

Research Article

Status of hemodialysis patients using complementary and alternative medicine practices during the COVID-19 pandemic

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Abstract

The use of complementary and alternative medicine (CAM) applications increased by 39.3% of individuals with chronic diseases during the pandemic process in Turkey. For this reason, this descriptive study was conducted to determine the use of integrative and integrated medicine practices in hemodialysis patients during the COVID-19 pandemic. The population of the study consisted of individuals who were treated in a hemodialysis unit in the city center ($n = 235$). It was planned to include whole of the population by using the whole number method, but patients, who did not agree to participate in the study and did not meet the inclusion criteria of the study, were excluded from the sample and the study was conducted with 160 patients between 1st June and 1st September 2021. As a data collection tool, a questionnaire consisting of 30 questions including socio-demographic and disease characteristics of the patients was prepared by the researcher upon review of related literature. Considering the distribution of phytotherapy method (herbal treatment) usage frequency of integrative and integrated medicine applications of individuals before the COVID-19 pandemic and during the COVID-19 pandemic period, the most vitamins (21.8%), prebiotics (12.5%), and honey (%) 10.6), their use was found to be high. During the COVID-19 pandemic, the use of massage (40%), breathing exercises (30.0%) and spiritual therapy (28.7%) applications increased. As a result, it is seen that integrative and integrated applications are considered in the process of dealing with hemodialysis patients. Physicians need to be aware of and ask patients about their use of integrated and integrated health practices.

Introduction

Hemodialysis is a method of treatment that requires devices and a qualified labor force, is continuous, has a high cost, and is life-saving for patients [1]. Despite the developments in the hemodialysis method, patients still encounter many physical, mental, and social problems.

Symptoms like fatigue, cramps, pain, sleep disorder, dyspnea, pruritus, depression, anxiety, nausea, vomiting, and constipation, which are among the mentioned problems, have a negative effect on all aspects of daily life and quality of life among individuals [2].

Kidney patients commonly use complementary and alternative medicine methods (CAM) such as acupressure, acupuncture, homeopathy, exercise, aromatherapy, yoga, and reflexology to cope with symptoms such as fatigue, pain, cramps, anxiety, depression, sleep disorders, itching

and to improve their quality of life. The national center for complementary and alternative medicine (NCCAM) defines CAM as products, practices, and health care systems that are not considered part of conventional [3,4].

Since the hemodialysis (HD) patient population is a highly susceptible group to infections, it is also a risky group in terms of COVID-19 infection, and HD centers are considered among the units with a high risk of epidemics. The reason for this is that the patients are older than the patients in the general population and have comorbid diseases such as hypertension, diabetes, and cardiovascular diseases. Therefore, hemodialysis patients exposed to risks and uncertainties are turning to more traditional and complementary health practices, focusing on preventive measures and seeking self-care measures to increase immunity, prevent disease transmission or mitigate the progression of infection [5,6].

The use of CAM CAMapplications increased by 39.3%

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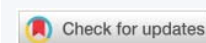
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of individuals with chronic diseases during the pandemic process in Turkey [7]. The nephrotoxic effect of several CAM therapies used in patients with renal impairment could disturb hemodynamics by reducing the glomerular filtration rate. For this reason, patients should be informed correctly and scientifically about these methods to avoid harmful and unnecessary uses [8-10].

For this reason, this study was conducted to determine the use of integrative and integrated medicine practices in hemodialysis patients during the COVID-19 pandemic.

Materials and methods

Study design

The population of the study consisted of individuals who were treated in hemodialysis units in Kırşehir city center in Turkey.

Totally 235 patients including 90 patients who were undergoing dialysis in the hemodialysis unit of Training and Research Hospital and 145 patients who were undergoing dialysis in a private dialysis center, constituted the population of the study. It was planned to include whole of the population by using the whole number method, but patients, who did not agree to participate in the study and did not meet the inclusion criteria of the study, were excluded from the sample and the study was conducted with 160 patients between 1st June and 1st September 2021.

Ethical considerations

Before starting the study, Ethics Committee Approval (2021-01/123) from the Non-invasive.

