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Pharmacy Students' Self-reported Health Behaviours and Spiritual Practices and Attitudes toward Complementary and Alternative Medicine

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Abstract

Objective: We explored if and how self-reported spiritual practices and health behaviours of pharmacy students correlated with attitudes toward CAM, CAM use, recommending CAM and seeking CAM evidence.

Method: A secondary analysis of a cross-sectional survey of 437 pharmacy students at the Charles University in Prague in the Czech Republic was conducted using the validated CAM Health Beliefs Questionnaire (CHBQ).

Results: Overall cohort CHBQ mean score was 48.5 (maximum score=70) confirming positive beliefs/attitudes toward CAM irrespective of self-reported health behaviour and spiritual practices. Students with self-reported spiritual practices used twice as many CAM modalities (3.8 vs 2.1; $p<0.001$); were more likely to recommend CAM therapy to patients (4.6 vs 3.2; $p<0.001$) and provide them with CAM-related information (6.2 vs 5.3; $p=0.021$). Positive health behaviour correlated with more self-reported CAM use ($p=0.040$). No correlation was found between smoking status, regular exercise and CAM use.

Conclusion: Pharmacy trainee's lifestyle and health behaviours may influence some of their patient care decisions about recommending CAM therapies.

Keywords: *Complementary and alternative medicine (CAM), CAM attitudes, CAM use, health behaviours, spirituality*

Introduction

In the United States, the most recent 2002 National Health Interview Survey showed that Complementary and alternative medicine (CAM) users shared certain sociodemographic characteristics compared to non-users, such as being female, having higher education and socioeconomic status, and impaired health (Barnes, Powell-Griner, McFann, & Nahin 2004). Other characteristics related to health behaviours, values and attitudes of CAM users have been investigated to a lesser extent. First findings suggested that positive health-related behaviours such as engagement in leisure-time physical activity, having consumed alcohol but not being a current heavy drinker, and being a former smoker were independently associated with the higher use of CAM (Nahin et al 2007). A variety of studies indicate that personality, unmet health needs and spirituality may be important correlates of attitudes and behaviours including CAM preference (Votova, & Wister, 2007). Scoring higher on a psychospiritual instrument was found to be more highly correlated with a patient's choice of a physician who recommended CAM, over one who did not (Petry, & Finkel, 2004). A cross-sectional survey of general practitioners showed a positive relationship between self-reported healthy dietary habits and physical activity, and CAM practice and recommendation (Giannelli, Cuttini, Da Frè, & Buiatti 2007).

In this study, we hypothesized that students who reported use of 'spiritual' modalities and more positive health behaviours defined by preventive health practices, would be more likely to report CAM use for themselves and to recommend CAM to their clients.

Materials and Methods

This study was a secondary analysis of a cross-sectional, self-administered survey of 250 first- and 187 third-year pharmacy students conducted at the School of Pharmacy at the Charles University (a five-year pharmacy program), one of two pharmacy schools in the Czech Republic. Full details of the primary study have been described elsewhere (Pokladnikova, & Lie, 2008). The validated 10-question CAM Health Belief Questionnaire (CHBQ), designed to

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measure attitudes/beliefs toward CAM in health professional settings, was used within a larger set of questions that included self-reported health behaviours (Lie and Boker, 2004, 2006). Because the maximum score on the CHBQ is 70, a positive attitude toward CAM was predefined as a total mean score exceeding the midpoint neutral score of 35, the same criterion used in the paper validating the CHBQ (Lie and Boker, 2004).

Information on self-reported health behaviour (smoking status, exercise habits, compliance with preventive care visits) and 'spiritual practices' was collected within the survey questions. Students with positive health behaviour (PB) were defined as non-smoking students who exercised regularly for 30 minutes at least three times a week and voluntarily visited their doctor for a preventive care visit in last two years. They were asked: 'Do you smoke?' (yes/no options), 'Do you exercise for 30 minutes at least three times a week?' (yes/no options), 'When was the last time you visited your physician for a preventive care check-up with 5 possible response options – a. never b. within last 12 months c. 1-2 years ago d. 2-5 years ago e. 5-more years ago'. The definition of positive health behaviour (PB) was meeting all the following criteria: checking 'no' for smoking, 'yes' for exercise, and checking 'c' for preventive health care. The definition of 'Self-reported spiritual practices' (S) was based on self-reported ´use of spiritual practices´ (such as prayer), defined as a 'yes' response to the item 'Spirituality (such as prayer)' in the CAM modality question asking about specific modalities used by the respondent. The study was approved by the Ethical Committee of School of Pharmacy.

Categorical data between the groups were analyzed by chi-square test or Fisher's exact test (two-tailed). An independent T-test or Man-Whitney-U test was used for continuous variables depending on normal distribution. *P*-values <0.05 were considered significant. In this study, analyses were performed using the Statistical Package SPSS version 12.0 (SPSS®, SPSS Inc., Chicago, IL, 2006).

