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Examining the Relationship between Thirst and Dry Mouth with the Number of Dials per Week and the History of Dialysis in Hemodialysis Patients

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Abstract

Introduction: Chronic Kidney Failure (CRF) is a progressive and irreversible degeneration of the kidney function in which the body's ability to keep fuel and balance the water and electrolyte eliminated.

Method: The present ingle-group descriptive-analytic study was conducted in order to examine the relationship between thirst and dry mouth with the number of dials per week and the history of dialysis in hemodialysis patients. The sample size was determined to be 62 subjects using Cochran's formula, with $\alpha = 0.05$ and $\beta = 0.20$.

Result: The mean age of patients was 52.68 years, and 70% (42 individuals) of subjects were female and 30% (18 individuals) of subjects were male in the present study; 52 (86.6%) subjects of the research units were married and 8 (13.4%) were single.

Conclusion: it is recommended to conduct larger studies to investigate he methods for reducing thirst and dry mouth in hemodialysis patients in order to improve the quality of life of these patients by controlling and preventing these complications.

Keywords: dialysis , hemodialysis, patients

INTRODUCTION

Chronic Kidney Failure (CRF) is a progressive and irreversible degeneration of the kidney function in which the body's ability to keep fuel and balance the water and electrolyte eliminated (1). End stage renal disease (ESRD) is a severe form of chronic renal disease associated with an irreversible reduction in renal function, which will cause death if not treated with dialysis or kidney implant (2). The most commonly used method for renal replacement in most patients is hemodialysis. More than 30 percent of dialysis patients are uncontrollably exposed. The most common causes of thirst in these patients include dryness of mouth, increased angiotensin levels 2, increased sodium levels, increased anticholinergic hormone, and increased osmolality of the plasma (3). The most common clinical symptoms in patients undergoing hemodialysis include gustatory changes and mouth inflammation. Also, changes to the saliva flow will occur. Dialysis can cause severe oral complications in patients treated with it, including oral mucosal patching, enamel hyperplasia, gum inflammation, dry mouth, uremic odor, flavor changes, and salivary concentrations (4). According to the findings of a study conducted by Borhan Mojabi, it became clear that 80% of patients with chronic renal failure suffer dry mouth and renal disorders were the cause of oral complications in these patients (5). Dry mouth is one of the most common symptoms in these patients and the flow of stimulated and non-stimulated saliva in patients with end stage renal disease under hemodialysis is lower than that of healthy subjects. Odor and mucosal ulcers, uremic stomatitis, mucosal mucus infections, candida infection, and dental anesthesia are other symptoms of patients with end stage renal disease (6). Many studies have examined the oral status of patients undergoing dialysis (7). However, the number of studies investigating the relationship between thirst and dry mouth with the number of dialysis and dialysis duration is limited. In a study conducted by Mortazavi, it was indicated that all oral indicators were poorly trusted with regard to oral dryness in patients undergoing long-term hemodialysis. Since thirst and dry mouth are some of the most common symptoms of hemodialysis patients (8), and since the history and number of dialysis play crucial role in the quality of dialysis of patients and the incidence of complications, and since implementing timely and proper dialysis can prevent further complications and reduce the incidence of hospitalizations, therefore, the present study was conducted to examine the relationship between thirst and dry mouth with the number of dials per week and the history of dialysis in hemodialysis patients in Zabol.

MATERIALS AND METHODS

The present ingle-group descriptive-analytic study was conducted in order to examine the relationship between thirst and dry mouth with the number of dials per week and the history of dialysis in hemodialysis patients. The sample size was determined to be 62 subjects using Cochran's formula, with $\alpha = 0.05$ and $\beta = 0.20$. The main inclusion criteria were like the followings: aging between 18 to 65 years, lack of mental disorders and cognitive-emotional disturbances that prevent effective communication, and lack not having underlying diseases, such as diabetes or those which might affect thirst and dry mouth. Required data was collected through demographic characteristics checklist, duration of thirst instrument (DTI), dry mouth assessment instrument (XI), and visual thirst intensity

assessment instrument, the content validity of which was confirmed in Hajar Ebrahimi Rigi and Saied Reza Mazloom's study (9); additionally, the validity of these instruments was examined and confirmed in the present study as well, with a score of 0.742 for DTI, 0.763 for Xi, and 0.919 for VAS instruments. Finally, collected data was analyzed using descriptive and inferential statistics and SPSS version.

