

Knowledge and acceptance of complementary therapies among perioperative healthcare professionals and general surgical patients

PhD thesis

Sándor Árpád Soós M.D.

Doctoral School of Clinical Medicine
Semmelweis University



Supervisor: László Harsányi, M.D., Ph.D.

Official reviewers:

Lajos Bogár, M.D., D.Sc.

József Sándor, M.D., Ph.D.

Head of the Final Examination Committee:

Ferenc Túry, M.D., Ph.D.

Members of the Final Examination Committee:

Krisztina Madách, M.D., Ph.D.

András Bálint, M.D., Ph.D.

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Introduction

The use of complementary therapies is a prevalent phenomenon in Hungary as well as in the developed and developing world. As patients have become increasingly interested in this field - partly motivated by necessity, partly by scientific interest - both physicians and nurses have started dealing with the bases of these methods. Several of these therapies that were previously regarded as 'unscientific' and were labelled 'quackery' are becoming more and more accepted, recognized and used in treatments.

The legal definition operative in Hungary is recorded in Decree 40/1997. (III.5), according to which „ the application of non-conventional treatment methods is such a healthcare activity that complements and in particular cases substitutes conventional treatment methods”. According to the guidelines issued by the Section of Medical Sciences of the Hungarian Academy of Sciences in 2004 and 2010: „complementary and alternative medicine is a term that includes those curative and diagnostic procedures that are not parts of traditional, conventional, Western medicine”. In summary, these treatments can be defined as methods that are based on various ideas and philosophical grounds and that can be used for preventing, diagnosing and treating different physical and mental conditions. In general these methods are not available within the frameworks of the primary healthcare system, except for a few countries.

The popularity of complementary therapies (CAM: Complementary and Alternative Medicine) is well-demonstrated by the fact that they are typically used by 20-40% of the total adult population in North America, Western Europe and in developed Asian countries. In the only large-scale study that has been conducted in Hungary the prevalence of these methods has been estimated to be between 15-20%. We shouldn't forget about the fact, though – especially in the case of herbal medication – that the application of these methods without informing the attending physician may trigger several drug interactions or complications that can result in life-threatening disturbances in the haemostasis, the cardiovascular system, the endocrine system, the electrolyte system and liver function.

The popularity of CAM has led to a more nuanced attitude towards naturopathic methods among physicians and nurses. This change has been seen both in terms of a growing trust towards these methods and of an increasing willingness to apply them.

Objectives

The aim of my study was to outline how complementary therapies are used in perioperative care and to examine how these methods are viewed by its participants. I divided the participants into three groups based on their role in perioperative care and I conducted the survey in these three groups with the following goals:

1. My first goal was to do a comparative analysis of anaesthesiologists' and general surgeons' attitudes towards

complementary therapies and integrative medicine. My most important points of view were the following:

- To outline participants' attitudes towards complementary therapies and integrative medicine and measure their acceptability
 - To measure participants' willingness to learn about complementary therapies
 - To study the participants' stance on individual methods
 - To study the extent to which complementary methods are used in the case of participants' own illness and in their clinical practice
2. My second goal was to conduct a descriptive analysis of the above mentioned criteria at Semmelweis University among perioperative healthcare professionals working in different fields, i.e. nurses and anaesthesiologistassistants.
3. My third goal was to collect data and carry out a descriptive analysis among patients scheduled for an elective, general surgical intervention at the 1st Surgical Clinic of Semmelweis University. My main criteria included:
- To survey patients' attitudes towards CAM and their use of CAM
 - To identify the most popular methods
 - To describe the indicators of CAM usage
 - To learn to what extent patients inform their attending physician about their use of CAM

Methods

Data-collection was carried out by self-completion questionnaires. All the questionnaires surveyed the socio-demographic background of the participants, contained yes-no questions and gap-fill tables in connection with the use of and knowledge of CAM.

The physicians' survey was conducted March 2014 – August 2015. The workplaces surveyed included the 11 clinics of the four medical universities in Hungary and besides these, 11 surgery or intensive care departments of 10 hospitals. The results were from 258 questionnaires, with a 64% response rate.

The healthcare workers' survey was carried out October 2014 – December 2015 at those clinics of Semmelweis University that provide perioperative care. Out of the 145 questionnaires 119 were sent back, the response rate was 82%.

