

## Health Care and Social Work Student's: Choice between Complementary and Alternative Medicine or Conventional Medicine on a 5 Point Severity Scale of Diseases

Andrea Sárvary<sup>1\*</sup>, Péter Takács<sup>2</sup> and Attila Sárvary<sup>3</sup>

<sup>1</sup>Department of Psychology, Faculty of Health, University of Debrecen, Nyíregyháza, Hungary

<sup>2</sup>Department of Informatics, Faculty of Health, University of Debrecen, Nyíregyháza, Hungary

<sup>3</sup>Department of Nursing Science, Faculty of Health, University of Debrecen, Nyíregyháza, Hungary

\*Corresponding author: Andrea Sárvary, Department of Psychology, Faculty of Health, University of Debrecen, Nyíregyháza, Hungary, Tel: +36 42 404 411/147; Fax: +36 42 598 234; E-mail: [sarvary.andrea@foh.unideb.hu](mailto:sarvary.andrea@foh.unideb.hu)

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### Abstract

**Background:** Complementary and alternative medicine (CAM) is still popular worldwide. This study investigates and compares the choices of health care and social work students between CAM and conventional medicine (COM) on a 5 point severity scale of diseases.

**Methods:** In a cross-sectional survey 595 (49.6% response rate) health care and social work students at the University of Debrecen, Faculty of Health completed the questionnaire. Data were analysed using descriptive and inferential statistics.

**Results:** The more serious the disease was, the frequency of primarily COM and secondly CAM increased (from 37.1% up to 62.4%), while it decreased in only COM (from 26.2% to 23.5%), in primarily CAM and secondly COM (from 28.7% to 10.8%), in only CAM (from 7.9% to 3.2%). Significantly more health care than social work students chose only COM on moderate level (34.0% vs. 24.2%;  $p < 0.05$ ) Significantly more social work than health care students chose primarily COM and secondly CAM on moderate, serious and the most serious levels (62.9% vs. 49.9%; 69.4% vs. 58.8%; 71.8% vs. 59.9%;  $p < 0.05$ ). Significantly more males than females chose only COM on the most serious level (36.4% vs. 21.6%;  $p < 0.05$ ). Significantly more females than males chose only CAM on the mildest level (8.9% vs. 1.3%,  $p < 0.05$ ) and primarily COM and secondly CAM on serious and the most serious levels (62.7% vs. 49.4%, 63.9% vs. 51.9%;  $p < 0.05$ ).

**Conclusions:** Our results suggest that beside conventional medicine most health care and social work students consider CAM to be an important element of healing process, although social work students are more open towards the combined use of CAM and conventional medicine. Our results supported that females have more positive attitudes towards CAM than males.

**Keywords:** Complementary and alternative medicine; Conventional medicine; Health care: social work students

### Introduction

Complementary and alternative medicine (CAM) is still popular worldwide [1-6] as it is reflected in the prevalence data of CAM use that varied between 9.8% and 76% among general population [1-7]. A systematic review of surveys from the UK also reported that 51.8% of the population applied alternative methods at least once during their lifetime [8]. However, the last trend analysis from the US found that the rate of CAM use in 2012 returned to the 2002 level [9]. In Bulgaria, Poland and Slovenia, the rate of CAM use providers was about 10% (10), but CAM use was 76% in the general population according to a survey prepared in Czech Republic [10].

The popularity of CAM among patients with chronic illness is similar or even higher than among the average population [1,11,12]. Previous studies indicated that CAM use increases with serious clinical

and health conditions [13,14] and it is exceptionally high among patients with life threatening illnesses such as cancer or HIV [15,16].

In Hungary, data concerning CAM use among general population and patients is limited. While the previous two national representative surveys showed an increased visiting rate of CAM practitioners from 1991 (6.6%) to 1999 (23.9%) [17,18], this rate was found to be 8.9% only in the latest survey carried out in 2009 [19]. Concerning the use of integrative medicine in clinical practice, one significant Hungarian research has been conducted and found that patients who had undergone elective surgery the prevalence of herbal medicine use was 7.2% [20].

