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Effect of Participation in Peer-Support Groups on Happiness and Life Orientation in Mothers of Children Undergoing Hemodialysis

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Abstract

Background: Problems associated with the conditions of children undergoing hemodialysis (HD) have significant effects on maternal physical and mental health status. Therefore, the provision of information and support to mothers of children receiving HD can have a profound impact on the health status of mothers.

Aim: The present study aimed to investigate the effect of participation in peer-support groups (PSGs) on happiness and life orientation in mothers of children undergoing HD.

Method: This longitudinal single-group study with interventional study design, with a pre/post-test research design, was conducted on 27 mothers who were referred to Dr. Sheikh Hospital, Mashhad, Iran, during 2019-2020. The mothers were divided into six groups and attended PSG sessions. The data were collected using demographic characteristics/ medical history questionnaire, the Oxford Happiness Inventory (OHI), and the Revised Life Orientation Test (LOT-R) three times before and three times after the intervention. The data analysis was performed using the SPSS software (version 25).

Results: In this study, the mean±SD age of participants in the PSG was 38.00±5.50 years. A significant difference was observed in the mean±SD scores of happiness at the pre-and post-intervention stages ($P<0.001$). Moreover, there was a significant difference in the mean±SD scores of life orientation before and after intervention ($P<0.001$).

Implications for Practice: Participation in PSGs can boost levels of happiness and positive life orientation in mothers of children receiving HD. Therefore, nurses are suggested to practice this intervention as an effective strategy.

Keywords: Happiness, Hemodialysis, Life orientation, Mother, Peer-support group

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Introduction

The prevalence of alternative renal replacement therapies in children and adolescents aged under 20 years is about 65 per one million population worldwide (1). Therefore, hemodialysis (HD) has been recognized as an alternative therapy and a common method to control chronic kidney disease (CKD) (2). During HD, mothers often assume the role of primary caregivers of their children and devote themselves entirely to this job (3). Mothers need to provide health care services to their children in addition to their parenting role, which imposes much stress and emotional pressure on them (4-5). Such mothers also feel that they are neglected and lonely in caring for their children, and even find that those around them, including family and medical staff, do not understand their conditions (6). According to Geense et al. (2017), mothers who provide care and treatment to their children notice that these responsibilities interfere with their other responsibilities at work and in social and family life (7). Consequently, these mothers are subjected to high levels of psychological tension (6) that often leads to the appearance of severe depression and anxiety symptoms (8). A collection of problems such as aggression, depression, and anxiety can give rise to psychosis and decline in mental health status and feeling of happiness in mothers of children with special needs (9).

The feeling of happiness is a measure of one's mental health and has numerous tangible benefits, such as improvement of physical health, reduction of psychological distress, and increase in life expectancy (10). Moreover, the feeling of happiness is an important variable that affects human life and somehow bestows meaning to life (11), as the most urgent natural and psychological needs in humans (12). Happiness can indirectly lead to improved medical and psychosocial outcomes and enhance the performance of patients and their families (13-14).

Quality of life is among the psychosocial factors that contribute to the successful implementation of medical treatments (15). Parents of children undergoing HD experience low levels of quality of life (16). Life orientation is one of the components of quality of life (17), which affects chronic diseases and conditions (18). Life orientation refers to the way people look at their lives and is comprised of two dimensions of optimism and pessimism (15). The sense of optimism plays a role in individuals' mental health status (19); therefore, optimists experience more psychological well-being and less stress in dealing with anxiety, act more dynamically and report higher satisfaction in life (20).

Mothers need emotional support to cope with their children's chronic diseases. They even need support from their spouse, family, and friends even if it is others' understanding and empathy or sharing of emotions (14). In the same line, peer support plays an important role in the maintenance of health in individuals and reduction of negative outcomes of stress; therefore, it has a direct effect on the quality of life. Peer support means using the support of an individual who adopts the most effective management style to improve his/her health based on empirical knowledge (21). Participants in peer-support group (PSG) sessions help individuals to socialize and connect with others (22). The PSG intervention is more effective than usual care in reducing the symptoms of depression, psychosocial distress, anxiety, and anger in patients (23, 24). The results of a study conducted by Ashktorab et al. (2013) demonstrated the impact of sharing positive experiences with peer patients on the way one manages chronic diseases (22). The results of another qualitative study further revealed that mothers of children undergoing HD preferred to meet peers with the same conditions to share their experiences. At present, all professional care teams have their focus on HD in children; therefore, their mothers as the primary caregivers have been ignored so far (6). To the best of the authors' knowledge and based on the review of literature, no research was conducted in this domain. Therefore, the present study aimed to determine the effect of participation in PSG sessions on happiness and life orientation in mothers of children undergoing HD.