I carried out the surgery patients' survey at the 1st. Department of Surgery of Semmelweis University July 2014 – April 2016 among the patients waiting for elective surgical interventions. The patients were given the questionnaire on the day of their admission and could hand it in any time during their hospital stay at a designated area in the staffroom of the surgery department. Data collection among these patients had a two-fold aim. Based on the division of integrative medicine by the National Center for Complementary and Integrative Health my questions referred to „natural product” and „mind and body” methods. In the first phase of the survey I examined the incidence rate of the consumption of herbal medicine besides

depicting the whole scale of CAM use. In this phase the response rate was 17%, I got 390 questionnaires back. In the second phase, omitting the questions about herbal medications I focused on the application of other CAM methods and I received 129 questionnaires. To sum up, out of the 2500 questionnaires 519 were handed in, the response rate was 21%.

IBM SPSS 20.0 software (SPSS Inc., Chicago IL) was used to process data. Socio-demographic data was examined by descriptive statistics: I indicated the mean values with numbers and in percentages, standard deviation (SD) and 95% confidence-interval (CI). To compare the correlations of the nominal variables I used contingency-table and Pearsons' chi-squared test.

Results

Attitudes towards CAM

52.7% of the physicians surveyed (136 persons) were interested in naturopathy, 34.4% were indifferent towards it (89 persons) and 12.9% rejected it (33 persons). This attitude was significantly influenced by gender: women were significantly more interested in CAM, $\chi^2(1)=10.17$; $p=0.001427$; OR=2.2765 (95% CI 1.3674-3.7901), while men rejected CAM in a significantly higher proportion, $\chi^2(1)=10.8$; $p=0.001015$; OR=4.6439 (95% CI 1.7305-12.4619). With regard to specialization, no significant differences were found between the surgeon and the anaesthesiologist group; participants supported or rejected CAM at a similar rate in both

groups. 68% of the healthcare professionals (81 persons) said they were interested in complementary therapies, 28.6% were indifferent towards these (34 persons) and 3.4% (4 persons) rejected them.

As for naturopathy, almost two thirds (63.3%, 330 people) of the surgical patients considered themselves to be interested in this field, one third (32.8%, 170) said they were indifferent towards these and only 3.75 (19) said they rejected it.

I examined what factors influence physicians' and healthcare professionals' attitudes towards and opinions about CAM. My points of view included evidence and experience, media, training and reimbursement opportunities. Participants could indicate in a chart the extent to which these factors influenced their opinion. No significant differences were found between the anaesthesiologists and surgeons regarding these factors. The most influential factors included evidence (86.4%, 223 persons) and their own experience or a family member's experience (50.4%, 130 persons). The media was not considered to be an influential factor according to the majority of the participants (77.5%, 200 persons). The healthcare professionals' survey yielded similar results: scientific evidence (68%, 81 persons) and own experience (63.9%, 76 persons) were important factors for the participants, while information gained from the media was not considered to be an influential factor (51.3%, 61 persons).

The use of complementary therapies and their application

36% (93 persons) of the physicians claimed to have used complementary therapies when they or their family members were

ill. 3.1% (8 persons) had a qualification in naturopathy, 12.4% (32 persons) claimed to have enough knowledge of these methods and 7% (18 persons) admitted using naturopathic methods in their daily practice. No significant difference was found between anaesthesiologists and surgeons in this respect.

55.5% (66 persons) of healthcare professionals said they have used complementary therapies when they or their family members were ill. 5.9% (7 persons) had qualifications in naturopathy, 25.2% (30 persons) felt they have enough knowledge of complementary therapies. 16.8% (20 persons) have already used complementary therapies during their work and 70.6% (86 persons) would feel like trying these methods. It should be highlighted that those who have already tried naturopathic methods are significantly more likely to apply these methods in clinical practice, too, $\chi^2(1)=9$; $p=0.0027$; OR=3.45 (95% CI 1.5067-7.8998).

Opinions about integrative medicine

The application of integrative medicine was supported by 66.7% (172 persons) of the physicians. There was no significant difference between the anaesthesiologist and surgeon group in the acceptance of integrative medicine, $p=0.232$. Regarding reimbursement policies, though, the two groups were of different opinions: significantly more anaesthesiologists supported the idea that CAM should become an integral part of modern medicine also in terms of reimbursement, $\chi^2(1)=7.1$; $p=0.007708$; OR=2.0798 (95% CI 1.2083-3.58).

The rate of acceptance of integrative medicine was higher among healthcare professionals: a great majority (79.8%, 95) said they would accept and support the introduction of integrative medicine.

