Use of complementary and alternative medicine by Turkish infertility patients: a descriptive study

Tamer Edirne¹*, Secil Gunher Arica²*, Sebahat Gucuk²*, Gamze Ugurluer³*

¹ Department of Family Medicine, University of Yuzuncu Yil, Van- Turkey
² Family Physician, Mother Child and Family Planning Center, Van - Turkey
³ Department of Radiation Oncology, University of Yuzuncu Yil, Van- Turkey

*These authors contributed equally to this work
§Corresponding author: Dr. Tamer Edirne
Address: YYU Arastirma Hastanesi, Aile Hekimligi AD, 65100 Van Turkey
Tel: +905337276406

Email addresses:

TE: tameredirne@yahoo.com
SGA: secilgunher@hotmail.com
SG: sebahatgu@yahoo.com
GU: gamzeugurluer@gmail.com
Abstract

Background
Infertility patients are a vulnerable group that often seeks a non-medical solution for their failure to conceive. We investigated the prevalence and types of complementary and alternative medicine (CAM) used by infertile Turkish women for the treatment of infertility.

Methods
Face-to-face questionnaire inquiring demographic information and types of CAM used were offered to hundred eligible infertility patients admitted to a primary care family planning centre in Van, Turkey.

Results
The vast majority of infertile women had used CAM at least once for infertility. CAM use included religious interventions, herbal products and recommendations of traditional “hodja’s” (religious preachers). CAM use was significantly more prevalent among women who were living with their parents, missing support from their partners and had never spoken with a doctor about CAM.

Conclusions
Infertile Turkish women use complementary medicine for infertility treatment and are in need of information about CAM. Physicians need to approach CAM with sensitivity and should be able to counsel their patients accordingly.

Background
According to the World Health Organization (WHO), more than three-quarters of the world’s population rely upon complementary and alternative medicine (CAM) for health care. The Cochrane Collaboration's definition of CAM is "a broad domain of healing resources that encompasses all health systems, modalities, and practices and
their accompanying theories and beliefs other than those intrinsic to the politically
dominant health systems of a particular society or culture in a given historical period”.
Although literature exists to document folkloric beliefs in non-Western cultures, there
is scant research to describe its popularity in modern society. Complementary and
various spiritual therapies are common among the community in Turkey. (1,2), mostly
used by adult and child cancer patients. (3,4)
However, details about the type of therapies and how they are used in relation to
conventional medicine are scarce; in particular, little is known about CAM treatments
for infertility. Infertility patients are a vulnerable group that often seeks a non-medical
solution for their failure to conceive. It is important that health professionals are
aware of their patients’ lay beliefs about illness and the CAM that they may choose.
The current study was planned to investigate CAM use among infertile Turkish
women from a remote and rural area. The objective was to find out which alternative
and nonmedical treatments are being used by infertile women seeking medical
infertility treatment, and also to determine whether there are specific demographic
factors that determine whether such advice is followed.

**Methods**
Data was gathered from women seeking knowledge about infertility treatment at a
family planning centre in Van, Turkey. The Centres for Mother-Child Health and
Family Planning (CFP) in Turkey offer routine care for women and children. In
general, one centre exists in a city displaying a supervisory role for the health
personnel from the other primary health care centres through in-service educational
activities. The CFP in Van operates policlinics including gynaecology, family
planning counselling, and routine antenatal care. Three family physicians, two
primary care physicians, six midwives give service to the population of Van.

- 3 -
The female population in this region is homogeneous in terms of ethnicity, religion and language. All patients in our sample were born and grown up in this region, were Muslims and were speaking Turkish and Kurdish. According to the data of the local health administrative, a total of 238,582 women aged 15-49 were recorded, with a crude birth rate of 25.9/1000 in the year 2008. There are no data about infertility rates from this region. Including criteria of the women were being 18 years or older, born and living in Van region, seeking knowledge for infertility treatment and being treated with ovulation induction.

Sample and survey questionnaire

A face-to-face questionnaire was undertaken with consecutive 100 infertile patients admitting to the Family Planning Centre in Van, Turkey from January to July 2009. The questionnaire was structured after preliminary discussions with patients and health professionals who were also informed by a literature review. Only women, who admitted to the centre seeking information about ovulation induction, were invited to participate.

