

This article was downloaded by: [Ben-Arye, Eran]

On: 21 September 2010

Access details: Access Details: [subscription number 927164364]

Publisher Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Ethnicity & Health

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713421971>

Exploring association of spiritual perspectives with complementary medicine use among patients with Type 2 diabetes in Israel

Eran Ben-Arye^a; Elad Schiff^b; Khaled Karkabi^a; Yael Keshet^c; Efraim Lev^d

^a Complementary and Traditional Medicine Unit, Department of Family Medicine, Technion-Israel Institute of Technology, Rappaport Faculty of Medicine, Israel and Clalit Health Services, Haifa, Israel ^b Department of Internal Medicine, The International Center for Health, Law and Ethics, Haifa University, Bnai-Zion Hospital, Haifa, Israel ^c Department of Sociology, Western Galilee Academic College, Bar Ilan University, Haifa, Israel ^d Department of Eretz Israel Studies, School of Public Health, University of Haifa, Haifa, Israel

First published on: 21 September 2010

To cite this Article Ben-Arye, Eran , Schiff, Elad , Karkabi, Khaled , Keshet, Yael and Lev, Efraim(2010) 'Exploring association of spiritual perspectives with complementary medicine use among patients with Type 2 diabetes in Israel', *Ethnicity & Health*, First published on: 21 September 2010 (iFirst)

To link to this Article: DOI: 10.1080/13557858.2010.510181

URL: <http://dx.doi.org/10.1080/13557858.2010.510181>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

Exploring association of spiritual perspectives with complementary medicine use among patients with Type 2 diabetes in Israel

Eran Ben-Arye^{a*}, Elad Schiff^b, Khaled Karkabi^a, Yael Keshet^c and Efraim Lev^d

^aComplementary and Traditional Medicine Unit, Department of Family Medicine, Technion-Israel Institute of Technology, Rappaport Faculty of Medicine, Israel and Clalit Health Services, 6 Hashahaf Street, Haifa and Western Galilee District, Haifa 35013, Israel; ^bDepartment of Internal Medicine, The International Center for Health, Law and Ethics, Haifa University, Bnai-Zion Hospital, Haifa, Israel; ^cDepartment of Sociology, Western Galilee Academic College, Bar Ilan University, Haifa, Israel; ^dDepartment of Eretz Israel Studies, School of Public Health, University of Haifa, Haifa, Israel

(Received 16 March 2009; final version received 19 July 2010)

Background. Spirituality, as distinct from religiosity, has become a most common term in complementary and alternative medicine (CAM) discourse. The association between religiosity and spirituality in the context of CAM use is a complex one and is worthy of being researched in specific local cultural contexts.

Objective. Exploring the association between CAM use and religiosity, in patients with and without diabetes Type 2 attending primary care clinics in Northern Israel.

Research design and methods. Research assistants administered a questionnaire developed to assess CAM use in primary care to a convenience sample of patients attending seven primary care clinics.

Results. Of the 3742 respondents, 485 (12.9%) reported having Type 2 diabetes. Respondents with diabetes reported more overall CAM use during the previous year (46.9% vs. 42%, $P=0.049$). A logistic regression model of patients with diabetes Type 2 indicated that CAM use was associated with higher self-assessed religiosity [$\text{Exp}(B) = 1.898$, 95% CI for $\text{Exp}(B)$ 1.02–3.529, $P=0.043$]. CAM use among patients with diabetes was also associated more with female gender, higher education, and age under 60. The positive association between CAM use and degree of self-assessed religiosity was further studied in sub-populations of Jewish and Arab patients with diabetes Type 2. A logistic regression model of the Jewish population indicated significant association between CAM use and higher religiosity [$\text{Exp}(B) = 3.668$, 95% CI for $\text{Exp}(B)$ 1.232–10.922, $P=0.02$].

Conclusion. Primary care physicians need to be aware of a possible association between religiosity and CAM use in patients with diabetes. Physicians may consider adding questions on CAM and religiosity to routine clinical interviews in order to enrich their dialog with diabetes patients.

