

Prevalence, Patterns, and Physicians' Awareness of the Use of Traditional and Complementary Medicine by Female Cancer Patients in Zahedan, Iran

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Abstract

Background: A significant proportion of cancer patients use Complementary and Alternative Medicine (CAM) worldwide and especially in Middle Eastern countries. The present study aimed to investigate the prevalence and patterns of using Iranian Traditional Medicine (ITM) and Complementary and Alternative Medicine (CAM) among female cancer patients in Zahedan, southeast of Iran. Also, this study sought to determine whether the patients disclosed the use of ITM and CAM to their physicians.

Methods: In this descriptive-analytical cross-sectional study, 130 female patients, referred to three cancer treatment centers in Zahedan, were selected via the convenience sampling method, from November 2019 to May 2020. Data were collected using a valid and reliable questionnaire. The analysis of data and relationships between the variables was performed using Pearson's correlation coefficient test, independent samples t-test, and one-way analysis of variance (ANOVA).

Results: Iranian Traditional Medicine (ITM) was highly and moderately used by 14.6% and 62.3% of the patients, respectively; more than 70% of them reported the use of herbal preparations (herbal medicines, medicinal plants, and herbal distillates). Complementary and Alternative Medicine (CAM) was utilized at a moderate level by 91.5% of the participants. The prevalence of diet therapy and the use of vitamins and mineral supplements was over 56% and the increased use of CAM was associated with a higher monthly income. Although 92.3% of the patients were undergoing treatment, a significant percentage of them (80.8%) did not disclose the use of ITM or CAM to their physicians.

Conclusion: The results highlighted the necessity of improving the physician-patient relationship in order to increase the patients' trust and willingness to consult their physicians about the use of ITM and CAM. Our results also shed light on the need to educate patients about the necessity of consulting a physician about the use of such therapies to minimize the safety concerns.

Keywords: Iranian Traditional Medicine, Complementary therapies, Physician-patient relations, Cancer, Iran

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1. Introduction

Interest in the use of Complementary and Alternative Medicine (CAM) has remarkably increased among cancer patients worldwide (1-3). The systematic review on the use of CAM by cancer patients indicated an average consumption rate of 51%, which indicated a rising trend in CAM consumption by these patients over the past decades (4). According to previous papers, especially those conducted in the Middle Eastern countries, a significant proportion of cancer patients use CAM; for example, in Palestine (1), Turkey (5), and Saudi Arabia (6), more than 69.5%, 32%, and 90% of the patients with cancer used CAM, respectively. Similarly, in Iran, the Iranian Traditional Medicine (ITM) and CAM methods are increasingly utilized by Iranian patients with cancer, sometimes even concurrently with cancer treatments (7-9).

A brief review of the literature suggests that gender,

lower age, higher education, and higher monthly income can be considered as independent sociodemographic predictors of unconventional medicine use (4, 9). Additionally, numerous studies on the physician's awareness of ITM and CAM use by cancer patients have reported high rates of non-disclosure (1, 2, 7, 10). Despite the great body of research on the cancer patients' use of ITM and CAM methods, a few researchers have addressed the rate of consumption among female cancer patients in Zahedan, southeast of Iran, or its related sociodemographic factors. Moreover, little information is available about the physicians' knowledge of patients' ITM and CAM use.

The consumption of non-conventional medicines, particularly medicinal plants, during cancer or concomitantly with anticancer treatments, may raise some safety concerns. Physician's unawareness concerning this issue could also aggravate the situation (4, 7). Therefore, this descriptive-analytical,

cross-sectional study aimed to investigate the rate, prevalence, and patterns of ITM and CAM use in female patients with cancer in Zahedan, Iran, by identifying the demographic and clinical characteristics of the patients and understanding the sociodemographic determinants of ITM and CAM use. We also sought to determine whether the studied patients disclosed the use of ITM and CAM to their physicians.