In the first part, subjects were investigated regarding demographic information that was suspected to influence the patients’ health-related behaviours including age, education and income level, years of infertility, gravidity, parity, household structure and locality. Questions inquiring partner support, intimate partner violence and knowledge about CAM were also asked. In the second part, respondents were asked to mention therapies they had used expressly for the purpose of getting pregnant. The treatments listed were including those that the authors had encountered in practice and which was the source of inspiration for this study.
Data recording and analysis

All of the interviews were conducted by trained female family physicians. Interviews took place in the visit room individually and lasted approximately 20 minutes. A midwife speaking Kurdish was ready for translation.

Because the study was descriptive by nature, no power analysis was performed in advance. Demographic information was compared between those using alternative treatments and nonusers with t tests for numerical data and contingency tables for categorical data. This study was determined to be exempt from review by the institutional review board at the University of Yuzuncu Yil. All participants gave informed consent.

Results
Response rates and demographic characteristics

A total of 100 women accepted to participate the study out of 115 invited (86.0% response rate). Mean age of the participants was 27 (18 – 40 years). Mean duration of infertility was 7.1 years (7-months - 27 years). Forty-six (46.0%) patients belonged to WHO group I, which includes women with hypogonadotrophic hypogonadism, and 54 (54.0%) to WHO group II, in which the vast majority of the women have polycystic ovary syndrome (PCOS). Mean age of menarche was 13.1 (9 -18 years).

There was no difference between the groups in education, income, gravidity, parity or years of infertility. Characteristics of the participants are shown in Table 1.

-Table 1 about here-
Overall, 82% of the women had used CAM for infertility. The most common intervention complementary to standard medical therapy was religious intervention used by all respondents. The next most common intervention involved faith healers. Nearly half of the sample (46.3%) stated that they sought help from faith healers (hodja’s) and accepted to use several folkloric remedies recommended by them. Table 2 displays the percentages using each intervention.

The patterns of CAM used by the patients reflected well-known herbal medicines but local traditional remedies were also reported.

*Herbals*

Dried leaves or roots of nettle (*Urtica dioica* L.) are boiled in water and steeped for 3-5 minutes. It is consumed several times a day as a hot (tea) or cold beverage.

European black pine (*Pinus nigra* Arnold) and subspecies *Pinus nigra* ssp. *caramanica* (5) belonging to Pinaceae family grows on Taurus Mountains in Southern Anatolia. Tar (resin) is obtained by dry-distillation from the stem and branches in primitive holes in the ground. It is a semi-solid black liquid, which is externally applied to the para-umblical region of the infertile women in form of a plaster for at least three days.

Fresh leaves of Johnny jumpup (wild daffodil; *Viola tricolour* L.) or heartsease (*Narcissus pseudonarcissus*) are squeezed together to form an ovule like small pill, which are inserted to the vagina before sexual intercourse.
**Folkloric methods**

Two spoons of wheat germ oil are swallowed twice every day and the patient sits naked on hot ashes or hot bricks for several days. Some prefer thermal spas with the same purpose.

The reproductive organ (uterus) of the female rabbit (Oryctolagus cuniculus) is cooked and eaten before sexual intercourse.

**Faith healings**

Patients may consult to religious healers. The *hodja* has a special spiritual power, acquired through inheritance (lineage) or a lifetime of devotional acts, allows him to communicate directly with God and thus act as a mediator between God and the people. Hodja’s offer a number of treatments and practice traditional systems of medicine, which involves use of a variety of herbs and minerals. Amulets (*tawiz*), containing verses from the Koran written by hodja’s are usually worn around the neck; act as a defence against evil spirits or the evil eye (*nazaar*). Hodja’s may also give cure through their breaths (healing breath) by blowing his breath over the body. He also may blow water or food (rice, for example) and then the blessed water is drunk or the food is eaten.

When the problem is thought to be spiritual, the hodja may diagnose possession by evil spirits (*jinns*), which must be exorcised. However, only specialist *hodja’s* have the specific knowledge to perform exorcisms. There is a widespread belief amongst Muslims that *jinns* are spiritual beings – created from smokeless fire rather than the spirit of dead people - that live on earth in a world parallel to mankind. *Jinns* have the ability to possess and take over the minds and bodies of other creatures, including humans, and to behave in either a good or evil manner. *Jinns* possess people for
different reasons. Most of the time possession occurs because the jinn is simply malicious and wicked.

*Religious healings*

The widespread religious health-seeking behaviours involve individuals or groups praying or reciting religious texts to seek cure. Individuals may drink holy water from hajj, fast or undertake pilgrimages to holly places (graves) to seek forgiveness of sins and alleviation of illness. At some holly places, people light candles or bind pieces of their cloths to the trees with a wish to conceive.