Keywords: primary care; diabetes; integrative medicine; complementary medicine; spirituality; cross-cultural medicine; traditional medicine

Introduction

Complementary and alternative medicine (CAM) is a title used in reference to a diverse group of health-related therapies and disciplines that are not considered to be

*Corresponding author. Email: eranben@netvision.net.il

a part of mainstream medical care. Other terms may include ‘natural medicine,’ ‘non-conventional medicine,’ and ‘holistic medicine’ (House of Lords, Science and Technology Committee 2000). In 2006, the US National Center for Complementary and Alternative Medicine (NCCAM 2006) classified CAM in five domains, which include holistic medical systems (e.g., traditional Chinese medicine), mind–body medicine (e.g., relaxation techniques), biologically based practices (e.g., herbal and dietary supplements), manipulative and body-based practices (e.g., massage), and energy medicine (e.g., therapeutic touch).

The use of CAM by patients with Type 2 diabetes ranges from 17 to 73% in different countries (Chang *et al.* 2007). Garrow and Egede (2006) reported in a 2002 US National Health Interview Survey (NHIS; National Center for Health Statistics 2004) that 48% of adults with diabetes used some form of CAM. Association between diabetes care and increased CAM use was found in both extremes of high use of conventional care (increased emergency department and primary care visits; Garrow and Egede 2006) and limited use of conventional care due to cost restrictions (Pagán and Tanguma 2007). CAM use in diabetes care may also be related to cultural, religious, and spiritual aspects. Chang *et al.* (2007) reviewed 18 studies from nine countries and concluded that spiritual healing is among the most widely used CAM modality in diabetic populations. Yeh *et al.* (2002) characterized the use of CAM among people with diabetes mellitus residing in the USA and found that spiritual practices were the leading modalities used specifically for diabetes treatment. In a pilot study conducted at the Yale University School of Nursing, Newlin *et al.* (2003) studied 22 Black women with Type 2 diabetes and found significant inverse correlations between diastolic blood pressure and spiritual and religious well-being.

The association between spirituality and CAM is highly regarded in various CAM schools of thought. Antonovsky’s concept of health promotion, *salutogenesis* rather than *pathogenesis*, is endorsed by CAM modalities, such as anthroposophic medicine, which perceives health in the holistic context of body, mind, and spirit (Eriksson and Lindström 2008). Kouvonen *et al.* (2008) studied prospectively the relationship between the sense of coherence (SOC), a concept suggested by Antonovsky, which relates to positive life orientation with effective coping, and the incidence of diabetes. The researchers studied 5827 Finnish male employees aged 18–65 at baseline of whom 313 developed diabetes during 18 years of follow-up. A low SOC was associated with a 46% higher risk of diabetes in participants who had been less than 50 years of age on entry into the study. Other studies in Sweden and Israel also suggested that SOC has important implications in diabetes care (Agardh *et al.* 2003, Cohen and Kanter 2004). CAM and spirituality are often regarded in the context of holistic care. Several scholars suggested integrating CAM within a biopsychosocial-spiritual context aiming to advance comprehensive patient-centered care (Bell *et al.* 2004, McDonough-Means *et al.* 2004, Ben-Arye *et al.* 2006). Kligler (2004) suggested an integrative approach to diabetes care based on these concepts.

Diabetes is a long-term chronic illness that has noticeable spiritual and religious perspectives in the Jewish and Arab communities. The Muslim pilgrimage Hajj to the holy cities in Saudi Arabia is a medical and spiritual challenge to patients with diabetes who may be at risks of morbidity and mortality (Khan *et al.* 2006). Religious Muslims with diabetes are also challenged by hypoglycemia risks during the monthly Ramadan fasting (Salti *et al.* 2004), while Jews with diabetes encounter

with different fasts through the year, including the Yom Kippur fast of more than 24 hours (Grajower 2008). Although the association between religiosity and diabetes care is not thoroughly studied, preliminary research indicates its importance. For example, Moss and McDowell (2005) studied patients with diabetes in a rural Caribbean community and found that strong religious influence formed the basis of diabetes treatment and offered symptom relief through spiritual revelations about herbal and folk remedies. In another study, Popoola (2005) studied the trans-cultural experience of living with diabetes in Nigerian and African-American communities and found that patients used holistic and complementary approaches while maintaining their spiritual faith and hopes.