2. Methods

2.1. Study Design

This descriptive-analytical, cross-sectional study was conducted on female patients with cancer who were referred to the medical centers of Zahedan for receiving treatments. We selected three medical centers in Zahedan (Imam Ali Hospital, Khatam Hospital, and an oncologist's office) as the study locations. These centers had available chemotherapy and/or radiotherapy facilities and were referral centers for patients with cancer. To explain the calculation of the sample size, it should be noted that due to the uncertain number of women under cancer treatment, the census method was carried out to find the eligible samples. To this end, in the specified time (November 2019 to May 2020), we employed purposive sampling for inviting all the female visitors to the three medical centers, who were receiving cancer treatments. The inclusion criteria were being a woman, being diagnosed with cancer, using at least one type of ITM or CAM method since the diagnosis, and the exclusion criteria were the unwillingness to participate in the study. Finally, based on these criteria and the above-mentioned specific time, and employing the census method, 146 women with cancer were recruited.

2.2. Data Collection

After inviting eligible women to the study through purposive sampling, experienced examiners conducted face-to-face interviews. We prepared a total of 146 questionnaires, 16 of which were excluded due to incomplete information; the final analysis was carried out with 130 questionnaires.

2.3. Data Collection Instrument

The questionnaire consisted of two major parts; the first part focused on the participants' profile in terms of age, ethnicity, educational level, religion, place of residence, employment, and monthly household income. In this part of the questionnaire, clinical

findings, such as type and stage of cancer, type of treatment, completion or non-completion of treatment sessions, and disclosure of the use of ITM or CAM methods to physicians, were also documented.

In the second part of the questionnaire, various ITM and CAM methods were initially extracted from relevant sources. After reviewing the sources and considering the comments of experts on the methods available in Zahedan, 15 ITM and CAM methods, including six ITM methods (herbal medicines, medicinal plants, bloodletting, leech therapy, cupping therapy, and herbal distillates) and nine CAM methods (diet therapy, use of vitamin and mineral supplements, acupuncture, energy therapy, homeopathy, chiropractic care, yoga, massage, and hydrotherapy) were selected. The extent to which the subjects used each of the ITM or CAM methods was rated on a six-point Likert scale as very high (6), high (5), moderate (4), low (3), very low (2), and not at all (1). The study questionnaire was filled out by the 20 female cancer patients and its fluency, clarification, and accuracy were measured based on their feedbacks to assess the face validity of the researcher-made questionnaire. In addition, as the main items of the questionnaire, like different methods of ITM and CAM, were selected from the website of National Center for Complementary and Integrative Health, previous studies (1, 2, 4, 7, 8, 9) and the expert's comments on the ITM and CAM methods available and conventional in Zahedan, the face validity of the study instrument was confirmed. By conducting the qualitative and quantitative methods, the content validity of the study tool was confirmed. In qualitative content analysis, five university faculty members, who expertise the fields of cancer, ITM, and CAM, revised the designed questionnaire and based on their precious ideas, feedback, and suggestions, the approved final version of the questionnaire was developed. In addition, for quantitative content analysis, five experts evaluated the Content Validity Ratio (CVR) and Content Validity Index (CVI). To calculate CVR based on its formula (11), all the questions were evaluated and those with CVR of 0.99 and higher were preserved. Additionally, regarding CVI, three different criteria of the questions, namely relatedness, resolution, and simplicity, were evaluated. Based on the whole number of concessions with ranks 3 and 4 on the total number of experts (12), the CVI score was calculated and the questions with CVI of 0.79 and higher were maintained in the study tool. A month before the data collection, a pilot study was done on 30 female cancer patients with the purpose of determining the reliability of the questionnaire. Cronbach's α for the ITM and CAM use subscales were

0.72 and 0.88, respectively, and for the study tool, it was 0.84, which showed high internal reliability.

2.4. Data Analysis

In the present study, the quantitative variables were described as mean and standard deviation (SD), and the qualitative variables were presented as numbers and percentages. Moreover, the analysis of data and relationships between the variables was performed using Pearson's correlation coefficient test, independent samples t-test, and one-way analysis of variance (ANOVA). We utilized SPSS version 22 for data analysis. A P-value less than 0.05 was considered statistically significant.

