

# Body-Image Disturbance: A Comparative Study among Haemodialysis and Kidney Transplant Patients

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## ABSTRACT

**Introduction:** As a chronic disease, End Stage Renal Disease (ESRD) changes the patients' body and affects their body image negatively. Although the changes in body image are expected in all types of renal replacement therapies, different renal replacement therapy methods could represent different levels of impact on body image.

**Aim:** Present study was conducted to examine and compare the level of body-image disturbance between haemodialysis and kidney transplant patients.

**Materials and Methods:** This descriptive study was conducted in two teaching hospitals in Tehran, Iran. Using convenient sampling, 84 patients (42 patients under haemodialysis and 42 patients with transplant) were invited to participate in the study. A self-designed questionnaire was developed to examine the level of body-image disturbance.

**Results:** Out of 42 haemodialysis patients, 64.3%, 19% and 16.7% of patients reported low, moderate and high level of body-image disturbance respectively. The mean score of body-image disturbance was  $21.1 \pm 18.3$  (rang=1-71) in haemodialysis patients. Of 42 transplant patients, 69%, 26.2% and 4.8% reported low, moderate and high level of body-image disturbance respectively. The mean score of body-image disturbance was  $17.1 \pm 13.3$  (rang=1-48). According to the results of independent t-test, difference between mean score of body-image disturbance in two groups was statistically significant ( $p < 0.05$ ).

**Conclusion:** The findings of the present study showed that both haemodialysis and renal transplant patients experienced some levels of body-image disturbance. This problem was more prevalent among haemodialysis patients in compared to kidney transplant ones. We recommend more studies may be conducted in this regard.

**Keywords:** End stage renal disease, Psychological disorders, Replacement therapy

## INTRODUCTION

End Stage Renal Disease (ESRD) is a chronic disease that causes permanent loss of renal function [1-3]. The prevalence and incidence of ESRD are increasing globally [4-6]. The results of the reports from the United States showed that between 1980 and 2009, the prevalent rate for ESRD increased nearly 600%, from 290 to 1738 cases per million population [7]. Iran is a Middle East country with approximately 79 million residents. According to the report of the Iranian Management Center for Transplantation and Special Diseases (IMCTSD), the prevalence and incidence of ESRD have significantly increased among Iranian population in recent years [5].

Body image is an important issue in caring of patients with a chronic disease. According to Leung's definition "Body image is the mental picture that people have of their own body and bodily functions including associated external and internal sensations" [2]. As a chronic disease, ESRD changes the patients' body and affects their body image negatively [8]. In 2013, the results of a cross-sectional study in the UK by Leonard showed that body-image disturbance is higher in haemodialysis patients in compared to general population [9]. In another study in this regard, Shahgholian et al., examined self-concept in patients undergoing haemodialysis and peritoneal dialysis. Similar to the results of Leonard's, Shahgholian et al., reported that the level of body-image disturbance is higher in haemodialysis and peritoneal dialysis patients in compared to healthy people [10]. In one study in 2012, Oyekçin et al., examined the level of body-image disturbance in patients under peritoneal dialysis and haemodialysis. The results of Oyekçin et al., indicated that the level of body-image disturbance is higher in haemodialysis patients as compared to patients under peritoneal dialysis [11].

Although changes in body image are expected in all types of renal replacement therapies, different renal replacement therapy methods could represent different levels of impact on body image.

Since this important issue remains understudy till now, the present study conducted to examine and compare the level of body-image disturbance between haemodialysis and kidney transplant patients.

## MATERIALS AND METHODS

### Design, Setting and Ethical Considerations

This study employed a descriptive design and was conducted in two teaching hospitals, Rasool Akram and Hasheminejad, in Tehran, Iran. Using convenient sampling, 84 patients (42 patients under haemodialysis and 42 patients with transplant) were invited to participate in the study. Data were collected between January and March, 2014. Since it involved human subjects, project approval was obtained from Tehran University of Medical Sciences. Some information about the study was also given by the author verbally. Participation in the study was voluntary and anonymity was assured.

### Inclusion and Exclusion Criteria

**Haemodialysis patients' criteria:** Age between 18 to 65 years, need to haemodialysis two times per week or more, no previous history of physical and psychiatric disorder, at least six month history of haemodialysis, ability to communicate, ability to reading and writing and accepting to participate in the present study.

**Transplant patients' criteria:** Age between 18 to 65 years, having received a kidney transplant at least 6 months prior to the study, no previous history of rejection, no previous history of physical and psychiatric disorder, ability to communicate, ability to reading and writing and accepting to participate in the present study.