In our study, we intended to assess the association between CAM use and religiosity, in the contexts of specific local sub-cultures and practices. Additionally, we aimed to explore the connection between religiosity and CAM use in patients with Type 2 diabetes attending primary care clinics located in Jewish and Arab communities in Northern Israel. The population of Northern Israel is characterized by a mosaic of Jews and Muslim Arabs, Christian Arabs and Druze, non-Arab Christians, and other religions. Arabs are the largest minority group in Israel accounting for about 20% of the country's total population (Central Bureau of Statistics, Government of the State of Israel 2009). We decided to focus on patients' self-assessment of religiosity. The focus on a perspective of religiosity, as reported in this study, was part of a larger study designed to investigate the outlook of patients attending primary care clinics in Northern Israel on the theme of CAM integration in primary care (Ben-Arye *et al.* 2009a, 2009b, 2009c).

Research design and methods

Study sites and participants

The study was performed using a convenience sample of patients visiting primary care clinics for medical or administrative services. Participants had to be older than 18 years and medically insured by Clalit Health Services (CHS 2009), the largest of four health maintenance organizations in Israel, serving 3,800,000 clients (approximately 60% of the country's population). The study included seven family medicine clinics operated by the CHS in varying urban and rural settings in Northern Israel and serving a variety of Jewish and Arab populations (Muslim Bedouins and non-Bedouins; Christians; and Druze).

Prior to initiation, the study was reviewed and approved by the CHS Internal Review Board.

Study design

A preliminary questionnaire in Hebrew was developed based on a comprehensive literature review as well as on a focus group discussion with patients attending a primary care clinic. A refinement of the questionnaire was based on the focus group's appraisals and on discussions among a group of physicians and CAM practitioners who had been asked to translate and correspond the Hebrew and Arabic versions of the questionnaires bi-directionally. The Hebrew and Arabic questionnaires were used in a preliminary study in two clinics, one located in a mixed

rural/urban Arab community and the other in a Jewish city. A group of five researchers (one statistician, three family practitioners, and one CAM practitioner; three of the five speak fluent Arabic and have worked at clinics in Arab communities) examined and compared the two sets of questionnaires and further refined the Arabic questionnaire by employing both linguistic and cultural perspectives.

The authors decided to use a broad and comprehensible definition of CAM: ‘therapies often named alternative, complementary, natural, folk/traditional medicine, which are not usually offered as part of the medical treatment in the clinic.’ Added to this definition was a list of CAM modalities: herbal medicine, Chinese medicine (including acupuncture), homeopathy, folk and traditional medicine, dietary/nutritional therapy (including nutritional supplements), chiropractics, movement/manual healing therapies (massage, reflexology, yoga, Alexander and Feldenkreis techniques, etc.), mind–body techniques (meditation, guided imagery, and relaxation), energy and healing therapies, and other naturopathic therapies. The questionnaires included a question concerning the religiosity of the respondent, matching his/her approach to one of four optional definitions that are accepted in both Jewish and Arabic culture: secular, traditional, religious, and ultra-religious.

Research assistants administered the survey to patients attending the family medicine clinics during the years 2005 and 2006. Hebrew- and Arabic-speaking research assistants were available at all of the clinics. Research assistants loaded results of the survey into a computer database for further analysis.

Statistical analysis

Data were evaluated using the SPSS software program (Version 12; SPSS Inc., Chicago, IL). Pearson’s Chi-square test and Fisher’s exact test were used to detect differences in the prevalence of categorical variables and demographic data between the Arab and Jewish participants. Additionally, a *t*-test was performed to determine whether any differences existed in the continuous variables between the two groups. *P*-values less than 0.05 were regarded as significant. Multivariable logistic regression was used to assess univariate associations with the odds ratio of CAM use in the Arab and Jewish populations.

Results

Of the 3972 eligible subjects, 132 refused to participate (response rate 96%). Of the 3840 respondents, 3742 respondents reported suffering from chronic diseases, 485 participants (12.9%) reported having diabetes, and 3257 (87.1%) reported having other chronic diseases or no disease at all. Of the 480 diabetes patients who were willing to identify their ethnicity, 271 defined themselves as Arabs (56.5%) and 209 (43.5%) as Jews.

The participants’ demographic characteristics are shown in Table 1. Respondents in the diabetes and non-diabetes groups were non-equally distributed by gender, age, educational background, and self-reported religiosity. Jewish and Arab diabetes respondents were equally distributed by gender but differed in other characteristics.