Methods

This longitudinal single-group study with interventional study design no control group was conducted at Dr. Sheikh Hospital, Mashhad, Iran, during 2019-2020. The study samples (n=30) were selected using the convenience sampling technique from the mothers who had met the inclusion criteria and were referred to this hospital (for the HD of their children) at the time of the study. The sample size adequacy was measured considering the confidence level of 95%, and based on the comparison of two means formula. The margin of error was 5%, and the variance of means was estimated at 45.

Accordingly, the minimum and sufficient required sample size were estimated at 18 in this study. The inclusion criteria included at least two months of HD at minimum, lack of uncontrolled mental disorders in mothers, lack of visual and hearing impairments, lack of debilitating acute and chronic disease risk, and lack of extreme stress except for their children's illnesses in the last six months. However, those mothers who refused to continue participation in the study, were absent in more than two PSG sessions, developed acute diseases or were hospitalized during the study, and discontinued HD due to kidney transplant or death of children were excluded from the study.

The data collection tools included the demographic characteristics/ medical history questionnaire, the Oxford Happiness Inventory (OHI), and the Revised Life Orientation Test (LOT-R).

The OHI, developed by Argyle, Martin, and Crossland (1989), included 29 items in a 4-point Likert scale. Each point in this scale was scored from 0 to 3 and the total score ranged from 0 to 87 (25-26). The LOT-R, designed by Scheier and Carver (1992), was consisted of 10 items, including three items with positive statements and three items with negative statements. Each item was scored based on a five-point Likert-type scale (from strongly disagree to strongly agree). Items 1, 4, and 10 were scored directly, and items 3, 7, and 9 were scored in reverse. Moreover, items 2, 5, 6, and 7 were complementary (i.e. items used to ensure that a respondent was not sensitive to the main items of the test). The total scores ranged from 0 to 24, wherein a higher score indicated a greater tendency to expect positive results versus negative ones (27).

The content validity of the demographic characteristics/medical history questionnaire was confirmed by seven faculty members of the School of Nursing and Midwifery affiliated to Mashhad University of Medical Sciences, Mashhad, Iran, and their corrections and opinions were applied. The reliability of the OHI had also been reported to be optimal in the studies by Liaghatdar et al. (2008) and Alipour et al. (2007; 26, 28), and all its 29 items were highly correlated with the total score. The Cronbach's alpha coefficient for the entire questionnaire was 91. The convergent and divergent validity of the scale has been further established. As well, the study results had shown the validity of this test for measuring happiness in Iranian society (26). In the present study, the reliability of the scale was confirmed through the determination of the internal consistency by the calculation of the Cronbach's alpha coefficient for 10 people which was estimated at 0.89. The reliability of the LOT-R had been already been estimated at 0.70, using the Cronbach's alpha coefficient (18). In the present study, the reliability of the LOT-R was confirmed by the internal consistency method through the calculation of the Cronbach's alpha coefficient for 10 people determined at 0.83.

In total, 32 children were undergoing HD at Dr. Sheikh Hospital, Mashhad, Iran. The mother of one child did not attend any of the HD sessions and another child did not meet the inclusion criteria less than two months after the first HD. As a result, 30 mothers entered the study. Initially, the purpose of the study was explained to the participants and informed consent was obtained. Subsequently, the mothers were divided into six groups of 4-5 people based on their children's HD program. Afterward, five PSG sessions were held for each group (each session lasting from 1 to 1.5 h) two times a week starting from 7 July 2020. During the intervention, three mothers were excluded from the study due to their absence in more than three PSG sessions (following the kidney transplant of their children and traveling to their hometown). Eventually, the intervention was conducted on 27 mothers.

The topics of the PSG sessions were extracted from the needs assessment in a similar study conducted by Pourghaznein et al. in 2018 (6) and included informational, mental-psychological, financial, functional, and physical needs. Some questions related to the need for support were raised by the researcher within the first five minutes of each session. Mothers had 10 minutes to write down whatever was on their minds and then communicate their experiences and propose their solutions in relation to the questions raised. In each session, mothers were asked to employ approaches to adapt to changes and use other people's experiences and views to deal with their relevant problems and cope with the present situation and the new concept of life. The PSG sessions were mother-centered, wherein the mothers could provide and maintain the dynamicity of the group and then share experiences and opinions regarding the questions posed.

