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Evaluation of perception of nurses toward the reasons for using complementary therapies in clinical their practice Zahra Tagharrobi1, Sima Mohammadkhan Kermanshahi2, Eesa Mohammadi3

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ABSTRACT

Background: The majority of nurses advocate integration of complementary therapies and conventional medicine, and some of them implement these methods in their clinical practice. There various reasons for application of complementary therapies by nurses, identification of which is of paramount importance. Therefore, this study aimed to evaluate the perceptions of nurses toward the reasons for using complementary therapies in clinical nursing practice.

Methods: This study was a qualitative content analysis, conducted in Isfahan and Kashan, Iran, during June 2014-July 2015. Purposive sampling was performed and was continued until data saturation. Semi-structured interviews were carried out with fifteen experienced nurses. Data were collected and analyzed using content analysis method. Data analysis was carried out using MaxQDA software.

Results: Four major categories including "ethical perceptions and attitudes", "obligating beliefs", "attention to information from unofficial sources", and "attention to information from official sources" were extracted with two main themes of "moral obligation of nurses" and "application of information sources by nurses".

Conclusion: With regard to the reasons for application of complementary therapies in practice, performance of nurses could be demonstrated through assessing their moral obligation and application of obtained information from various sources, especially unofficial ones. Therefore, acknowledging these findings could help healthcare planners design guidelines and functional models to integrate complementary therapies and nursing practice.

1. Introduction

Complementrary therapies are a wide range of treatment resources used in addition to conventional treatments to prevent or treat diseases, improve health, or enhance the overall condition of individuas.[1]

This type of treatment has been classified into various categories;[2] according to the last classification presented by National Center for Complementary and Alternative Medicine in the United States (NCCIH), these therapies are classified into six categories of 1) treatments for body, mind, and soul, 2) body-based therapies, 3) natural products, 4) energy healing, and 5) traditional treatments and care systems.[2] Meanwhile, some experts divide complementary therapies into two general groups of pharmacological and non-pharmacological treatment, commonly used among various societies.[2, 3] Barnes et al. (2008) reported that almost four out of ten adults and one out of nine children receive some forms of complementary therapies.[4] A systematic review was conducted to evaluate 51 reports from 15 countries. According to that review, the prevalence rate of using this type of treatment ranges between 9.8% and 76% over a course of 12 months, with the highest rates allocated to Asian countries, especially during the recent years.[5] Iran is no exception in this regard. Complementary and traditional therapies were applied in Iran from ancient times; however, major developments were made during Islamic civilization period and with the rise of scholars such as Ibn Sina in the history of medicine. Moreover, the major branch of this treatment method has been progressively improved as Islamic and Iranian

traditional medicine with the help of the respective authorities and the efforts of world Health Organization (WHO).[6] Heydarifar et al. (2013) conducted a local study on residents of Qom, Iran, to evaluate the prevalence rate of complementary therapies, which was reported to be 93.5%, exclusively in the area of medicinal plants.[7]

Application of complementary therapies in nursing is not a new issue and has been the main area of focus for nursing pioneers and theoreticians. In the 1880s, Nightingale underscored the importance of a good environment for patients. In her theory of human care with a holistic approach, Watson emphasized on caring for body, mind, and soul.[8] However, this approach is considered more than ever due to the changes in general attitude.[8]

Chang and Chang (2015) conducted a systematic review to evaluate 11 reports on knowledge, perception, and attitude of nurses toward complementary therapies. Their results revealed that 66.4% of nurses maintained positive attitudes toward this approach, whereas 56.3-90.6% of the participants insisted on the integration of complementary therapy and traditional medicine.[9] In some countries, this method is considered in nursing curriculum, nursing specialities, RN tests, in-service programs for nurses, and studies on nursing.[8, 10]

With regard to nursing adherence to complementary therapies, some experts pointed out that improvement of the quality of healthcare services, promotion of functional independence, expansion of nursing role, and enhancement of interactions between patients and nurses are of optimal importance.[11, 12]

