



Research Article

The Prevalence of Fatigue in Hemodialysis Patients in Iran: A Literature Review

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Abstract

Background: Fatigue is now an important priority in order to minimize, reduce mortality rate, shorten the length of stay in hospitals, and dramatically decrease the medical expenses in hemodialysis patients.

Method: This review aimed to determine the incidence of fatigue in hemodialysis patients in Iran. The studies conducted from 1997 to 2016 were reviewed and analyzed by the keywords namely fatigue, hemodialysis patient's and systematic review in Pub Med, Science Direct, Scopus, and Google Scholar, Iran medex, SID, and Magiran databases.

Result: The results indicated the prevalence of fatigue is different from 47 to 97.7 % considering the important role of nurses, it is essential to train nurses concerning fatigue in order to enhance their knowledge and practice about specific symptoms of fatigue in hemodialysis patients.

Keywords

Nurses; Hemodialysis; Patients

Introduction

Chronic renal failure is one of the global public health problems. Today, 2-3% of the world's population suffers from chronic kidney disease (CKD), and each year the number of people infected is doubled. The annual mortality rate from this disease across the world is 60,000 [1] and in Iran, about 15% is annually added to the number of patients undergoing dialysis [2]. That is, in 2007, about 14,000 cases were reported. The disease is often unpredictable and the patient may not notice the progression of the disease until the end-stage renal disease [3]. The disposal of waste, the precise regulation of liquids and chemical compounds, the secretion of certain hormones and the activation of vitamin D are among the activities of the kidneys in the body. However, once more than 95% of the kidney tissue is destroyed by various diseases, the accumulation of toxins in the body would increase so much that survival cannot be possible without the use of dialysis or kidney transplantation [3]. In Iran and many other countries, hemodialysis is the most common method of treating this disease [4,5]. Being one of the most successful alternative renal treatments, hemodialysis has changed the treatment outlook for

patients with end-stage renal failure and there are now hundreds of thousands of patients around the world undergoing such treatment [6]. However, hemodialysis cannot change the normal course of the underlying kidney disease and completely substitute for the kidney function. Thus, the patient is exposed to problems and side effects. In long-term dialysis, patients will undergo hemodialysis for 2 to 3 sessions a week and 3 to 4 hours per session; which can lead to fatigue in these patients [7]. Fatigue is one of the most annoying and most commonly reported symptoms in hemodialysis patients [8]. The North American Nursing Association defines fatigue as feeling weak and reduced capacity for mental and physical activity; in which tired people do not have previous energy, do less activity, and put more efforts for the lightest daily activities [9]. Moreover, familial, social and psychological functions of hemodialysis patients may also be affected by fatigue [10]. A study in 2007 showed that hemodialysis patients experience physical, emotional and cognitive fatigue [11]. Fatigue is an important and unknown symptom and a complex concept in these patients in improving which nurses can be effective [12]. The results of the studies conducted in Iran showed that more than 60% of hemodialysis patients suffer from fatigue [13]. The significance of fatigue in patients with renal disease is more prominent where 94% of dialysis patients are reported to be more willing to undergo dialysis when they are at increased energy levels [14]. Meanwhile, with increased age, history of dialysis, and kidney failure, the likelihood for reduced education and income will increase [15] and it limits daily activities [16]. Host intrinsic factors, accumulation of substances from body metabolites, changes in basal energy, sleep and activity disturbance, disease pattern, treatment pattern, great deal of symptoms and side effects resulted from the disease and treatment, patient's mental status, body's oxygen supply mechanism, changes in the pattern of regulating and transferring the substances in the body, environmental and social factors, and stressful life events are considered effective in fatigue. Despite the numerous articles about fatigue in chronic patients and kidney failure disease, the current knowledge about the fatigue experienced by hemodialysis patients is negligible and little success has been achieved in identifying demographic, psychological and physiological factors associated with fatigue [17]. Fatigue reduction methods include pharmaceutical and non-pharmaceutical interventions. Non-medical interventions include nutrition therapy, treatment of sleep disorders; stress management, exercise, yoga, treatment of depression and acupuncture used to reduce fatigue in hemodialysis patients [14]. Therefore, according to the studies conducted on the increasing number of patients with chronic renal failure and the increasing need for dialysis and high prevalence of fatigue as one of the long-term hemodialysis complications, this study aimed to review the summary and results of the studies on the incidence of fatigue in dialysis patients in Iran.

