggesting that religiosity is central to one's mental and physical health as well as a significant indicator of SWB. Many relevant studies have appeared **(30)**.

In recent years, research evidence has indicated that religion is beneficial and related to various favorable outcomes, such as longevity, increased SWL, fewer psychopathological symptoms, better social adjustment, greater self-control and increased meaning and purpose in life **(31).**

The positive impacts of religiosity on physical and psychological health are well documented. **Koenig and Larson (32)** reviewed 850 studies investigating the association between religiosity and mental health and found a strong correlation of religious beliefs and practices with SWL (positive) and with levels of anxiety and depression (negative). **Hackney and Sanders (33)** carried out a meta-analysis and found an overall positive relationship between religiosity and mental health.

Many studies have suggested that people who engage in religious activities report higher levels of WB (34). **Stavrova et al. (35)** concluded that existing research has provided substantial evidence of the positive associations among religiosity, health and longevity. Self-identification as a religious person and an intrinsic religious orientation are positively related to self-rated physical health, as well as to lower rates of a variety of diseases. Furthermore, religious individuals live longer compared to less religious individuals.

Garssen et al. (36) reported that the impact of religiosity was positive on mental health. The major components contributing to mental health were participation in public religious activities and the importance of religion to the respondents. Using a sample of adolescents, **Zullig et al. (37)** found that students who describe themselves as spiritual or religious are likely to report greater self-perceived health, and greater self-perceived health probably influences life satisfaction. **Hayo (38)** investigated the determinants of happiness across Eastern Europe after the collapse of the socialist system and found that frequent churchgoers reported a significantly higher life satisfaction than those who did not attend church.

Religiosity and religious coping are associated with positive outcomes of mental health. coping practices and shed light on psychological factors influencing adaptive behaviors that promote increased resilience, reduce symptoms of distress, and maintain emotional well-being. spirituality and religiosity may be central to their healing, or with their congregations, whose faith may be central to their everyday life. Religious reappraisal and coping self-efficacy may, in turn, have beneficial effects reflected in reduced symptoms of distress and improved well-being and quality of life. Such positive outcomes are especially relevant when facing a crisis, as religious individuals may learn and apply helpful emotion regulation and coping strategies from therapy and other faith-based contexts to better manage everyday stress **(39).**

Most of the brain regions that have been implicated in a systemic review of R/S are also key components of large-scale neural circuits (e.g., DMN, frontoparietal executive network, fronto-temporal-parietal network) that subserve higher-order brain functions, such as emotion processing, empathy, selfknowledge, and self-referential reflective activity. Examples include the following: mood-induction stimuli have been shown to lead to increased cerebral blood flow selectively in the superior PFC and precentral area (areas that were also implicated for R/S in several studies reviewed

here); BOLD signals in the superior PFC, middle/inferior temporal gyrus, and inferior parietal cortex (regions that have also been associated with R/S) have been associated with the cognitive appraisal of oneself and others; a high level of activity in the middle frontal gyrus and middle temporal gyrus has also been shown to be essential for the subjective feeling of empathy, whereas activity in the superior temporal cortex has been predictive of altruistic behaviors; and the concerted activation of the parietal/temporal, posterior cingulate, and medial prefrontal cortices has been involved in producing mind-wandering states. **(40)**

- <u>Depression:</u>

A mixed outcome between depression and religion was found. Nonetheless, there was a general consensus that greater religiosity is associated with less depression symptoms and faster recovery from depression. While exploring the influence of religion on depression among the Indo-Canadian Sikh women community in Greater Vancouver area, for instance, a study found that religion, family support, in-laws, and arranged marriage are correlated with self-doubt and marital violence due to depression **(41).**

On the other hand, other researchers found that spiritual health interventions were more successful among youth (13–24 years) compared to older participants **(42)** when using different medium such as online spiritual support. With rapidly changing Canadian demographics, the study suggests the importance of using non-conventional mediums for religious or spiritual mentorship to reduce mental health problems, especially among young adults. While examining the importance of religion or spirituality and health-related quality of life among chronically ill kidney patients in Toronto, studies conducted by Davison and Jhangri found that influence of religion was different among depressed patients with different educational attainment **(43).** The studies found that the impact of religiosity among depressed patients with fewer years of education to be more accentuated compared to those with higher education. However, a sense of mastery and self-esteem also showed suppression effects.