With regard to emphasis on the congruence between complementary therapy and nursing, researchers have declared that the rudimentary principles of complementary therapy are not different from those of nursing. In addition, it was concluded that the basis is holistic for both. The term holistic refers to treating the body as a whole. Additionally, the interaction of body, mind, and soul is considered in holistic care, which is in line with several nursing theories. Some of the key features of complementary therapy are self-treatment, self-care, self-responsibility, and positive interaction between patients and therapists.[11, 13] According to the results obtained by Cooke et al. (2012), adding complementary therapies to the caring process means having a holistic point of view in nursing.[14] Holistic nursing is rooted in humanistic perspective and complementary medicine is introduced as an alternative name.[15] Regardless of holistic thinking, homogeneity of nursing and complementary medicine could be explained through emphasis on nursing theories, nursing ethics, and various classifications in nursing science.[3, 15, 16]

In total, similarity between nursing and complementary therapies has led to the recognition of these types of treatments in nursing by several nursing boards. In addition, they affirmed the effective application of these therapies in clinical performance.[17]

This question might come to mind that "according to the perception of nurses, why complementary therapies are used in clinical nursing performance?", or "is the philosophy behind using complementary therapies in nursing based on work experience of nurses in fact in congruence with the viewpoints of experts and professionals regarding the necessity of using these types of treatments in nursing actions?" Several studies were conducted with a qualitative or quantitative approach to investigate the contributing factors for the application of complementary therapies by nurses in clinical practice at international level. Evidence suggests that these factors are mainly discussed in the form of inhibiting,[18-21, 2] facilitating,[19-24] or at least associated factors.[3, 14, 24, 25] In this regard, limited number of studies were carried out on the reasons for application of complementary therapies.[18, 22, 25, 26] While nursing practice in hospital environment was taken into consideration in some of the studies, they evaluated the reasons for application of complementary therapies by nurses in private clinics.[27] According to documents available in the national and international scientific databases, there has been no study on the reasons for using complementary therapies in nursing practice in Iran. Meanwhile, the phenomenon under study is based on the area and characteristics of the studied subject and accurate identification of it in clinical areas of different countries is of paramount significance.[26] As accurate and clear recognition of these reasons could help healthcare decision-makers provide applicable guidelines and present a common model, in which complementary therapies are integrated with nursing practice. Given the scarcity of sufficient data on this subject at national level and since qualitative studies offer a broader vision of the subject, this study aimed to evaluate the perception of nurses toward application of complementary therapies in clinical nursing practices using a qualitative approach.

2. Methods

2.1. Design

This qualitative content analysis was conducted on 15 nurses, currently working at five public healthcare centers (four hospitals and one nursing

home) in Isfahan and Kashhan, Iran, during 2014-2015.[28-31]

2.2. Participants and setting

Purposive sampling method was used to select the participants. The participants were nurses who were using at least one of the common treatment methods of complementary medicine in their clinical nursing practice. On the other hand, those individuals who were using these methods just for scientific purposes, nurses who were offering these types of services to their clients in private outpatient clinics, and those who merely considered these methods during their work (1-2 times) were excluded from the study.

2.3. Data Collection

Data collection was carried out from July 2014 for one year through semi-structured individual interviews. At first, each participant received a phone call, and if eligible, patient's consent was obtained and time and place of interview were arranged.

The first participant was a nurse introduced by an oncologist and two faculty members of the Nursing Department as a skilled individual in applying intellectual methods, effective relationship counseling, and relaxation techniques. Snowball sampling was used to choose the other participants.[29] Sampling continued until data saturation. Our purpose was to have diversity in terms of place of employment, work experience, age, position, and types of used methods. The most common methods employed by the participants were spirituality, relaxation techniques, movement therapy, dietary advice, relationship counselling, music or other audio stimuli, touch, massage, creative arts, play therapy, oral or topical natural ingredients, hypnotism, mental imagery, and positive thinking techniques. Each sample was applying one or some of the mentioned approaches.