3. Results

3.1. Sociodemographic and clinical characteristics of cancer patients

The mean and standard deviation of the participants' age was 36.11 ± 8.75 years (range: 16-60 years). The inclusion criteria were being a woman, being diagnosed with cancer, using at least one type of ITM or CAM method since the diagnosis, and the exclusion criteria were the unwillingness to participate in the study. Finally, based on these criteria and the above-mentioned specific time, and employing the census method, 130 women with cancer were studied.

Table 1 depicts the sociodemographic and clinical characteristics of the participants.

3.2. Prevalence and Patterns of Iranian Traditional Medicine (ITM) and Complementary and Alternative Medicine (CAM) Use

The extent up to which the female cancer patients used each of the six items of ITM and the nine items of CAM were rated on a six-point Likert scale, with 6 point showing the highest and 1 point showing no use of each item; accordingly, the minimum and maximum scores of the patients' ITM use were 6 and 36, respectively, and the mean score of their ITM use was 15.39 ± 5.04 . A mean score of 13.80 ± 5.74 was also calculated as the rate of CAM use by the patients, with a minimum of 9 and a maximum of 54 scores.

It should be noted that the amount of ITM and CAM use by female cancer patients were categorized as low, moderate, and high levels based on these criteria: 1) scores lower than the result of (the mean score of the patients' ITM or CAM use - the SD)=the low level; 2) scores between the results of (the mean score of the patients' ITM or CAM use+the SD & the mean score of the patients' ITM or CAM use - the SD)=the moderate level; 3) scores higher than the result of (the mean score of the patients' ITM or CAM use+the SD)=the high level.

Based on these criteria, the amount of ITM use was categorized into the low, moderate, and high levels as follows:

- 1) the low level of ITM use= $X < 10.35$, ($15.39 - 5.04 = 10.35$);
- 2) the moderate level of ITM use= $10.35 < X < 20.43$,

Table 1: Patients' Sociodemographic and Clinical Characteristics (N=130)

Sociodemographic Characteristics		Clinical Characteristics			
Age Groups (year)	N (%)	Place of Residence	N (%)	Type of Cancer	N (%)
<18	2 (1.5)	City	101 (77.7)	Cervix	30 (23.1)
18-29	32 (24.6)	Village	29 (22.3)	Stomach	35 (26.9)
30-39	48(36.9)	Employment	N (%)	Skin	8 (6.2)
40-49	42 (32.3)	Employed	34 (26.2)	Blood	13 (10)
50-59	5 (3.8)	Housewife	96 (73.8)	Breast	38 (29.2)
60+	1 (0.8)			Other	6 (4.5)
Ethnicity	N (%)	Monthly Household Income	N (%)	Stage of Cancer	N (%)
Fars	70 (53.8)	>100\$	35 (26.9)	First	82 (63.1)
Baloch	55 (42.3)	100-400\$	89 (68.5)	Second	5 (3.8)
Other	5 (3.9)	400\$<	6 (4.6)	Developed	25 (19.2)
				Do Not Know	18(13.8)
Religion	N (%)	Level of Education	N (%)	Kind of Treatment	N (%)
Muslim (Shia)	64 (49.2)	Illiterate	16 (12.3)	Chemotherapy	109 (83.8)
Muslim (Sunni)	66 (50.8)	Primary Education	36 (27.7)	Radiation Therapy	21 (16.2)
		Secondary Education	41 (31.5)	Is the treatment over?	N (%)
		Tertiary	37(28.5)	Yes	10 (7.7)
				No	120 (92.3)

Table 2: The levels of using ITM and CAM by female cancer patients

The levels of using ITM and CAM	ITM N (%)	CAM N (%)
Low	30 (23.1)	11 (8.5)
Moderate	81 (62.3)	119 (91.5)
High	19 (14.6)	-
Total	130 (100)	130 (100)

ITM: Iranian Traditional Medicine; CAM: Complementary and Alternative Medicine

(15.39-5.04=10.35 and 15.39+5.04=20.43);

3) the high level of ITM use = $20.43 < X$, (15.39+5.04=20.43).

As can be seen from Table 2, the results showed that 23.1%, 62.3%, and 14.6% of the patients used ITM at low, moderate, and high levels, respectively.