### Instruments

First, a questionnaire was designed to obtain background information that was assumed to influence patients' body-image disturbance. A self-designed questionnaire was developed to

examine the level of body-image disturbance. The items were formulated based on the literature, analysis of similar questionnaires and the authors' experience in this area. The instrument was designed in Persian and consisted of 20 items. Responses were rated on a Likert-scale of 0-4 with higher scores indicative of greater body-image disorder. All items were worded positively. Total scores were between (0 - 80). Scores between 0 - 20, 21 - 40 and 41 to 80 would indicate low, moderate and high level of body-image disturbance respectively. The questionnaire's content validity was assessed by ten members of Tehran University of Medical Sciences. These experts were also asked to rate each item based on relevance, clarity, and simplicity on a four-point scale. The researchers analyzed the results. The content validity score was 91.2%. To assess the reliability of the scale, alpha coefficient of internal consistency ( $n=20$ ) was computed. The alpha coefficient for this instrument was 0.96.

## STATISTICAL ANALYSIS

Analysis of the data involved descriptive statistics (mean and standard deviation), Pearson correlation, independent t-test and one-way ANOVA using SPSS (Statistical Package for the Social Sciences) software (v19.0; PASW Statistics). Variables were considered to be statistically significant if  $p < 0.05$ .

## RESULTS

The mean age of haemodialysis patients was  $44.4 \pm 13.2$  and  $45.4 \pm 11.9$  years for transplant patients respectively. With regard to sex, 52 and 62 were male in haemodialysis and transplant groups respectively. The most common cause of ESRD in patients of both groups was diabetes [Table/Fig-1]. The demographic characteristics were similar in patients of two groups.

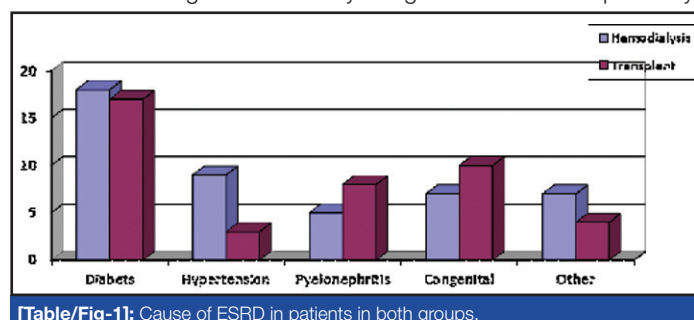
### Dialysis Patients

Of 42 patients in this group, 64.3%, 19% and 16.7% of patients reported low, moderate and high level of body-image disturbance respectively. The mean score of body-image disturbance was  $21.1 \pm 18.3$  ( $\text{rang}=1 - 71$ ).

The mean score of body-image disturbance in the female subjects was  $29.1 \pm 22.1$ . This score for the male group was  $14.5 \pm 11.2$ . According to the results of independent t-test, this difference between two groups was statistically significant ( $p=0.009$ ). The mean score of body-image disturbance in single patients was  $32 \pm 22.3$ . This score for married patients was  $11.1 \pm 12.3$ , then according to the results of independent t-test, the difference was statistically significant ( $p=0.003$ ). Regarding to the findings of Pearson correlation test a significant correlation was found between the mean score of body-image disturbance and patients' age. Those who were older have lower level of body-image disturbance ( $r=-0.534$ ,  $p=0.001$ ). We did not find any significant correlation or relationship between patients' mean score of body-image disturbance and other demographic characteristics such as weight, level of education, years of haemodialysis, employment status, level of family income, financial status and cause of ESRD.

### Transplant Patients

Of 42 patients in this group, 69%, 26.2% and 4.8% reported low, moderate and high level of body-image disturbance respectively.



[Table/Fig-1]: Cause of ESRD in patients in both groups.

The mean score of body-image disturbance was  $17.1 \pm 13.3$  ( $\text{rang}=1 - 48$ ). No significant correlation or relationship between patients' mean score of body-image disturbance and no demographic characteristics including sex, age, marital status, weight, level of education, years of transplant, employment status, level of family income, financial status, and cause of ESRD were found.

## Haemodialysis and Transplant Patients

The mean scores of body-image disturbance were  $17.1 \pm 13.3$  and  $21.1 \pm 18.3$  ( $\text{rang}=1 - 71$ ) in transplant and haemodialysis respectively. According to the results of independent t-test, this difference between two groups was statistically significant ( $p < 0.05$ ). In transplant patients, the highest mean score was  $1.8 \pm 1.5$  in response to question number 8 (I would like to know the others' view about my appearance). In this group, the lowest mean score was  $0.38 \pm 1.0$  in response to question number 9 (I try to divert the attention of the others from my appearance using jewellery and embellish). In haemodialysis patients the highest mean score was  $1.7 \pm 1.3$  in response to question number 1 (I am concerned about changes in my appearance). In this group the lowest mean score was  $0.57 \pm 1.2$  in response to question number 13 (I try to deny negative changes in my appearance). [Table/Fig-2] shows responses of patients in both groups to all items of the questionnaire.

## DISCUSSION

The results showed that both groups of patients had some levels of body-image disturbance. Also, they indicated that the level of body-image disturbance was higher among haemodialysis patients as compared with kidney transplant patients.