Table 1. Demographic characteristics of respondents.

Characteristics	No. of respondents who reported having chronic diseases, $n = 3742^a$					
	No. of non-diabetes respondents, $n = 3257$	No. of diabetes respondents, $n = 485$	p -Value	No. of Jewish diabetes respondents, $n = 209$	No. of Arab diabetes respondents, $n = 271$	p -Value
Mean age in years \pm SD (median)	42.2 \pm 15.9 (39)	55.4 \pm 13.8 (55)	<0.0001	61.1 \pm 13.6 (60.5)	50.5 \pm 12.1 (49)	<0.0001
Sex ^b						
Male:Female(%)	1112:1881 (37.1:62.9)	194:251 (43.6:56.4)	0.005	94:113 (45.4:54.6)	111:156 (41.6:58.4)	NS
Education						
Elementary school	288 (10.3%)	126 (30.7%)	0.0001	31 (16.2%)	109 (45.4%)	<0.001
High school	1483 (52.8%)	217 (52.8%)		108 (56.5%)	114 (47.5%)	
Academic	1036 (36.9%)	68 (16.5%)	0.0001	52 (27.2%)	17 (7.1%)	
Religiosity						
Secular	1114 (34.9%)	135 (28.2%)	0.0044	96 (47.1%)	37 (13.8%)	0.0001
Traditional	1611 (50.5%)	231 (48.3%)	NS	83 (40.7%)	145 (53.9%)	0.0053
Religious	423 (13.3%)	105 (22.0%)	0.0001	24 (11.8%)	81 (30.1%)	0.0001
Ultra-religious	44 (1.4%)	7 (1.5%)	NS	1 (0.5%)	6 (2.2%)	NS

^a3742/3840 respondents reported having chronic diseases.

^b3438/3742 respondents reported their sex.

Note: NS, non-significant; SD, standard deviation. Data analysis was performed by Pearson's Chi-square test and Fisher's exact test.

Complementary and alternative medicine (CAM) use during previous year

Compared to respondents without diabetes, patients with diabetes reported more overall CAM use during the previous year (diabetes patients 46.9% vs. non-diabetes 42%, $P=0.049$), but similar rates of consultation with CAM practitioners (33.5% vs. 31.9%).

Respondents with diabetes, significantly more than non-diabetes, reported use of herbal remedies (38.8% vs. 30.9%, $P=0.021$) but significantly less manual and movement therapies (28.6% vs. 41.2%, $P=0.021$). Participants in both groups reported high and similarly prevalent use of folk/traditional medicine (39–46%) and nutritional supplements (37–41%). Patients with diabetes reported more consultations with traditional medicine practitioners (26.5% vs. 16.2%, $P=0.003$), but less with practitioners of manual and movement therapies (35.8% vs. 48.4%, $P=0.003$).

Logistic regression model characterizing complementary and alternative medicine (CAM) users with diabetes

The authors constructed a regression model, based on variables of gender, age, education, and self-assessed religiosity, in order to characterize diabetes CAM users. Table 2 shows that CAM use among patients with diabetes was associated with female gender, higher education, and age younger than 60 years. CAM use was associated with religiosity in a subset of religious and ultra-religious patients with diabetes (compared to patients who identified themselves as secular) [$\text{Exp}(B) = 1.898$, 95% CI for $\text{Exp}(B)$ 1.02–3.529, $P=0.043$].

The authors decided to study the association of CAM use and religiosity by examining logistic regression models of the two study subsets of the Jewish and Arab diabetes population. Table 3 shows that in the Jewish diabetes population, CAM use was significantly associated with religiosity [$\text{Exp}(B) = 3.668$, 95% CI for $\text{Exp}(B)$

Table 2. Logistic regression model to assess univariate associations with odds ratio of CAM use in the diabetes patients' population.

Variables	<i>B</i>	<i>p</i> -Value	$\text{Exp}(B)$	95% CI for $\text{Exp}(B)$	
				Lower	Upper
Gender – women	0.418	0.047	1.519	1.005	2.297
Religiosity ^a					
Traditional	0.405	0.107	1.499	0.916	2.452
Religious + Ultra-religious	0.641	0.043	1.898	1.020	3.529
Age ^b					
< 40 years old	0.557	0.074	1.745	0.948	3.214
40–60 years old	0.589	0.013	1.802	1.130	2.874
Education ^c					
Elementary	–0.913	0.006	0.401	0.209	0.768
High school	–0.704	0.017	0.495	0.277	0.883

^aSecular.

