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THE EFFECT OF GURGLING WITH PEPPERMINT WATER ON THIRSTY IN CKD UNDERGOING HEMODIALYSIS AT HARAPAN DAN DOA HOSPITAL 2023

Abstract

Introduction : Chronic kidney failure is a condition in which the body is unable to maintain balance metabolism, fluids, and electrolytes due to irreparable damage to kidney function. One of the problems that can occur in hemodialysis patients is thirst . Therefore, it is important to treat thirst. Gargling with peppermint water is one way to quench thirst and overcome it. **Purpose:** The purpose of this study was to find out whether gargling with peppermint water is effective reduce thirst in kidney failure patients undergoing hemodialysis at RS Harapan Door Bengkulu. **Method:** This study used quasi-experimental methods. The total sample of this study amounted to 36 people, which were divided into two groups, namely the intervention group of 18 people and the control group of 18 people. Purposive sampling technique was used in this study. Visual analog scale instruments for assessing thirst are used as questionnaires to assess thirst. **Results:** The study showed that there was a difference in average thirst sensation between the intervention groups and the control group . For the Mann-Whitney statistical test for thirst, the p-value is 0.026 (p-value ≤ α 0.05). This suggests that gargling with peppermint water affects thirst in thehemodialysis patients . Peppermint water gargle therapy may be recommended as a non-drug treatment to control taste thirst in renal failure patients undergoing hemodialysis.

Keywords: gargling, hemodialysis, kidney failure, peppermint, thirst

Abstrak

Pendahuluan : Gagal ginjal kronis adalah suatu kondisi di mana tubuh tidak mampu menjaga keseimbangan metabolisme, cairan, dan elektrolit akibat kerusakan fungsi ginjal yang tidak dapat diperbaiki. Salah satu masalah yang dapat terjadi pada pasien hemodialisis adalah rasa haus. Oleh karena itu, penting untuk mengobati rasa haus. Berkumur dengan air peppermint adalah salah satu cara menghilangkan dahaga dan mengatasinya. **Tujuan :** Tujuan penelitian ini adalah untuk mengetahui apakah berkumur dengan air peppermint efektif mengurangi rasa haus pada pasien gagal ginjal yang menjalani hemodialisis di RS Harapan Door Bengkulu. **Metode :** Penelitian ini menggunakan metode quasi eksperimen . Total sampel penelitian ini berjumlah 36 orang, yang dibagi menjadi dua kelompok, yaitu kelompok intervensi sebanyak 18 orang dan kelompok kontrol sebanyak 18 orang. Teknik purposive sampling digunakan dalam penelitian ini. Instrumen skala analog visual untuk menilai rasa haus digunakan sebagai kuesioner untuk menilai rasa haus. **Hasil :** Penelitian menunjukkan bahwa terdapat perbedaan rata-rata sensasi haus antara kelompok intervensi dan kelompok kontrol. Untuk uji statistik Mann-Whitney untuk rasa haus, nilai p-value adalah 0,026 (p-value ≤α 0,05). Hal ini menunjukkan bahwa berkumur dengan air peppermint mempengaruhi rasa haus pada pasien hemodialisis. Terapi kumur air peppermint mungkin direkomendasikan sebagai pengobatan non-obat untuk mengendalikan rasa haus pada pasien gagal ginjal yang menjalani hemodialisis.

Kata Kunci: Berkumur, gagal ginjal, haus, hemodialisa, peppermint

INTRODUCTION

In recent years, the number of cases of non-communicable diseases (NCDs) seems to be increasing both in the country and around the world. According to the World Health Organization (2021), non-communicable diseases cause 40 million deaths annually worldwide, which is 70% of all

causes of death worldwide. chronic kidney failure is one of the few non-communicable diseases that are a global health problem. Long-term failure of kidney function leads to kidney performance that cannot be gradually corrected. This causes uremia and azotemia because the body cannot maintain metabolic, fluid, and electrolyte balance (Inayati et al., 2021). The glomerular filtration rate (GFR) decreased below 60 ml/min/1.73m2 for three months, both with and without kidney damage. Chronic renal failure (CRF) is expected to be the most rapid and fifth most common cause of death by 2040 (Guerrero-Hue et al., 2021).