Although impaired body image is a common psychological consequence of living with ESRD [8], studies about the effects of several renal replacement therapy methods on ESRD patients' body image are very limited. Our search on electronic database showed only one study that examined and compared body image between dialysis and renal transplant patients. This study was conducted by Rezaei et al., in Iran. Similar to the findings of the present study, Rezaei et al. reported that both types of these two renal replacement therapy methods have negative impacts on patients' body image. In Rezaei et al., study, the range of patients' body-image disturbance were 88 and 48 for haemodialysis and transplant patients respectively that are in consist with our findings [12]. Although comparing body-image disturbance between dialysis and renal transplant patients were limited to only one study, some studies compared the level of body-image disturbance among haemodialysis and peritoneal dialysis patients. The results of these studies represented different findings. Some of them reported that body-image disturbance is similar between haemodialysis and peritoneal dialysis patients and some reported that body-image disturbance in haemodialysis patients is higher. Several factors can cause body-image disturbance in haemodialysis patients such as overweight, edema, skin lesion, and use of arrio-venous graft, fistula, neck line, or catheter for haemodialysis. Surgery and changes related to the side effects of immunosuppressant drugs are also some factors that affect body image of transplant patients. Recently in one review study, Zimbren determined five factors that affect body-image satisfaction in organ recipient patients including organ, genre, pre transplant medical illness, time since transplantation and post-transplant medication regimen [13].

Patients with ESRD need replacement therapy methods including haemodialysis or renal transplantation to remain alive [4]. Although remarkable advances in understanding, treatment and care of patients with ESRD have been achieved over three decades [14,15], high level of psychosocial issues within this group of patients remains a concern. Body image is an important issue in the development of psychosocial disorders in patients under haemodialysis and transplant patients that should be payed more

attention. In one study in 2014, Carvalho examined the effects of body-image disturbance on depression development among haemodialysis patients. The results of Carvalho's study showed that body-image disturbance significantly enhanced the patients' level of depression [16]. In this regard, the results of one study in Turkey showed that depression and anxiety have relationship with body image in haemodialysis patients [11].

Items	Haemodialysis	Transplant	p-value
1 - I am concerned about changes in my appearance	1.7± 1.3	1.7± 1.4	1.00
2 - I compare my appearance with the others regularly	1.3± 1.3	1.1± 1.4	0.539
3 - I prefer to be alone because of my appearance	0.83± 1.2	0.52± 1.1	0.233
4 - Everyday some events happen in my life that compel me to think of my appearance	1.2± 1.3	0.98± 1.2	0.444
5 - When I see my face and body in mirror, I feel that I am ugly	0.74± 1.2	0.60± 1.1	0.590
6 - My appearance is worse than that I imagine	0.70± 1.2	0.40± 0.79	0.218
7 - I think about changes in my appearance too much	1.4± 1.3	1.1± 1.1	0.273
8 - I would like to know the others' view about my appearance	1.1± 1.2	1.8± 1.5	0.02
9 - I try to divert the attention of the others from my appearance using jewellery and embellish	0.76± 1.3	0.38± 1.0	0.149
10 - I would like to change some parts of my appearance	0.88± 1.3	0.62± 1.1	0.329
11 - I am not satisfied about my weight and height	1.3± 1.6	0.45± 1.6	0.04
12 - I think that I do not have sexual attraction for my husband/wife	1.4± 1.8	0.95± 1.4	0.170
13 - I try to deny negative changes in my appearance	0.57± 1.2	0.30± 0.5	0.180
14 - My appearance is different one that I expected	0.83± 1.3	0.76± 1.3	0.811
15 - My appearance is the cause of many events in my life	0.76± 1.2	0.74± 1.3	0.935
16 - Because of inappropriate appearance, I am not willing to have sexual relations	1.4± 2.0	0.79± 1.6	0.127
17 - When I compare my appearance to the others, I have sense of shameless	0.93± 1.5	0.71± 1.2	0.478
18 - Negative changes in my appearance cause impairment in my social activities	0.74± 1.2	0.76± 1.1	0.928
19 - I feel that I lost interest in my appearance	0.98± 1.5	0.86± 1.2	0.692
20 - When I look at my photos, I think it does not show my real appearance	1.4± 1.5	1.5± 1.6	0.893

[Table/Fig-2]: Response of patients to each items of questionnaire.

## LIMITATION

As this study was based on a convenient sample and the participation was voluntary, there might have been a selection bias

which might affect the possibility to generalize the results to all patients in addition to the small sample.

## CONCLUSION

Body image is an important issue among haemodialysis and kidney transplant patients that has not been paid enough attention by now. Body-image disturbance can increase the chance of psychological disorders among this group of patients. The findings of the present study showed that both haemodialysis and renal transplant patients experienced some levels of body-image disturbance. This problem was more prevalent among haemodialysis patients as compared to kidney transplant ones. Health care team members working with this group of patients should be aware of this important issue and conduct psychological programs to decrease the level of body-image disturbance. We recommend that more studies may be conducted in this regard.

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