With one of the largest study participants ($N = 70,884$), among the articles reviewed, Baetz and colleagues reported mixed relationships between depression and religion **(44).** The authors found a negative correlation between depression and frequent worshipers. However, they found that participants who stated spiritual values or faith showed a positive correlation between religion and depression. They suggested using longitudinal study to tease out the nuances and complexity between religion and depression. Similar results were found by other researchers who argued that believers who attended religious services at least once a month had 22% lower risk of depression compared to non-attenders, even after controlling for socioeconomic and biological covariates **(45).**

Neuroimaging studies have found high R/S importance to be associated with increased cortical thickness in the parietal and occipital regions, which may confer resilience to the development of

depression, with risk of depression decreased by up to 80% when compared to non-R/S controls. **(40)**

A functional neuroimaging study reported that greater R/S importance was associated with decreased default mode network (DMN) connectivity, suggesting protective neural adaptation in the DMN as persons at high risk for depression have increased DMN connectivity. Finally, two electroencephalography (EEG) studies have shown associations between R/S importance and greater posterior alpha during rest, which has been associated with better pharmacological treatment response for depression. **(40).**

In **Miller and colleagues (46),** second- and third-generation offspring of depressed and depressed probands (first generation) underwent assessment of R/S importance and church attendance, and cortical thickness assessment via MRI. They found (1) an association, independent of familial risk, between R/S importance (but not frequency of attendance) and thicker cortices in the left and right parietal and occipital regions, the mesial frontal lobe of the right hemisphere, and the cuneus and precuneus in the left hemisphere, and (2) significantly stronger effects of R/S importance on cortical thickness among the high-risk versus the low-risk group, especially along the left mesial wall. They concluded that a thicker cortex, which is associated with high R/S importance, makes individuals at high familial risk more resilient to the development of depression, potentially by countering the cortical thinning that is associated with increased risk for depression.

Spiritual practices can have considerable antidepressant effects due to the associated increase in serotonin and dopamine. Additional factors like increased levels of melatonin and AVP contribute to the antidepressant effects. There is an observed increase of β-endorphin as also NMDAr antagonism during meditation, both of which have antidepressant effects. The decreased level of CRH and cortisol also plays an important role in allaying depression. Thus, via multiple neurochemical changes, spiritual practices can counteract depression **(47).**

- <u>Suicide</u>

While using the Canadian Community Health Survey (CCHS) to exam the relationships between spirituality/religiosity and suicidal behaviour, Rasic and colleagues found that religious attendance is associated with decrease in suicide attempts and mental illness, regardless of social support **(48).** Participants who identified themselves as spiritual were less likely to report decrease in suicide attempts and mental illness. Similarly, Good and his colleagues found that religion\spirituality had no protective effects on non-suicidal self-injuries **(49).** In addition, religious beliefs can provide barriers to participation in Advance Care Planning (ACP) issues related to end-of-life care **(50).** Overall, studies on the topic do suggest that religious involvement usually prevent suicide and suicidal behaviour due to strong community support **(24).**

- <u>Anxiety/Stress</u>

A study found that subjective religiosity and attendance tended to be highly correlated with lower anxiety, alcohol consumption and poor health. However, for immigrants, anxiety can be due

to acculturation strategies, challenges and stress. The challenges were in maintaining a peaceful cohabitation between different parallel traditions. These researchers suggested the relevant role of religion, cultural communities and plural belongings in reducing anxiety and stress among new immigrants (51).

