

## Original Article

## Complementary Methods Used for Uremic Pruritus

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**Correspondence:** Sebahat Ates, PhD, Assistant Prof., School of Nursing, Maltepe University, Istanbul, Turkey. e-mail: sebahatates@maltepe.edu.tr**Abstract****Background:** Uremic pruritus is a distressing problem, disrupting patients' quality of life. Patients apply medical and/or complementary methods to cope with this problem, which seriously affects their lives.**Objective:** This study aims to determine complementary methods used in order to palliate and eliminate uremic pruritus in patients.**Method:** This study was conducted in Istanbul, the most populated city of Turkey. The study sample consisted of 151 patients treated in two different hemodialysis clinics.**Findings:** It was determined that 42.4% of the patients used medical therapy, 19.2% complementary therapy and 21.9% both therapy types. Also, as the complementary therapy, 43.5% applied cologne and 24.2% washed the area with warm water. No difference was found in complementary therapy use in terms of age, gender, education level, marital status and with whom they live. However, significant differences were detected between working and unemployed patients in terms of the rates of complementary therapy use ( $p=0.003$ ;  $p<0.01$ ).**Conclusions:** It was determined that 41.1% of the patients who participated in this study used complementary methods.**Keywords:** end-stage renal disease, hemodialysis, uremic pruritus, quality of life, complementary method, nursing.**Introduction**

The level of chronic kidney disease, which is regarded as a significant public health issue that has become an epidemic in the world and in Turkey although it is often preventable or delayed when diagnosed early, ranges from occult kidney damage in which kidney functions are well preserved (Phase I) to the level of renal failure that requires Renal Replacement Therapy (RRT) (Phase V). Because of the uremic syndrome in Phase V, which threatens life, the patient needs replacement therapy, which includes dialysis or transplantation therapies (Suleymanlar, 2007; Durna, 2012).

As of the end of 2013, the total number of patients with the end-stage renal disease (ESRD) in the USA was reported to be 661,648 and 88.2% of the patients who reached the end stage in 2013 began chronic hemodialysis therapy program (United States Renal Data System, 2015). In Turkey, on the other hand, the number

of patients with the ESRD is over 60,000. As in other countries, the type of replacement therapy that is used the most frequently is hemodialysis by 78.96% according to the data of the Turkish Society of Nephrology (Suleymanlar and Altıparmak, 2012).

Hemodialysis is a lifesaving therapy for patients with the end-stage renal disease. However, it is a therapy method which causes non-negligibly frequent complications in patients during dialysis or in the long/short term in spite of the advances in the methods and technologies of hemodialysis (Akpolat and Utas, 2008). Complications such as hypotension, muscle cramps, nausea-vomiting, headaches, pruritus, chest pain, tremors and fever affect all the areas of individuals' daily life and their quality of life negatively (Topal, 2006; Kuypers, 2009). Numerous skin symptoms and signs may accompany chronic kidney disease (CKD). Among these, the most frequently observed symptom is uremic pruritus. It is

observed in patients who take hemodialysis by 20–90% (Akar and Gur, 2000). Uremic pruritus is described as an unpleasant sensory and emotional experience felt on the skin, which develops based on CKD without any symptom of another systemic or dermatological disease that may cause pruritus (Daugirdas, Blake and Todd 2010; Tzu-Chen et al., 2011) Although its causes have not been accurately understood, numerous factors are considered, including uremia, skin dehydration, bivalent ions such as calcium, phosphorus and magnesium, secondary hyperparathyroidism, histamine, an increase in serum vitamin A level and sensitivity to the tools used during hemodialysis, to dialysate, and to ethylene oxide used for the purpose of sterilization (Hsu et al., 2009; Narita et al., 2008)

Pruritus is described as a subjective feeling (Arıcan, 2005; Davidson et al., 2010). Though uremic pruritus is very frequently observed among patients who receive hemodialysis treatment and it negatively affects the lives of patients, this problem of patients and how they cope with this problem are not identified by health workers during the treatment. Moreover, studies on this issue is rather limited. Uremic pruritus that is not solved affects patients' quality of life adversely and it might become chronic. Persistent chronic pruritus leads to irritated skin and the development of secondary infections. It has been found in studies that it restricts mental and physical activity, and might lead to exhaustion, agitation and depression. These conditions prolong the treatment process and since they lead to adverse effects, they complicate the functions of the treatment protocol and they become factors that affect the quality of life (Zucker et al., 2003; Arıcan, 2005; Mistık et al, 2006; Pisoni et al., 2006; Melo et al., 2009).