First, a list of guiding questions was prepared based on the subject, which was asked at an appropriate time during the interview. A few more questions were added to the list based on the information obtained from different interviews. Each interview was initiated with the general question of "please elaborate on the complementary method(s) you apply in your work" and based on the participants' responses, other questions were asked including: "How did you become interested in this method?", "Please explain the factors affecting your job", "Why do you use this method to take care of patients?", and "Can you talk about your feelings when using these types of methods?".

Deep conversation questions such as "what do you mean by that? Could elaborate more?" to reach deeper information were employed, as well. A high percentage of data was repeated after the sixth interview, followed by the saturation of data at the sixteenth interview. The researcher changed the study environment for the seventeenth interview; however, no new data was obtained.

All the interviews were carried out by the corresponding author, trained to conduct qualitative interviews.[16] Interviews were conducted in the form of face-to-face and at a peaceful place in workplace of the participants. On average, the duration of each full interview was 73 minutes. A small part of two interviews (the first and third participants) was clarified over a five-minute phone conversation. In addition, all the interviews (total: 17) were recorded with approval of the subjects, and every word along with all the gestures, movements, and non-verbal cues were recorded. In addition to interviews, in-field notes were also used to collect data.[29]

2.4. Ethical considerations

Objectives of the study were explained to the subjects and informed written consent was obtained prior to the study. Location, time, and duration of the interview were determined based on the opinion of participants. In addition, comfort and privacy during the interview for the subjects was provided by the researchers. Moreover, the participants were assured of confidentiality of data and were free to withdraw from the study at any time during the study. Subject loss did not occur before or during the interviews.

2.5. Statistical analysis

Concurrent with data collection, data analysis was performed using conventional content analysis.[30] After typing the whole script, all the interviews and notes were entered into MaxQDA, version 10, to facilitate data organization. Transcription of each interview was repeatedly read and assessed by the researcher. A pattern suggested by Zhang and Wildermuth was used to analyze data. This pattern consisted of eight stages of 1) preparing the data, 2) defining the unit of analysis, 3) designing bundles and coding scheme, 4) testing the coding scheme on a part of the transcript, 5) coding the content, 6) evaluating coding stability, 7) drawing conclusions based on coded data, and 8) reporting methods and results. After preparing the transcript, meaning units were identified and proper codes were written for each of them based on the questions. At the end of the fourth interview, primary codes were classified based on conceptual similarity (subcategories). Afterwards, the codes

were overviewed, modified, and confirmed by the research team to continue data collection and analysis. The subcategories were compared and placed in the main and more abstract categories. In addition, the main categories were classified and each was allocated a more abstract meaning (theme); finally, the methods and findings were reported.[30-32]

The four criteria proposed by Lincoln and Guba were used to ensure the strength of the results.[29, 32] Moreover, all the extracted codes from each interview was checked with the interviewee and modified (if needed) to confirm the results. The accuracy of results was confirmed through evaluation of the extracted interview transcripts, codes, and categories by the second and third authors, as well as one faculty member outside of the research team. To confirm the reliability of the results, all the stages and methods used in this study were recoded and reported systematically. In this study, we aimed to select the participants with different backgrounds, work experiences, types of applied complementary methods, and job positions, which can confirm the reliability of the findings.

3. Results

Demographics of the subjects are provided in Table 1. Performing 17 interviews with 15 participants led to the extraction of 226 primary codes, 16 subcategories, and four categories, from which two "moral obligation of nurses" and "application of information sources by nurses" themes were extracted (Table 2).

1.3. Moral obligation of nurses

The term "moral obligation of nurses" indicates the role of ethical attitudes and perceptions and obligating beliefs in creating a sense of obligation in nurses about helping patients through using complementary therapies. This theme includes two categories of "ethical attitudes and perceptions" and "obligating beliefs".