Table 3 summarizes complementary and traditional approaches to health care.

-Table 3 about here-

The demographics of patients who used nonmedical treatments were compared with those of nonusers, as shown in Table 4. There was no difference between the groups in age, education, income, location, gravidity, parity or years of infertility. There was no difference in the percent of patients who had experienced intimate partner violence in the past 12 months. CAM use was significantly more prevalent among women who were living with their parents, missing support from their partners and had never spoken with a doctor about CAM.

-Table 4 about here-
Discussion
This study shows that many infertile Turkish women are using nonmedical treatments and interventions in addition to those used in medical practice. The study showed no difference in use of CAM by women of different age, income, education, length of infertility, parity or location. One might assume that women of a higher socio-economic status would have more knowledge to resist using other therapies, or that women struggling with infertility for a longer time might seek other therapies. However, our data suggest that most women are equally exposed to such interventions and these factors do not affect their choices.

The most prevalent intervention included items summarized as religious healing which can exert positive influences on health by contributing to a sense of hope and allowing coping with the stress of infertility treatment.\(^6\)

People having faith in spiritual healers, clergymen, hodja’s, homeopaths or even many quacks, have utilized alternative therapies. These are the first choice for problems such as infertility, epilepsy, psychosomatic troubles, depression, etc. \(^7\)

Religion has a strong influence on people’s beliefs about illness and treatments resulting in acceptance of methods recommended by religious healers (hodja) without rational criticism. In our study, all of our patients were praying for cure in routine and nearly half of them had visited a faith healer (hodja) and complied with his methods, even if they were inconceivable.

Spiritual healing methods are known to be used regularly for relive by Turkish patients \(^8\) and in the Muslim world \(^9\) but also in the western world \(^10\). However, one might argue this is a true reflection of the patients’ culture where prayer and spiritual believes are part of people’s everyday life and may not be included in CAM.
Some religious methods included in this study have never been shown to directly affect fertility, but some may indirectly influence health in a negative way. Remedies recommended by hodja such as “holly breath and foods” must be mind confusing. Methods such as exorcism could have a devastating effect on the psychological health of the patients who already are suffering emotional distress. They are based on the false belief that illness is the expression of sins that can be manipulated by some religious interventions. Generally, these interventions are sold to the patients with the promise that they can cure multiple diseases, such as infertility. All are aimed at vulnerable clients desperate for anything that promises hope.

Few herbal supplements have been subjected to adequate study regarding efficacy on fertility. We found stinging nettle to be the most frequently used herbal supplement, and it is recommended for many illnesses including cancer. (11-15)

A review of literature on nettle, however, does not find adequate support for its use in infertility. (16)

Nettle leaf has traditionally been used for numerous other conditions, although confirmatory clinical trials have not been conducted for all remedies. Moreover, although it is believed to be generally safe, it can cause adverse effects by interfering with some drugs.

The use of medicinal tar (resin, pitch) for dermatological disorders dates back to the ancient times. Although coal tar is utilized more frequently in modern dermatology, wood tars have also been widely employed. Wood tars have been used in the treatment of various cutaneous disorders, including psoriasis and atopic dermatitis, and have no photosensitising effects. (17)

An increased risk of irritation and allergic sensitisation has been seen with their use. (18,19)
No relevant information was found in the literature on the benefits of tar to infertility.

In one scientific study, the ethanol extract of the bulbs of *Narcissus pseudonarcissus* was found effective in one mouse model of nociception, para-benzoquinone induced abdominal constriction, but not in another, the hot plate test. However, at these concentrations it also caused significant toxic effects. (20)

*Viola tricolor* is one of many plant species containing cyclotides. These small peptides have proven to be useful in drug development due to their size and structure giving rise to high stability. One such cyclotide, vitri A, found in *Viola tricolor* is said to contain cytotoxic characteristics (21) meaning that it could be used to treat cancers but no scientific study regarding its effects on fertility was found.

For other folkloric interventions stated here, no data exist. The opinion that ingesting organs of highly reproductive animals will make conception more likely could be dating back to old times but will never be studied and are generally only of cultural interest. This is also true for the combination of wheat germ and heating the female genitourinary tract, which may exhibit a response to the cold climate of this region with long and severe winters.

