

Chronic pain and fatigue: Associations with religion and spirituality

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BACKGROUND: Conditions with chronic, non-life-threatening pain and fatigue remain a challenge to treat, and are associated with high health care use. Understanding psychological and psychosocial contributing and coping factors, and working with patients to modify them, is one goal of management. An individual's spirituality and/or religion may be one such factor that can influence the experience of chronic pain or fatigue.

METHODS: The Canadian Community Health Survey (2002) obtained data from 37,000 individuals 15 years of age or older. From these data, four conditions with chronic pain and fatigue were analyzed together – fibromyalgia, back pain, migraine headaches and chronic fatigue syndrome. Additional data from the survey were used to determine how religion and spirituality affect psychological well-being, as well as the use of various coping methods.

RESULTS: Religious persons were less likely to have chronic pain and fatigue, while those who were spiritual but not affiliated with regular worship attendance were more likely to have those conditions. Individuals with chronic pain and fatigue were more likely to use prayer and seek spiritual support as a coping method than the general population. Furthermore, chronic pain and fatigue sufferers who were both religious and spiritual were more likely to have better psychological well-being and use positive coping strategies.

INTERPRETATION: Consideration of an individual's spirituality and/or religion, and how it may be used in coping may be an additional component to the overall management of chronic pain and fatigue.

Key Words: *Chronic pain; Coping; Psychophysiological; Psychosomatic; Religion; Spirituality*

Conditions characterized by non-life-threatening chronic pain and fatigue are persistent, difficult to treat, and lie on the border between psychiatry and physical medicine. Fibromyalgia, back pain, migraines and chronic fatigue syndrome are examples of frequently comorbid conditions characterized by chronic pain or fatigue (1,2). Although each condition has distinctive features, they show similar pain-related brain changes on magnetic resonance imaging (3). A common etiology of persistent peripheral nociceptive input resulting in central sensitization has been reported (4). These psychophysiological conditions, once referred to as psychosomatic, are characterized by high health care use (5), comorbidity with depression, anxiety and sleep problems (6,7), and a decreased quality of life (8,9).

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Douleur et fatigue chroniques : Rôle de la religion et de la spiritualité

HISTORIQUE : Les maladies qui s'accompagnent de douleur et de fatigue chroniques sans menacer le pronostic vital continuent de poser un défi sur le plan thérapeutique et sont associées à une forte utilisation des soins de santé. L'un des objectifs de leur prise en charge est de mieux comprendre les facteurs psychologiques et psychosociaux contributifs et les mécanismes d'adaptation en jeu, tout en travaillant avec les patients à modifier les uns et à utiliser les autres à bon escient. La pratique de la spiritualité et/ou de la religion chez l'individu peut moduler son expérience de la douleur ou de la fatigue chroniques.

MÉTHODES : L'Enquête sur la santé dans les collectivités canadiennes (2002) a recueilli des données auprès de 37 000 personnes de 15 ans et plus. À partir de ces données, quatre maladies qui s'accompagnent de douleur et de fatigue chroniques ont été analysées ensemble, soit la fibromyalgie, la dorsalgie, la migraine et le syndrome de fatigue chronique. D'autres données tirées de l'Enquête ont servi à déterminer de quelle façon la religion ou la spiritualité influent sur le bien-être psychologique et l'utilisation des divers mécanismes d'adaptation.

RÉSULTATS : Les personnes religieuses étaient moins susceptibles de souffrir de douleur et de fatigue chroniques, contrairement aux personnes qui avaient une vie spirituelle sans se réclamer d'un culte en particulier. Et les personnes souffrant de douleur et de fatigue chroniques étaient plus susceptibles d'utiliser la prière et de rechercher un soutien spirituel comme moyens de composer avec leurs symptômes, comparativement à la population générale. En outre, les sujets atteints de douleur et de fatigue chroniques qui pratiquaient une religion ou une autre forme de spiritualité étaient plus susceptibles de se sentir mieux sur le plan psychologique et d'utiliser des stratégies d'adaptation positives.