1.1.3. Ethical attitudes and perceptions

Nurses declared that in most of the cases a part of their ethical attitudes and perceptions guide them toward use of complementary methods for patients.

Some of the participants stated that using these types of methods in their clinical practice was mostly due to understanding the mental state of patients their families and having empathy with them. According to the results, having experiences of problems in relatives did trigger empathy.

"I understand a mentally challenged patients; I recognize them as patients … I love them. I have accepted them as a patients. I disagree with prescribing more medications and I know there are other ways to keep them calm; therefore, I use those methods to help them. I love my patients, maybe because when I first became a real nurse, my brother was diagnosed with leukemia …" (a 45 year-old nurse with BSc).

Regarding the reasons for using complementary therapies, some nurses mentioned sense of duty. Some of the participants emphasized on physical and psychological problems in patients and marked that the nature of nursing requires such applications. These methods are applied in the field of nursing and since they are nurses, they will help patients. Even some of them considered the subject from a professional ethics point of view and considered themselves obligated to use these methods in practice. In this regard, one of the participants stated that

"as a nurse, I can either use these methods or not. However, I strongly feel obligated to practice them to ensure health of my patients … Due to my commitment to my work … because of the oath I have taken and the obligation I feel toward it, I consider myself responsible to use these methods to help patients, regardless of any obstacle … I feel that this is part of our ethics and must be a part of our duties …" (a 48 year-old nurse, BSc).

Some of the nurses pointed out the outcomes of not using these methods or the desire to prevent the disease as the reasons for applying complementary therapies. In this regard, particular attention is focused on the side effects of high doses of medicines. One of the participants said

"… the patient was restless and we were unable to administer more medicine since the dosage would be dangerous and could cause addiction in the patient. We wanted to sooth the pain with a minimum dose of medication. Therefore, we had to use complementary therapies" (a 44 year-old nurse, BSc).

Some other nurses expressed their own judgment call regarding the needs of clients, both patients and their families. This notion has obligated them to respond to any identified need from patients and use these methods to eliminate problems. One of the participants proposed that

"In my opinion, sometimes families are more stressed out and need to be relaxed, even more than patients … I mostly perform this treatment method for them" (a 33 year-old nurse, BSc).

Another reason for using complementary therapies was reported to be lack of sufficient work by colleges and the desire to cover for them, as one participant mentioned

"psychologists show no sense of obligation for their work, they are not able to perform a proper

relaxation therapy. In the past, there were a few experienced psychologists…but after tha it was so neglected that no one performs it now. I myself use this method for patients" (a 45 year-old nurse, BSc).

2.1.3. Obligating beliefs

Another aspect of nursing moral obligation is the beliefs of nurses. The majority of these beliefs (e.g., believing in divine rewards and beneficial and harmless nature of complementary therapies) are rooted in cultural and religious values.

Some of the nurses considered application of these methods due to believing in the importance of healthcare goals such as calming patients, having a calm environment, provided a satisfying condition for patients and improving the treatment process. However, this belief in the importance of healthcare goals might be associated with negligence of nurses toward possible secondary problems caused by using complementary therapies. One of the participants argued about stimulating an environment for Children hospitalized in the intensive care unit (ICU) as

"… I ask the family members of children to bring their own toys and blankets. I have seen that the presence of such objects significantly helps calming children. We cross several boundaries because of children. In the ward, the calm state in children and reduced anxiety are more important than issues related to decreased infection rate. I suggest parents to bring some objects, and I found no problem in that … I have rarely encountered a dirty blanket and I've sent them to laundry room" (a 33 year-old nurse, BSc).

One of the reasons expressed by nurses was believing in harmless nature of complementary methods and considering pharmacaulogical agents unsafe. Moreover, these nurses preferred to use complementary therapies. Even in some cases, when nurses doubt the effectiveness of some methods, they use them due to their believing in the harmless nature of these methods. One of the nurses explained about using traditional compounds in the ICU that

"I think it is wrong to consume chemical compounds such as Ranitidine and Hyoscine, which are definitely associated with side effects. I prefer to use mint extract… I like this type of treatment more than treatment with chemical compounds since they don't cause damage" (a 36 year-old nurse, BSc).