A lot of studies have been published about the knowledge, perception and attitudes toward complementary and alternative medicine (CAM) among health care students and health professionals [21-26]. Most of the studies have found positive attitudes towards CAM among health care students and that female students had a more positive attitude towards CAM therapies and they used CAM more frequently than male students [22,23,26,27].

However, there were not found publications focusing on the difference in the choices of health care and non-health care students between CAM and conventional medicine. Therefore the primary aim of the research was to investigate and compare health care (nursing, paramedic, midwifery and health visitor) and social work students' choices between CAM and COM on a 5-point severity scale of diseases. In addition, the study aimed to reveal how students' choices change as the severity of diseases increases. As the third aim of the study comparisons were made between male and female students.

## Materials and Methods

### Study questionnaire

In the questionnaire a 5 point severity scale of diseases was defined and utilized as follows:

- Mildest: diseases lasting for some days only,
- Mild: diseases lasting for some weeks without any complications,
- Moderate: diseases demanding hospital care,
- Serious: chronic diseases, and diseases deteriorating life quality,
- Most serious: life-threatening or incurable diseases.

The following response categories (on the base of choosing CAM and conventional medicine) were given:

- Only CAM,
- Primarily CAM and secondly conventional medicine (abbreviated as 'CAM+COM'),
- Only conventional medicine (abbreviated as 'only COM') and
- Primarily conventional medicine and secondly CAM (abbreviated as 'COM+CAM').

For each level of disease severity students were asked to indicate which response categories they would choose for themselves.

### Pilot study

The questionnaire was pre-tested for content, easy usage, language clarity, and time required answering it among 8 students. Necessary modifications were made so that it would be simple to answer, yet provide accurate data.

### Study sample

The study sample consisted of 1st year to 4th year undergraduate students from the Faculty of Heal of the University of Debrecen. The sample target was 1295 students (780 full time students and 419 part time students) including health care students (n=929, 266 nurses, 256 paramedics, 211 midwives and 196 health visitors) and social work students (n=270). There were 214 males and 985 females.

### Data collection

The study was carried out at the University of Debrecen, Faculty of Health in Nyíregyháza, Hungary between April and June 2013. The Eva-sys online version of the questionnaire was used in order to increase the efficiency of data collection. Completion of the questionnaire occurred during seminars when computers were available for students. Students had only one occasion to complete the questionnaire. Teachers gave the students a brief description of what the study entailed before they filled in the questionnaire. Participation

in the study was voluntary and a written permission to conduct the research was obtained from the University of Debrecen, Faculty of Health.

### Statistical Analysis

All the data were analyzed with the help of Statistical Package for Social Sciences (SPSS) software program (Version 22.0). To summarize the data descriptive statistics were used. For this, choices between CAM and COM were analyzed using frequencies of the four response categories for each of the five levels of disease severity. Likewise, the frequency of changes in the choice between CAM and COM as the severity of diseases increases was assessed.

Proportion analysis was used to compare the frequencies of the four response categories one by one with the subsequent levels of severity and the frequencies between males vs. females and between health care vs. social work students [28]. Results were considered to be significant when the p-value was less than 0.05.

### Results

Five hundred and ninety five students from 1st, 2nd, 3rd and 4th years (males: 77, females: 518) completed the questionnaire (Table 1): 124 (20.9%) social work students and 471 (79.1%) health care students (nurses: 185, 31.1%, paramedics: 62, 10.4%, midwives: 125, 21.0%, and health visitors 1:99, 16.6%). The sample was representative with the respect to proportion of gender and health care vs. social work students. The mean age was 27.1 years and ranged from 18-57. The response rate was 49.6% (595/1199).

Area of study	Specialty of students	Total No (%)
Health care N=471 (79.1%)	nursing	185 (31.1)
	paramedic	62 (10.4)
	midwifery	125 (21.0)
	health visitor	99 (16.6)
Social work N=124 (20.9%)	social work	124 (20.9)
total		595 (100)
Choice between CAM and COM on the five levels		

**Table 1:** Characteristics of the sample.

Table 2 shows how students choose between CAM and COM on the five levels of severity of diseases. For the mildest level, 37.1% of the students chose COM+CAM, followed by only COM (26.2%), CAM +COM (28.7%), and only CAM (7.9%). For the mild level, 43.7% of the students chose COM+CAM followed by only COM (29.9%), CAM +COM (22.5%) and only CAM (3.9%). For the moderate level, 52.6% of the students chose COM+CAM, followed by only COM (31.9%), CAM+COM (13.6%) and only CAM (1.8%). For the serious level over 60.0% of the students chose OM+CAM (61.0%), followed by only COM (26.1%), CAM+COM (8.7%) and only CAM (2.5%). As for the most serious level, over 60.0% of the students chose COM+CAM (62.4%), followed by only COM (23.5%), CAM+COM (10.8%) and only CAM (3.2%).