Method and Materials

This Review study surveyed prevalence of fatigue in hemodialysis patients from 1997-2016 in Iran. For data collection The English and Persian studies conducted from 1997 to 2016 were reviewed and analyzed by the keywords namely fatigue, hemodialysis patient's and systematic review in Iran in databases included Pub Med, Science Direct, Scopus, Google Scholar, Iran medex, SID, and Magiran databases.

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Table 1: The studies summery about dialysis patients fatigue in Iran from 1997-2016.

ID	Author	Year	Province	Sample size	Fatigue %
1	Farmahini(18)	2010	Tehran	56	64.30%
2	Sajadi(19)	2011	Tehran	56	60.70%
3	Hadadian(20)	2012	Khuzestan	45	14%
4	Hadian jozi(21)	2013	Tehran	25	47%
5	Koshan(22)	2013	North Khorasan	65	97%
6	Tayyebi(23)	2013	Tehran	86	64%
7	BasiriMoghadam(24)	2013	Razavi Khorasan	90	97/7%

Results

A total of 70Articles were found between 1997 and 2016. With the help of the keywords, articles focused on fatigue, hemodialysis patients and systematic review in Iran in English and Persian languages. In addition to the articles, some abstracts were reviewed. Table 1 shows the summary of the most important articles from 1997 to 2016.

Discussion

Fatigue has been reported as a common debilitating symptom in many patients undergoing hemodialysis [14-18]. A review of the results of this study showed a high level of fatigue among dialysis patients in Iran. Moreover, the results showed that the fatigue in dialysis patients in Iran was consistent with the results of other studies in the other countries. That is, the frequency of severe fatigue in patients in the studies of Braun et al. was reported to be 90, 58, 69, 70.63, 77.9, 50 and 71%, respectively. Moreover, the results of this review showed that various factors such as educational level, occupation, age, income, and history of the disease are effective in the level of fatigue in dialysis patients [19-24]. The results of the study of Kushan et al. [22] showed no significant relationship between fatigue and gender, marital status, educational level, residence, income, duration of disease and history of dialysis. The study of Haddian et al. [20] also showed no significant relationship between the reported fatigue and gender, marital status, educational level, income, and the history of dialysis. Whereas Sajadi aimed to investigate the factors affecting the fatigue in patients with chronic renal failure undergoing hemodialysis, they showed a relationship between demographic variables of gender and income with fatigue [13]. That is, women undergoing dialysis reported greater significant fatigue compared with men. In addition, Kushan et al. [22] reported a significant relationship between fatigue and age. That is, fatigue increases as age increases [22,25]. The results of some studies showed a significant difference between the increase in the age of hemodialysis patients and the increase in fatigue [16,26]. On the other hand, the results of some studies showed no significant difference in fatigue between the age group under 50 and above 50 [8]. The results of Tavakoli's research showed that despite the complexity of fatigue dimensions and the variety of its causes or nutrition education in the form of a nutrition-based educational program, the fatigue in these patients can be reduced without using medication. Considering that this educational program is easy to use; does not cost the patient anything, increases the educational-care role of intensive care unit nurses and leads to the active participation of patients in their care process, the use of this approach is recommended to reduce fatigue in patients undergoing hemodialysis.

Meanwhile, the result of Riahi's research showed that daily exercise is a hope that will bring hemodialysis patients near to the life before the disease [27]. The findings of this study indicated that aerobic exercises (working with Ergometer bicycles) along with

dialysis treatment have a favorable effect on the quality of life and the muscular strength of hemodialysis patients. Since aerobic exercises are inexpensive for hemodialysis patients and have no negative side effects, they are recommended.

Conclusion

The evaluation of the results indicated a high level of fatigue in hemodialysis patients in which various previously mentioned factors were effective. Therefore, in order to improve the quality of life in these patients, it seems essential that health care providers, the family of the patient as well as the patient should be more aware of how to determine the extent of fatigue, prevalence, risk factors, complications and fatigue reduction strategies.

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