INTERPRÉTATION : Chez l'individu, la pratique de la spiritualité et/ou de la religion et la façon dont elle peut l'aider à composer avec une situation donnée pourrait être un autre élément de la prise en charge globale de la douleur et de la fatigue chroniques.

Chronic pain and fatigue conditions are a challenge for the biomedical model because of the psychological factors associated with their etiology and maintenance, including depression, anxiety and somatization (10). In a historical review, Shorter (11) attributes vulnerability to pain and fatigue without obvious physical cause to a loss of faith in medical reassurance, reliance on the media for health knowledge and an increase in loneliness due to postmodern loss of relationships. More recent research in chronic, non-life-threatening pain and fatigue has been directed toward understanding stress vulnerability, coping, and factors that exacerbate or ameliorate these illnesses (8,12,13). New evidence suggests that a common thread of psychological stress, muscle tension and fear-based avoidance of activity exacerbates the suffering (14).

Religious and spiritual beliefs and practices are factors that may play a role in stress vulnerability and coping with illness (15), and may affect the range and quality of social relationships (11). Oman and Thoresen (16) suggested several pathways through which religion can positively influence health, including enhanced social support, better health behaviours and positive psychological states, which may in turn affect psychoneuroimmunological pathways. Religion and spirituality are related but separate concepts. Spirituality may be practiced within an organized religion, and for some individuals, it may lack a social context. Whether purported benefits of religion and spirituality are the same for an individual who identifies her or himself as spiritual, but does not participate in a community of like-minded believers (ie, not religious), is not clear.

Individuals may turn to religion or spirituality when dealing with chronic pain and fatigue conditions (17-19). Spiritual beliefs and practices may influence pain perception and tolerance because psychological states are potential modulators of the pain experience (20). Negative affect, represented by depressive symptoms, is associated with an increased experience of pain in chronic conditions (21). Studies have also reported an association between higher religiousness and lower levels of depressive symptoms (22,23), demonstrating that religion or spirituality may play a role in attenuating negative affect, decreasing stress, or enhancing relaxation or distraction. Consequently, this could impact the experience of pain. Prayer may also play a role, but findings on the relationship of prayer and chronic pain and fatigue are mixed (15,18), depending on whether prayer is used in an active or passive manner (24).

The need for multimodal approaches to chronic pain and fatigue management, and recent research examining the role of religion and spirituality in chronic conditions inspired the present research to address two questions using the Canadian Community Health Survey, cycle 1.2, Mental Health and Well-being database:

1. Is being religious or spiritual associated with chronic pain or fatigue?
2. Is being religious or spiritual associated with any differences in psychological well-being or coping strategies for those individuals with chronic pain and fatigue?

METHODS

Data collection

The Canadian Community Health Survey, cycle 1.2, is a cross-sectional survey that collected information related to mental health and well-being in the Canadian population 15 years of age or older, and living in private dwellings, in 2002 (25). The public-use microdata file used for these analyses contains responses from approximately 37,000 individuals (26).

Study measures

Chronic pain and fatigue: The diagnosis of a 'chronic condition' was determined by self-report in response to a question about "long-term conditions which are expected to last or have already lasted 6 months or more and that have been diagnosed by a health professional". No attempts were made to corroborate self-reports of medical illness. Conditions characterized by chronic pain or fatigue were extracted for this analysis and combined: "Do you have fibromyalgia?" (yes = 541, 1.5%), "Do

you have back problems excluding fibromyalgia and rheumatism?" (yes = 7713, 20.9%), "Do you have migraine headaches?" (yes = 3966, 10.7%) and "Do you have Chronic Fatigue Syndrome?" (yes = 439, 1.2%). Positive responses for the combined chronic pain and fatigue classification totalled 10,479 (28.4%). Other pain and fatigue conditions with more defined etiologies (eg, Crohn's disease, osteoarthritis, cancer) were not included.