Most of the interviewed nurses repeatedly expressed their reasons for using complementary therapies to be their belief in their effectiveness and beneficial impact. This belief in the efficacy of such treatments was so strong that some nurses accepted all the hardships and obstacles and continued their practicing them.

"… even though we have many problems with visitors and controlling contamination in our ward, we do continue this type of treatment since it is good for neonates and the results are worth the trouble; with all the difficulties, I still ask mothers to come …" (a 43 year-old nurse, MSc).

Another issue that instigated nurses to use complementary therapies in their practice was believing in divine rewards. Since using these treatment methods could help enhance the quality of life in patients through various ways, this act was regarded as benediction and blessing. One participant proposed that

"I definitely focus more on the spiritual side of this issue … I believe that there is a God, there is an energy, and whatever goes around comes around. Therefore, we have to do what is right and good for patients…" (a 38 year-old nurse, BSc).

Some other nurses conduct these therapies as a benediction and vow. *"… my main goal was actually a vow I have taken for the sake of my parents and myself. I had problems, underwent a surgery and asked God to give me back my health and in return, I would come and work here for a while … All of this work is because of that vow"* (a 47 year-old nurse, BSc).

2.3. Application of information sources by nurses

"Application of information sources by nurses" indicates the role of data resources in nursing clinical performance. This theme includes two categories of data obtained from unofficial sources and those from official sources.

1.2.3. Attention to data obtained from unofficial sources

In most cases, the reason for using complementary therapies in patient treatment was the focus of nurses on unofficial resources to obtain relevant data. Traces of religious and cultural values can be observed in information resources, especially in personal experiences.

Nurses discussed the role of professional experience regarding the reasons for using complementary therapies in clinical practice, and the most common philosophy among them was application and continuous use of these methods in healthcare services. Regarding the use of honey for curing injury site, one of the participants asserted:

"… for the first time, we wanted to apply honey therapy on a patient … his companion approved this act. After using this method for 2-3 days, I saw that nothing can be seen under the injury site … I wanted to give up and not to use it anymore, I cleansed the injury … It seemed that it was debrided by honey … So we continued with the treatment… Not even a slight scar was left with using honey. This

remained in my mind and I always use it after that" (a 33 year-old nurse, BSc).

The effectiveness of application of these methods by nurses or their relatives for personal use was pointed out by some of the participants. In this regard, one nurse declared

"I notice that it works for me, if my family members or I get a stomachache, we will drink peppermint extract, which is very effective … Therefore, I gavage peppermint extract or prescribe peppermint pills for a patient with emphysema" (a 36 year-old nurse, BSc).

In terms of the application of complementary therapies, another information resource for nurses is daily life experiences. The participants stated that observing other people's actions (e.g., the elderly in family, doctors, patients, colleagues, head nurses, students, or even common people in the society) or listening to their conversations helped them learn about application of complementary therapies by people. These nurses aim to use these data in their clinical practice. The majority of nurses paid special attention to those applications that were closely related to cultural and/or religious values.

"Mr H was admitted here and he used chicory essential oil whenever you changed his diapers … He also massaged his legs with red flower extract to prevent muscle soreness … I also recommend other patients to do this, and I ask their companions to bring some with themselves to hospital …" (a 36 year-old nurse, BSc).

Some of the nurses used the experience of physicians when they started to apply some of complementary methods. In this regard, one of the participants stated:

"… sometimes when a baby cries, I ask his mother to provide a little of her milk on a piece of cotton and put on his head; the smel of milk (help) … I have heard this from Dr.J, he was here several years ago and he declared that nurses use this method in a city …" (a 43 year-old nurse, BSc).