In addition, the amount of CAM use was categorized into low, moderate, and high levels, as follows:

1) the low level of CAM use = $X < 8.06$, (13.80-5.74=8.06);

2) the moderate level of CAM use = $8.06 < X < 19.54$, (13.80-5.74=8.06 and 13.80+5.74=19.54);

3) the high level of CAM use = $19.54 < X$, (13.80+5.74=19.54).

As shown in Table 2, CAM was not highly used by the subjects. Overall, 91.5% of the patients employed CAM moderately, and 8.5% of them used it at low levels.

Table 3 demonstrates the prevalence of the use of ITM and CAM by female cancer patients of the study. Herbal medicines and leech therapy were respectively the most and the least prevalent ITMs used by the participants (98.5% vs. 9%). Furthermore, diet therapy and chiropractic care were the most and the least prevalent CAMs used by the patients (67.7% vs. 1.5%, respectively). According to Table 4, the mean scores of the amount of ITM and CAM use indicated that the most applied ITM methods were herbal medicines, medicinal plants, and herbal distillates. Regarding the CAM methods, the most frequently employed ones were diet therapy and the use of vitamin and mineral supplements (Table 3 and Table 4).

3.3. Socio-demographic Variables related to Iranian Traditional Medicine (ITM) and Complementary and Alternative Medicine (CAM) Use

According to Table 5, the statistical analysis of sociodemographic variables and ITM and CAM use

only indicated a significant relationship between the monthly income and the level of CAM use. According to Pearson's correlation coefficient test, as monthly income increases, the frequency of CAM use slightly rose ($r=0.228$, $P=0.009$). However, no significant relationship was found between other sociodemographic variables and the level of ITM and CAM use among the participants (Table 5).

3.4. Patients' Disclosure of Iranian Traditional Medicine (ITM) and Complementary and Alternative Medicine (CAM) Use

Only 25 (19.23%) patients reported disclosing the use of ITM or CAM methods to their physicians, and the majority of the remaining (80.8%) stated their physicians' unawareness.

4. Discussion

Based on the present results, the use of ITM and CAM methods was common among patients with cancer, whose majority reported moderate use. Among various

Table 3: The prevalence of ITM and CAM use by female cancer patients (N=130)

Types of ITM	N (%)
Herbal Medicines	128 (98.5)
Medicinal Plants	123 (94.6)
Herbal Distillates	92 (70.8)
Bloodletting	40 (30.8)
Cupping Therapy	19 (14.6)
Leech Therapy	12 (9)
Types of CAM	N (%)
Diet Therapy	88 (67.7)
Vitamin and Mineral Supplements	74 (56.9)
Massage	21 (16.2)
Hydrotherapy	17 (13.1)
Yoga	11 (8.5)
Homeopathy	10 (7.7)
Energy Therapy	10 (7.7)
Acupuncture	8 (6.2)
Chiropractic	2 (1.5)

ITM: Iranian Traditional Medicine; CAM: Complementary and Alternative Medicine

Table 4: The rate of the use of different ITM and CAM methods

Methods	Use per total population (%)							
	Very high	High	Moderate	Low	Very low	Not at all	Average use (out of 6)	
ITM	Herbal medicines	8.5	30.0	28.5	7.7	23.8	1.5	3.87
	Medicinal plants	12.3	23.1	31.5	9.2	18.5	5.4	3.85
	Herbal distillates	17.7	23.8	15.4	4.6	9.2	29.2	3.48
	Bloodletting	-	3.1	11.5	8.5	7.7	69.2	1.71
	Cupping therapy	1.5	1.5	3.1	2.3	6.2	85.4	1.34
	Leech therapy	-	-	-	3.8	5.4	90.8	1.13
	Diet Therapy	6.9	13.8	16.9	11.5	18.5	32.3	2.82
	Vitamin and Mineral Supplements	12.3	14.6	10.8	4.6	14.6	43.1	2.76
	Hydrotherapy	-	4.6	0.8	0.8	6.9	86.9	1.29
CAM	Massage	-	2.3	2.3	0.8	10.8	83.8	1.28
	Energy Therapy	3.1	-	-	-	3.8	92.3	1.20
	Yoga	-	1.5	0.8	-	6.2	91.5	1.15
	Acupuncture	0.8	0.8	1.5	-	3.1	93.8	1.15
	Homeopathy	-	0.8	-	3.1	3.8	92.3	1.13
	Chiropractic	-	-	-	-	1.5	98.5	1.02