Trials Ethics Committee Unit of a University and written permissions from institutions where the study was conducted received.

Instrument

As a data collection tool, a questionnaire consisting of 30 questions including sociodemographic and disease characteristics of the patients was prepared by the researcher upon review of related literature [4-12]. The questionnaire form prepared by the researchers was in Turkish. The 30 questions in total, evaluated socio-demographic characteristics (9 questions), disease-related characteristics (11 questions) and integrative and integrated medicine practices and usage characteristics (10 questions).

Inclusion criteria

Individuals who were older than 18, were receiving hemodialysis treatment at least for 6 months, were undergoing hemodialysis sessions three times a week, had no mental problem that may prevent them to participate in the study, were capable of communicating, could speak and understand Turkish and agreed to participate in the study, were included in the study.

Procedure

The data of the study were collected from the patients by using face to face interview technique. The patients were informed about the study and their verbal and written consent were received.

Data analysis

All statistical analyses were performed with IBM Statistical Package for the Social Sciences (SPSS) Statistics 21 software, 2012. Percentage calculation; mean and standard deviation values were included in their analysis, and chi-square analysis was applied at the same time. Statistically, $p < 0.05$ values were accepted as significant.

Results

It was determined that 65.0% of individuals included in the study were women, 52.8% were in the age group of 65 years and older, the average age was 66.8 ± 12.4 , 46.2% were primary school graduates, 94.3% were married, 58.9% had nuclear family, 49.2% had general health insurance (SII), 92.9% were unemployed, 78.6% stated their income status were middle, and 66.4% were living in an urban area. In the study, no significant relationship was found between individuals' use of CAM applications and age, gender, educational status, employment status, income level, and social security status ($p > 0.05$).

The individuals were hemodialysis patients on average for 76.84 ± 19.22 months and were undergoing hemodialysis treatment for 74.11 ± 26.13 . It was found that 86.2% of the individuals' vascular insertion sites had arteriovenous fistula, a BMI of 48.9% was normal, and transplantation was not planned for 70.0%. There was no difference between the socio-demographic and disease characteristics of the patients who received treatment in the training and research hospital and the private dialysis center.

Considering the distribution of individuals' use of CAM practices during the COVID-19 pandemic for treatment and protection according to some characteristics of their diseases, the rates of use of CAM practices are higher in individuals with port catheter access arteriovenous fistula and other chronic disease ($p < 0.05$). There was no significant relationship between disease duration, hemodialysis duration, and CAM use ($p > 0.05$) (Table 1).

When some characteristics of the individuals participating in the study regarding COVID-19 were examined, 63.7% of them were diagnosed with COVID-19, 39.3% of them were treated with COVID-19 and 15.1% were using medical treatment + integrative and integrated medicine applications, 83.3%. It was determined that the patient used integrative and integrated medicine applications to protect himself during the COVID-19 pandemic process and was mostly used to strengthen the immune system (82.3%) (Table 2).

**Table 1:** Distribution of CAM Applications Usage Cases for Treatment and Protection of Individuals in the COVID-19 Pandemic Process by Disease-Related Features.

| Disease-Related Features | Using CAM Practices | | Do Not Use CAM Practices | | Test value and p - value |
|------------------------------------|---------------------|-------------|--------------------------|-------------|----------------------------------|
| | Number (n) | Percent (%) | Number (n) | Percent (%) | |
| Duration of disease | | | | | |
| 1-9 years | 40 | 47.0 | 30 | 40.0 | $\chi^2 = 1,762$ $p = 0,186$ |
| 10 years and more | 45 | 53.0 | 45 | 60.0 | |
| Duration of hemodialysis | | | | | |
| 1-9 years | 39 | 45.8 | 34 | 45.3 | $\chi^2 = 0,748$ $p = 0,374$ |
| 10 years and more | 46 | 54.2 | 41 | 54.7 | |
| Vascular access | | | | | |
| Arteriovenous Fistula | 57 | 67.0 | 44 | 58.6 | $\chi^2 = 11,623$ $p = 0,001$ |
| Port Catheter | 28 | 33.0 | 31 | 41.4 | |
| Presence of other chronic diseases | | | | | |
| Yes | 55 | 64.7 | 26 | 34.6 | $\chi^2 = 2,319$ $p = 0,000$ |
| No | 30 | 35.3 | 49 | 65.4 | |

