



Original research article

# Health care and social worker students' attitudes, knowledge and experience of complementary and alternative medicine and its differences between full-time and part-time students in Hungary

Andrea Sárváry<sup>1\*</sup>, Péter Takács<sup>2</sup>, Krisztina Éles Gebriné<sup>3</sup>, Attila Sárváry<sup>4</sup><sup>1</sup> University of Debrecen, Faculty of Health, Department of Psychology, Nyíregyháza, Hungary<sup>2</sup> University of Debrecen, Faculty of Health, Department of Health Informatics, Nyíregyháza, Hungary<sup>3</sup> University of Debrecen, Faculty of Health, Department of Health Visitor Methodology and Public Health, Nyíregyháza, Hungary<sup>4</sup> University of Debrecen, Faculty of Health, Department of Nursing Science, Nyíregyháza, Hungary

## Abstract

**Introduction:** This study aimed to compare the attitudes of health care and social work students towards knowledge and personal use of CAM. We also studied the students' opinions about the integration of CAM into higher education and health care in Hungary. Comparisons were made between full-time and part-time students.

**Materials and methods:** A total of 725 students (601 health care and 124 social work) took part in a cross-sectional survey using a self-completion questionnaire. Data were analysed using descriptive statistics.

**Results:** Social work and part-time students' attitudes were significantly more positive than those of health care and full-time students. The most commonly known CAM practices were massage, relaxation, homeopathy, acupuncture and herbal medicine. The most commonly personally used CAM modalities were massage and herbal medicine. Health care students' knowledge was higher than social work students in homeopathy, acupuncture and Traditional Chinese Medicine. Part-time students had more knowledge and experience about several CAM practices than full-time students. Most students agreed that CAM should be integrated into higher education and the health care system.

**Conclusions:** Social workers and part-time students are more open towards CAM. The more positive attitudes, higher knowledge and more experience regarding CAM that was found among part-time students cannot be explained by age itself.

**Keywords:** Attitude; Complementary and alternative medicine (CAM); Full-time and part-time students; Health care and social worker students; Knowledge

## Introduction

Complementary and Alternative Medicine (CAM) is used as an umbrella term involving natural products and a variety of traditional therapeutic methods and techniques (NCCIH, 2018). Along with the increasing popularity of CAM methods in Western countries, a need appeared for integrating these techniques into the medical care system (Balouchi et al., 2018; Ben-Arye et al., 2008; Clarke et al., 2015; Fox et al., 2010; Peltzer and Pengpid, 2018; Tan and Mak, 2015; Taylor, 2002). International organizations such as the World Health Organization (WHO) also emphasized the importance of the development of national policies and regulations of CAM, and strengthening the safety and quality assurance of these methods by regulation and integration of CAM into health service delivery (WHO, 2013).

Most international studies carried out in the last 10 years have shown an intensified interest in CAM among medical and other health care students. Both medical and non-medical students' attitudes towards CAM were positive and they agreed with the integration of CAM into the curriculum (Akan et al., 2012; Awad et al., 2012; Çamurdan and Gül, 2013; James et al., 2016; Joyce et al., 2016; Poreddi et al., 2016; Walker et al., 2017). Nowadays, education in CAM practices at the medical and health science universities has become accepted practice, resulting in increased knowledge and more interest among students (Booth-Laforce et al., 2010; Klafke et al., 2016; Lee et al., 2007; Pearson and Chesney, 2007; Tiralongo and Wallis, 2008).

In Hungary the education of CAM practices was introduced in 1987, when some medical universities offered a course in Traditional Chinese Medicine for medical students. The education of other types of CAM practices started at the end of

\* **Author for correspondence:** Andrea Sárváry, University of Debrecen, Faculty of Health, Sóstói u. 2–4, 4400 Nyíregyháza, Hungary; e-mail: [sarvary.andrea@foh.unideb.hu](mailto:sarvary.andrea@foh.unideb.hu)  
<http://doi.org/10.32725/kont.2019.009>

Submitted: 2018-04-19 • Accepted: 2018-11-27 • Prepublished online: 2019-03-04

KONTAKT 21/2: 214–221 • EISSN 1804-7122 • ISSN 1212-4117

© 2019 The Authors. Published by University of South Bohemia in České Budějovice, Faculty of Health and Social Sciences.

This is an open access article under the CC BY-NC-ND license.

the 1990s (Hegyí, 2010). The University of Debrecen, Faculty of Health offers some CAM courses for health care and social work students.

Our previous study found that full-time nursing, health visitor<sup>1</sup> and midwifery students' attitudes towards CAM were positive and that they have relatively high percentages of knowledge about some CAM practices. The Complementary Medicine course was found to be useful among the participants and they reported a higher knowledge about some CAM practices than students who did not participate in this course (Sárváry et al., 2016).