ITM: Iranian Traditional Medicine; CAM: Complementary and Alternative Medicine

Table 5: Relationship between Sociodemographic Variables and the level of ITM and CAM use

Variables	Mean±SD for Groups		Statistical Test		P value	
Ethnicity		CAM	ITM	ITM	F=921	0.433
	Fars	13.48±5.96	14.84±5.41	CAM	F=0.993	0.398
	Baloch	13.96±5.32	16.09±4.56			
	Turk	13.66±5.03	13.66±5.51			
	Kurd	20.50±10.60	18.00±2.83			
Level of Education	Illiterate	14.50±7.93	15.12±5.31	ITM	F=0.696	0.556
	Primary Education	12.77±5.56	16.25±4.98	CAM	F=1.788	0.153
	Secondary Education	12.95±4.22	14.61±4.35			
	Tertiary	15.43±6.11	15.54±5.72			
Religion	Muslim (Shia)	12.94±3.78	15.16±5.29	ITM	t=-0.524	0.601
	Muslim (Sunni)	14.64±7.07	15.62±4.82	CAM	t=-1.714	0.09
Place of Residence	City	13.65±4.90	15.54±5.12	ITM	t=0.670	0.523
	Village	14.31±8.10	14.86±4.81	CAM	t=-0.415	0.681
Employment	Employed	13.85±6.40	14.76±4.28	ITM	t=-0.843	0.401
	Housewife	13.78±5.52	15.61±5.29	CAM	t=-0.62	0.950
Age	-	-	-	ITM	r=-0.124	0.161
	-	-	-	CAM	r=-0.82	0.356
Monthly Household Income	-	-	-	ITM	r=0.018	0.842
	-	-	-	CAM	r=0.228	0.009

F=ANOVA; t=Independent t test; r=Pearson correlation; ITM: Iranian Traditional Medicine; CAM: Complementary and Alternative Medicine

ITM methods, the use of herbal preparations (herbal medicines, medicinal plants, and herbal distillates) was significantly higher than other methods, as they were used by more than 70% of the patients. Moreover, among CAM methods, nutrition counseling, diet therapy, and the use of vitamin and mineral supplements were the most common ones (an overall of >56%). In line with the present study, previous research has reported that ITM and CAM are popular methods frequently used by patients with cancer (2, 6, 9, 13). Additionally, previous

studies have shown the high prevalence rates of herbal preparations, particularly herbal medicines (1, 5, 7, 8, 14, 15), vitamin and mineral supplements (2, 3, 13), and nutrition counseling and diet therapy (8) among patients with cancer, as compared to other types of ITM and CAM methods.

Moreover, according to previous papers, geographical region and place of residence are among factors influencing the use of ITM and CAM, which may

be related to the cultural attitude of the region toward health and the inhabitants' access to these treatments (7, 16). The use of ITM, especially herbal medicines and medicinal plants, has been integrated into the Iranian culture for a long, particularly in Zahedan, where it remains popular despite the introduction of CAM methods. Studies have shown that the use of ITM and CAM methods are common in the general population of Iran (17-19); therefore, the frequent use of these treatments during diseases is expected among some patients. Referral to apothecaries, traditional healers, and herbal preparation stores are also common, simple, and part of people's lifestyle in Zahedan, like many other parts of Iran. Consequently, the higher prevalence of these treatments among the studied patients in comparison with other ITM methods can be explained.

Moreover, the high accessibility of nutrition consultants at a relatively reasonable cost, simple access to a variety of vitamin and mineral supplements in pharmacies (over-the-counter or with prescriptions), the lower cost of them, and their ease of use along with anticancer drugs can explain the high prevalence of diet therapy and the use of vitamin and mineral supplements among cancer patients. On the other hand, the least frequent methods were cupping and leech therapy in ITM and homeopathy and chiropractic care in CAM. Other works have also reported leech therapy and homeopathy as the least frequently applied methods among the patients (8, 9). It seems as if the need for a practitioner's prescription to access these treatments, on top of their higher cost, is one of the reasons behind the less frequent use of these methods. In this regard, Sadighi and colleagues highlighted the referral of most homeopathy users to physicians (20).