Given that infertility rituals are described more in less developed cultures, cultural and national influences are likely to affect the use of nonmedical treatments. The nonmedical therapies identified by this study are prevalent in this community, and may not be generalized to other cultures and time periods. Still, many of these recommendations have existed for generations, and the fact that they are still in use suggests that some must be useful or effective. Very few, however, have actually been studied for evidence of their efficacy.

Studies from developing, Eastern or pronatalist countries tend to focus on society’s stigmatisation of infertility, (22, 23), the lack of support from husbands (24-27), and
the importance of education and counselling about infertility and treatment approaches to infertility. (28-30)

We only included patients treated by conventional ovulation induction methods into the study. The use of CAM was widespread, although only in means of a second-line rather than an alternative. The majority had never discussed CAM with a doctor and this group used significantly more CAM, which is widespread pattern of patients and even physicians in Turkey. (8,31)

Our questionnaire findings indicate that the husband’s support is very important. Lack of partner support was associated with an increased utilization of CAM. Furthermore, we also documented that infertility patients were subject to IPV, which in general originates from husbands. Intimate partner violence is known to be frequent among Turkish couples, and infertile women report high rates. (32-34) No difference in CAM use was observed among our respondents, but a high rate of IPV in both groups. We suggest that there is a cultural background underlying these findings.

Our patients who were living with their parents were using CAM more common then their counterparts which may be explained by the fact that infertile women are under emotional pressure from mothers’ and fathers’ in-law, relatives, and own parents, which is well documented all over the world. (34-37) Motherhood is believed to be the most important role for women and is fundamental for the women’s identity in Islamic culture. The public places great emphasis on fertility and childbearing, which in turn is a matter of honour for both families. Therefore, decisions to seek alternative treatments are to be usually taken as a family rather than as an individual and people having been coerced or persuaded into accepting them, as it has been reported before. (38)
Attributing the causes of infertility to supernatural causes such as evil spirits and God’s retribution, and seeking help from faith and traditional healers are the results of social stigmatisation for infertile women which places them at risk of serious social and health-related consequences.

The prevalence of CAM in this sample of infertile Turkish women indicates the appropriateness of counselling these patients about CAM. Successful programs in dealing with infertility need to include the establishment of a community based intervention strategy including primary care physicians to educate people about infertility and to give guidelines for treatment options.

Because of the popularity of these non-prescription treatment methods, it is important for healthcare providers to be prepared to initiate discussions with their patients and provide counselling.

This study has several limitations including the collection of data by means of the questionnaire, which introduced the threat of selection bias. The validity of the findings is dependent on the individual’s memory and accuracy in reporting CAM use. The survey methodology also carries an inherent selection bias. A relatively small fraction of patients in one health facility chose to complete the survey. Women who have an interest in complementary and alternative medicines might have been more likely to take the time to complete the questionnaire. On the other hand, some women were only speaking Kurdish, which might have resulted in misinterpretation of some questions. The sample in this study reflects only one area of Turkey and the findings should be limited to this population.

Conclusions
For the most part, nonmedical treatments in this study were irrational and possibly dangerous. Although religious interventions are of little proven benefit, they may
contribute positively to infertility treatment either by giving a sense of empowerment or control or by helping to relieve some of the stress. Some interventions may involve substantial emotional distress, such as exorcism, with no known benefit. Some herbal preparations may even have an ill effect on health and well-being. Physicians providing care for infertile patients may therefore want to inquire about such practices and be able to counsel their patients accordingly.

Competing interests
We, the author(s) declare that we have no competing interests.

Authors' contributions
TE participated in the design of the study, acquisition and interpretation of data, helped to draft the questionnaire, and participated in writing the discussion and revised it.

SGA participated in the design of the study, helped to draft the questionnaire and to discuss the results.

SG conceived of the study, and participated in its design and coordination and helped to draft the manuscript.

GU participated in the design of the study, conducted the statistics and revised it.

Acknowledgements
None.