Nurses did not ignore the role of multi-sectoral cooperation in obtaining information. In this regard, they would interact with nurses from other similar wards and use each others' experiences as useful data. They tried to apply these treatment methods after ensuring safety and efficacy of the proposed therapy. Modern technology can definitely act as a facilitator in this regard. One participants argued

"my collegues are from different hospitals of Tehran, Iran, or even other cities and I always interact with them through viber app and exchange ideas, they often say that they used a complementary therapy and positive results were obtained … One of my friends declared that they tested application of lavender for agitated patients in the ICU, and promising results were obtained … I wish to discuss this issue with our anesthesiologists… test this method on a few patients and if it was effective … we could always use it afterwards" (a 33 year-old nurse, BSc).

2.2.3. Attention to the data obtained from official sources

In some cases, the data resources related to application of complementary therapies are official. In this regard, one of the most common official sources is in-service training, used by the majority of participants to obtain helpful information. One of the nurses started.

"I attended a hypnotherapy training course held by our hospital … I participated in all the courses and now I am using that training in my profession" (a 38 year-old nurse, BSc).

Self-study is also applied by nurses. However, convenient access to resources at work place has a crucial role in this regard. One participant expressed

"… I studied about those methods that could be used in our ward, I read lots of books, there are some handouts on the subject of massage in the ward, which I have used. I even review articles, surf the internet, whenever I had the time …" (a 32 year-old nurse, BSc).

Some nurses used whatever they have learned in university at any level as an information resource.

"My nursing trainer talked about a case with a big wound,, and she said that using honey for filling it really helped the patient. Therefore, I used the same method for some of the patients based on the experience of my professor" (a 36 year-old nurse, BSc).

A part of the recorded notes of our researcher is also about the role of attention to these types of resources by nurses. When faced with a research question on the reasons of using complementary therapies in an unofficial conversation, the nurse that was using distraction techniques and acupressure at the time of injection of penicillin for a child declared

"During internship, my instructor told us, taught us. The reason for using distraction techniques is pretty obvious; this massage helps alleviate pain, I there was a mechanism involved; however, it slipped my mind. I use this method whenever I want to administer an intramuscular injection" (field note 3, Shahid Beheshti Hospital, Kashan, Iran).

Table 1. Demographic characteristics of the participants

Variable		N(%)
Marital status	Single	2(13.33%)
	Married	13(86.66%)
Educational level	BSc	13(86.66)
	MSc	2(13.33)
Occupational status	Nurse	8(53.33)
	Director of nursing	7(46.66)
Age (year)	30-34	3(2)
	35-39	5(33.33)
	40-44	3(20)
	44-49	4(26.66)
	M±SD	39.38±5.81
Work experience (year)	5-9	1(6.67)
	10-14	7(46.66)
	15-19	1(6.67)
	20-24	3(20)
	25	3(20)
	M±SD	16.13±5.88

Table 2. The process of theme, categories, and subcategories formation

Theme	Categories	Subcategories
Moral obligation of nurses	Ethical attitudes and conceptions	Understanding patients and having a sense of empathy Having a sense of duty Having a desire to prevent complications caused by not using complementary therapies Responding to the identified needs of patients Having a desire to cover for lack of sufficient work observed in other colleagues
	Obligating beliefs	Believing in the importance of outcomes Believing in harmless nature of complementary methods Believing in the effectiveness of complementary therapies Having faith in divine rewards
Use of information resources by nurses	Attention to data obtained from unofficial sources	Focusing on everyday life events Professional experiences Personal experiences Using multi-sectoral cooperation
	Attention to data obtained from official sources	Self-study Retraining and in-service training Information obtained while attending university

4. Discussion

According to the results of the present study, two themes including "moral obligation of nurses" and "application of information sources by nurses" were identified and each consisted of two main categories.