Response categories	Choice between CAM and COM- No (%)				
	the mildest level	mild kevel	moderate level	serious level	the most serious level
only CAM	47 (7.9)	23 (3.9)	11 (1.8)	15 (2.5)	19 (3.2)
CAM+COM	171 (28.7)	134 (22.5)	81 (13.6)	52 (8.7)	64 (10.8)
only COM	156 (26.2)	178 (29.9)	190 (31.9)	155 (26.1)	140 (23.5)
COM+CAM	221 (37.1)	260 (43.7)	313 (52.6)	363 (61.0)	371 (62.4)
total	595	595	595	595	595

Changes in the choice between CAM and COM as the severity of diseases increases

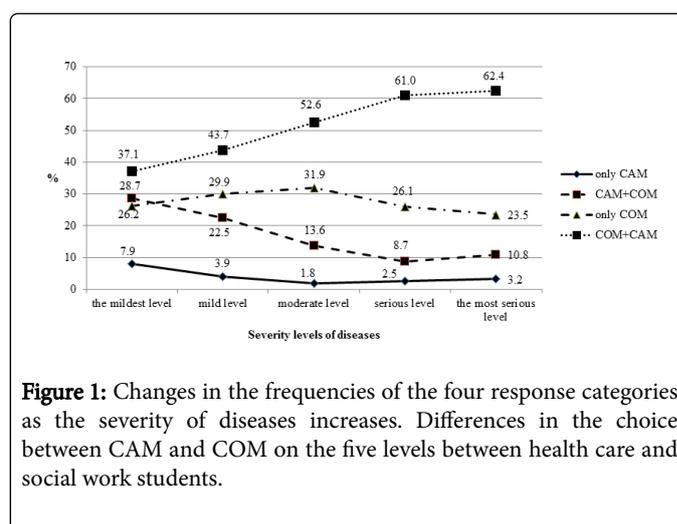
**Table 2:** Students' choices between CAM and COM on the five levels.

As the level of severity of the diseases increased (Figure 1) the frequency of choosing only CAM significantly decreased from mildest (7.9%) to mild level (3.9%) ( $p=0.005$ ), and it did not change significantly until the most serious level (3.2%) ( $p=0.249$ ).

The frequency of choosing CAM+COM decreased significantly from the mildest (28.7%) to mild level (22.5%) ( $p=0.017$ ) and from mild to moderate level (13.6%) ( $p<0.001$ ) and from moderate to serious level (8.7%) ( $p=0.009$ ) and it did not change significantly until the most serious level (10.8%) ( $p=0.282$ ).

The frequency of choosing only COM increased significantly from the mildest (26.2%) to moderate level (31.9%) ( $p=0.035$ ), and it significantly decreased from moderate to serious level (26.1%) ( $p=0.030$ ) and it did not change significantly until the most serious level (23.5%) ( $p=0.347$ ).

The frequency of choosing COM+CAM increased significantly from the mildest (37.1%) to mild level (43.7%) ( $p=0.025$ ), and from mild to moderate level (52.6%) ( $p=0.002$ ) and from moderate to serious level (61.0%) ( $p=0.004$ ) and it did not change until the most serious level (62.4%) ( $p=0.676$ ).



**Figure 1:** Changes in the frequencies of the four response categories as the severity of diseases increases. Differences in the choice between CAM and COM on the five levels between health care and social work students.