^bAge > 60 years.

^cAcademic.

Note: CI, confidence interval.

Table 3. Logistic regression model to assess univariate associations with odds ratio of CAM use in the Jewish diabetes patients' population.

Variables	B	p-Value	Exp(B)	95% CI for Exp(B)	
				Lower	Upper
Religiosity ^a					
Traditional	0.341	0.300	1.406	0.738	2.679
Religious + ultra-religious	1.300	0.020	3.668	1.232	10.922
Age ^b					
< 40 years old	0.680	0.206	1.974	0.688	5.663
40–60 years old	0.728	0.027	2.072	1.085	3.957
Education ^c					
Elementary	-0.978	0.053	0.376	0.140	1.013
High school	-0.721	0.045	0.486	0.240	0.984

^aSecular.^bAge >60 years.^cAcademic.

Note: CI, confidence interval.

1.232–10.922, $P=0.02$]. A logistic regression model of the Arab diabetes population found no association between CAM use and religiosity. Higher education and age younger than 60 years were highly associated with CAM use in both regression models of the Jewish and Arab diabetes population.

Discussion

In this study, we found that CAM use was associated with religiosity in a subset of religious and ultra-religious patients with diabetes. When we further analyzed the data in regard to religious and cultural contexts, we found that CAM use was associated with religiosity in the Jewish diabetes population but not within the Arab diabetes population. In a previous report, we found that Arab and Jewish patients with diabetes use CAM (47%) and consult CAM practitioners (31–35%) in similar rates during the year prior to the survey (Ben-Arye *et al.* 2009a, 2009b, 2009c). Nevertheless, Jewish and Arab patients use different CAM modalities – Arab patients consulted more with traditional and herbal practitioners, while Jewish patients consulted more with homeopaths. The dissimilarity between Arab and Jewish patients with diabetes regarding CAM use and religiosity as suggested in the present study may be explained by different approaches of patients from the two communities to the concepts of CAM and spirituality. We hypothesize that patients may approach CAM with different expectations varying from a need for practical advice (e.g., herbs that will reduce glucose level) to seeking healing in a spiritual context. Kumar *et al.* (2006) referred to this practical approach to CAM as ‘a desire for quick and additional relief.’ In-depth qualitative research is needed to ascertain whether CAM use among patients with diabetes reflects only an interest in concrete quick remedies or suggests a search for meaning and spirituality. In our study, Arab patients with diabetes were significantly more religious compared to Jews (based on their self-report), but still no association was found regarding religiosity and CAM

use. This finding may indicate that this group of Arab patients did not associate CAM with religiosity but rather with practical remedies such as herbs. Further studies may assess the validity of the hypothesis that religiosity in Arab patients with diabetes predicts seeking other non-CAM therapeutic routes such as praying and religious practices. In contrast to Arab patients, only 12% of the patients in the Jewish group defined themselves as religious or ultra-religious. We hypothesize that this group of Jewish patients may direct their religiosity not only to the religious arena, but also to CAM modalities that may be interpreted in a spiritual context, such as homeopathy with its non-materialistic and metaphysic characteristics.

This study may also have some theoretical implications. If religiosity and CAM use are indeed associated in some local sub-cultures and not in others, as appears likely from our results, then spirituality can be understood as an element that either associates or distinguishes between CAM use and religiosity, depending on the context of local cultural beliefs and practices. We did not find any research investigating the associations between religiosity, CAM use, and spirituality for Israeli Arabs; hence, we cannot expand on explanations for the Arab diabetes patients. However, for the Jewish diabetes patients, whose religiosity and CAM use were found to be associated, a mechanism that is possibly involved here is *domestication*. This term has been proposed to describe a process characteristic of CAM in Israel (and perhaps also elsewhere), 'in which the foreign is rendered familiar and palatable to local tastes' (Fadlon 2005, p. 2). As shown in another Israeli study (Zaidman *et al.* 2009), domestication may take the form of ignoring or omitting some of CAM's core ideas. Our results suggest that CAM, diabetes, and religiosity are interconnected at least in the Jewish society. If these findings are valid in other societies and cultures, conceptualizing a model of care based on these associations may add another perspective to our dialog with patients. Such a model may integrate three layers of care in which induction of lifestyle changes, empowerment of patients, and therapeutic relationships are woven around the spiritual–CAM–conventional triangle.