In the PSG sessions, the researcher was only a facilitator who tried to boost the effectiveness of the group, accelerate group discussions, provide scientifically correct information, reflect on the group dynamics process, provide feedback to members, and avoid the exchange of wrong information.

The participants were informed about the study objectives and written informed consent was obtained from them. The participation was based on willingness and the participants could withdraw from the

study at any time. Moreover, the participants were ensured that their privacy and information would be kept confidential.

The questionnaires were completed three times before and after the intervention. Therefore, the questionnaires were completed by the participants one, two, and three weeks before and after the PSG sessions to collect data, increase the accuracy of measured variables, such as the feeling of happiness and life orientation, and reduce the effect of environment and passing of time on the study variables. Afterward, the data were analyzed in the SPSS software (version 25) using descriptive and analytical methods following the affirmation of data accuracy. The quantitative and qualitative variables in this study were presented as mean \pm SD and relative and absolute frequency distributions. Moreover, the ANOVA was used to compare the quantitative variables with normal distribution at the pre/post-intervention stages, and the Friedman test was adopted for the analysis of non-normally distributed variables. Furthermore, a post hoc test was conducted to compare paired time data. The repeated measures analysis was also exercised after removing the effect of the pre-test scores to compare the post-test scores in terms of individual variables. A reliability coefficient of 0.95 was obtained in the performed tests.

Results

The mean \pm SD age of the mothers (n=27) in the PSG sessions was 38.00 \pm 5.50 years. The majority of the mothers (88.90%) were married and had primary education (37.00%). They were mostly housewives (88.90%) and had (55.60%) a family income less than enough. The mean \pm SD age and the range of children undergoing HD were 12.70 \pm 2.60 years and 7-17 years, respectively. The mean \pm SD duration of CKD in children was 76.30 \pm 61.00 months. Moreover, the HD duration and the age of underlying disease diagnosis were estimated at 2.50 \pm 2.80 years and 55.40 \pm 59.80 months, respectively. The bulk of children receiving HD was male (59.30%), students (59.30%), and enrolled in the fifth grade (19.00%), with the underlying condition of the neurogenic bladder (29.09%).

The mean \pm SD of the total score of happiness in mothers measured three times before the intervention was estimated at 33.00 \pm 9.50, and the total score of happiness one, two, and three weeks at the post-intervention stage were estimated at 56.10 \pm 7.10, 54.40 \pm 7.00, 51.00 \pm 5.50, respectively. Based on the Friedman test results, the difference between the intervention stages in terms of happiness was significant (P<0.001). The results of Dunn's post hoc test similarly showed a significant difference between the total score of happiness before and after the intervention (Table 1). Based on the test results, no significant difference was observed in mothers' happiness two weeks after the intervention and one week after it (P=0.391), and three weeks after the intervention and two weeks after it (P=0.122).

The mean \pm SD of total life orientation score was estimated at 11.70 \pm 3.20 in mothers at the pre-intervention stage and was estimated at 16.40 \pm 1.70, 15.10 \pm 2.70, 15.50 \pm 2.20 one, two, and three weeks after the intervention, respectively. According to the results of repeated measures analysis, the

Table 1. Mean \pm SD of the total score of happiness in mothers with children undergoing HD before and after intervention