Hence, the need for health professionals including social workers, and counsellors to be sensitive in delivering culturally and religiously/spiritually appropriate services to newcomers to Canada. The study by Keonig provided an insightful summary of longitudinal studies showing low anxiety levels among the highest and the lowest religious participants with the moderately religious participants showing high levels of anxiety (24). Nevertheless, Koenig cautioned that anxiety may drive participants to become more religious. Hence, he made a clear distinction between positive forms of religious coping mechanisms and negative ones.

Positive and negative mechanisms will reduce and increase stress, respectively. On the other hand, the intergenerational issues of trauma and substance use disorder among indigenous Canadian have been ignored. Few researchers had engaged on the promotion of traditional indigenous healing practices when mixed with Western knowledge (52).

Meditation due to the neurochemical changes can produce an anxiolytic effect. The factors decreasing anxiety during meditation are an increased parasympathetic activity, decreased LC firing with decreased noradrenaline, increased GABAergic drive, increased serotonin and decreased levels of the stress hormone cortisol. The increased levels of endorphins and AVP also contribute to the anxiolytic effects of meditation (47).

- **Psychotic Disorder**

Several studies (53) found within the study's time frame explored the association between religion/spirituality and psychotic disorders. While examining the relationship between clinical treatment of psychotic disorder and religion in Québec, Mohr and colleagues found that religion was helpful for about 87% but harmful to about 13% of their study participants.

When compared to Switzerland and the USA, authors argued that Canadian patients showed less antagonism between their religious beliefs and psychiatric treatment. Hence, the authors hypothesised that this could be due to the Catholic heritage, and the strong separation between medicine and religion in Québec (53).

While using the Canadian Community Health Survey (CCHS), other researchers argued that frequent worshipers tended to exhibit lower psychiatric disorders, and depression levels compared to those who are not (54). In a separate study, Baetz and colleagues found and argued that beliefs and practices of psychiatrists may have an effect on the treatment and spiritual inquiry of their patients (44).

These findings are similar to early studies which explored the effects of religion/spirituality on psychotic disorder and found that religiosity seem to reduce psychosomatic health problems such

as stress, and help increase job satisfaction, job motivation and organizational commitment among some Muslims in Canada **(10).**

A study of the impact of religion and spirituality in schizophrenics showed that religion was used as a positive way of coping by 71% of patients and as a negative way of coping by 14%. The study found that religion and spirituality lessened (54%) or increased (10%), psychotic symptoms and may reduce (33%) or increase (10%), the risk of suicide attempts. It may also reduce (14%) or increase (3%), substance use and foster adherence to (16%) or be in opposition to (15%), psychiatric treatment **(55).**

In **Pelletier-Baldelli and colleagues (56),** researchers associated nonclinical psychosis with the OFC volume on MRI. They found that intrinsic religiosity is increased in the nonclinical psychosis group, that these individuals show volume decreases in bilateral lateral and medial OFC, and that OFC volume was significant negatively associated with depressive/negative symptoms. They concluded that nonclinical psychosis–related brain abnormalities may also heighten religiosity.

Meditation can induce psychotic states via mechanism such as increased $5HT_2$ receptor activation, increased DMT, increased NAAG and increased dopamine. The mechanisms include the 5HT inhibition of LGB, the hallucinogenic effects of DMT, the dissociative hallucinogenic effects of NAAG and the action of increased dopamine in the temporal lobe. A variety of schizophrenomimetic effects can be seen as a result of these complex neurochemical changes. **(3).**

❖ <u>Communicable Diseases</u>

If religious behaviour is often seen as a "coping mechanism" for mental health, similar argument could be made for managing communicable disease. However, the literature search found only 6 journal articles **(57)** that discuss the associations between infectious diseases and religion/spirituality. These articles discuss the association between religion/spirituality and diseases such as HIV/AIDS, and objections or/and doubts about vaccination.

- <u>HIV/AIDS</u>

Many studies preferred a qualitative approach to explore the relationship between communicable diseases and religion/spirituality **(57).** While examining the psycho-spirituality of African women living with HIV/AIDS in Ontario, Aryee found that religion (prayer and beliefs in God) was associated with overcoming stigma and other barriers such as loneliness and isolation **(58). Aryee (58)** suggested the need to explore such relationships within an Afro-cultural or spiritual habit to better understand the experiences of African Canadians living with HIV/AIDS.