This study does have certain limitations. We did not select a representative sample of the Jewish and Arab communities in Israel, but decided to approach patients in clinics serving a variety of communities with distinctive cultural characteristics, which are located in a relatively small area of 300 km² in Northern Israel. This method may have caused selection bias in terms of clinic-site selection. To offset this potential bias, we made considerable efforts to minimize patient selection bias by offering participation in the study, with no language restriction, to each and every patient that entered the clinic for any medical or administrative reason. Thus, our results may not represent the total population but rather the population of patients who actually came to the clinics. Another potential drawback of the study is that we intentionally designed the study in primary care clinics, and not in diabetes specialists' clinics, in order to learn the perspectives of 'real-world' patients commonly taken care of in family medicine practice. Thus, our findings may not reflect attitudes of patients with more severe diabetes status referred to diabetes specialists' clinics. Another limitation for interpretation of our results is the demographic differences between the Jewish and Arab populations in terms of age and education. Compared to the Arab population, the Jewish population is significantly older (mean age of patients with diabetes: Jews vs. Arabs: 61.1 vs. 50.5) and is characterized by more patients with academic background (27.2% vs. 7.1%). The differences in age and education of the

two populations emphasize the importance of analyzing religiosity as a multi-dimensional phenomenon. Another limitation is the potential difference of the Arab and Jewish populations in terms of identifying formal religious affiliation and ethnicity. This aspect is a subject for debate in the Jewish society from the birth of the Zionist movement and is especially reflected in the secular society. Indeed, this factor of religious/ethnic affiliation may impact our results and influence our ability to analyze the connection religious affiliation and CAM use. Thus, our findings concerning religiosity and CAM use in patients with diabetes may be influenced by cultural perspectives and necessitate cultural-sensitive verification in follow-up studies.

In conclusion, in this study we found significant use of CAM among patients with diabetes in Northern Israel and that this use may be associated with religiosity. Based on these findings, we recommend asking patients with diabetes routinely whether they have considered CAM use or have current and/or previous experience with CAM. Thereafter, we suggest asking whether patients associate CAM with spirituality, religiosity, or a search for special meaning and purpose in life because of their disease.

References

- Agardh, E.E., *et al.*, 2003. Work stress and low sense of coherence is associated with type 2 diabetes in middle-aged Swedish women. *Diabetes Care*, 26 (3), 719–724.
- Bell, I.R., *et al.*, 2004. Strength of vital force in classical homeopathy: bio-psycho-social-spiritual correlates within a complex systems context. *Journal of Alternative and Complementary Medicine*, 10 (1), 123–131.
- Ben-Arye, E., *et al.*, 2006. Is a bio-psycho-social-spiritual approach relevant to cancer treatment? A study of patients and oncology staff members on issues of complementary medicine and spirituality. *Supportive Care in Cancer*, 14 (2), 147–152.
- Ben-Arye, E., *et al.*, 2009a. Attitudes of Arab and Jewish patients toward integration of complementary medicine in primary care clinics in Israel: a cross-cultural study. *Social Science and Medicine*, 68 (1), 177–182.
- Ben-Arye, E., *et al.*, 2009b. Attitudes of patients with diabetes about complementary medicine in Israel: a cross-cultural perspective. *Journal of Alternative and Complementary Medicine*, 15 (3), 211–212.
- Ben-Arye, E., *et al.*, 2009c. Attitudes of Arab-Muslims toward integration of complementary medicine in primary-care clinics in Israel: the Bedouin mystery. *Ethnicity and Health*, 6, 1–13.
- Central Bureau of Statistics, Government of the State of Israel, 2009. *The Arab population in Israel* [online]. Available from: <http://www.cbs.gov.il> [Accessed 18 August 2010].
- Chang, H.Y., Wallis, M., and Tiralongo, E., 2007. Use of complementary and alternative medicine among people living with diabetes: literature review. *Journal of Advanced Nursing*, 58 (4), 307–319.
- Clalit Health Services, 2009. *Clalit Health Services* [online]. Available from: http://www.microsoft.com/israel/casestudies/clalit_sql.msp [Accessed 18 August 2010].
- Cohen, M. and Kanter, Y., 2004. Relation between sense of coherence and glycemic control in type 1 and type 2 diabetes. *Behavioral Medicine*, 29 (4), 175–183.
- Eriksson, M. and Lindström, B., 2008. A salutogenic interpretation of the Ottawa charter. *Health Promotion International*, 23 (2), 190–199.
- Fadlon, J., 2005. *Negotiating the holistic turn: the domestication of alternative medicine*. Albany, NY: State University of New York Press.
- Garrow, D. and Eggede, L.E., 2006. Association between complementary and alternative medicine use, preventive care practices, and use of conventional services among adults with diabetes. *Diabetes Care*, 29, 15–19.