Religion and spirituality variables: The frequency of worship attendance ranged from 1 (never) to 5 (once per week or more), and was dichotomized into frequencies of monthly or more (37%) and less than monthly (63%) to reflect consistent religious service attendance. This single question on attendance frequency is considered a valid measure of organizational religion (27). Spirituality was also assessed by a single question: "Do spiritual values play an important role in your life?" (no = 37%, yes = 63%). Three categories were developed by cross-tabulation: 'religious' (n=10,793, 35.7%), for those who attended worship services at least monthly and believed spiritual values are important; 'spiritual' (n=10,753, 35.5%), for those who endorsed spiritual values as important but did not attend worship services at least monthly; and 'nonreligious/nonspiritual' (n=8704, 28.8%), for those who did not endorse spiritual values as important or attend religious services at least monthly. Two per cent of respondents (n=609) were religious, but not spiritual (mean age approximately 36 years of age, 60% men). There were missing data on 6125 respondents, bringing the total population used in the analysis to 30,859. The analysis did not change regardless of whether this group was included as part of the 'religious' group; therefore, it was excluded to keep definitions consistent. The first group is therefore referred to as 'religious' for ease of convention, although both religion and spirituality were important in this group.

Coping strategies: Thirteen ways of coping were derived and modified in wording from several coping scales, including Ways of Coping Revisited (28), the Coping Strategy Indicator (29) and the COPE scale (30). The questions started with "When dealing with stress, how often do you..." followed by the 13 coping methods, each rated on a four-point scale – never, rarely, sometimes and often.

Covariates: Age was recorded in 14 groups of five-year blocks. The first block was from 15 to 19 years of age, and the last block was from age 80 years and older (mean age [\pm SD] 42 \pm 3.5 years). Fifty-one per cent were women (n=18,806), 62% were married or common law (n=22,801), and 38% were single, separated, widowed or divorced (n=14,132). Social support (Medical Outcome Study Social Support Survey) (31) was measured by 19 functional support items, each rated on a five-point scale (range 0 to 76, mean 64.8 \pm 13.3). The Psychological Well-being Manifestation Scale (32) measures well-being over the previous month with 25 questions on a five-point scale (0 to 4). Higher scores indicate better well-being (range 0 to 100, mean 81.5 \pm 14.2). 'Trouble sleeping' was measured on a four-point scale, and was dichotomized into 1 = none or a little of the time (n=24,136, 65%), and 2 = some, most or all of the time (n=12,843, 35%). Major depression was diagnosed using the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Revision*, based on the World Health Organization Composite International Diagnostic Interview (33), with 12.2% (n=4494) reporting suffering from at least one lifetime major depressive episode.

Statistical analysis

To reduce the number of coping variables, a principal component analysis was conducted with varimax rotation of 12 of the 13 coping items. Because 'prayer and seeking spiritual help' were of interest as separate items, this item was not included in the factor analysis. Two main factors emerged, and were labelled negative and positive coping, in addition to a third factor, which included using alcohol, or 'drugs or medication' to cope (Table 1). Combined, these three factors accounted for 41% of the variance. Within the positive coping factor, 'jogging or other exercise' had the lowest association with the other items, and removing this item increased the Cronbach's alpha of the positive coping scale to 0.502. Because 'jogging or other exercise' may be an important treatment adjunct in chronic pain and fatigue, it was analyzed separately from the remaining cognitive positive coping methods. The Cronbach's alpha for negative coping was 0.592. The positive, negative, exercise, and alcohol, drug and medication coping items were used as dependent variables in the regression models below.