On the other hand, while exploring the effect of **Newberg and Iversen, (47)** spirituality and religion in patients with HIV/AIDS, Cotton and colleagues found that patients who were

more spiritual or religious were more likely to express optimism, and better self-esteem than those who were not **(59)**. However, while exploring the risk of HIV/AIDS and its prevention among the Inuit in Nunavut Territory, a study identified that there was silence among HIV/AIDS patients communities partly due to inadequate awareness of the disease **(57)**. In addition, there was insufficient outreach to remote committees by health promoters, and lack of appreciation and acknowledgement of the importance of local religious and sociocultural realities among the Inuit people in relation to infectious diseases. **(10)**.

- **Vaccination**

A study found a large rubella outbreak which occurred in the Netherlands and spread to Canada around 2004 and 2005 was predominantly among orthodox Christians with religious objections to immunizations **(60)**. A parallel argument by the Jehovah Witness preferred medical intervention or surgery without blood transfusion, which contravenes their religious values **(61)**. The Jehovah Witnesses prefer blood conservation techniques, where the blood used is their own, because they believe blood is 'sacred' and it is associated with life and God, so it should not be given away.

While exploring a better understanding of public perception of Human Papillomavirus (HPV) vaccine among Canadians, Feinberg and colleagues found the importance of culturally and religiously sensitive message packaging for promoting public health **(62)**. For example, rather than promoting HPV vaccination as a means of preventing cancer, governments had supported a campaign to reduce Sexually Transmitted Disease (STD) contravening many religious beliefs which were in favour of abstinence rather than medical prevention methods. In general, better understanding of different religious views about vaccines will enhance its promotion and reduce resistance.

❖ **Quality of Life (QOL):**

Out of the 151 relevant articles reviewed, only 38 articles discussed and found different relationships between quality of life (QOL) and religion/spirituality. Religious beliefs or religious teachings seemed to increase a feeling of empowerment, acceptance and control over one's health. Religiosity could comfort and bring hope of better days ahead to patients with a wide variety of illnesses. The studies which covered QOL and well-being in this literature review used a holistic approach to understand health literacy among Canadian Indigenous Youth explore the role of prayers in various stages of disease; examine lifestyle, private religious practices (like individual prayers, listening to religious media outlets and reading religious text) and health in the Black Seventh-Day Adventists; and study the impact of religious dietary prescription (Ramadan/fasting) on health **(63)**.

Other studies explored the QOL among amputees in the USA and Canada; end-of-life assistance; spiritual transformations and medical illness among Canadian indigenous population; workplace spirituality and health; and caregivers and culture in the Chinese Canadian population.

In addition, while exploring how religious group identification helped promote health and well-being among older adults in Ontario, Canada, Ysseldyk and colleagues found religious social networks were valuable sources of social capital and well-being among the studied populations **(64)**. Variations were found across age, gender, education, which is constant across the majority of reviewed literature. Improvement in medical illness was also found among people interacting with traditional North American Indigenous healers **(65)**.

In general, all the articles that elucidated the associations between religiosity and QOL used quantitative approaches. They used different samples sizes and collectively suggested that religiosity enhances and promotes better health and well-being. For example, McKenzie and colleagues confirmed that religious involvement could actually promote healthy behaviour **(66)**. The study illustrated how private religious practices are fundamental determinants for implementing and accepting health-promoting behaviour in specific communities in Canada. To optimise the benefits of religiosity, the authors argued for (a) better understanding of the patients' existential spirituality, which would promote rehabilitation and quicker recovery; and (b) the need for training and knowledge of health professionals to be sensitive to the different cultural, religious beliefs or spirituality of their patients across communities, gender and age.