Many different types of pharmacological and complementary methods are used in the treatment of uremic pruritus. The pharmacologically used medicines are moisturizing crèmes-lotions and antihistamines taken orally. While some of the patients benefit from pharmacological therapy, most of them cannot benefit satisfactorily because of the complex nature of pruritus, and therefore they resort to complementary therapy methods.

It was detected that within the scope of complementary methods, patients applied such practices as diet, menthol, herbal medicines,

hypnosis, imagining, attending social support groups, relaxation exercises, cold application, aromatherapy, thermal therapy, hydrotherapy, music therapy, acupuncture and acupressure (Millikan, 2006; Van-Os et al., 2007). Complementary methods are culture, heritage, habits, knowledge and behaviors that pass on from generation to generation and from society to society. Even though there have been developments in the health system, herbs, which are described to be economical and practical and as natural-domestic remedies in addition to being a solution to despair, are the most significant healing method that the public prefers (İlisulu, 1992).

The importance of nursing practises during the follow-up of chronic diseases and symptom management cannot be denied (Fountouki & Theofanidis 2009). The assessment of the effects of uremic pruritus, the dermatological complication that hemodialysis patients experience the most frequently during the treatment, on the quality of life is a significant topic that should have an important place in nursing practises. Success in management of the symptom that causes discomfort is related to patients knowing about the complementary methods they adopt in order to cope with the problem and the positive and negative effects of these methods. The present study was conducted in order to determine the complementary methods that hemodialysis patients use to cope with uremic pruritus from which they often suffer.

## **Methodology**

### ***The Study Design***

This was conducted as a descriptive study in order to determine complementary methods that hemodialysis patients use to cope with uremic pruritus.

### ***Setting and Samples***

The study was conducted between May 18 – August 20, 2015 at two hemodialysis centers which belong to a private hospital. No specific sampling method was used for the study and an attempt was made to reach all of the study population. Patients suffering from uremic pruritus due to renal dysfunction who were diagnosed with the ESRD, aged over 18 and who received hemodialysis treatment for at least six months were taken into the sample.

Out of 200 patients who were being treated in these centers, 151 were accepted into the sample, while 49 were denied because they started hemodialysis recently and did not suffer from pruritus.

### **Ethical considerations**

For this study, ethical approval was received from the ethical committee of the hospital and legal permission from the institution, and the written informed consent was obtained from the patients.

### **Data Collection Tools Used in the Study**

The patient data were obtained through a data form about the socio-demographic and disease characteristics and another data form designed with regard to the pruritus complaint, which were prepared by the researchers in line with the literature. The data form about the socio-demographic and disease characteristics involved questions regarding socio-demographic characteristics like age, gender, education level, marital status and employment status, and disease characteristics like the duration of hemodialysis and chronic disease status, while the data form about pruritus had 22 questions that were specific to pruritus, such as itching frequency, its duration, pharmacological and complementary methods used for itching, itching areas and the effects of itching.

### **Data Assessment**

Data entry and assessment was performed in digital environment.

The Number Cruncher Statistical System (NCSS) 2007 software was used for statistical analyses. During the assessment of the study data, in addition to descriptive statistical methods (Mean, Standard Deviation, Median, Frequency, Ratio, Minimum, Maximum), Pearson Chi-Square test, Fisher-Freeman-Halton test, Fisher's Exact test and Yates' Continuity Correction test were used to compare the qualitative data. The significance was assessed at the levels of  $p < 0.01$  and  $p < 0.05$ .

### **Results**

It was determined that the mean age of the study participants was  $64.13 \pm 11.95$ . 34.4% (n=52) of

the participants were illiterate, 82.8% (n=125) were retired, 68.9% (n= 104) were married and 95.4% (n=144) lived with their families. When the treatment durations of the patients were examined, it was seen that 8.6% (n=13) received treatment for 6–11 months, 11.9% (n=18) for 12–23 months, 19.9% (n=30) for 24–35 months and 59.6% (n=90) for 36 months and over. 51.7% (n=78) did not have any other chronic diseases, whereas various chronic diseases were detected in 48.3% (n=73) of the participants. Of these participants, 56.2% (n=41) were found to have hypertension, 24.7% (n=18) diabetes, 1.4% (n=1) neurogenic bladder, 9.6% (n=7) coronary failure, and 8.2% (n=6) coronary heart disease.