The primary aim of the study was to investigate and compare health care and social work students' attitudes and knowledge towards CAM, its personal use and its perceived effectiveness. Secondly, the study aimed to reveal students' opinions about the integration of CAM into the higher education and health care system in Hungary. Finally, comparisons were made between full-time and part-time students.

## Materials and methods

### Study questionnaire

The following CAM practices were included in a self-administered questionnaire: Traditional Chinese Medicine, acupuncture, homeopathy, meditation, relaxation techniques, hypnotherapy, Mind Control, magnets, Prananadi<sup>2</sup>, Reiki<sup>3</sup>, therapeutic touch, kinesiology, massage, acupressure, chiropractic, reflexology, herbal medicine and non-herbal supplements.

### Attitude

Attitude was measured by 12 statements. Students answered on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

### Knowledge

Students were asked to indicate their knowledge about CAM practices using a 4-point Likert scale (none/very little/some/a lot).

### Personal use and perceived effectiveness

Students were asked to respond 'yes' or 'no' with reference to CAM practices and to assess the effectiveness of the practices used by them on a 7-point Likert scale (1 = it was completely ineffective, 7 = it was completely effective).

### Integration of CAM

Students were asked to indicate how much they agree with four statements concerning integration of CAM practices into higher education and the health care system in Hungary on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

The questionnaire was pre-tested with 8 students. Modifications were made as necessary to ensure the questionnaire was understandable and easy to answer.

### Sample

The study target sample consisted of all the full-time and part-time students (1,627) at the Faculty of Health of the University of Debrecen. The sample consisted of 996 full-time and 631 part-time students in the 1st–4th year. One group of students (1,289) was studying in the area of health care (294 nurses, 256 paramedics, 211 midwives, 196 health visitors, 332 health care managers) and the other group (338) was studying social work. There were 259 males and 1,368, females.

### Data collection

The study was carried out at the University of Debrecen, Faculty of Health in Nyíregyháza between April and June 2013. The Eva-sys online version of the questionnaire was used. Teachers organized the data collection during seminars. Participation in the study was voluntary. Written permission to conduct the research was obtained from the University of Debrecen, Faculty of Health.

### Statistical analysis

Data were analysed using SPSS version 22.0 with 0.05 as the level of significance. Similarly to other research (Cook et al., 2000; Joyce et al., 2016), all Likert-scale responses with any degree of agreement were grouped together as positive responses.

A scale was developed from the 12 statements in order to evaluate students' attitudes towards CAM. The internal consistency of this measure was found to be high (Cronbach's alpha = 0.842). To summarize the data, descriptive statistics were used. An independent sample *T*-test was used to measure whether the difference of Likert scale averages was significant between health care vs. social work and full-time vs. part-time students. The correlation between students' attitudes towards CAM and students' age was examined by Spearman's rho. Simple cross-tabulations, Chi-square tests (Pearson) were used to analyse differences in agreeing with statements, knowledge and personal use between health care vs. social work, and full-time vs. part-time students.

## Results

725 students from the 1st, 2nd, 3rd and 4th years completed the questionnaire (93, 12.8% males, and 632, 87.2% females). The survey response rate was 44.6% (725/1,627). Among the 725 respondents, 601 (82.9%) were health care students and 124 (17.1%) were social work students. The distribution of students based upon enrollment per semester was 469, 64.7% full-time and 256, 35.3% part-time.

Health care students consisted of the following groups: 185 (25.5%) nurses, 62 (8.6%) paramedics, 125 (17.2%) midwives, 99 (13.7%) health visitors, 104 (14.3%) health care managers and 26 (3.6%) master health care social workers. Social work students consisted of three groups: 104 (14.3%) social work bachelor students, 6 (0.8%) social work and social economy master students and 14 (1.9%) post graduate students (Table 1). Data were collected from 1st (289 = 39.9%), 2nd (217 = 29.9%), 3rd (142 = 19.6%) and 4th (77 = 10.6%) year students. The mean age was 27.1 years (full-time students: 21.6 years, part-time students: 35.8 years), and ranged from 18–57. The sample was representative with the respect to proportion of health care and social work as well as full-time vs. part-time students at the Faculty of Health.

### Attitude

Students' attitudes were found to be positive according to the Likert scale averages (Mean (*M*) = 5.03, standard deviation (*Std*) = 0.91). There were significant differences in health care (*M* = 4.99, *Std* = 0.91) and social work (*M* = 5.18, *Std* = 0.87; *p* = 0.041) students' attitudes, and full-time (*M* = 4.93, *Std* = 0.87) and part-time (*M* = 5.20, *Std* = 0.94; *p* = 0.000) students' attitudes.