Response categories	Frequency No (%)									
	Mildest level		Mild level		Moderate level		Serious level		Most Serious level	
Only CAM	Health care N=471	Social work N=124								
	35 (7.4)	12 (9.7)	19 (4.0)	4 (3.2)	11(2.3)	0	15(3.2)	0	16(3.4)	3(2.4)
CAM+COM	128 (27.2)	43 (34.7)	103 (21.9)	31 (25.0)	65 (13.8)	16 (12.9)	51 (10.8)	11 -8.9	56 (11.9)	9 (7.3)
Only COM	131 (27.8)	25 (20.2)	145 (30.8)	33 (26.6)	160* (34)	30* (24.2)	128 (27.2)	27 (21.8)	117 (24.8)	23 (18.5)
COM+CAM	177 (37.6)	44 (35.5)	204 (43.3)	56 (45.2)	235* (49.9)	78* (62.9)	277* (58.8)	86* (69.4)	282* (59.9)	89* (71.8)

\*Proportion analysis:  $p<0.05$ ; Gender differences in the choice between CAM and COM on the five levels

**Table 3:** Differences in the frequencies of the four response categories between health care and social work students on the five levels.

Table 3 shows the differences in the choice between CAM and COM between health care and social work students. The frequency of only COM was significantly different between health care and social work students on moderate (160, 34.0% vs. 30, 24.2%,  $p=0.049$ ) level. The

frequency of only COM+CAM was significantly different between health care and social work students on moderate (235, 49.9% vs. 78, 62.9%,  $p=0.013$ ), serious (277, 58.8% vs. 86, 69.4%,  $p=0.041$ ) and the most serious (282, 59.9% vs. 89, 71.8%,  $p=0.019$ ) levels.

Table 4 shows the gender differences in the choice between CAM and COM. The frequency of only CAM was significantly different between males and females on the mildest level (1, 1.3% vs. 46, 8.9%,

$p=0.038$ ). The frequency of only COM was significantly different between males and females on the most serious (28, 36.4% vs. 112, 21.6%,  $p=0.007$ ) level. The frequency of COM+CAM was significantly different between males and females on serious (38, 49.4% vs. 325, 62.7%,  $p=0.034$ ) and the most serious (40, 51.9% vs. 331, 63.9%,  $p=0.050$ ) levels.

Response categories	Frequency No (%)									
	Mildest level		Mild level		Moderate level		Serious level		Most serious level	
	male	female	male	female	male	female	male	female	male	female
	N=77	N=518	N=77	N=518	N=77	N=518	N=77	N=518	N=77	N=518
Only CAM	1*	46*	7	41	1	10	1	14	1	18
	-1.3	-8.9	-9.1	-7.9	-1.3	-1.9	-1.3	-2.7	-1.3	-3.5
CAM+COM	24	147	12	97	11	70	11	51	8	57
	-31.2	-28.4	-15.6	-18.7	-14.3	-13.5	-14.3	-9.8	-10.4	-11
only COM	26	130	29	149	28	162	27	128	28*	112*
	-33.8	-25.1	-37.7	-28.8	-36.4	-31.3	-35.1	-24.7	-36.4	-21.6
COM+CAM	26	195	29	231	37	276	38*	325*	40*	331*
	-33.8	-37.7	-37.7	-44.6	-48.1	-53.3	-49.4	-62.7	-51.9	-63.9
Total	77	518	77	518	77	518	77	518	77	518

N=595; \*Proportion analysis:  $p<0.05$

**Table 4:** Gender differences in the frequencies of the four response categories on the five levels.

## Discussion

People in European countries are growing up in a cultural environment where the norm for treating diseases is conventional therapy. However, over the last decades the popularity and use of CAM methods (e.g. natural products) has increased both among the general population and patients with chronic diseases [1-6,12,29-31]. Prior to this study, little was known about the choices health care and social work students make between CAM and COM or their combination. Firstly, our study has revealed the differences in how health care and social work students choose between CAM and conventional medicine on a 5-point severity scale of diseases. Secondly, our study has revealed gender differences in choosing CAM and conventional medicine.