The characteristics of the patients regarding uremic pruritus are shown in Table 1.

74.8% of the cases (n=113) stated that they experienced itch for more than 12 months, while 34.4% (n=52) said that itching was constant, 78.8% (n=119) that the duration of itching was between 0 and 30 min and 52.3% (n=79) that itching was exacerbated particularly at night. It was detected that patients experienced itching especially in hot environments and when they sweated.

The level of itching in the cases ranges between 3 and 9, and the mean is  $5.55 \pm 1.30$ . When the symptom characteristics of itching are examined, it can be seen that 11.3% (n=17) are in the form of a feeling of tickling, 37.7% (n=57) a feeling of tingling, 9.3% (n=14) a feeling of pricking, 38.4% (n=58) a feeling of burning and 3.3% (n=5) a feeling of stinging. Itching occurs on the back in 25.2% (n=38) of the patients, in head and neck region in 4.6% (n=7), in abdominal region in 5.3% (n=8), on arms and legs in 33.8% (n=51), and in all of the body in 31.1% (n:47).

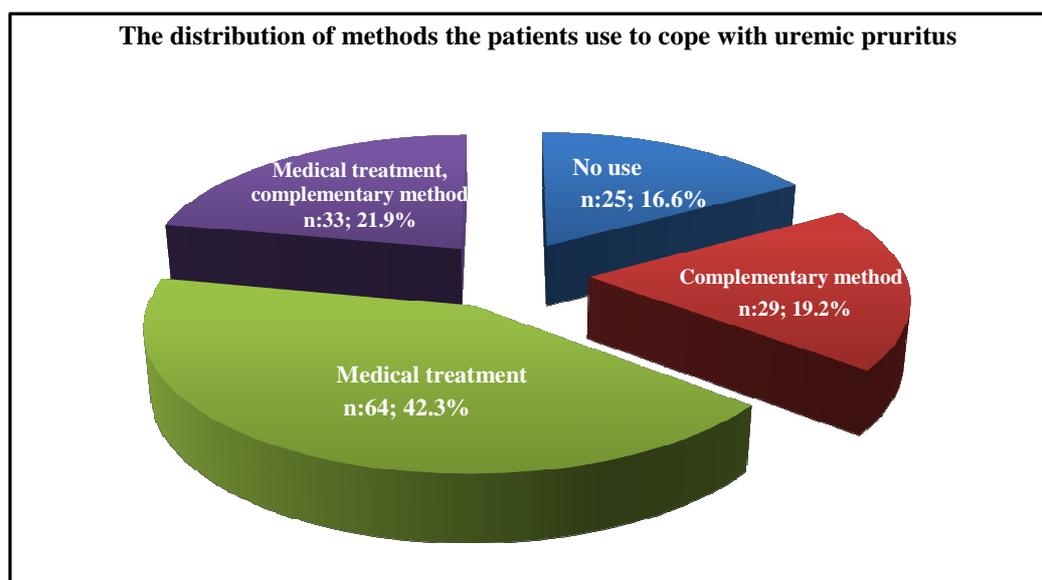
Pruritus affects sleeping in 10.6% (n=16) of the patients almost always, while it occasionally affects sleep in 56.3% (n=85) of the patients and does not affect sleep in 33.1% (n=50) of them. Pruritus restricts social activities of 26.5% (n=40) of the patients and leaves 40.4% (n=61) of them in a difficult situation when together with others.

**Table 1: Findings related to itch characteristics of patients**

Distribution of information regarding itch		n	%
<b>Duration</b>	1–6 months	19	12.6
	6–12 months	19	12.6
	> 12 months	113	74.8
<b>Prevalence</b>	Several times a month	27	17.9
	Several times a week	72	47.7
	Constantly (day – night)	52	34.4
<b>Situations when pruritus occurs</b>	Change of weather	11	7.3
	Sweating	42	27.8
	In hot environment	58	38.4
	When stressed	11	7.3
	During dialysis	18	11.9
	Cannot describe	11	7.3