Over 70% of the students (Table 2) agreed that CAM is a useful supplement to regular medicine (523 = 72.1%), and that it brings about an improvement in patients' wellbeing (521 =

**Table 1. Characteristics of the sample**

Area of study	Specialization of students	Total N (%)	Full-time students N (%)	Part-time students N (%)
Health care N = 601 (82.9%)	nursing	185 (25.5)	82 (17.5)	103 (40.2)
	paramedic	62 (8.6)	50 (10.7)	12 (4.7)
	midwifery	125 (17.2)	119 (25.4)	6 (2.3)
	health visitor	99 (13.7)	99 (21.1)	0 (0.0)
	health care management	104 (14.3)	79 (16.8)	25 (9.8)
	health care in social work MSc	26 (3.6)	0 (0.0)	26 (10.2)
Social work N = 124 (17.1%)	social work BA	104 (14.3)	40 (8.5)	64 (25.0)
	social work and economy MA	6 (0.8)	0 (0.0)	6 (2.3)
	post graduate	14 (1.9)	0 (0.0)	14 (5.5)
Total		725 (100%)	469 (64.7)	256 (35.3)

71.9%). Over two-thirds of students agreed to the following statements: I believe that CAM may have a positive effect on general health outcomes (506 = 69.8%), CAM does have significant results (500 = 69.0%), and CAM treatments can provide an answer in cases where conventional medicine has no solution (498 = 68.7%). However, one-third of students (246 = 33.9%) believed that the results of CAM are in most cases due to a “placebo-effect”. Furthermore, approximately one-quarter of students (209 = 28.8%) believed that CAM was dangerous because it raised unfounded hopes, may lead to disappointment later, and patients almost never get better using only CAM (163 = 22.5%).

Significant differences were found between health care and social work students’ opinions (Table 2) in the following two items: CAM is a useful supplement to regular medicine (424 = 70.5% vs. 99 = 79.8%;  $p = 0.036$ ) and I believe in alternative approaches in health (371 = 61.7% vs. 91 = 73.4%;  $p = 0.014$ ).

Significant differences were observed between full-time and part-time students’ opinions regarding the “placebo-effect” of CAM (175 = 37.3% vs. 71 = 27.7%;  $p = 0.009$ ), and whether CAM is a useful supplement to regular medicine (323 = 68.9% vs. 200 = 78.1%;  $p = 0.008$ ), and whether CAM may have a positive effect on general health outcomes (313 = 66.7% vs. 193 = 75.4%;  $p = 0.015$ ).

**Table 2. Health care and social work students’ general attitudes towards Complementary and Alternative Medicine (CAM)**

Statements	Agreed <sup>1</sup> N (%)			p
	Total N (%) N = 725	Health care students N (%) N = 601	Social work students N (%) N = 124	
CAM is a useful supplement to regular medicine	523 (72.1)	424 (70.5)	99 (79.8)	0.036
CAM brings about an improvement in patients’ wellbeing	521 (71.9)	425 (70.7)	96 (77.4)	0.131
I believe that CAM may have a positive effect on general health outcomes	506 (69.8)	411 (68.4)	95 (76.6)	0.069
CAM does have significant results	500 (69.0)	409 (68.1)	91 (73.4)	0.242
CAM treatments can provide an answer in cases where conventional medicine has no solution	498 (68.7)	406 (67.6)	92 (74.2)	0.147
I believe in alternative approaches in health	462 (63.7)	371 (61.7)	91 (73.4)	0.014
In recent years CAM has advanced considerably in the understanding of illness and diseases	378 (52.1)	309 (51.4)	69 (55.6)	0.391
The results of CAM are in most cases due to a ‘placebo-effect’	246 (33.9)	209 (34.8)	37 (29.8)	0.290
The increase in CAM use is dangerous because it raises unfounded hopes and leads to disappointment later	209 (28.8)	177 (29.5)	32 (25.8)	0.415
Patients almost never get better using only CAM	163 (22.5)	134 (22.3)	29 (23.4)	0.791
The increase in the use of CAM is dangerous because it increases the possibility of negative side-effects	117 (16.1)	98 (16.3)	19 (15.3)	0.786
Treatment with CAM modalities should be forbidden by law	86 (11.9)	69 (11.5)	17 (13.7)	0.485

<sup>1</sup> Percentages of ‘agreed a little’, ‘agreed moderately’, and ‘agreed strongly’ responses were combined.

*Association between attitude and age*

The correlation between students' attitudes and students' age was found to be weak ( $r = +0.234$ ).

**Knowledge**

82.7% of the students reported that they know something or a lot (Table 3) about massage. This was followed by relaxation (500 = 69.3%), homeopathy (475 = 66.1%), acupuncture

(472 = 65.5%), herbal medicine (466 = 65.1%) and meditation (459 = 64.2%).