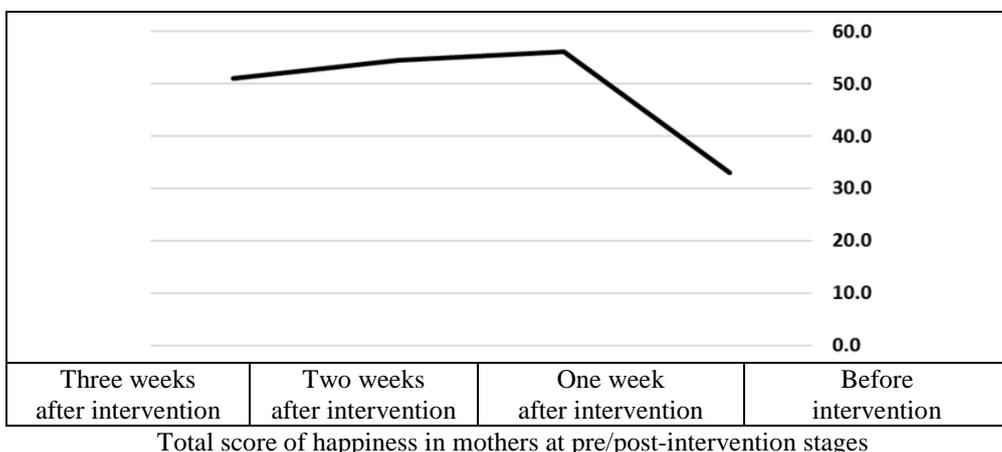
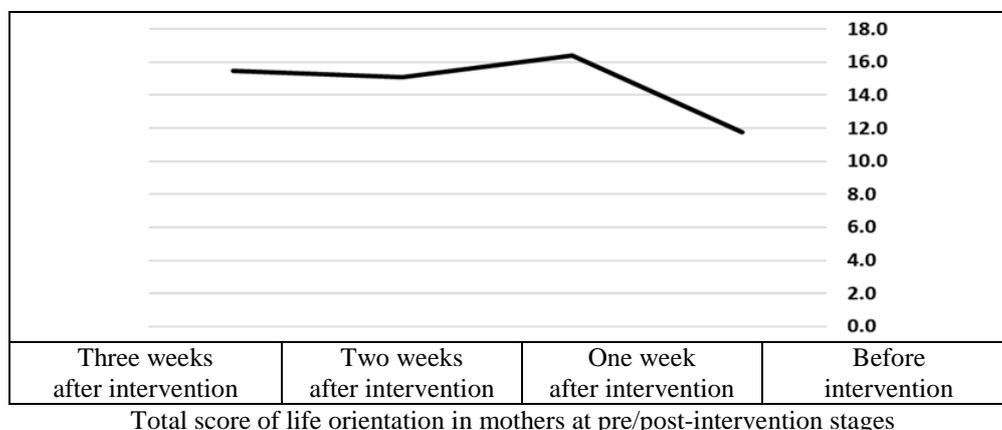
Total score of happiness	Mean \pm SD	Comparison with pre-intervention stage	Comparison with after one-week intervention	Comparison with after two-week intervention
Before intervention	33.0 \pm 09.50			
One week after intervention	56.10 \pm 7.10	P<0.001		
Two weeks after intervention	54.40 \pm 7.00	P<0.001	P=0.391	
Three weeks after intervention	51.00 \pm 5.50	P=0.002	P<0.001	P=0.122
Within-group test results between intervention stages	Ch-square=67.30 Df=3 P<0.001 Friedman test			

Table 2. Mean±SD of the total score of life orientation in mothers with children undergoing HD before and after intervention

Total score of life orientation	Mean±SD	Comparison with pre-intervention stage	Comparison with after one-week intervention	Comparison with after two-week intervention
Before intervention	11.70±3.20			
One week after intervention	16.40±1.70	P<0.001		
Two weeks after intervention	15.10±2.70	P=0.002	P=0.301	
Three weeks after intervention	15.50±2.20	P<0.001	P=0.018	P=1.000
Within-group test results between intervention stages	F-statistic=21.20 Df=2.30, 59.10 P<0.001 Repeated measures analysis			

difference between the intervention stages was also significant in terms of happiness score (P<0.001). The Bonferroni correction test results showed a significant difference between the total scores of life orientation before and after the intervention stages (Table 2). Based on Bonferroni correction test results, the difference between two weeks after the intervention and one week after it (P=0.301), and three weeks after the intervention and two weeks after it (P=1.000) were not significant.

Furthermore, the demographic characteristics, such as maternal age, level of education, marital status, and family income level had no impact on mothers' feeling of happiness after attending PSG sessions (P>0.05).



Discussion

The PSG increased the feeling of happiness and positive life orientation in mothers of children undergoing HD in this study. The presence of mothers in PSGs could lead to improved quality of life and increased feelings of happiness. A sense of usefulness in a community was created in mothers after they shared their experiences of caring for a child undergoing HD during PSG sessions. Therefore, these sessions positively affected mothers' self-confidence and boosted their ability to better deal with problems through the adoption of the most efficient solutions. The study results were consistent with the results of a survey conducted on 99 women with breast cancer reported by Sharif et al. (2012) demonstrating that peer-led education could improve quality of life in females after mastectomy from before the intervention until two months after participation in PSG sessions (29). Based on the results of a study conducted by Ghaljaei et al. in 2020 the implementation of a PSG program for mothers of children with acute lymphoblastic leukemia could boost the quality of children's lives, which was in line with the results of the present study (30). Similarly, the study performed by Jafarzadeh et al. (2015) showed that participation in PSG sessions could improve the level of physical functioning in patients undergoing HD (31). These results were also confirmed in the studies conducted by Uccelli (2004) in Italy and Naroie (2012) in Iran (32, 33). It is worth mentioning that the influence of PSGs had been also investigated on several variables, such as quality of life, illness perception, physical health, stress, and depression in patients with multiple sclerosis (MS). In some of these studies, PSGs significantly and positively relieved patients' stress and depression and enhanced physical health in patients (34-36). However, in some other studies, despite a positive effect on depression, PSGs had no effect on the quality of life, perception of illness, and physical health (32, 37).