The Centers For Disease Control And Prevention (2021) say that, 15% of adults in the US or around 37 million people, are predicted to suffer from chronic kidney failure. According to the annual report of the ERA-EDTA Registry (2019), there are 680,842 patients undergoing renal replacement therapy in Europe. According to the Indonesia Renal Registry (2018), there are 198,575 patients with chronic kidney failure, this figure has increased more than in previous years. According to data from the Indonesian Health Profile (2021), there were 1,417,104 cases of chronic kidney failure that occurred that year. According to Riskesdas Bengkulu (2018), it shows the prevalence of chronic kidney failure is 0.43% or 12,322 cases and is in 13th place.

Hemodialysis is a method of replacing kidney function. Usually, hemodialysis is performed 2-3 times a week for 10-12 hours in total, with each session lasting 3-5 hours, in order to achieve adequate efficiency. In Indonesia, kidney failure patients do not undergo hemodialysis every day, so between two dialysis sessions, they face the problem of fluid accumulation in the body (Armiyati et al., 2019).

Problems that arise due to excess fluid are edema, heart problems, and weight gain between two hemodialysis times (Smeltzer &; Bare, 2015). In order to avoid excess fluid, patients should limit fluid consumption on days when they do not do hemodialysis (Armiyati et al., 2019). Restriction of fluid intake must be done so that patients suffering from chronic kidney failure get comfort before, during and after hemodialysis therapy (Anita & Novitasari, 2017). Restriction of 3 important fluids is applied to hemodialysis patients even though patients will feel complaints of thirst (Guyton &; Hall, 2016).

Patients undergoing hemodialysis with fluid restriction often experience thirst problems. Increased thirst often results in increased fluid consumption through beverages. However, kidney failure patients cannot respond to thirst normally (Daryani, 2020). Therefore, it is important to carry out thirst management (Ardiyanti, 2015).

Gargling causes the chewing muscles to work to produce salivary glands by triggering the parotid glands so that thirst decreases with increased salivary

production. Peppermint or mint leaves are aromatic herbal plants producing essential oils (Ardisela, 2012). The content of essential oils found in Peppermint brings out a spicy but cool cool taste so that it can stimulate salivary secretion (Meylia & Rimbyastuti, 2014).

Based on the phenomenon described above, the author wants to conduct a scientific study on "the effect of gargling with peppermint water on thirst in kidney failure patients undergoing hemodialysis at Harapan and Doa Hospital in Bengkulu City".

METHODS

This sort of reseaech is quantitative with a quasi-experimental plan utilizing pre-post test plan with control gather. The ponder included two bunches. The mediation bunch will be treated by swishing with peppermint water. The control gather will be given swishing treatment with bubbled water as a comparison. Thirst estimations were taken 1 hour some time recently and after the intercession. The think about was conducted for one day with a recurrence of three garglings conducted at 10.00 WIB, 12.00 WIB, and 14.00 WIB. The consider was conducted by giving educated assent, at that point pre-test thirst, treatment was carried out within the mediation and control bunches, at that point a post test of respondents' thirst was carried out.

Data was processed using SPSS 21 with data tests using non-parametrics; *Mann Whitney* and *Wilcoxon*. The media used are *Visual Analogy Scale* (VAS) *For Thirsty Assessment* instruments with *Cronbach's alpha coefficient* = 0,96, SOPs for freezing with peppermint water and gargling with boiled water.

RESULTS

Table 1: Characteristics of Respondents includes Age, Gender, Long Hemodialysis (N = 36)

Variable	Group		P value
	Intervention (N=19)	Control (N=19)	
Gender			
Man	5 (27.8%)	8 (44.4%)	
Woman	13 (72.2%)	10 (55.6)	0,488*
Age			
Mean	50.39	46.44	
Min	24	22	
Max	63	62	0,516**
SD	9.720	13.635	
CI 95%	45.56 ; 55.22	39.66 ; 53.22	
Long Hemodialysis			
Mean	3.33	2.22	0,052**

Min	1	1
Max	7	5
SD	1.782	1.263
CI95%	2.45 ; 4.22	1.59 ; 2.85

**** Chi-Square Test ** Whitney Mann Test***

According to the results, it was found that most of the respondents who participated were women. The number of female respondents within the intercession bunch was 13 individuals (72.2%), whereas the control bunch was 10 individuals (55.6%). According to Ardiyanti's research (2015), it can be concluded that most hemodialysis patients are women (56.2%). Other research findings also concluded that the majority of hemodialysis patients are women (60.0%) (Lina &; Wahyu, 2015). Research conducted by Dasuki and Basok (2018), shows that more than half of hemodialysis patients are women (58.8%). Gender will affect a person's fluid and weight where women have proportionally less body water because it contains more fat than men. Fat does not contain water, so obese clients have a smaller proportion of water than thin ones.