Significant differences were found between health care and social work students' knowledge regarding homeopathy (408 = 68.6% vs. 67 = 54.0%;  $p = 0.002$ ), acupuncture (405 = 67.7% vs. 67 = 54.5%;  $p = 0.005$ ) and Traditional Chinese Medicine (243 = 40.6% vs. 31 = 25.0%;  $p = 0.001$ ).

**Table 3. Health care and social work students' knowledge of CAM practices**

CAM practices	Knowledge <sup>1</sup> N (%)			p
	Total N (%) N = 725	Health care students N (%) N = 601	Social work students N (%) N = 124	
massage	592 (82.7)	494 (83.3)	98 (79.7)	0.333
relaxation	500 (69.3)	421 (70.5)	79 (63.7)	0.134
homeopathy	475 (66.1)	408 (68.6)	67 (54.0)	0.002
acupuncture	472 (65.5)	405 (67.7)	67 (54.5)	0.005
herbal medicine	466 (65.1)	394 (66.4)	72 (58.5)	0.094
meditation	459 (64.2)	381 (64.4)	78 (63.4)	0.843
chiropractic	410 (57.5)	345 (58.4)	65 (53.3)	0.300
Mind Control	324 (45.3)	265 (44.6)	59 (48.4)	0.449
non-herbal supplements	298 (41.9)	251 (42.7)	47 (38.2)	0.360
acupressure	269 (38.1)	230 (39.2)	39 (32.5)	0.165
Traditional Chinese Medicine	274 (37.9)	243 (40.6)	31 (25.0)	0.001
hypnotherapy	242 (34.0)	209 (35.4)	33 (27.3)	0.085
magnets	213 (29.8)	181 (30.6)	32 (26.0)	0.309
reflexology	202 (28.7)	176 (30.0)	26 (22.0)	0.080
therapeutic touch	144 (20.3)	121 (20.5)	23 (18.9)	0.672
kinesiology	114 (16.1)	92 (15.7)	22 (18.0)	0.519
Reiki	95 (13.4)	79 (13.4)	16 (13.2)	0.950
Pranadi	58 (8.1)	52 (8.8)	6 (4.9)	0.152

<sup>1</sup> Percentages of 'knowing some' and 'knowing a lot' responses were combined.

Significant differences were found between full-time and part-time students' knowledge about relaxation (335 = 71.9% vs. 165 = 64.7%;  $p = 0.046$ ), herbal medicine (285 = 61.6% vs. 181 = 71.5%;  $p = 0.007$ ), Mind Control (194 = 41.8% vs. 130 = 51.6%;  $p = 0.012$ ), non-herbal supplements (179 = 38.8% vs. 119 = 47.6%;  $p = 0.024$ ), acupressure (156 = 34.0% vs. 113 = 45.7%;  $p = 0.002$ ), magnets (120 = 25.9% vs. 93 = 37.2%;  $p = 0.002$ ), therapeutic touch (79 = 17.1% vs. 65 = 26.1%;  $p = 0.004$ ) and kinesiology (60 = 12.9% vs. 54 = 22.0%;  $p = 0.002$ ).

**Personal use and perceived effectiveness**

The most commonly used CAM practices (over 50%) among students (Table 4) were massage (386 = 53.2%) and herbal medicine (358 = 53.1%). A significantly higher personal use of massage was found among social work students than among health care students (76 = 61.3% vs. 310 = 51.6%;  $p = 0.048$ ). The personal use of ten CAM practices was found to be significantly higher ( $p < 0.050$ ) among part-time students than among full-time students (Table 4). The highest effectiveness was experienced in massage (368 = 50.8%) and herbal medicine (315 = 43.4%).

**Integration of CAM**

65.0% of the students believed that research on CAM should be conducted (Table 5). The majority indicated that integration of CAM practices into health care would be effective (430 = 59.6%), CAM should be taught in higher education in the field of medical and health sciences (428 = 59.3%) and only evidence-based CAM practices should be taught (427 = 59.5%). Significant differences were observed between health care and social work students' opinions regarding whether there should be research on CAM (376 = 63.1% vs. 91 = 74.0%;  $p = 0.021$ ).

Significant differences were also found between full-time and part-time students' opinions regarding research on CAM (278 = 59.7% vs. 189 = 74.7%;  $p = 0.000$ ), whether integrating CAM practices into health care would be effective (259 = 55.5% vs. 171 = 67.3%;  $p = 0.002$ ), whether CAM should be taught (254 = 54.2% vs. 174 = 68.8%;  $p = 0.000$ ), and whether only evidence-based CAM practices should be taught (260 = 55.9% vs. 167 = 66.0%;  $p = 0.008$ ).