The results of the present study also indicated that participation in PSGs could encourage positive life orientation in mothers. The study performed by Babaei-Kafaki et al. (2018) examined the effect of applied behavior analysis and pivotal response education on life orientation, positive and unconditional acceptance, and social anxiety in mothers of children suffering from autism and showed that training did not have a significant impact on maternal life orientation (38). In the present study, mothers' problems and the need for support were reflected in each PSG session. Therefore, it was likely that mothers' self-confidence, happiness, and hope were raised and maintained after their needs were met and this, in turn, led to the promotion of mental health and quality of life in these mothers. According to the previous studies, positive life orientation was associated with mental health and quality of life (19). Failure to conduct a similar study in this field means that researchers have not paid attention to this important health problem; therefore, future studies are suggested to examine the ways that positively affect the life orientation of mothers with children undergoing HD.

Consistent with the results of the present study, the study conducted by Jadid Milani et al. (2014) showed that the mean scores of illness perception in patients with MS increased after participation in PSGs; however, this increase was not statistically significant (37). In contrast, based on a study conducted by Biglar et al. (2018) PSG could increase the use of problem-focused coping strategies in women with MS (39). Moreover, the effectiveness of PSG on stress and depression in patients with MS has been established in other studies (37). Participation in PSGs helps people feel comfortable and have a sense of belonging to a group with those who have similar problems as well as various successful and unsuccessful experiences. Positive experiences of members and sharing them with others can accordingly create an opportunity for mothers unlike those gained through the training and lead to a greater sense of satisfaction and higher levels of happiness.

It is worth mentioning that, after the intervention, follow-up tests were performed three times with one-week intervals which increased the level of happiness and life orientation optimally compared to that before participation in the PSG sessions. However, the level of happiness and life orientation declined over time, which may be due to the coincidence of the coronavirus disease 2019 (COVID-19) pandemic and completion of the questionnaires at the post-intervention stage. This decline can be easily justified since these mothers were worried about their children all their life long. Although the virus outbreak created a fear regarding longevity and quality of life in everyone, this fear was mingled with anxiety and depression in mothers who spent three days a week at the hospital and were forced to leave quarantine. In addition, this downward trend was more evident in some dimensions of happiness, including life satisfaction which can be representative of one's living conditions, affected by many factors, such as social interactions and levels of income (40). The COVID-19 pandemic

affected the economy; therefore, families with poor financial status before this pandemic suffered more due to the high costs of medication and special diets. On the other hand, with the onset of quarantine, mothers were reluctant to attend public gatherings because they were increasingly concerned about their children's longevity and health status. It should be noted that due to the limited research population this study was conducted as a single-group study, and it was done longitudinally to investigate the effect of time passing on the variables of happiness and life orientation. Therefore, the study variables were examined three times before and three times after the intervention with a one-week interval.

Regarding the limitations of the present study, one can refer to the lack of a control group. It is recommended that future studies should be conducted with a control group. It can be argued that changing mothers' attitudes towards their problems, achieving solutions to tackle these problems, finding people like themselves, reducing the sense of being ignored by the medical staff, and getting support from their peers are among the things that play a role in strengthening and continuing the rising trend in happiness and positive life orientation.

Implications for Practice

Based on the results of the present study, PSGs can increase levels of happiness and positive life orientation in mothers of children undergoing HD. Therefore, nurses and other health care providers should adopt an appropriate method to boost happiness and positive life orientation in mothers. Accordingly, they are recommended to use PSGs, as a cost and energy-effective program to reduce the stress and anxiety level of mothers which in turn affects the process of care and treatment in children. It is suggested that further studies be conducted with larger sample size.

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Conflicts of Interest

The authors declare that they have no conflict of interest regarding the publication of the present study.

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