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Table 1: Complementary and alternative medicine use, self-reported knowledge, a likelihood of recommending CAM modality amongst pharmacy students with respect to health behavior.

CAM modality[$]	Used %		Self-reported knowledge %		Likely to recommend to a patient %	
	PB[#]	Non-PB	PB[#]	Non-PB	PB[#]	Non-PB
	N=92	N=186	N=92	N=186	N=92	N=186
Any CAM modality						
≥ 1	94	78	92	91	96	90
≥ 2	80*	70	90	86	88	81
Vitamins	77*	58	90	84	83	76
Herbals	53	37	88	83	78	79
Massage	34*	31	89*	79	86*	70
Relaxation	18	16	80	74	71	67
Homeopathy	12	89	67	67	36	41
Aromatherapy	90	85	70	62	50*	38
Yoga	69	63	75	67	61	57
Spirituality	37	41	41	43	13	20
Meditation	35	19	76	66	49	43
Natural healing	27	17	55	45	20	15

[$]Ten most frequently used therapies are listed only.

[#] non-smokers, regular exercise, last preventive check-up < 2 years

* An independent T-test or Man-Whitney-U test were used depending on normal distribution to test for differences between groups at level of significance <0.05.

times a week?' (yes/no options), 'When was the last time you visited your physician for a preventive care check-up with 5 possible response options – a. never b. within last 12 months c. 1-2 years ago d. 2-5 years ago e. 5-more years ago'. The definition of positive health behaviour (PB) was meeting all the following criteria: checking 'no' for smoking, 'yes' for exercise, and checking 'c' for preventive health care. The definition of 'Self-reported spiritual practices' (S) was based on self-reported ´use of spiritual practices´ (such as prayer), defined as a 'yes' response to the item 'Spirituality (such as prayer)' in the CAM modality question asking about specific modalities used by the respondent. The study was approved by the Ethical Committee of School of Pharmacy.

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Results

Two hundred seventy eight students participated in the primary study (n(PB)=92 vs n(non-PB)=186 and n(S)=50 vs n (non-S)=228 respondents) for a response rate of 64%.

The CHBQ overall mean score for the PB and S students were 48.6 and 49.1 respectively, comparable to the overall mean CHBQ score of 48.5 for the entire cohort of respondents, confirming positive beliefs/attitudes toward CAM irrespective of self-reported health behavior and spiritual practices.

Across the two years of respondents, 90.3 % self-reported the use of at least one CAM modality (excluding vitamin/mineral supplements); the mean number of CAM modalities used was higher in PB compared to non-PB respondents (2.7 vs 2.3; p=0.038) (Table 1). S respondents self-reported use of twice as many CAM modalities overall as non-S respondents (3.8 vs 2.1; p<0.001) (Table 2).

Ninety six percent of PB students would recommend at least one CAM modality to a patient compared to 92 % of non-PB students (p=0.185). S respondents were more likely to recommend a higher number of CAM modalities to a patient (S respondents mean = 4.6 vs Non-S respondents mean = 3.2; p<0.001) and provide them with CAM-related information (S respondents mean = 6.2 vs Non-S respondents mean = 5.3; p=0.021).

A greater number of PB respondents obtained information on CAM mainly through the internet (66 % vs 46 %; p=0.001), journals (62 % vs 47 %; p=0.015) and books (48 % vs 41 %; p=0.187) compared to non-PB respondents. There was no difference in CAM information resource use between respondents with and without self-reported spiritual practices.

Table 2: Complementary and alternative medicine use, self-reported knowledge, a likelihood of recommending CAM modality amongst pharmacy students with respect to self-reported spiritual practices

CAM modality[$]	Used %		Self-reported knowledge %		Likely to recommend to a patient %	
	S	Non-S	S	Non-S	S	Non-S
	N=50	N=228	N=50	N=228	N=50	N=228
Any CAM modality						
≥ 1	100*	88	98	90	100*	90
≥ 2	100*	68	96*	85	94*	81
Vitamins	94*	79	96*	84	4*	25
Herbals	96*	76	96	82	94*	75
Massage	78*	57	92*	80	88*	73
Relaxation	80*	51	88	74	86*	64
Homeopathy	32	38	68	67	34	40
Aromatherapy	54*	32	80*	61	66*	36
Yoga	34	32	70	69	66	57
Meditation	34*	16	64	71	56	42
Natural healing	22	12	48	48	28*	14
Acupressure	10	9	48	51	28	25
Tai-chi	8	8	22	23	24	14
Reflexology	14	7	28	20	22	14
Reiki	12	5	24	16	20*	9
Acupuncture	10	4	62	61	32	27
Positive Imaginary	10*	2	24*	11	12*	4

S, students with self-reported spiritual practices , Non-S, students without self-reported spiritual practices

[$]Fifteen most frequently used therapies are listed only.