The comes about found that the normal age of the intercession bunch respondents was 50.39 a long time, whereas the control bunch was 46.44 a long time. The least age is 22 a long time ancient and the most noteworthy age is 63 a long time ancient . The results stated that the age of respondents was in the pre-elderly. According to Smeltzer, et al (2008), cases of chronic kidney disease tend to increase in adulthood due to the chronic and progressive course of the disease. As you get older simultaneously, renal and urinary tract functions and tubule function, including reabsorption ability, will decrease. This is supported by Aisara's statement (2018), Dynamic diminish in Glomerular Filtration Rate (GFR) and Renal Blood Stream (RBF) happens by age. In addition, with age, the elderly actually encounter a decrease in physiological and cognitive capacities so that they are defenseless to different wellbeing issues (Sutriyanti et al., 2022).

In this study, it was found that the time respondents spent in undergoing hemodialysis in the intervention group and control group ranged from 1 to 7 years, with an average of 3 years. There's a factually noteworthy relationship between the length of hemodialysis and thirst. The length of time experiencing hemodialysis is related to the patient's capacity to adjust. The longer the quiet experiences hemodialysis, the more patients are anticipated to adjust to the condition of the infection (Najikhah, 2020).

Table 2: **Average distribution of thirst before intervention on Intervention and control groups**

Variabel	Group		P Value
	Intervention	Control	
Thirst Value			
Mean			
Min	4.00	4.17	
Max	3	3	0.960**
SD	5	7	
CI95%	0.767	1.249	
	3.62 ; 4.38	3.55 ; 4.79	

***Uji Mann Whitney*

Table 2 shows that the average thirst value of the intervention group respondents was 4.00 with an SD of 0.767, and it is believed that 95% of the average thirst value before the intervention was in the range of 3.62 to 4.38. The average thirst value of control group respondents was 4.17 with SD 1,249, and it is believed that 95% of the average thirst value before the intervention was in the range of 3.55 to 4.79.

Table 3 : **Average distribution of thirst after intervention on Intervention and control groups**

Variabel	Group	
	Intervention	Intervention
Thirst Value		
Mean	2.17	2.89
Min	1	1
Max	3	5
SD	0.857	1.132
CI95%	1.74 ; 2.59	2.33 ; 3.45

Seen that the normal thirst level of respondents within the intercession bunch was 2.17 with a standard deviation of 0.875. In expansion, it can be accepted that 95% of the normal thirst level after interceding was within the extend from 1.74 to 2.59. Meanwhile, the cruel esteem of thirst level within the control gather was 2.89 with a standard deviation of 1.132, and it is believed that 95% of the normal thirst level some time recently intercession was within the extend of 2.33 to 3.45. The decrease in thirst value in this study was due to respondents who had the willingness to refrain from consuming excessive fluids by applying the act of gargling with peppermint water that had been taught. Respondents said that after gargling the mouth becomes noticeably not dry, the lips become moist, and also bad breath muffles. In accordance with a study conducted by arfany et al (2014), gargling movement activates Musculus Masseter which then stimulates the parotid gland to produce saliva or saliva, consequently saliva production increases so that thirst can be reduced.

Table 4 : Differences in Average Thirst Before and After Exercise Treatment in the intervention group

	N	Median (Min-Max)	Z	P-value
Thirst Value				
Before intervention	18	4.00 (3-5)	-4.001	0.000***
After intervention	18	2.17 (1-3)		

******Wilcoxon Test***

The comes about of the Wilcoxon Marked Rank Test factual test contained in Table 4 appear that the p esteem is 0.000 ≤ α 0.05. This appeared that there was a noteworthy distinction between the normal thirst values some time recently and after the intercession within the intercession bunch.