In this study, the following tendencies have revealed in the choices between CAM and COM as the severity of diseases increased. Over one third of students chose COM+CAM on the mildest level (37.1%). The frequency of this option significantly increased from level to level up to serious level by about 25%, and on the most serious level almost two thirds of students chose COM+CAM (62.4%). About one quarter of students chose only COM on the mildest level (26.2%). The frequency of only COM significantly increased up to moderate level (31.9%) then significantly decreased from moderate to serious level (26.1%). On the most serious level it was about the same as on the mildest level (23.5%). Over one quarter of students chose CAM+COM on the mildest level (28.7%). The frequency of CAM+COM

significantly decreased from level to level up to serious level by about 20% and on the most serious level nearly one tenth of students chose this option (10.8%). Less than 10% of students chose only CAM on the mildest level (7.9%). The frequency of only CAM significantly decreased from the mildest to mild level (3.9%) and on the most serious level approximately 3% of students chose this option. These tendencies harmonize with previous studies indicating that CAM use as an add-on treatment of medical treatment increases with serious clinical and health conditions [12-14,32-34].

Thus, based upon the data we conclude that one part of the students changed their choices between CAM and COM as follows. One part of them shifted on the mild level while the other part shifted on moderate level from CAM+COM to COM+CAM. The other part of the students probably shifted their choices on the serious and the most serious levels from only COM to COM+CAM. The third part of the students shifted on the mild level from only CAM to other categories, but it is unclear to which one.

These shifts are supposed to be influenced by students' knowledge and beliefs about conventional medicine and CAM, by their previous use of and experience with CAM, social and cultural norms, as well as professional socialization [35,36]. Our previous studies have found that the attitudes of health care students towards CAM were positive at Faculty of Health, and they had relatively high level of knowledge and personal use of CAM [27].

Moreover, these results also support students' belief that besides conventional medicine CAM is an important element of medical treatment on each severity level of diseases. Our previous results also found that health care students were convinced that the integration of CAM in the curricula is needed [26], since that could help to improve the holistic approach of treating diseases [22,23,26,37].

In the recent study, significant differences were found in the choice between CAM and COM between health care and social work students. The frequency of only COM was higher among health care than among social work students on each level and the difference was significant on moderate (34.0% vs. 24.2%,  $p=0.049$ ) level (the absolute differences were: 4% to 10%). The frequency of COM+CAM was higher among social work than among health care students on each level (except on the mildest level) (the absolute differences were: 2% to 13%). The difference was significant on moderate (62.9% vs. 49.9%,  $p=0.013$ ), serious (69.4% vs. 58.8%,  $p=0.041$ ) and the most serious (71.8% vs. 59.9%,  $p=0.019$ ) levels. The reason for these results might be that the education of health care students is based on conventional medicine and it may substantially determine their attitudes towards CAM [37].

In the present study, significant gender differences were found in choosing between CAM and COM. The frequency of only COM was higher among males than among females on each level and the difference was significant on the most serious (36.4% vs. 21.6%,  $p=0.007$ ) level (the absolute differences were: 5% to 15%). The frequency of only CAM was significantly higher among females than among males on the mildest level (8.9% vs. 1.3%,  $p=0.038$ ). The frequency of COM+CAM was higher among females than among males on each level and the difference was significant on serious (62.7% vs. 49.4%,  $p=0.034$ ) and the most serious (63.9% vs. 51.9%,  $p=0.050$ ) levels (the absolute differences were: 4% to 13%). These results, supported by the data of previous studies, show that females have a more positive attitude towards CAM and they are more open towards CAM than males (22, 23,27).

Our study had some limitations. Firstly, using self-reported questionnaire answers could be influenced by social desirability therefore our results may not reflect students' real choices between CAM and conventional medicine. Secondly, we carried the study among students; therefore the results can only be generalized to this population. In the future we should repeat the study with a sample from a population of general adults. Thirdly, although our sample was representative with the respect to the proportion of gender (at our faculty the majority of students are female) at the Faculty of Health, further investigation is needed to determine whether gender differences would be found in a population with a more balanced male-female representation. Fourthly, although our sample was representative with the respect to the proportion of health care and social work students at the Faculty of Health, further investigation is needed to study the differences between the two groups. Finally, students had just one chance to complete the questionnaire which may have contributed to the 49.6% response rate.

## Conclusion

Students' choices between CAM and conventional medicine supported that conventional medicine is dominant in medical treatment in the European culture, but CAM is also regarded as an important part of the healing process. Our results supported the position that females are more open towards CAM than males. The

reason for social work students are more open towards the combination of CAM and conventional medicine than health care students might be due to that the education of health care students is based on conventional medicine.

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