Multiple analysis of covariance was used, with age, sex, marital status and social support as covariates to determine differences between the group with chronic pain and fatigue and the rest of the population. Among those with chronic pain and fatigue, separate linear regression models were used to predict the continuous outcome variables – psychological well-being, positive coping, negative coping, exercise coping, and alcohol, drug or medication coping – using religious or spiritual group membership dummy-coded as the independent variable, with the nonreligious and nonspiritual group as the reference category. The Bonferroni correction for multiple tests was applied, with $P < 0.01$ as the level of significance. All estimates were weighted. Statistical analysis was performed with SPSS for Windows, Release 15.0.0, 2006 (SPSS Inc, USA).

RESULTS

Descriptive statistics and associations with chronic pain and fatigue

Significant differences were determined in the demographic characteristics between those with chronic pain and fatigue and the general population. The population with chronic pain and fatigue was more likely to be older (mean age 44 years, 95% CI 44 to 45, versus mean 41 years, 95% CI 41 to 42), female (58% versus 48%), living with a partner (65% versus 60%) and with lower social support (range 0 to 76, mean 63.7, 95% CI 63.5 to 64.0, versus mean 65.3, 95% CI 65.1 to 65.4). After controlling for these baseline characteristics, including social support (Table 2), it was determined that the population with chronic pain and fatigue was less likely to use positive coping strategies and exercise, and more likely to use negative coping strategies, prayer or seeking spiritual help, and alcohol, drugs or medication. Chronic pain and fatigue sufferers were more likely to report trouble sleeping and had a significantly higher likelihood of a major depression episode. The chronic pain and fatigue population are significantly more spiritual, but are less religious. Numbers of nonreligious and nonspiritual individuals did not differ between chronic pain and fatigue sufferers and the general population.

Religion, spirituality and mental health in chronic pain and fatigue

Adjusted associations with psychological well-being and ways of coping with stress in the chronic pain and fatigue population are

TABLE 1
Factor loadings of coping measures

Coping	1	2	3
Negative coping			
Avoiding people	0.604	-0.196	0.155
Sleeping more	0.600	-0.057	0.155
Blaming oneself	0.640	0.044	0.086
Eating more or less	0.642	0.027	-0.008
Wishing away situation	0.538	0.098	-0.015
Positive coping			
Doing something enjoyable	0.086	0.657	0.022
Looking on the bright side	-0.217	0.645	-0.047
Talking to others	0.006	0.571	-0.066
Problem solving	-0.072	0.581	-0.050
Exercising	0.260	0.451	0.116
Alcohol, drug or medication coping			
Using drugs or medication	0.104	-0.075	0.741
Drinking alcohol	0.104	0.032	0.775

presented in Table 3. Being spiritual was associated with the use of positive, negative and exercise coping methods. Being religious was significantly associated with better psychological well-being, positive coping, exercise and less use of alcohol, drugs or medication to cope.

DISCUSSION

The population with chronic pain and fatigue contains more individuals who are spiritual without being religious, and who, as a group, use prayer to cope more than the general population. The finding is consistent with a tendency to seek spiritual support during time of illness (17,34) and to pray for health-related concerns (35) (Table 2). The tendency to turn to spiritual resources has also been shown in depression and anxiety disorders, both of which may be chronic (36). We also found those with chronic pain and fatigue reported more depression. In contrast, those who were religious were less likely to have chronic pain and fatigue. One explanation is that individuals with chronic pain and fatigue do not attend worship services frequently, possibly because of their physical and psychological difficulties. Alternatively, frequent worship attendance may be somehow protective of chronic pain and fatigue. The latter interpretation could be consistent with Shorter's hypothesis (11) of a lack of social connection as a contributing factor to psychosomatic illness. Frequent worship attendance (religion) is also linked to lower self-reports of pain intensity among individuals with sickle cell disease (37). Positive religious coping techniques are related to significantly better mental health in general (17). The cross-sectional nature of the data precludes definite causal conclusions.