Considering the distribution of phytotherapy method (herbal treatment) usage frequency of integrative and integrated medicine applications of individuals before the COVID-19 pandemic and during the COVID-19 pandemic period, the most vitamins (21.8%), prebiotics (12.5%), and honey (%) 10.6), their use was found to be high. When the distribution of phytotherapy method (herbal treatment) usage frequency, which is one of the integrative and integrated medicine applications, is examined during the COVID-19 pandemic, it is seen that the frequency of use of all phytotherapy methods (herbal treatment) of individuals has increased and garlic (58.7%), probiotic usage (50.0%) and vitamins (46.3%) (Table 3).

Considering the distribution of the frequency of use of body and mind applications from integrated and integrative medicine applications during the pre-COVID-19 pandemic and the COVID-19 pandemic period, It was determined that the most common applications of the body and mind before the COVID-19 pandemic were music therapy (13.7%), massage (11.2%) and applied movement therapies (7.5%). During the COVID-19 pandemic, the use of massage (40%), breathing exercises (30.0%) and spiritual therapy (Quran recitation, Zamzam water) (28.7%) applications increased (Table 4).

Less than one-third (80.0%) of the study participants rely on a family member as a source of information about CAM. The second most reliable source of information was (TV)/Internet (56.4%) and healthcare professionals (27.0%). The sources of information on the CAM are summarized in Table 5.

Discussion

CAM is defined as a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine [13]. In this study, it has been observed that the CAM applications use of among hemodialysis patients has increased during the pandemic process.

Table 2: Some Characteristics of Hemodialysis Patients Related to COVID-19.

| Features | Number (n) | Percent (%) |
|---|------------|-------------|
| Status of contracting COVID-19 disease | | |
| Yes | 102 | 63.7 |
| No | 58 | 36.3 |
| Methods used by people with COVID-19 to treat the disease ($n = 102$)* | | |
| Medical treatments only | 37 | 36.2 |
| Only integrative and integrated medicine applications | 25 | 24.5 |
| Medical treatment+integrative and integrated medicine applications | 40 | 39.3 |
| The use of CAM applications during the COVID-19 pandemic process | | |
| Yes | 85 | 83.3 |
| No | 75 | 16.7 |
| The purpose of using CAM practices during the COVID-19 pandemic process *($n = 85$) | | |
| Pain | 45 | 52.9 |
| Fatigue | 50 | 58.8 |
| Strengthen the immune system | 70 | 82.3 |
| Weakness | 47 | 55.2 |
| To breathe comfortably | 65 | 76.4 |

*Column total exceeds 100% because some participants used more than one source of information about CAM.

Table 3: Distribution of the Frequency of Use of Phytotherapy Practices in Hemodialysis Patients During the COVID-19 Pandemic Period ($n = 160$).

| CAM Applications | Before the COVID-19 | | During the COVID-19 | |
|--|---------------------|-------------------------|---------------------|-------------------------|
| | I used Number (%) | I didn't use Number (%) | I used Number (%) | I didn't use Number (%) |
| Phytotherapy method (Herbal treatment) | | | | |
| Vitamin | 35 (21.8) | 125 (78.2) | 86 (53.7) | 74 (46.3) |
| Mineral | 4 (2.5) | 156 (97.5) | 63 (39.3) | 97 (60.7) |
| Probiotic | 20 (12.5) | 140 (87.5) | 80 (50.0) | 80 (50.0) |
| Garlic | 14 (8.7) | 291 (91.3) | 94 (58.7) | 66 (41.3) |
| Turmeric | 6 (3.7) | 136 (96.3) | 18 (11.2) | 142 (88.3) |
| Honey | 17 (10.6) | 143 (89.3) | 51 (31.8) | 109 (68.2) |
| Linden | 5 (3.1) | 155 (96.9) | 58 (36.2) | 102 (63.8) |
| Black Seeds | 12 (7.5) | 148 (92.5) | 48 (30.0) | 112 (70.0) |
| Rosehip | 6 (3.75) | 154 (96.3) | 15 (9.3) | 145 (90.6) |
| Olive Oil | 8 (5.0) | 152 (95.5) | 28 (17.5) | 132 (82.5) |
| Ginger | 4 (2.5) | 156 (97.5) | 27 (16.8) | 133 (83.2) |