RESEARCH FINDINGS

The mean age of patients was 52.68 years, and 70% (42 individuals) of subjects were female and 30% (18 individuals) of subjects were male in the present study; 52 (86.6%) subjects of the research units were married and 8 (13.4%) were single. The range of changes for the first dialysis history was between 1 and 11 years; i.e. the maximum history of dialysis was 11 years and the minimum history of dialysis was 1 year. The lowest number of dialysis per week was 2 times and the highest was 3 times a week.Duration if thirst of the patients was evaluated using related means. The mean duration of thirst and standard deviation were 19.82 and 6.99 in order. According to the evaluation of the thirst duration questionnaire, it can be concluded that the duration of thirst is very high in these patients.Based on the results of the present study, the mean and standard deviation of dry mouth turned out to be 44.02 and 7.31 in patients; according to dry mouth assessment questionnaire, dry mouth of these patients is very high.The analysis of thirst intensity showed that the mean and standard deviation of thirst intensity turned out to be 75.12 and 18.24 in patients; according to thirst intensity assessment questionnaire, thirst intensity of these patients is very high, too.The relationship between the duration of thirst with a history of dialysis and the number of dialysis was examined using Spearman correlation coefficient test. The results indicate that there is no relationship between the duration of thirst with the number of dialysis per week and the duration of dialysis sessions. (Table1)

Table 1. The relationship between thirst with the history and number of dialysis in the hemodialysis patients

Variable		Spearman correlation coefficient	P-value
Duration of thirst	History of dialysis	0.26	0.93
	The number of dialysis per week	0.31	0.09

Also, the association between the intensity of thirst with the number of dialysis per week and the history of dialysis, as well as the relationship between dry mouth and the number of dialysis per week and the history of dialysis were studied using the Spearman test; based on the results, there was no significant relationship between dry mouth and none of the parameters of dialysis history and the number of dialysis per week (p> 0.05) (Table 3). There was, also, no significant relationship between thirst intensity with the number of dialysis and per week (p> 0.05). (Table3)

Table 2. The relationship between dry mouth with the history and number of dialysis in the hemodialysis patients

Variable		Spearman correlation coefficient	P-value
Dry mouth	History of dialysis	0.16	0.26
	The number of dialysis per week	0.28	0.18

Table 3. the relationship between the intensity of thirst with the history and number of dialysis in the hemodialysis patients

Variable		Spearman correlation coefficient	P-value
Intensity of thirst	History of dialysis	0.24	0.72
	The number of dialysis per week	0.15	0.38

DISCUSSION AND CONCLUSION

The incidence rate of various mouth and dental problems, such as periodic diseases, premature teeth loss, and dry mouth and thirst, is higher in dialysis patients in comparison with healthy subjects. These problems may be due to several factors, including reduced immunity, drug use, kidney stroke, scan degradation, and fat restriction in these individuals. (10 and 11).According to the results of the present study, the average duration, severity of thirst, and dry mouth turned out to be high in in hemodialysis patients, 19.82, 75.12 and 44.02 respectively, and these patients suffered a high degree of thirst and dry mouth. Also, no significant relationship was found between the parameters of duration of thirst, thirst intensity and dry mouth with dialysis per week and history of dialysis (p> 0.05).No study with the exact same name, like the present one, was found during the search for literature and scientific resources; the number of studies carried out in this area was very limited, making the researcher use similar studies.In two studies conducted by Hamed Mortazavi et al in 2010 and 2014, which investigated the periodontal and dental conditions of hemodialysis patients and compared it to healthy subjects, the number of rotting teeth, the number of missing teeth, number of filled teeth, and indexes such as plaque were assessed. It was concluded that all periodontal and dental indices in individuals with a longer duration of dialysis and a history longer than 3 years were significantly higher than those with a history of dialysis of less than 3 years (11). These results were not consistent with the findings of the present research, the reasons, with certain probabilities, being the huge sample size of Mortazavi's study, which was conducted on 65 hemodialysis patients and 65 healthy subjects; another reasons might be the fact that the present study examined the indices of thirst and dry mouth, but Mortazavi's studies evaluated other indices; additionally, difference regarding the time of dialysis might be another reasons justifying inconsistency of findings. Several other researches have emphasized that thirst is very common in patients undergoing hemodialysis, and it is one of the most common complications in these patients; these patients suffer intense thirst, the most commonly stated reasons of which might be Anxiolytic angiogenesis, an increase in sodium levels,

antinociceptive increased hormones and an increase in plasma osmolality (12). The results of these studies confirm what the present study has found. Thirst and dry mouth can affect the quality of life of dialysis patients. Thirst can be a sign of discomfort and disorientation in hemodialysis patients, and may also be a cause of overweight between IVDs (13). Thirst and dry mouth are and one of the most common causes death is in patients undergoing hemodialysis; these two disorders have many complications, including cardiovascular problems (14). Considering the high rate of thirst and dry mouth in hemodialysis patients, it is quite necessary to provide close analysis and examination of these two complications in order to establish required preventive strategies. A lot of studies have been done, and there are several methods, mainly supportive, such as putting a piece of ice in the mouth and waiting for it to melt gradually and keep drinking water during the day, for treating dry mouth and thirst. Therapies such as the use of artificial saliva, paraspinal aphrodisiacs such as pilocarpine hydrochloride tablets (5 mg, 3 times a day), sweaty mouthwash, and no alcohol consumption might actually be helpful (15). Another introduced following strategies for controlling thirst and dry mouth: preventing salty intakes, eating raw fruits and vegetables, taking care of mouth and oral hygiene, sucking hard candies, chewing gum and ice cream . According to the above-stated points, it is recommended to conduct larger studies to investigate he methods for reducing thirst and dry mouth in hemodialysis patients in order to improve the quality of life of these patients by controlling and preventing these complications.

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