Table 5 : Differences in Average Thirst Before and After Exercise Treatment in the control group

	N	Median (Min-Max)	Z	P-value
Thirst Value				
Before intervention	18	4.00 (3-7)	-3.416	0.001***
After intervention	18	3.00 (1-5)		

******Wilcoxon Test***

The comes about of the Wilcoxon Marked Rank Test factual test in Table 5 appeared a noteworthy distinction between the normal thirst values some time recently and after the intercession within the control bunch, with a p esteem of 0.001 which was littler than the α importance level of 0.05. Kidney disappointment patients experiencing hemodialysis can overcome thirst with different sorts of treatment, one of which is washing . There are several ways to reduce thirst felt by kidney failure patients undergoing hemodialysis, one of which is gargling with mint-flavored mouthwash considered effective against thirst (Ardianty, 2015). Based on research by Suryono (2016), said that gargling can also be with 25 ml boiled water at room temperature (±25ºC), gargling for 30 seconds and then disposing of the gargle water in the measuring cup provided, this method is also effective in reducing thirst in kidney failure patients. According to research conducted by Sacrias et al (2015), it is recommended to gargle using mouthwash 3-4 times per day with a maximum limit of water use of 100ml.

Table 6 : The Effect of Gurgling With Peppermint Water On Thirsty In Kidney Failure Patients Undergoing Hemodialysis At Harapan And Doa Hospital Bengkulu City

Variable	N	Median (min-max)	U	*P value*
Thirsty Intervention	18	2.00 (1-2)	103.500	0,026**
Thirsty Control	18	1.50 (0-2)		

***Whitney Mann Test*

From the comes about of this ponder it can be concluded that swishing utilizing peppermint water contains a more significant effect in lessening the sensation of thirst. This may be seen from the normal contrast within the diminish in thirst sensation that's more prominent than swishing utilizing conventional water.

DISCUSSIONS

The results of this study found that chronic kidney patients undergoing hemodialysis at Harapan and Doa Kota Hospital had different thirst averages after being given treatment, with p-values of 0.026 < 0.05. Therefore, with a p-value significance level of 0.026 (p-value < 0.05), it can be concluded that thirst can be minimized by gargling peppermint water.

The results are in accordance by research Ardianty (2015), showing that gargling with mint-flavored mouthwash affects thirst with a p value of 0.001. Gargling with peppermint water can affect thirst due to peppermint content and gargling movements that can increase salivary secretion. One of the chemical ingredients of mint is menthol which has a cold and refreshing sensation in the mouth. When the salivary glands fail to provide enough fluid to moisturize the mouth, it results in thirst. The effect on thirst alters oral sensations. Normal thirst will soon disappear by drinking, thirst can also be overcome just by wetting the mouth without any water swallowed. Moistening the mouth by gargling can reduce thirst (Ardiyanti, 2015).

Ganong (2008), states that mechanical, neuronal, and chemical stimuli can increase salivary secretion, especially in the parotid gland because gargling movements activate masticatory muscles. A simple saliva reflex can be produced through gargling movements. It occurs when chemoreceptors and compressive receptors inside the oral cavity respond. Then, the impulses of afferent fibers reach the salivary center in the brainstem medulla, which is also the center that controls digestion and digestive activity. The salivary center

then sends impulses to the salivary gland through extrinsic autonomic nerves, which reduces thirst.

CONCLUSIONS

Based on the comes about and talk of the impact of washing with peppermint water on thirst in patients enduring from kidney disappointment and experiencing hemodialysis, the normal age was 50.39 a long time for intercession gather, whereas 46.44 a long time for control bunch. Both intercession and control bunch sex were ruled by the female sex. The normal length of hemodialysis was 3 a long time for the mediation bunch and 2 a long time for control bunch. The level of thirst some time recently treatment was 4.00 for mediation bunch whereas after treatment got to be 2.17. Normal thirst level for control bunch some time recently treatment was 3.83 and after treatment 2.33, there was a noteworthy distinction between thirst levels some time recently and after treatment in both bunches. Within the intercession bunch, the distinction was critical with ($p = 0.000$), whereas within the control bunch the distinction was critical with ($p = 0.001$). In this way, there was a critical impact of swishing with peppermint water on thirst ($p = 0.026$).

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