Table 4: Distribution of Body and Mind Based CAM Practices in Hemodialysis Patients.

| Body and Mind-Based CAM Practices | Before the COVID-19 | | During the COVID-19 | |
|-----------------------------------|---------------------|-------------------------|---------------------|-------------------------|
| | I used Number (%) | I didn't use Number (%) | I used Number (%) | I didn't use Number (%) |
| Breathing Exercise | 2 (1.2) | 158 (98.8) | 48 (30.0) | 112 (70.0) |
| Hypnotherapy | - | 160 (100.0) | 2 (1.2) | 158 (98.8) |
| Massage | 18 (11.2) | 142 (88.8) | 64 (40.0) | 96 (60.0) |
| Meditation | 5 (3.1) | 155 (96.9) | 27 (16.8) | 133 (83.2) |
| Spiritual therapy | 13 (8.1) | 147 (91.9) | 46 (28.7) | 114 (71.3) |
| Movement Therapies | 12 (7.5) | 148 (92.5) | 32 (20.0) | 128 (80.0) |
| Reflexology | 4 (2.5) | 156 (97.5) | 16 (10.0) | 144 (90.0) |
| Music Therapy | 22 (13.7) | 138 (86.3) | 46 (24.7) | 114 (75.3) |
| therapeutic touch | 1 (0.6) | 159 (99.4) | 5 (3.1) | 155 (96.9) |

Table 5: Sources of Information about CAM.

| Sources of information | Frequencies (%)* |
|------------------------------|------------------|
| Healthcare professional | 35 (41.1) |
| Social beliefs | 23 (27.0) |
| Herbal medicine practitioner | 6 (7.0) |
| Family member | 68 (80.0) |
| TV/Internet | 48 (56.4) |

*Column total exceeds 100% because of participants used more than one source of information about integrative and integrated medicine



In our study, while socio-demographic characteristics did not affect the rate of CAM use, it was found that the rate of use of disease-related features increased significantly, especially in individuals with a prey fistula at the port catheter insertion site and other chronic diseases. This may be due to the fact that patients experience pain three times a week during AVF entry and experience different symptoms due to another chronic disease. The prevalence of CAM use among patients in a chronic renal failure clinic in Turkey was 25.2% and primarily consisted of phytotherapy [8,10]. Karatas, et al. [14], in their study in Adana province, found that a significant portion of the population (39.3%) used integrated and integrative medicine practices for COVID-19 during the COVID-19 quarantine period in April 2020. Erişen and Yılmaz [15], found in their study that approximately half of the participants (42.8%) consume herbal products such as garlic and sumac. Ozenoglu, et al. [16], found that the most commonly used nutritional supplements during the pandemic period were vitamin C, vitamin D, and multivitamin complex. In another study, approximately one-third of individuals (36.1%) reported that they started to use nutritional supplements, primarily vitamin D (56.9%), vitamin C (50.4%), and zinc (27.6%) [17]. In their cross-sectional study, Kamarlı, et al. [18] determined that 57.0% of the individuals used herbal supplements, and 46.1% of the individuals used nutritional support during the pandemic. In the same study, it was determined that the most preferred nutritional supplements were vitamin C, multivitamins, vitamin D, and zinc, and it was determined that individuals consumed garlic, ginger and turmeric, green tea, and other herbal teas (linden, chamomile, sage) as fresh herbs during the epidemic period, although they had not used them before [18].