**Table 4. Full-time and part-time students' personal use and perceptions about effectiveness of CAM practices**

CAM practices	Personal use N (%)			p	Perceived effectiveness <sup>1</sup> Total N (%) N = 725
	Total N (%) N = 725	Full-time students N (%) N = 483	Part-time students N (%) N = 272		
massage	386 (53.2)	224 (47.8)	162 (63.3)	0.000	368 (50.8)
herbal medicine	358 (53.1)	218 (46.5)	167 (65.2)	0.000	315 (43.4)
homeopathy	278 (38.3)	140 (29.9)	138 (53.9)	0.000	191 (26.3)
non-herbal supplements	258 (35.6)	141 (30.1)	117 (45.7)	0.000	124 (17.1)
relaxation	220 (30.3)	150 (32.0)	70 (27.3)	0.194	177 (24.4)
chiropractic	197 (27.2)	116 (24.7)	81 (31.6)	0.046	140 (19.3)
Traditional Chinese Medicine	195 (26.9)	104 (22.2)	91 (35.5)	0.000	83 (11.4)
acupuncture	185 (25.5)	97 (20.7)	88 (34.4)	0.000	101 (13.9)
meditation	170 (23.4)	112 (23.9)	58 (22.7)	0.710	122 (16.8)
Mind control	133 (18.3)	91 (19.4)	42 (16.4)	0.319	77 (10.6)
acupressure	133 (18.3)	76 (16.2)	57 (22.3)	0.044	59 (8.1)
reflexology	132 (18.2)	76 (16.2)	56 (21.9)	0.059	53 (7.3)
magnets	93 (12.8)	48 (10.2)	45 (17.6)	0.005	53 (7.3)
hypnotherapy	92 (12.7)	67 (14.3)	25 (9.8)	0.081	19 (2.6)
Reiki	68 (9.4)	38 (8.1)	30 (11.7)	0.110	34 (4.7)
therapeutic touch	65 (9.0)	36 (7.7)	29 (11.3)	0.100	29 (4.0)
Prananadi	55 (7.6)	30 (6.4)	25 (9.8)	0.102	16 (2.2)
kinesiology	53 (7.3)	27 (5.8)	26 (10.2)	0.030	18 (2.5)

<sup>1</sup> Percentages of 'a little effective' and 'moderately effective' and 'completely effective' responses were combined.

**Table 5. Full-time and part-time students' opinions about integration of CAM practices into higher education and health care system**

Statements	Agreed <sup>1</sup> N (%)			p
	Total N (%) N = 725	Full-time students N (%) N = 483	Part-time students N (%) N = 272	
CAM should be researched	467 (65.0)	278 (59.7)	189 (74.7)	0.000
I think integration of CAM methods into health care would be effective	430 (59.6)	259 (55.5)	171 (67.3)	0.002
In my opinion CAM should be taught in higher education in the field of medical and health sciences	428 (59.3)	254 (54.2)	174 (68.8)	0.000
I think only evidence-based CAM methods should be taught	427 (59.5)	260 (55.9)	167 (66.0)	0.008

<sup>1</sup> Percentages of 'agreed a little', 'agreed moderately', and 'agreed strongly' responses were combined.

## Discussion

This is the first study carried out in Hungary to examine and compare health care and social work students' attitudes towards CAM and their related knowledge about CAM. We also investigated students' personal use of and perceived effectiveness of CAM practices, and their opinions about the integration of CAM into undergraduate curricula and the Hungarian health care system.

Overall, the attitudes of health care and social work students' towards CAM were positive. However, a considerable proportion of students attributed the results of CAM to a 'placebo-effect' in most cases (33.9%), and are afraid that CAM can raise unfounded hopes and leads to disappointment later (28.8%).

Social work students' attitudes were significantly more positive than those of health care students. This difference can be explained by the fact that the education of health care students is based on conventional medicine and it may substantially determine their attitudes towards CAM (Lorenc et al., 2014). Previous studies showed that social workers in the clinical fields may play an important role in communication with patients about CAM and can provide credible information alongside the health care workers (Cook et al., 2000; Runfola et al., 2006).

Part-time students' attitudes were found to be significantly more positive than those of full-time students. A weak positive association was found between students' attitudes and their age; suggesting that age itself does not have a significant effect on the attitude towards CAM. The more positive attitudes of part-time students might be related to their higher knowledge

and experience of several CAM practices (see later) and might be influenced by other factor(s).