Among those individuals with chronic pain and fatigue (Table 3), being religious (but not just spiritual) was associated with better psychological well-being. Spiritual transcendence, or the capacity to view life from a more detached perspective, was associated with better well-being in individuals with rheumatoid arthritis (38). Acceptance of illness was associated with better psychological well-being in chronic fatigue syndrome and chronic pain (39). Acceptance may be enhanced by religious or spiritual strength and reframing of the chronic illness (40).

TABLE 2
Multiple analysis of covariance of coping and well-being with chronic pain and fatigue (CPF) and the general population (weighted)

	No CPF n=26,476 (72%)	CPF n=10,479 (28%)	Df	Sum of squares	F	P
PWB, range 3–100	82.9 (82.7–83.0)	79.8 (79.5–80.1)	1	51355.022	419.91	<0.001
Positive cope, range 1–4	3.46 (3.46–3.47)	3.44 (3.43–3.44)	1	3.781	25.35	<0.001
Negative cope, range 1–4	2.18 (2.18–2.19)	2.32 (2.30–2.33)	1	95.988	393.07	<0.001
Exercise cope, range 1–4	2.10 (2.08–2.11)	2.05 (2.03–2.08)	1	10.571	13.27	<0.001
Prayer cope, range 1–4	2.43 (2.41–2.44)	2.52 (2.49–2.54)	1	43.364	22.94	<0.001
Alcohol/drugs, range 1–4	1.23 (1.23–1.24)	1.32 (1.31–1.33)	1	39.434	226.34	<0.001
Trouble sleeping	30.4%	45.1%	1	118.066	716.33	<0.001
Lifetime major depression	9.9%	17.5%	1	31.987	426.54	<0.001
Nonspiritual and nonreligious	28.9%	29.3%	1	0.092	0.471	0.49
Spiritual	35.0%	37.7%	1	3.875	16.99	<0.001
Religious	36.1%	33.0%	1	5.165	23.32	<0.001
Error			27553		–	–

Data for CPF and No CPF scores presented as mean (95% CI) unless otherwise stated. Results adjusted for age, sex, marital status and level of social support. Df Degrees of freedom; PWB Psychological well-being

TABLE 3
Linear regression analysis of psychological well-being and coping methods in the population with chronic pain and fatigue

	Spiritual			Religious		
	Std B	t	P	Std B	t	P
Psychological well-being	0.028	2.298	NS	0.078	6.373	<0.001
Positive coping	0.108	8.42	<0.001	0.109	8.37	<0.001
Negative coping	0.033	2.59	0.01	0.023	1.80	NS
Alcohol/drug coping	–0.004	–0.29	NS	–0.106	–7.99	<0.001
Exercise coping	0.044	3.33	0.001	0.107	8.06	<0.001

Results adjusted for age, sex, marital status and level of social support. The reference category was nonspiritual and nonreligious subjects. NS Not significant; Std B Standardized beta

Both the religious and spiritual groups were significantly more likely to use positive coping mechanisms than the nonreligious and nonspiritual group (Table 3). The positive coping mechanisms included attitudinal and active strategies, such as looking on the bright side, doing something enjoyable or talking to others. Religion and spirituality increase feelings of control and self-efficacy, which appear to be related to increasing pain tolerance and encouraging more active coping techniques (41). Both groups were also more likely to use exercise to cope than the nonreligious and nonspiritual groups. This finding may reflect a larger available support network or more opportunities for activities that accompany religious observance, or the possibility that the religious group is less disabled in general, which was not addressed in these data.

The spiritual group was more likely to use negative coping strategies. This may reflect more general disability or indicate a subset of individuals who use more negative forms of spiritual coping (ie, feeling that God is punishing them), and tend to have negative psychological and physical reactions as well (42). It is possible that pain and fatigue may not only physically discourage worship attendance, but may create anger at God or initiate other spiritual struggles. If these struggles are not worked

through, they may be linked to a worse outcome (43) or lead to other forms of negative coping, such as addictive behaviours (44) and other psychopathologies (45). In a survey of pain-triggering events, emotional distress was identified as the most significant factor; thus, consideration of all sources of stress is important (1). In contrast, the religious group was less likely to use alcohol, drugs or medication to cope. Usual religious prescriptions regarding excess use of drugs and alcohol may have reduced this form of negative coping (46).