**Table 2: Complementary methods the patients use in order to cope with itching**

		N	%
<b>The status of using complementary therapy methods</b>	Not using	89	58.9
	Using	62	41.1
<b>The complementary therapy used</b>	Applying cologne	27	43.5
	Washing with warm water	15	24.2
	Moisturizing crème	13	21.0
	Washing with cold water	5	8.1
	Scratching with wool socks	1	1.6
	Squeezing lemon	1	1.6



**Figure 1: The distribution of methods the patients use to cope with uremic pruritus**

A statistically very significant difference was found between the prevalence of itching according to the gender of the patients ( $p=0.009$ ;  $p<0.01$ ). Furthermore, a statistically very significant difference was detected between the times itching started according to gender of the patients ( $p=0.008$ ;  $p<0.01$ ). The prevalence of itching among men is significantly higher than women when men are under stress and when they are on dialysis. The average itching durations, the times when itching appears and the existence of scars according to patients' gender did not show a statistically significant difference ( $p>0.05$ ).

16.6% ( $n=25$ ) of the patients did not implement any treatment and complementary method, while 19.2% ( $n=29$ ) used only complementary methods, 42.3% ( $n=64$ ) medical treatment, and 21.9% ( $n=33$ ) used both medical treatment and complementary methods together. It was found that among 126 patients, 91.3% ( $n=115$ ) stated that they benefited from the treatment they applied, but 8.7% ( $n=11$ ) said that they did not; 7.9% ( $n=10$ ) emphasized that the method that was used was not effective against pruritus, whereas 81.0% ( $n=102$ ) said that it had a short-term effect ( $<24$  hours) and 11.1% ( $n=14$ ) a long-term effect.

41.1% ( $n=62$ ) of the patients had different methods used for pruritus. Applying cologne was

observed in 43.5% ( $n=27$ ), washing with warm water in 24.2% ( $n=15$ ), using moisturizing crème in 21.0% ( $n=13$ ), washing with cold water in 8.1% ( $n=5$ ), scratching with wool socks in 1.6% ( $n=1$ ) and squeezing lemon in 1.6% ( $n=1$ ) (Table 2).

It was found out that patients' status of using complementary methods did not show significant differences according to age, gender, education level, marital status, with whom they live, the durations of hemodialysis treatment and the existence of chronic diseases; however, according to the status of employment, statistically significant differences were identified between the rates of the patients' use of complementary methods ( $X^2: 8,901$ ;  $p=0.003$ ). The use of complementary methods was rarely observed among working patients, while the rates of complementary methods used by unemployed patients were statistically significantly high.

### Discussion

In various studies about uremic pruritus, it is reported as a skin symptom that is most frequently observed among hemodialysis patients by Murtagh et al. (2007) (74%) and Guder et al. (2012) (42%) (Murtagh et al., 2007; Guder et al., 2012). This symptom might be rather discomforting for hemodialysis patients (Rajaram and Yinson, 1998). About the starting time of uremic pruritus, Lee et al. (2006) report that

81.5% of patients experience uremic pruritus in the first year of hemodialysis (Lee, Lin and Huang, 2006). In the study conducted with patients taking hemodialysis in Taiwan, it was reported that 83.9% experienced pruritus in the first six months (Mahabir and Gulliford, 1997). In this study, on the other hand, it was seen that it appeared after the first year of hemodialysis in 74.8% of the patients (Table 1).

A statistically very significant difference was detected between the prevalence of pruritus according to the gender of patients ( $p=0.009$ ;  $p<0.01$ ). It was found that particularly male patients experienced itching more frequently; their rate of having itch was significantly higher than women when they were more stressed and when they were taking dialysis. Similarly, Narita et al. (2008) indicate the male gender as the risk factor for uremic pruritus in patients taking hemodialysis treatment (Narita et al., 2008).

It was reported that patients with uremic pruritus itched especially at night and therefore displayed drowsiness during the day, and this situation affected the functions of social life (Zucker et al., 2003; Mistik et al., 2006; Rajaram and Yinson, 1998). Pruritus causes numerous problems from physical, mental and social aspects, such as chronic fatigue, insomnia, social isolation and reduced quality of life. Similarly, it was determined in this study that itching impaired the sleep function in 56.3% of the patients and restricted the social activities of 73.5% of them. Moreover, 40.4% of the patients felt uncomfortable because they itched when they were with other people. Although the reason why itching worsens during night is not definitely known, it is thought that hemodynamical changes like sweating at night and the increase of skin temperature might bring about a feeling of itch and trigger the action of itching.