In this study, the most well known CAM practices (over 60%) were massage, relaxation, homeopathy, acupuncture, herbal medicine and meditation, which is similar to other studies carried out among medical and pharmacy students (Akan et al., 2012; Awad et al., 2012). Similarly to other studies (Hussain et al., 2012), in this study the most commonly used CAM practices (massage and herbal medicine) were perceived as being the most effective. The highest knowledge and personal use of massage and herbal medicine might be due to their popularity in Hungary. Herbal medicine was the most frequently recommended (10.1%) practice by Hungarian surgeons and anaesthesiologists and it was used by 7.2% of surgery patients (Sóos et al., 2015; 2016). The higher knowledge of relaxation and meditation might be due to some psychological courses focusing on these techniques. The higher knowledge of homeopathy was not surprising because it is becoming more popular in Hungary among the general population as well as health care professionals.

Knowledge about homeopathy, acupuncture and Traditional Chinese Medicine was found to be higher among health care students than social work students. The reason for this result might be that health care students obtain knowledge about some CAM practices during their studies. According to a Hungarian survey, Traditional Chinese Medicine and homeopathy were the most known methods among surgeons and anaesthesiologists (Sóos et al., 2016). Another study found that social workers had the most knowledge about mind-body techniques and community-based alternatives (Henderson, 2000). Social workers had more experience about massage than health care students. This result might be related to social workers being more open towards CAM and that massage is very popular among Hungarians.

Part-time students had a higher knowledge of seven CAM practices and they were more experienced in ten CAM practices than full-time students. This may be because part-time students might have more health problems (due to their higher mean age) and so they might have tried some types of CAM. Full-time students had a higher knowledge of relaxation. This may be the result of only full-time students having had the opportunity to take part in some psychological courses focusing on relaxation.

About 60% of the students agreed with the four items regarding integration of CAM into higher education and the health care system in Hungary. These results are supported by studies carried out among health care students (Awad et al., 2012; Çamurdan and Gül, 2013; James et al., 2016; Joyce et al., 2016; Lee et al., 2007; Tiralongo and Wallis, 2008) and Hungarian surgeons and anaesthesiologists (Sóos et al., 2016).

Social work students considered research on CAM to be more important than health care students. This might be related to social workers being more open toward CAM than health care students. More parttime students agreed on four items regarding integration of CAM than full-time students, which might be due to the basic attitude of part-time students' attitudes towards CAM being more positive than full-time students and that they had more experience with CAM.

Our study had some limitations. The answers could have been influenced by social desirability, because a self-administered questionnaire was used. Therefore, our results may not reflect the actual knowledge, use and/or experience of the respondents. Furthermore, in future studies the number of CAM practices needs to be decreased.

## Conclusions

Social work students were more open to CAM than health care students. Health care students' knowledge was higher about three CAM practices than social workers. Part-time students had more positive attitudes towards, and a higher knowledge and experience of CAM, but these results cannot be explained by age. Therefore further research is needed to reveal the other factors. Most students believed that the integration of CAM into the higher education and health care system is necessary. However, significantly more part-time students considered this issue especially important compared to full-time students

## Footnotes

- <sup>1</sup> Health visitors generally care for children until 18 years, and work in districts with close connections with pediatric family doctors/general practitioners or in schools.
- <sup>2</sup> Pranayama method uses hands-on, no-touch techniques to maintain or improve both physical and emotional health.
- <sup>3</sup> Reiki method uses simple hands-on, no-touch, and visualization techniques, with the goal of improving the flow of life energy in a person.

## Conflict of interests

The authors have no conflict of interests to declare.

## Acknowledgements

We are thankful to the following colleagues of the Health Faculty for their assistance in this study: Mónika Fucskó, Éva Huszti PhD, Lajos Hüse PhD, Imre Lipóczki MD, Gabriella Ludescher PhD, Katalin Heinrichné Kószegi, and also to Thomas R. Lawson, PhD, University of Louisville, USA.

## Postoje, znalosti a zkušenosti studentů zdravotní péče a sociální práce v oblasti doplňkové a alternativní medicíny a jeho rozdíly mezi studenty prezenčního a dálkového studia v Maďarsku

### Souhrn

**Úvod:** Cílem této studie bylo porovnání postojů studentů zdravotní péče a sociální práce k poznání a osobnímu využití doplňkové a alternativní medicíny. Studovali jsme také názory studentů na integraci doplňkové a alternativní medicíny do vysokoškolského vzdělávání a zdravotní péče v Maďarsku. Byla provedena srovnání mezi studenty prezenčního a dálkového studia.

**Metodika:** Celkový počet 725 studentů (601 zdravotní péče a 124 sociální práce) se zúčastnil průřezového průzkumu pomocí dotazníku. Data byla analyzována pomocí popisné statistiky.