* An independent T-test or Man-Whitney-U test were used depending on normal distribution to test for differences between groups at level of significance <0.05.

All respondents showed low awareness and use of CAM evidence-based information sources.

Discussion

We recently reported a study that found similarly positive attitudes among Czech pharmacy and US medical students in their own use of CAM modalities and tendency to recommend CAM use to patients (Lie and Boker, 2004, 2006; Pokladnikova and Lie, 2008). We now report a secondary analysis of our survey data investigating the connection between self-reported spiritual practices, and healthy behaviors, and likelihood of recommending CAM to patients, CAM use and attitudes.

Respondents showed positive attitudes about CAM irrespective of their health behaviors and self-reported spiritual practices. There was a significant positive correlation between some health behaviors and self-reported spiritual practices and self-reported CAM use and a likelihood of recommending a CAM therapy to a patient. In other words, respondents who displayed certain health behaviors and/or report spiritual practices were using a higher number of CAM modalities and were more likely to recommend a CAM therapy to a patient. On average, respondents with self-reported spiritual practices self-reported use of twice as many CAM modalities overall as respondents who did not self-report use of spiritual modalities, with meditation, relaxation, positive imaginary, massage, herbals, vitamins and mineral supplements and aromatherapy being the most prevalent modalities. These findings support existing research showing that tendency toward spiritual beliefs is associated with increased CAM use and particularly self-initiated/self-directed types of CAM modalities (Dessio et al 2004; Stoskopf, Kim, Schell, Glover, and Samuels 2000; Votova and Wister, 2007).

Although the numbers of respondents with positive health behavior and self-reported spiritual practices (n=17) were too small to determine if the two were additive in their effect in our study, preliminary results suggested there may be a synergistic effect.

Despite the fact that pharmacy students with self-reported practice of spiritual modalities showed low awareness and use of evidence-based CAM information sources, they were willing to recommend CAM modalities more frequently than students without self-reported practice of spiritual modalities without the requisite evidence to do so, that is, based only on personal use of these modalities. This finding, that pharmacy students' self-reported willingness to recommend CAM therapies to patients despite a lack of knowledge based on current evidence, should be of concern to educators and health profession practitioners.

Pharmacists have an important role in assessing patients' current use of CAM and advising them on their potential benefits and risks. Currently, Czech pharmacy curriculum lacks a systematic approach to an evidence-based CAM education. The patterns of CAM self-reported use, knowledge and a likelihood of recommending CAM to a patient among pharmacy students with self-reported spiritual practices provide us with important information on how to best develop a new CAM program that would meet the need for more evidence- based instructions. Moreover, pharmacy curriculum should take into account that students' beliefs including spiritual ones may affect their health care decisions and their ability and willingness to recommend a CAM modality to a patient. At the same time, it is important to have trainees understand that patients' beliefs and health care needs influence patients' choice of a CAM modality. Similarly in a study by Robinson et al, the patients' decisions concerning CAM involved choosing a modality that was in accord with their self-assessed health care needs and beliefs (Robinson, Chesters, Cooper, 2007).

The strengths of our study are the completeness of the data, a high representative sample of Czech pharmacy students, and use of a validated survey instrument. Weaknesses include a less complex definition of spirituality and preventive health behaviors.Spirituality has been variously defined in studies of health and illness and definitions range form single questions to multi-item questionnaires such as the SpREUK, the Ironson -Woods Spirituality/Religiousness Index, the Daily Spiritual Experience Scale and the Spiritual Wellbeing Scale (Büssing, Ostermann, Matthiessen and Büssing 2005; Ellison, 1983; Ironson et al 2002; Underwood and Teresi, 2002; Williams, 1994). Spirituality maybe broadly defined as one's connection to a universal force which may be referred to as God, Mother nature, Cosmos, Higher power, or any other name. Spiritual practices such as prayer are used to cultivate spiritual wellbeing. Spirituality is often, but not necessarily, associated with religious behavior that may be assessed through membership in a religious organization, rate of attendance at its functions, frequency of prayer and involvement in social activities of the organization.

The association between healthy behaviors and spiritual practices, and the likelihood of recommending CAM to patients in pharmacy students bears further investigation among other health professionals, using tools validated for 'Spirituality' and a more rigorous definition of 'healthy behaviors'. Nevertheless, our study results indicate that pharmacy trainee's lifestyle as well as spiritual practices such as prayer may influence some of their patient care decisions about recommending CAM therapies. Evidence-based CAM curriculum needs to be introduced to the current pharmacy curriculum so that patient care decisions are based on the best available and valid evidence while respecting patients' beliefs and health care needs.

There is no conflict of interest.

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