The present study confirms the known associations of chronic pain and fatigue with decreased positive well-being, increased use of alcohol and drugs, decreased exercise, increased trouble sleeping and increased lifetime depression (5,13). In addition, we found that chronic pain and fatigue were associated with less positive coping, more negative coping and less likelihood of being religious, but increased likelihood of being spiritual and turning to prayer to cope.

Limitations of the present study include the cross-sectional nature of the data, which restricted inferences regarding causality. The measure of organizational religion was well established, but was limited to one question about worship frequency (27). The measure of importance of spiritual values was likewise limited to one question. No measure of pain severity or level of disability relevant to the present study was available. Ultimately, replication and longitudinal studies with more sensitive measures need to be conducted, with the aim of further examining these findings. Advantages of the present study include a nationally representative population, use of well-established sampling procedures, and no apparent bias or emphasis regarding the association of religion and spirituality with chronic pain and fatigue.

CONCLUSION

Religion, as measured by worship frequency together with importance of spiritual values, is associated with lower levels of chronic pain and fatigue syndromes in the Canadian population. Frequent worship attendance is associated with better psychological well-being in the population with chronic pain and fatigue. Religiousness and spirituality are both associated with the use of positive (psychological) and exercise (physical)

coping mechanisms. Although religious individuals may appear to have better outcomes in a cross-sectional study such as the present one, it remains to be determined whether this is due to less pain in general or better pain management. For example, spiritual meditation was associated with higher pain tolerance than secular meditation or relaxation (47). Nevertheless, there are several implications for physicians in the management of chronic pain and fatigue. Chronic pain and fatigue conditions require multimodal approaches and a variety of coping strategies (48). Asking patients about their religious or spiritual beliefs may allow for exploration of potential positive or negative forms of coping or beliefs that would otherwise go unnoticed. Sensitive inquiry and referral

to appropriate sources to deal with spiritual struggles are encouraged as part of patient-centred care (49). Developing religiously and spiritually sensitive pain reduction interventions, spiritually oriented group therapy or practising spiritual meditation have been proposed, and are beginning to be examined as useful additional ways to help (20). The present study suggests that frequency of religious worship attendance should be considered in the development of such interventions. Further study of the associations presented here, particularly in a longitudinal manner, may contribute to our understanding of chronic pain and fatigue and other chronic distressing disorders, and may enhance the tools used to deal with them.