- Grajower, M.M., 2008. Management of diabetes mellitus on Yom Kippur and other Jewish fast days. *Endocrine Practice*, 14 (3), 305–311.
- House of Lords, Select Committee on Science and Technology, 2000. Complementary and alternative medicine: House of Lords Select Committee on Science and Technology 6th report (session 1999–00).
- Khan, N.A., et al., 2006. Pattern of medical diseases and determinants of prognosis of hospitalization during 2005 Muslim pilgrimage Hajj in a tertiary care hospital. A prospective cohort study. *Saudi Medical Journal*, 27 (9), 1373–1380.
- Kligler, B., 2004. The role of the optimal healing environment in the care of patients with diabetes mellitus type II. *Journal of Alternative and Complementary Medicine*, 10 (Suppl. 1), S223–S229.
- Kouvonen, A.M., et al., 2008. Sense of coherence and diabetes: a prospective occupational cohort study. *BMC Public Health*, 6 (8), 46.
- Kumar, D., Bajaj, S., and Mehrotra, R., 2006. Knowledge, attitude and practice of complementary and alternative medicines for diabetes. *Public Health*, 120 (8), 705–711.
- McDonough-Means, S.I., Kreitzer, M.J., and Bell, I.R., 2004. Fostering a healing presence and investigating its mediators. *Journal of Alternative and Complementary Medicine*, 10 (Suppl. 1), S25–S41.
- Moss, M.C. and McDowell, J.R., 2005. Rural Vincentians' (Caribbean) beliefs about the usage of non-prescribable medicines for treating Type 2 diabetes. *Diabetic Medicine*, 22 (11), 1492–1496.
- National Center for Health Statistics, 2004. *Data file: National Health Interview Survey* [online]. Hyattsville, MD: National Center for Health Statistics. Available from: http://wwwftp.cdc.gov/pub/health_statistics/nchs/datasets/nhis/2002 [Accessed 8 October 2008].
- NCCAM, 2010. *NCCAM facts-at-a-glance and mission*. Available from: <http://www.nccam.nih.gov/about/ata glance/> [Accessed 18 August 2010].
- Newlin, K., et al., 2003. The relationship of spirituality and health outcomes in Black women with type 2 diabetes. *Ethnicity and Disease*, 13 (1), 61–68.
- Pagán, J.A. and Tanguma, J., 2007. Health care affordability and complementary and alternative medicine utilization by adults with diabetes. *Diabetes Care*, 30 (8), 2030–2031.
- Popoola, M.M., 2005. Living with diabetes: the holistic experiences of Nigerians and African Americans. *Holistic Nursing Practice*, 19 (1), 6–10.
- Salti, I., et al., 2004. A population-based study of diabetes and its characteristics during the fasting month of Ramadan in 13 countries: results of the epidemiology of diabetes and Ramadan 1422/2001 (EPIDIAR) study. *Diabetes Care*, 27 (10), 2306–2311.
- Yeh, G.Y., et al., 2002. Use of complementary and alternative medicine among persons with diabetes mellitus: results of a national survey. *American Journal of Public Health*, 92 (10), 1648–1652.
- Zaidman, N., Goldstein-Gidoni, O., and Nehemya, I., 2009. From temples to organizations: the introduction and packaging of spirituality. *Organization*, 16 (4), 597–621.