Willingness to learn about complementary therapies

48.8% (125 persons) of the physicians would be willing to learn to use some kind of complementary therapy. This number was significantly higher among anaesthesiologists than among surgeons, $\chi^2(1)=12.42$; $p=0.000425$; $OR=2.6397$ (95% CI 1.5265-4.5648).

60.5% (72) of healthcare professionals would like to learn complementary therapies – this was not significantly influenced by age or level of education.

The use of complementary therapies and its indicators among general surgery patients

25.2% (131 persons) of surgery patients has already consulted a naturopathic doctor and 26.8% (139 persons) have already tried some kind of complementary therapy in the case of illness. During their hospital stay 83.4% (434 persons) would use naturopathic treatments if their attending physician recommended it and 76.5% (397 persons) would consider it important that complementary therapies would be available in primary care.

Regarding patients' willingness to inform their attending physician about their use of complementary therapies, 12.89% (67 persons) of the participants said they would inform their doctor without being

asked and 23.5% said they would do so if they were directly asked about this.

Patients who use complementary therapies have the following predictors:

- Being female, $\chi^2(1)=5.21$ $p=0.022$; OR=1.5873 (95% CI 1.066-2.3635).
- Those whose highest education is primary school are significantly more opposed to complementary therapies than the average, $\chi^2(1)=4.23$; $p=0.039715$; OR=2.1383 (95% CI 1.021-4.4781). Those who have a college or university degree have tried CAM at a significantly higher rate, $\chi^2(1)=12.98$; $p=0.000315$; OR=2.0814 (95% CI 1.3915-3.1132).
- On examining the correlations between the use of CAM and the underlying surgical disease I found that those who suffer from a hormonal disease are significantly more likely to turn to CAM, $\chi^2(1)=4.08$ $p=0.043394$; OR=2.3773 (95% CI 1.0031-5.6339). No such difference was found in the case of other illnesses.
- The age group of 40-49 use CAM more often, $\chi^2(1)=6.25$; $p=0.012419$; OR=1.9263 (95% CI 1.1451-3.2405). The 70-79 age group uses these methods significantly less frequently, $\chi^2(1)=5.27$; $p=0.021696$; OR=1.8466 (95% CI 1.0875-3.1354).
- In the case of herbal medicine use, those patients turned to phytotherapy at a significantly higher rate who had at least a

high school diploma or a university degree, $\chi^2(1)=4.48$;
p=0.034294; OR=2.8 (95% CI 1.04-7.54).

Opinions about complementary therapies

Surgeons' and anaesthesiologists' stance on individual complementary methods:

- Neural therapy was marked as an unknown method by the majority of the participants (82.6%, 213 persons).
- The majority thought that homeopathy was not an evidence-based method (62.4%, 161 persons).
- Traditional Chinese Medicine was considered to be the most evidence-based method (57.8%, 149 persons).
- Phytotherapy was the most recommended method (10.1%, 26 persons).
- Reflexology was marked as the most frequently applied method in clinical practice (2.3%, 6 persons).
- An important difference should be highlighted regarding complementary therapies: anaesthesiologists recommended Traditional Chinese Medicine significantly more often than surgeons, p=0.02475; OR=4.0351 (95% CI 1.1756-13.8496). There was no significant difference in the opinions about other methods between the two groups.

Healthcare professionals' stance on individual complementary methods:

- Neural therapy was marked as an unknown complementary therapy by the majority of the participants (71.4%, 85 persons).
- The majority thought that homeopathy was not an evidence-based method (26.9%, 32 persons).
- Acupuncture was considered to be the most evidence-based method (63%, 75 persons).
- In the case of own illness, the majority applied homeopathy (22.7%, 27 persons).
- Alternative exercise and massage therapy (3.4%, 4 persons) and acupressure (2.5%, 3 persons) were used most frequently in daily practice.

The most frequently used treatment methods among surgical patients in the perioperative period included:

- Traditional Chinese Medicine (8.5%, 44 persons)
- Alternative exercise and massage therapy (6.4%, 33 persons)
- Homeopathy (6.4%, 33 persons).

The most frequently used methods two weeks before the operation included:

- Phytotherapy (3.6%)
- Bioenergetics (1.3%, 7 persons)
- Alternative exercises and massage therapy (1.2%, 6 persons).