In our study group, it was observed that especially vitamin, minerals and garlic consumption increased in hemodialysis patients during the pandemic process. It is known that vitamins such as vitamins C, D and minerals such as zinc and selenium are protective against viral infections due to their antioxidant and anti-inflammatory effects. In addition, these vitamins and nutrients may play a protective role against increased intrapulmonary oxidative load in viral infections. Although there are not many studies with a high level of evidence, it is known that the role of dietary supplements in the fight against COVID-19, the supplements of vitamins A, C, D, zinc and selenium have positive effects on the immune response and are protective against viral infections [19,20].

In a study, the majority of patients who used nutritional supplements (75.8%) and herbal products (86.2%) during the pandemic stated that they used these products to protect themselves from COVID-19 and to strengthen their immune systems [18]. Demir, et al. [21], in their study with adults aged 18 - 65, 66.2% of the participants stated that they used nutritional supplements during the pandemic process and the purpose of use of nutritional supplements was; They

stated it as “strengthen the immune system”, “feeling good”, “protecting from COVID-19” and “eliminating the deficiency in the body”. In our study, patients stated that they used CAM practices to relieve pain, keep their immune systems strong, reduce fatigue and weakness, and breathe comfortably. In order to achieve these, it has been determined that they do not only herbal treatments but also mind-body-based applications. They stated that they mostly preferred massage to relieve their pain, breathing exercises to breathe comfortably, and spiritual therapy to feel comfortable, rested and peaceful during the pandemic process.

In the literature, fatigue, pain, cramps, anxiety, depression, sleep disorders, itching in hemodialysis patients to cope with symptoms such as acupressure, acupuncture, widespread use of other CAM methods such as homeopathy, exercise, aromatherapy, yoga, and reflexology are reported to be used [1-4]. The nephrotoxic effect of several integrative and integrated medicine therapies used in patients with renal impairment could disturb hemodynamics by reducing the glomerular filtration rate. For this reason, health care providers should question patients about the use of CAM practices. Communication with patients should be clear and should not act judgmental.

In the study, it was determined that individuals are mostly aware of integrated and integrated health practices from family members, TV, the internet, and health personnel. In the study conducted by Kocabaş, et al. [22], it was determined that the advice of family and friends is effective in the use of CAM. In the other study, it was stated that they relied on mass media (52.4%) and the Internet (27.4%) to obtain information about CAM practices [23]. The effectiveness of family and friend advice in CAM practices can be attributed to the importance of close circle recommendations in the field of health, as in many other issues, due to the culture we live in.

The fact that the ratio of health personnel is low in the sources of information on the subject reveals the importance of this subject even more. Undesirable situations related to integrative and integrated medicine applications regarding the use of these methods together with traditional treatments from health personnel to prevent developing their applications, scientific studies with a high level of evidence on the subject follow, use the results and guide the healthy/sick individual correctly.

Conclusion

As a result, it is seen that integrative and integrated applications are considered in the process of dealing with hemodialysis patients. Among the preferred applications are mostly phytotherapy (vitamin, mineral and grind), and mind-body-based applications (massage, breathing exercise, spiritual therapy). Patients reported that they mostly do these practices to reduce their pain, strengthen their immunity,



relieve their weakness and fatigue, and breathe comfortably. It has been determined that the patients mostly prefer family members, friends, or the internet/TV rather than the health personnel as the source of information about integrative and integrated applications. Physicians need to be aware of and ask patients about their use of integrated and integrated health practices. This knowledge could prevent potentially dangerous drug-herb or drug-drug interactions caused by the concomitant use of integrated and integrated health practices.

Limitations of the study

Its limitation is that only the patients who received HD treatment in Kırşehir province were included in the study. Therefore, the results of this study are it is intended for patients receiving HD treatment in a dialysis center. The results from the study cannot be generalized to all HD patients.

Authorship criteria

(SG) designed the study. (SG and SŞ) collected the data. (SG and SŞ) analyzed the data. (SG) prepared the manuscript. All authors approved the final version for submission.

Acknowledgement

We thank all those who participated in this study.

Conflict of interest

The authors meet the authorship criteria, and all authors are in agreement with the content of the manuscript.

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