References


### Tables

**Table 1.** Patient demographics (n=100).

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (SD)</strong></td>
<td>27 (6.1)</td>
</tr>
<tr>
<td><strong>No. (%)</strong></td>
<td></td>
</tr>
<tr>
<td>Educational level</td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>48 (48.0)</td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>41 (41.0)</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>11 (11.0)</td>
</tr>
<tr>
<td>Monthly income</td>
<td></td>
</tr>
<tr>
<td>&lt; 377 $*</td>
<td>61 (61.0)</td>
</tr>
<tr>
<td>&gt; 377 $</td>
<td>39 (39.0)</td>
</tr>
<tr>
<td>Location</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>67 (67.0)</td>
</tr>
<tr>
<td>Urban</td>
<td>33 (33.0)</td>
</tr>
<tr>
<td>Household structure</td>
<td></td>
</tr>
<tr>
<td>Living with parents (self or in law)</td>
<td>64 (64.0)</td>
</tr>
<tr>
<td>Living without parents</td>
<td>36 (36.0)</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>WHO I</td>
<td>39 (39.0)</td>
</tr>
<tr>
<td>WHO II</td>
<td>61 (61.0)</td>
</tr>
</tbody>
</table>
Table 2. Interventions utilized by patients using CAM (n=82)

<table>
<thead>
<tr>
<th>Interventions</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Herbals</td>
<td>24 (29.3)</td>
</tr>
<tr>
<td>Folkloric methods</td>
<td>9 (11.0)</td>
</tr>
<tr>
<td>Faith healers (hodja)</td>
<td>38 (46.3)</td>
</tr>
<tr>
<td>Herbals + faith healers</td>
<td>30 (36.6)</td>
</tr>
<tr>
<td>Religious healings</td>
<td>82 (100.0)</td>
</tr>
</tbody>
</table>

Table 3. Nonmedical treatments used for infertility in the region of Van as reported by the participants

**Herbals**

Tea prepared with stinging nettle leaves is consumed three times a day.

Tar (resin) obtained from the stem of pine is externally applied to the para-umblical region of the infertile women in form of a plaster for at least three days.

Leaves of Johnny jumpup (Viola tricolor) or heartsease (Narcissus pseudonarcissus) are used to create a medicament used vaginal insertion before sexual intercourse.

**Faith healing**

Referring to faith healers such as hodja’s and wearing amulets, drinking holy water or eating food blessed by the hodja.

**Folkloric methods**

Sitting naked on hot ashes or hot bricks.

Eating rabbit sex organs before sexual intercourse.

**Religious healing**

Individuals or groups praying or reciting religious texts to seek cure.

Undertaking pilgrimages to holly places (tombs) to seek forgiveness of sins and alleviation of illness.
<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Did use (n=82)</th>
<th>Did not use (n=18)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>26.7 (6.0)</td>
<td>28.2 (6.9)</td>
<td>0.36</td>
</tr>
<tr>
<td>Years of infertility (years)</td>
<td>8.0 (5.9)</td>
<td>6.6 (4.7)</td>
<td>0.38</td>
</tr>
<tr>
<td>Gravidity</td>
<td>0.9 (1.2)</td>
<td>0.7 (1.1)</td>
<td>0.59</td>
</tr>
<tr>
<td>Parity</td>
<td>0.4 (0.9)</td>
<td>0.3 (0.5)</td>
<td>0.96</td>
</tr>
<tr>
<td>Educational level (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate (%)</td>
<td>40 (48.8)</td>
<td>8 (44.4)</td>
<td>0.60</td>
</tr>
<tr>
<td>&lt;5 years</td>
<td>32 (39.0)</td>
<td>9 (50.0)</td>
<td></td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>10 (12.2)</td>
<td>1 (5.6)</td>
<td></td>
</tr>
<tr>
<td>Location (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>55 (67.1)</td>
<td>12 (66.7)</td>
<td>0.97</td>
</tr>
<tr>
<td>Urban</td>
<td>27 (32.9)</td>
<td>6 (33.3)</td>
<td></td>
</tr>
<tr>
<td>Monthly income (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $377* (minimum wage 2008, Turkey)</td>
<td>51 (62.2)</td>
<td>10 (55.6)</td>
<td>0.60</td>
</tr>
<tr>
<td>$377</td>
<td>31 (37.8)</td>
<td>8 (44.4)</td>
<td></td>
</tr>
<tr>
<td>Living with parents (self or in-law) (%)</td>
<td>57 (69.5)</td>
<td>7 (38.9)</td>
<td>0.014</td>
</tr>
<tr>
<td>Abused in the last 12 months (%)</td>
<td>72 (87.8)</td>
<td>13 (72.2)</td>
<td>0.09</td>
</tr>
<tr>
<td>Feels not supported by her partner (%)</td>
<td>30 (36.6)</td>
<td>2 (11.1)</td>
<td>0.036</td>
</tr>
<tr>
<td>Never spoke with a physician about CAM (%)</td>
<td>66 (80.5)</td>
<td>4 (22.2)</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Minimum wage rate 2008, Turkey (1 USD=1.21 TL)