**Výsledky:** Postoje studentů dálkového studia v oblasti sociální práce byly výrazně pozitivnější než postoje studentů prezenčního studia v oblasti zdravotní péče. Nejznámějšími postupy doplňkové a alternativní medicíny byly masáže, relaxace, homeopatie, akupunktura a bylinná medicína. Nejčastěji používané modality doplňkové a alternativní medicíny byly masáže a bylinná medicína. Znalosti studentů v oblasti zdravotní péče byly vyšší než studentů sociální práce v oblasti homeopatie, akupunktury a tradiční čínské medicíny. Studenti dálkového studia měli více znalostí a zkušeností s několika praktikami doplňkové a alternativní medicíny než studenti prezenčního studia. Většina studentů souhlasila s tím, že doplňková a alternativní medicína by měla být začleněna do vysokoškolského vzdělávání a systému zdravotní péče.

**Závěr:** Sociální pracovníci a studenti dálkového studia jsou otevřenější vůči doplňkové a alternativní medicíně. Pozitivnější postoje, vyšší znalosti a více zkušeností s CAM, které byly nalezeny mezi studenty dálkového studia, nelze vysvětlit samotným věkem.

**Klíčová slova:** postoj; doplňková a alternativní medicína; studenti prezenčního a dálkového studia; studenti v oblasti zdravotní péče a sociální práce; znalosti

## References

- Akan H, Izbirak G, Kaspar EC, Kaya CA, Aydin S, Demircan N, et al. (2012). Knowledge and attitudes towards complementary and alternative medicine among medical students in Turkey. *BMC Complement Altern Med* 3(12): 115. DOI: 10.1186/1472-6882-12-115.
- Awad AI, Al-Ajmi S, Waheedi MA (2012). Knowledge, Perceptions and Attitudes toward Complementary and Alternative therapies among Kuwaiti Medical and Pharmacy Students. *Med Princ Pract* 21(4): 350–354. DOI: 10.1159/000336216.
- Balouchi A, Mahmoudirad G, Hastings-Tolsma M, Shorofi SA, Shahdadi H, Abdollahimohammad A (2018). Knowledge, attitude and use of complementary and alternative medicine among nurses: A systematic review. *Complement Ther Clin Pract* 31: 146–157. DOI: 10.1016/j.ctcp.2018.02.008.
- Ben-Arye E, Frenkel M, Klein A, Scharf M (2008). Attitudes toward integration of complementary and alternative medicine in primary care: Perspectives of patients, physicians and complementary practitioners. *Patient Educ Couns* 70: 395–402. DOI: 10.1016/j.pec.2007.11.019.
- Booth-Laforce C, Scott CS, Heitkemper MM, Cornman BJ, Lan MC, Bond EF, Swanson KM (2010). Complementary and Alternative Medicine (CAM) attitudes and competencies of nursing students and faculty: results of integrating CAM into the nursing curriculum. *J Prof Nurs* 26(5): 293–300. DOI: 10.1016/j.profnurs.2010.03.003.
- Çamurdan Ç, Gül A (2013). Complementary and alternative medicine use among undergraduate nursing and midwifery students in Turkey. *Nurse Educ Pract* 13(5): 350–354. DOI: 10.1016/j.nepr.2012.09.015.
- Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL (2015). Trends in the use of complementary health approaches among adults: United States, 2002–2012. *Natl Health Stat Report* 79: 1–16.
- Cook CA, Becvar DS, Pontious SL (2000). Complementary alternative medicine in health and mental health: implications for social work practice. *Soc Work Health Care* 31(3): 39–57. DOI: 10.1300/J010v31n03\_03.
- Fox P, Coughlan B, Butler M, Kelleher C. (2010). Complementary alternative medicine (CAM) use in Ireland: a secondary analysis of SLAN data. *Complement Ther Med* 18(2): 95–103. DOI: 10.1016/j.ctim.2010.02.001.
- Hegy G (2010). A komplementer medicina színes palettája és jelenlegi helyzete Magyarországon. [The colorful palette of complementer medicine and its present situation in Hungary]. *Komplementer Medicina* 3: 39–42.
- Henderson L (2000). The knowledge and use of alternative therapeutic techniques by social work practitioners: a descriptive study. *Soc Work Health Care* 30(3): 55–71. DOI: 10.1300/J010v30n03\_04.
- Hussain S, Malik F, Hameed A, Ahmed S, Riaz H, Abbasi N, Malik M (2012). Pakistani Pharmacy Students' Perception About Complementary and Alternative Medicine. *Am J Pharm Educ* 76(2): 21. DOI: 10.5688/ajpe76221.
- James PB, Bah AJ, Kondorvoh IM (2016). Exploring self-use, attitude and interest to study complementary and alternative medicine (CAM) among final year undergraduate medical, pharmacy and nursing students in Sierra Leone: a comparative study. *BMC Complement Altern Med* 16: 121. DOI: 10.1186/s12906-016-1102-4.
- Joyce P, Wardle J, Zaslowski C (2016). Medical student attitudes towards complementary and alternative medicine (CAM) in medical education: a critical review. *J Complement Integr Med* 13(4): 333–345. DOI: 10.1515/jcim-2014-0053.
- Klafke N, Homberg A, Glassen K, Mahler C (2016). Addressing holistic healthcare needs of oncology patients: Implementation and evaluation of a complementary and alternative medicine (CAM) course within an elective module designed for healthcare professionals. *Complement Ther Med* 29: 190–195. DOI: 10.1016/j.ctim.2016.10.011.
- Lee MY, Benn R, Wimsatt L, Cornman J, Hedgecock J, Gerik S, et al. (2007). Integrating complementary and alternative medicine instruction into health professions education: organizational and instructional strategies. *Acad Med* 82: 939–945. DOI: 10.1097/ACM.0b013e318149ebf8.
- Lorenc A, Blair M, Robinson N (2014). Personal and professional influences on practitioners' attitudes to traditional and complementary approaches to health in the UK. *J Tradit Chin Med* 1: 148–155. DOI: 10.1016/j.jtctms.2014.09.002.
- NCCIH – National Center for Complementary and Integrative Health (2018). Complementary, Alternative, or Integrative Health: What's In a Name? [online] [cit. 2018-08-23]. Available from: <https://nccih.nih.gov/health/integrative-health#cvsa>