Conclusions

1. Anaesthesiologists and surgeons working in Hungary - in the departments surveyed – have little information about complementary therapies. Only 3.1% of the participants had qualifications in naturopathy and 12.4% of them considered themselves well-informed in this field.
2. More than half, 52.7% of the anaesthesiologists and surgeons working in Hungary - in the departments surveyed are interested in CAM. This number is significantly higher among women ($p=0.001427$); while men are significantly more opposed to CAM ($p=0.001015$). These results were not significantly influenced by specialization or age.
3. The great majority, 86.4% of anaesthesiologists and surgeons working in Hungary - in the departments surveyed – is of the opinion that CAM methods should be considered in terms of scientific evidence.
4. Almost half, 48.4% of anaesthesiologists and surgeons working in Hungary - in the departments surveyed – would be willing to learn about some kind of complementary therapy: this rate was significantly higher among anaesthesiologists than among surgeons ($p=0.000425$).
5. The idea of integrative medicine is accepted among anaesthesiologists and surgeons working in Hungary - in the departments surveyed. 66.7% would support its use in their clinical practice. Regarding reimbursement policy,

anaesthesiologists consider this significantly more important than surgeons ($p=0.007708$).

6. The most frequently applied CAM by anaesthesiologists and surgeons working in Hungary - in the departments surveyed – included reflexology and Traditional Chinese Medicine. Traditional Chinese Medicine and manual therapy were considered to be the most evidence-based method while homeopathy was thought to be the least evidence-based method. Neural therapy was the least known complementary therapy method.
7. Anaesthesiologists working in Hungary - in the departments surveyed – recommend or use Traditional Chinese Medicine significantly more often than surgeons ($p=0.02475$). No significant difference was found in attitudes towards other complementary therapies surveyed.
8. As for information about CAM, nursing staff working in perioperative care at Semmweis University said they have little knowledge of CAM but looking at data gained from the study shows that compared to surgeons and anaesthesiologists they were better informed about CAM; 5.9% of them had qualifications in naturopathy and 25.2% considered themselves to be well-informed enough in this field.
9. Nursing staff working in perioperative care at Semmelweis University were more interested and more willing to learn about CAM than anaesthesiologists and surgeons. 68% of them

were interested and 60.5% of them said they would be willing to learn about these methods.

10. 70.6% of nursing staff working in perioperative care at Semmelweis University would be willing to apply naturopathic methods in their daily work. This attitude has strongly been influenced by experience gained from their own illness or that of a family member – because of this they apply CAM significantly more frequently in their daily work ($p=0.0027$).
11. Nursing staff working in perioperative care at Semmelweis University consider acupuncture to be an evidence-based method and doesn't think homeopathy is scientifically well-grounded. Despite this, most of them turn to homeopathy in the case of own illness. Alternative exercise and massage therapy were marked as the most frequently used methods in their daily work. Neural therapy turned out to be the least known method.
12. 63.6% of perioperative patients waiting for surgery at the 1st. Department of Surgery of Semmelweis University were interested in CAM. 25.2% have already visited a naturopathic doctor and 26.8% have used some kind of complementary methods.
13. There are significantly more women among those perioperative patients waiting for surgery at the 1st. Department of Surgery of Semmelweis University who have used complementary therapies is ($p=0.022$). Those who have a degree ($p=0.000315$), those who belong to the age group of 40-49 ($p=0.012419$), those who have a hormonal disease ($p=0.043394$) are more

likely to use CAM. Among those patients who use herbal medicine the number of those who have at least a high school diploma or a degree is significantly higher ($p=0.034294$), but gender, age group or the underlying disease were not influential factors in this respect.

14. The great majority, 76.5% of perioperative patients at the 1st. Department of Surgery of Semmelweis University believes that it would be important for complementary therapies to be available within primary care and 83.4% would use such a treatment if it was recommended by their attending physician.
15. Perioperative patients at the 1st. Department of Surgery of Semmelweis University most frequently used complementary therapies such as phytotherapy, bioenergetics, alternative exercise and massage therapy and homeopathy within two weeks prior to the operation. In terms of longevity in the perioperative period the most popular methods were Traditional Chinese Medicine, alternative exercise and massage therapy, homeopathy and phytotherapy.
16. Only a small percent (12.9%) of the perioperative patients at the 1st. Department of Surgery of Semmelweis University informed their physician about their use of complementary therapies. In the case of herbal medicine consumption this rate was higher, 25%.

Bibliography of the candidate's publications

Publications related to the PhD thesis

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