Moral obligation of nurses was one of the major general perceptions of nurses, acting as a strong stimulator that guides nurses on use of complementary therapies to reduce patient problems. In other words, ethical attitudes and perceptions of nurses and their obligating beliefs are the result of nurses' understanding of patients and having a sense of empathy and duty toward patients, understanding the outcomes of not using complementary methods (especially the side effects of chemical medicine), understanding the needs of patients, having a desire to cover for insufficient work of colleagues, and believing in the importance of patient comfort and effectiveness of methods, their lack of side effects, and divine rewards. These were the major components of attitude and perception of nurses toward using complementary therapies.

In line with our findings, some of the previous quantitative studies with cross-sectional design have demonstrated that some of the contributing factors for increasing use of complementary therapies in clinical practice were scientific evidence,[3] personal interest,[33, 34] religious beliefs,[3, 33] personal application of methods,[3, 34-36] nurses' perceptions of the benefits of complementary therapies,[3] familiarity with the methods,[3, 35] believing in their effectiveness,[34, 36] having a formal training about complementary therapies, holding a positive attitude toward complementary therapies,[36] having professional knowledge on complementary therapies and professional viewpoints,[35] and believing in lack of side effects for these methods.[34] Cooke et al. (2012) conducted a study on nurses currently working at intensive care units in Australia. In congruence with our results, the proposed a relationship between

application of these methods and nurses' perception toward the effectiveness of complementary therapies and having related knowledge.[14] In a study by Wardle et al. (2013), the reasons for application of massage therapy were reported to be personal use, believing in its effectiveness, having a positive experience from using it on some patients, and interacting with massage therapists,[37] which were in accordance with the results of the current study.

Another study by Kristiniak (2011) was conducted to evaluate work experience of American nurses, who applied complementary therapies in their practice using a phenomenological approach. According to the obtained results, the most common reasons for using complementary methods were reported to be symptom management, failure in treatment, and integration with general healthcare services by nurses. In fact, occasional ineffectiveness of conventional treatments, witnessing symptomatic relief in patients upon using these methods, and the desire of authorities to integrate complementary therapies with conventional treatments were identified as the main reasons. In this regard, the two factors of symptom management and failure in treatment were in line with subcategories of "believing in the effectiveness of methods" and "having a desire to prevent the complications caused by lack of using complementary methods". One of the causes of this contradiction in the extraction of other different categories in the mentioned study might be the fact that all of their samples were trained on complementary therapies and were working in a hospital with a Magnet sign, while only some of the nurses in the present study were trained. [26]

In a study by Fletcher et al. (2014), a qualitative approach was implemented to evaluate the perception of managers and complementary therapy providers in a healthcare organization affiliated to the Military Science in the United States. The extracted theme for selecting these methods was demonstrated as "knowledge and attitude", which was in congruence with our results.[21] The "knowledge and attitude" theme confirmed both themes of "moral obligation", resulting from the attitude and "application of information sources by nurses". In another study, work experience of American nurses in terms of suggesting Chinese medicine methods were evaluated using a qualitative approach. Some of the nurses emphasized on their role in treating patients,[38] which was in line with the subcategory of "sense of duty" in the current study. In a study by Van der Riet et al. (2012), work experience of Thai nurses in relation to using complementary therapies in rehabilitation wards were investigated using discourse analysis approach. In that study, the holistic nature of nursing practice was confirmed and the intention of some of the nurses was performing good deeds,[39] which was in congruence with the subcategory of "believing in divine rewards" in the present study.

On the other hand, grounded theory approach was used in a study by Hall et al. (2013) to determine the factors shaping the attitude of midwives toward using complementary therapies for pregnant women. One of the extracted categories was knowledge and beliefs of midwives,[40] which was in accordance with the theme of "application of information resources by nurses" and category of "obligating beliefs" in the present study. Similarly, grounded theory approach was applied by Kim et al. (2013) to assess the process of acceptance of complementary therapies among Korean nurses. The results obtained in the mentioned study demonstrated the interest of nurses in using such methods and limitations of conventional medicine to be the major reasons for using complementary therapies.[25] It is worth mentioning that the term "interest in using complementary methods" was in line with the category of "ethical attitudes and perceptions" in the present study. However, it is necessary to consider the fact that all the participants of the mentioned study were officially trained and the evaluated phenomenon was the process of acceptance of these methods by nurses.