However, while examining the effect of spirituality in later life in older adults Molzahn argued that there were negative correlations between QOL and religion or spirituality **(67)**. Likewise, while exploring the cultural predictors of caregiving burden among Chinese-Canadians, a study showed that caregivers experienced high level of burden, even among strong traditional Chinese families due their religious (Western or Non-Western) practice, and low level of piety **(68)**. Hence, Lai and colleagues argued that religiosity might predict physical health, number of illnesses, and individuals' usage of Instrumental activities of daily living scale which includes the ability to: (1) use a phone, (2) shop, (3) prepare their own meal, (4) do housekeeping routines, (5) do laundry, (6) independently use transportation, (7) self-medicate, and (8) properly handle finance.

❖ <u>Chronic Disease</u>

Out of the 128 articles reviewed, only 7 **(69)** discussed chronic illnesses. While using the Canadian National Population Health Survey (1996/1997) with a sample of about 70 thousand participants, a study reported that spirituality (or faith) was correlated with a reduction in chronic noncancer pain (CNCP), but gender had no influence on CNCP **(70)**.

Davison and colleague confirmed the relevancy of existential domain of spirituality for patients with chronic kidney disease (especially near the end of life) in Alberta **(71)**. They argued that spiritual care was an integral part of quality care. The authors further argued that overall the Existential well-being (EWB) was a more relevant measure than religiosity. Along with extended family relationships, the EWB were strong predictors of health-related quality of life (HRQL) in Canada. For instance, spirituality and psychological adjustments enhanced or preserved the HRQL for pre-dialysis and dialysis patients **(43)**.

Similarly, religious individuals were found to be less prone to fatigue and chronic illnesses. Although spiritual persons were more likely to suffer both fatigue and chronic illnesses, they have better coping mechanisms compared to their non-religious counterparts. Read and colleagues examined the interaction of complementary medicine (diet, exercise, etc.) and alternative medicine (acupuncture, herbal medicine), and religious methods (prayers, talismans, etc.) used to fight infertility.

The authors found significant differences between patients who relied on Western biomedicine and those predominantly using non-Westerns or alternative complementary medicine **(69)**. The authors argued that the nuances could be attributed to differences in cultures and traditions, which are greatly influenced by religious and spiritual beliefs. On the other hand, while exploring eating disorders and the impact of religiosity and spirituality on young women with low Body mass index (BMI), a study found that women with body shame and lower level of spirituality were more likely to have eating disorders **(72)**.

❖ Cancer

Despite its universal health care system, inequalities in cancer screening among foreign-born Canadians remain. While comparing the cancer screening among women in Toronto, researchers found high cancer screening among Muslim women (85.2%) compared to women in other religious groups (77.5%) and those with no religious affiliations (69.5%) **(73)**. However, while exploring the views on cervical cancer and HPV screening among Muslim immigrant women, in the Greater Toronto Area, Vahabi and colleague found that religion and culture did influence and shape women's health care experiences **(74)**.

The Muslim women studied favoured HPV self-sampling as an alternative to the current model. Hence, the authors argued for the need to informed Muslim women about (1) the Canadian health care system, and (2) the preventive health measures available for all Canadian residents. Further, the authors suggested the need for health practitioners to be proactive: (1) in promoting sexual education when they meet immigrant women of the visible minority groups, and (2) to be aware of the negative impact of preconceive assumptions on the sexual activity for this group of women **(74)**. Overall, the association between cancer and religion was typically a popular area of research **(57)**.

❖ Heart Disease

In Saskatchewan, Banerjee and colleagues found that attending religious services may provide a small yet important protection against coronary heart disease, CHD. People who attend religious services at least once a week had lower tendency of having diabetes and hypertension compared to those who attend religious services only once a year **(75)**. Scholars found that recovery from post-myocardial infarction among Canadian Punjabi Sikh men was dependent on lifestyle changes, which include food consumption, exercises and religion (faith) **(76)**. The study further emphasized

the need for health care professionals to acknowledge the importance of religion and culture in the rehabilitation process in some minority Canadian communities.

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