In this study, it was detected that 41.1% ( $n=62$ ) of the patients resorted to complementary methods in order to cope with the itch, and 43.5% ( $n=27$ ) used cologne, 24.2% ( $n=15$ ) washing with warm water, 21.0% ( $n=13$ ) moisturizing crème, 8.1% ( $n=5$ ) washing with cold water, 1.6% ( $n=1$ ) scratching with wool socks and 1.6% ( $n=1$ ) squeezing lemon.

In Zucker (2003), 44% of the patients stated that warm shower relieved pruritus. In this study, however, 24.2% of the patients preferred warm shower to decrease itching. Hot environments, sweating, stress and dry skin might increase

uremic pruritus, while warm or cold shower, low environment temperature and activity can decrease it (Patel, 2007).

In this study, 19.6% of the patients said they used moisturizing crème. It was also found in the literature that water-based moisturizers significantly decreased uremic pruritus and partially relieved skin dryness (Okada et al., 2004).

Gonul et al. (2009) found that 6.9% of 69 patients preferred to use cologne for the problem of pruritus. On the other hand, it was reported in the present study that the rate of cologne use, the most frequently used method for pruritus, was 43.5% ( $n=27$ ). In pruritus, cologne evaporates when applied on the skin because of the heat of the skin and it creates an antipruritic effect by providing a cooling sensation, thus relieving the patient (Topal, 2007). Cologne, which has an especially important place in the Turkish culture, is preferred because it can be found in any Turkish home and so it is easily accessible. Moreover, it delays itching thanks to its cooling effect, though for a short time. However, cologne produced using ethanol dries the skin, prevents sweating, and even causes allergic reactions. As a result, it should be taken into consideration that cologne accelerates the disruption of skin integrity in these patients and thus leads to infections, and patients should be informed that moisturizing skin instead of drying is much more effective in coping with uremic pruritus. In their study, Ozturk et al. (2005) found that the use of complementary methods was 76.4% among women and 59.7% among men and women used them more frequently than men (Ozturk et al., 2005). Similarly, Akyol et al. (2011) concluded that the use of complementary methods was mostly observed among women (Akyol et al., 2011). It is considered that women can use complementary methods more than men because the knowledge of the elderly women is respected because of the patriarchal characteristics of the Turkish society, knowledge sharing is more frequent among women about such issues and it is the woman in the family who is consulted about health problems. However, no statistically significant difference was detected in this study when the rates of the complementary method use were examined according to the distributions of age and gender ( $p>0.05$ ). This situation might be explained with the fact that women primarily prefer pharmacological methods since they live in a city like Istanbul in which it is very easy to

access to health services.

The literature studies concluded that complementary methods were used by patients with low education levels (Mahabir and Gulliford, 1997). In another study, it was found that individuals with an education level of primary school and/or below used traditional methods by 77.5% (Ozturk, 2005). Although it was also found in this study that 83.9% of those people who used complementary methods were either illiterate or primary school graduates, no statistically significant differences were observed between education level and the status of the use of complementary method. Moreover, there were no statistically significant differences between the status of complementary method use according to marital status and whom they lived with ( $p>0.05$ ).

A statistically significant difference was detected between the rates of the use of complementary method according to the employment status ( $p<0.01$ ). While the rates of complementary method use were low among working patients, the rates of complementary method use among unemployed patients were significantly higher than other patients. Similar to the present study, Rajagaram and Yinson (1998) also found that traditional methods were used more frequently by people with low income levels. It can be conceived that patients prepare natural remedies using herbs they buy from herbalists according to their purchasing power and from substances at home for the purpose of healing.

### Conclusion

The management of uremic pruritus is rather complicated because of its complex nature. Patients regard complementary methods as an opportunity to manage this symptom. When patients use these methods, they aim to reduce the feeling of discomfort that uremic pruritus creates and improve their quality of life. It was determined that 41.1% of the patients who participated in this study used complementary methods. These practises form a part of the Turkish culture as well. Therefore, in Turkey, it will be important to conduct randomized controlled studies in order to assess the effects of these methods used by patients on uremic pruritus, to add evidence-based complementary methods to the course curriculum in undergraduate nursing education and to establish complementary medicine and application centers in universities in improving the life quality of

patients and increasing the effectiveness of treatment.

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