REFERENCES

- Bennett RM, Jones J, Turk DC, Russell IJ, Matallana L. An internet survey of 2,596 people with fibromyalgia. *BMC Musculoskelet Disord* 2007;8:27.
- Meeus M, Nijs J, Meirleir KD. Chronic musculoskeletal pain in patients with the chronic fatigue syndrome: A systematic review. *Eur J Pain* 2007;11:377-86.
- Schmidt-Wilcke T, Ganssbauer S, Neuner T, Bogdahn U, May A. Subtle grey matter changes between migraine patients and healthy controls. *Cephalalgia* 2008;28:1-4.
- Staud R, Rodriguez ME. Mechanisms of disease: Pain in fibromyalgia syndrome. *Nat Clin Pract Rheumatol* 2006;2:90-8.
- Bair MJ, Robinson RL, Katon W, Kroenke K. Depression and pain comorbidity: A literature review. *Arch Intern Med* 2003;163:2433-45.
- Afari N, Buchwald D. Chronic fatigue syndrome: A review. *Am J Psychiatry* 2003;160:221-36.
- Patten SB. Long-term medical conditions and major depression in the Canadian population. *Can J Psychiatry* 1999;44:151-7.
- Davis MC, Zautra AJ, Reich JW. Vulnerability to stress among women in chronic pain from fibromyalgia and osteoarthritis. *Ann Behav Med* 2001;23:215-26.
- Ofluoglu D, Berker N, Güven Z, Canbulat N, Yilmaz IT, Kayhan O. Quality of life in patients with fibromyalgia syndrome and rheumatoid arthritis. *Clin Rheumatol* 2005;24:490-2.
- Manchikanti L, Fellows B, Singh V, Pampati V. Correlates of non-physiological behavior in patients with chronic low back pain. *Pain Physician* 2003;6:159-66.
- Shorter E. *From Paralysis to Fatigue: A History of Psychosomatic Illness in the Modern Era*. New York: Maxwell Macmillan, 1992:295-323.
- Kato K, Sullivan PF, Evengård B, Pedersen NL. Premorbid predictors of chronic fatigue. *Arch Gen Psychiatry* 2006;63:1267-72.
- Kato K, Sullivan PF, Evengård B, Pedersen NL. Chronic widespread pain and its comorbidities: A population-based study. *Arch Intern Med* 2006;166:1649-54.
- Siegel RD. Psychophysiological disorders: Embracing pain. In: Germer CK, Siegel RD, Fulton PR, eds. *Mindfulness and Psychotherapy*, 1st edn. New York: Guilford Press, 2005:173-96.
- Rippentrop EA. A review of the role of religion and spirituality in chronic pain populations. *Rehabil Psychol* 2005;50:278-84.
- Oman D, Thoresen CE. 'Does religion cause health?': Differing interpretations and diverse meanings. *J Health Psychol* 2002;7:365-80.
- Rippentrop EA, Altmaier EM, Chen JJ, Found EM, Keffala VJ. The relationship between religion/spirituality and physical health, mental health, and pain in a chronic pain population. *Pain* 2005;116:311-21.
- Koleck M, Mazaux JM, Rasle N, Bruchon-Schweitzer M. Psychosocial factors and coping strategies as predictors of chronic evolution and quality of life in patients with low back pain: A prospective study. *Eur J Pain* 2006;10:1-11.
- Cigrang JA, Hryshko-Mullen A, Peterson AL. Spontaneous reports of religious coping by patients with chronic physical illness. *J Clin Psychol Med Settings* 2003;10:133-7.
- Wachholtz AB, Pearce MJ, Koenig H. Exploring the relationship between spirituality, coping, and pain. *J Behav Med* 2007;30:311-8.
- Bush EG, Rye MS, Brant CR, Emery E, Pargament KI, Riessinger CA. Religious coping with chronic pain. *Appl Psychophysiol Biofeedback* 1999;24:249-60.
- Smith TB, McCullough ME, Poll J. Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events. *Psychol Bull* 2003;129:614-36.
- Baetz M, Griffin R, Bowen R, Koenig HG, Marcoux E. The association between spiritual and religious involvement and depressive symptoms in a Canadian population. *J Nerv Ment Dis* 2004;192:818-22.
- Pargament KI, Koenig HG, Perez LM. The many methods of religious coping: Development and initial validation of the RCOPE. *J Clin Psychol* 2000;56:519-43.
- Statistics Canada. Canadian Community Health Survey Cycle 1.2: Mental Health and Well-being, Public Use Microdata File Guide. <<http://www.statcan.ca/bsolc/english/bsolc?catno=82M0021G>> (Version current at July 15, 2008).
- Statistics Canada. Canadian Community Health Survey, cycle 1.2 [machine readable data file]. (First edition). 2004. Ottawa, Statistics Canada.
- Norris P, Inglehart R. *Sacred and Secular: Religion and Politics Worldwide*. Cambridge: Cambridge University Press, 2004.
- Folkman S, Lazarus RS. If it changes it must be a process: Study of emotion and coping during three stages of a college examination. *J Pers Soc Psychol* 1985;48:150-70.
- Amirkhan JH. A factor analytically derived measure of coping: The Coping Strategy Indicator. *J Pers Soc Psychol* 1990;59:1066-74.
- Carver CS, Scheier MF, Weintraub JK. Assessing coping strategies: A theoretically based approach. *J Pers Soc Psychol* 1989;56:267-83.
- Sherbourne CD, Stewart AL. The MOS social support survey. *Soc Sci Med* 1991;32:705-14.
- Massé R, Poulin C, Dassa C, Lambert J, Bélair S, Battaglini MA. [Elaboration and validation of a tool to measure psychological well-being: WBMS.] *Can J Public Health* 1998;89:352-7.
- Gravel R, Béland Y. The Canadian Community Health Survey: Mental health and well-being. *Can J Psychiatry* 2005;50:573-9.
- Büssing A, Ostermann T, Matthiessen PF. Role of religion and spirituality in medical patients: Confirmatory results with the SpREUK questionnaire. *Health Qual Life Outcomes* 2005;3:10.
- McCaffrey AM, Eisenberg DM, Legedza AT, Davis RB, Phillips RS. Prayer for health concerns: Results of a national survey on prevalence and patterns of use. *Arch Intern Med* 2004;164:858-62.
- Baetz M, Bowen R, Jones G, Koru-Sengul T. How spiritual values and worship attendance relate to psychiatric disorders in the Canadian population. *Can J Psychiatry* 2006;51:654-61.
- Harrison MO, Edwards CL, Koenig HG, Bosworth HB, Decastro L, Wood M. Religiosity/spirituality and pain in patients with sickle cell disease. *J Nerv Ment Dis* 2005;193:250-7.
- Bartlett SJ, Piedmont R, Bilderback A, Matsumoto AK, Bathon JM. Spirituality, well-being, and quality of life in people with rheumatoid arthritis. *Arthritis Rheum* 2003;49:778-83.
- Van Damme S, Crombez G, Van Houdenhove B, Mariman A, Michiels W. Well-being in patients with chronic fatigue syndrome: The role of acceptance. *J Psychosom Res* 2006;61:595-9.
- Risdon A, Eccleston C, Crombez G, McCracken L. How can we learn to live with pain? A Q-methodological analysis of the diverse