The present study, in line with previous research, revealed that a higher monthly income was associated with a more frequent use of CAM methods by patients (4, 21). Since the application of CAM is not covered by health insurance in the study area (all the expenses are paid out-of-pocket) and the cost of these treatments is high, people with lower incomes cannot pay for CAM methods; therefore, only patients with higher incomes can benefit from CAM; it seems as though by insurance coverage of CAM methods, a higher number of patients can benefit from them.

According to the present results, there was no significant relationship between other sociodemographic variables and the level of ITM and CAM use. Nevertheless, the findings of some similar

studies have implied that in addition to higher income, younger age and higher education predicted the CAM use among patients with cancer (4). This discrepancy with the present results may be attributed to the specific sociocultural context of Zahedan and methodological differences, such as the sample size, study methods, characteristics of the samples (type and grade of cancer), and the selected ITM and CAM methods.

The present findings supported previous research, indicating the non-disclosure of ITM or CAM use by cancer patients to their physicians. In the present study, a significant proportion of the patients did not disclose ITM or CAM use to their physicians, and the majority of them (92.3%) did not complete their chemotherapy or radiotherapy sessions. The patients' avoidance to disclose the use of ITM and CAM methods to physicians has also been reported in previous papers, suggesting lower rates of physician unawareness as compared to the present study (2, 7, 10, 22, 23). Iranians seem to consider the ITM use as a common practice in illness and health and assume that ITM methods, especially medicinal plants, are safe, as they have been used by their ancestors for hundreds of years; therefore, they find it unnecessary to consult a physician in this regard.

There are also other reasons behind the patients' unwillingness to disclose ITM or CAM use to physicians and healthcare professionals; for example, certain physicians may have a dismissive attitude toward ITM and CAM due to their lack of knowledge or belief; thus, patients are reluctant to discuss them with their physicians (24). Some patients also feel that their doctors do not approve of CAM and ITM or are not interested in such knowledge; consequently, they do not discuss them with their physicians (10). Moreover, the insufficient time spent by physicians during patient visits and poor patient-physician relationship might contribute to the dissatisfaction of patients, leading to ITM and CAM use (7, 22). Hence, there is a need for improving the patient-physician relationship, spending sufficient time with the patients, and paying attention to their beliefs in ITM and CAM use since the patients' lack of trust and poor patient-physician relationship prevent them from discussing their therapeutic preferences. Ultimately, this condition leads to the ineffectiveness of cancer treatments, drug interactions, and adverse effects on the patient's health and treatment (2, 4).

4.1. Limitations

This study had certain limitations, such as inadequate

information about ITM and CAM use by the patients in Zahedan, Iran which made it difficult to compare the present results with those of previous works conducted in similar sociocultural contexts. Furthermore, the difficulty of interviewing the patients due to their poor physical condition was another limitation, making the sample size too small.

5. Conclusion

In the current study, the moderate use of ITM and CAM methods was reported by the majority of female patients with cancer, and the use of herbal preparations, as well as diet therapy and vitamin/mineral supplements, was significant. Furthermore, the majority of the subjects were completing their chemotherapy or radiotherapy sessions while using these alternative methods. Nonetheless, only a few of the patients disclosed the use of ITM or CAM methods to their physicians. Accordingly, there is a need to improve the patient-physician relationship in order to increase the patients' trust and willingness to consult healthcare professionals. It is also necessary to educate the healthcare professionals about various ITM and CAM therapies to enable them to offer the safest method when consulting patients. Moreover, patients with cancer should be informed about the importance of consulting a physician about the use of ITM and CAM methods, especially concurrently with chemotherapy or radiotherapy sessions so that safety concerns and health risks could be minimized.

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Ethical Approval

The Ethics Review Board of the university approved the present study with the code of IR.ZAUMS.REC.1398.218. Also, written informed consent was obtained from the participants.

Conflict of interest: None declared.

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