19. Pearson NJ, Chesney MA (2007). The CAM education program of the national education center for complementary and alternative medicine: an overview. *Acad Med* 82: 921–926. DOI: 10.1097/ACM.0b013e31814a5014.
20. Peltzer K, Pengpid S (2018). Prevalence and determinants of traditional, complementary and alternative medicine provider use among adults from 32 countries. *Clin J Integr Med* 24(8): 584–590. DOI: 10.1007/s11655-016-2748-y.
21. Poreddi V, Thiyagarajan S, Swamy P, Gandhi S, Thimmaiah R, BadaMath S (2016). Nursing Students Attitudes and Understanding of Complementary and Alternative Therapies: An Indian Perspective. *Nurs Educ Perspect* 37(1): 32–37. DOI: 10.5480/14-1319 7.
22. Runfola JF, Levine E, Sherman P (2006). Helping patients make decisions about complementary and alternative treatments: the social work role. *J Psychosoc Oncol* 24(1): 81–106. DOI: 10.1300/J077v24n01\_07.
23. Sárváry A, Demcsák HL, Radó S, Takács P, Sárváry A (2016). Student nurses, midwives and health visitors' attitudes, knowledge, and experience of complementary and alternative medicine in Hungary. *Eur J Integr Med* 8: 552–559. DOI: 10.1016/j.eujim.2016.04.005.
24. Soós SÁ, Jeszenői N, Darvas K, Harsányi L (2015). Herbal medicine use by surgery patients in Hungary: a descriptive study. *BMC Complement Altern Med* 15: 358. DOI: 10.1186/s12906-015-0890-2.
25. Soós SÁ, Jeszenői N, Darvas K, Harsányi L (2016). Complementary and alternative medicine: attitudes, knowledge and use among surgeons and anaesthesiologists in Hungary. *BMC Complement Altern Med* 16: 443. DOI: 10.1186/s12906-016-1426-0.
26. Tan AC, Mak JC (2015). Complementary and alternative medicine in diabetes (CALMIND) – a prospective study. *J Complement Integr Med* 12: 95–99. DOI: 10.1515/jcim-2014-0038.
27. Taylor B (2002). Becoming a reflective nurse or midwife: using complementary therapies while practising holistically. *Complement Ther Nurs Midwifery* 8(2): 62–68. DOI: 10.1054/ctnm.2001.0595.
28. Tiralongo E, Wallis M (2008). Integrating complementary and alternative medicine education into the pharmacy curriculum. *Am J Pharm Educ* 72(4): 74.
29. Walker BF, Armson A, Hodgetts C, Jacques A, Chin FE, Kow G, et al. (2017). Knowledge, attitude, influences and use of complementary and alternative medicine (CAM) among chiropractic and nursing students. *Chiropr Man Therap* 25: 29. DOI: 10.1186/s12998-017-0160-0.
30. WHO (2013). WHO Traditional Medicine Strategy 2014–2023. [online] [cit. 18-08-23]. Available from: [http://apps.who.int/iris/bitstream/10665/92455/1/9789241506090\\_eng.pdf?ua=1](http://apps.who.int/iris/bitstream/10665/92455/1/9789241506090_eng.pdf?ua=1)