Anderson et al. (2015) conducted a study to evaluate the perception of American nurses toward therapeutic touch using content analysis approach. One of the extracted themes was holistic viewpoint beyond knowledge of duties. In other words, it was indicated in the mentioned study that the performance of nurses was not based on duty in this regard. In addition, given the holistic viewpoints and therapeutic interactions of nurses with patients, they aimed to use these methods in clinical practice.[18] Given that therapeutic touch was the only subject of the mentioned study, their findings were in line with the theme of "moral obligations" in the present study to some extent. In the current study, it was marked that using various sources to obtain data by nurses leads to a positive attitude toward application of complementary therapies in their professional practice.

Similarly, other studies have indicated that nurses used various sources (official and unofficial) such as the media, books, magazines and newspapers, conferences, internet, family, friends, colleagues, healthcare providers, and training courses to learn about complementary therapies. It was concluded that knowledge, especially in the area of effectiveness and safety, helps nurses benefit from these methods in treating patients.[8, 34]

In a study by Johannessen (2013), work experience of Norwegian nurses regarding

aromatherapy in dementia patients suffering from sleep disorders was evaluated using an action research approach. One of the reasons for continuous use of aromatherapy was reported to be the positive outcomes in patients and its natural origin.[23] These results were in congruence with the subcategory of "professional experiences" and "believing in lack of side effects in complementary therapies" in the present work.

Johnannessen and Garvik (2015) used a phenomenological approach to assess the work experience of nurses in relation to using complementary therapies in nursing homes in Norway. In line with our findings, contributing factors for using complementary therapies were identified as experience, observing positive results, and interest of nurses.[22] These reasons were also in accordance with the subcategory of "professional experiences" and category of "ethical attitudes and perceptions" in the current study.

Results of each of the mentioned studies confirmed some of the findings obtained in the present study. Obviously, the use of complementary therapies in clinical practice by nurses could be different in terms of number and variety in different studies, caused by differences in time, location, social and cultural backgrounds, structural characteristics of clinical fields, as well as demographics of the samples (e.g., personality, religious beliefs, educational level, and specialized training).

The subject of complementary therapies has been added to master's degree of some of nursing specialities during the past 1-2 years in Iran. However, this issue is not considered in in-service training programs and no official models or operating plans are available in hospitals for this issue. Based on the mentioned topics, the results of the present study can be justified. Nurses use various sources (mostly unofficial ones) to gather information in this regard. They also try to use any method that seems to be effective and harmless and are in line with their interests, principles, and duties. Transferability of results could be the cause of congruence between our findings and results of other studies. However, our finding must be interpreted with caution due to the limited sample size.

5. Conclusion

The obtained results demonstrated the reasons for using complementary therapies in clinical practice to be knowledge and moral obligation in nurses that stem from proper understanding. Therefore, it is recommended that suitable and adequate training be provided for nursing students at different educational levels to promote the use of complementary therapies in nursing clinical practice. Moreover, special attention should be paid to the concept of complementary therapies in in-service training programs. In addition, establishing specialized academic programs related to nursing must not be neglected by the authorities. Designing appropriate study tools and a model of factors leading to the application of complementary therapies by nurses in their clinical practices is recommended for future studies.

Conflicts of interest

The authors declare no conflicts of interest.

Authors' contributions

Zahra Tagharobi: Study design, data collection and analysis, as well as writing the first draft were performed. Sima Mohammadkhan Kermanshahi: assisted in study design and data analysis and interpretation. She also made fundamental reforms in the manuscript and monitored the study process. Isa Mohammadi: contributed with study deign, data analysis and interpretation, as well as making fundamental changes in the manuscript and monitoring the study process.

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