- understandings of acceptance of chronic pain. *Soc Sci Med* 2003;56:375-86.
41. Keefe FJ, Kashikar-Zuck S, Robinson E, et al. Pain coping strategies that predict patients' and spouses' ratings of patients' self-efficacy. *Pain* 1997;73:191-9.
 42. Keefe FJ, Affleck G, Lefebvre J, et al. Living with rheumatoid arthritis: The role of daily spirituality and daily religious and spiritual coping. *J Pain* 2001;2:101-10.
 43. Pargament KI, Koenig HG, Tarakeshwar N, Hahn J. Religious struggle as a predictor of mortality among medically ill elderly patients: A 2-year longitudinal study. *Arch Intern Med* 2001;161:1881-5.
 44. Faigin CA, Pargament KI. Filling the spiritual void: Spiritual struggles as a risk factor for addictive behaviors. Association for Psychological Science, 20th Annual Convention. Chicago, May 22 to 25, 2008. (Abst)
 45. McConnell KM, Pargament KI, Ellison CG, Flannelly KJ. Examining the links between spiritual struggles and symptoms of psychopathology in a national sample. *J Clin Psychol* 2006;62:1469-84.
 46. Gorsuch RL. Religious aspects of substance abuse and recovery. *J Soc Issues* 1995;51:65-83.
 47. Wachholtz AB, Pargament KI. Is spirituality a critical ingredient of meditation? Comparing the effects of spiritual meditation, secular meditation, and relaxation on spiritual, psychological, cardiac, and pain outcomes. *J Behav Med* 2005;28:369-84.
 48. Astin JA. Mind-body therapies for the management of pain. *Clin J Pain* 2004;20:27-32.
 49. Puchalski C, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. *J Palliat Med* 2000;3:129-37.
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