The Effect of Psycho-education Program on the Affiliate Stigma in the Caregivers of Clients with Bipolar Disorder

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Abstract

Background

Mental health experts believe that stigma is the most challenging issue for caregivers of clients with psychiatric disorders. Therefore, monitoring and assessing the affiliate stigma in the caregivers is necessary. This study is aimed to investigate the effect of psycho-education program on the affiliate stigma in the caregivers of clients with bipolar disorder.

Materials and Methods

This quasi-experimental study with both intervention and control groups was conducted Ghods Hospital in Sanandaj (n = 64). Psycho-education program was performed for the intervention group for 4 weeks (one session per week for 60 to 90 minutes). Data was collected using the Affiliate Stigma Scale before and after intervention (with 4 weeks gap).

Results

The results of study showed that there was no difference between intervention and control groups in terms of the distribution of contextual variables. The mean and the standard deviation of the affiliate stigma before the conducting the psycho-education program in the control group was (73 ± 14.72), and in the intervention group was (69.63 ± 14.66). After the intervention and administrating the post-test, the results in the control group was (74 ± 14.21) and in the intervention group was (35.06 ± 8.31) which showed a statistically significant difference (P < 0.001).

Conclusions

According to the obtained results in this study and based on the other studies' result, the routine care is not able to meet the educational needs of the caregivers of clients with bipolar disorder. Psycho-education is effective on the reduction of the affiliate stigma of caregivers of clients with bipolar disorder and it can be considered as one of the stigmatization strategies.

Introduction

Bipolar disorder is one of the most common psychiatric disorders (1, 2) with a prevalence of about 3% in the general population. It is also the sixth leading cause of disability worldwide (2). This disease has a significant impact on the quality of life and various aspects of social and individual functioning (1 and 3), and is considered as an important health problem (4).
Mental disorder is a stressful issue for the patient and the family, because the disease does not only make the patient anxious, but also causes severe distress for the family (5, 6). According to the studies, stigma is one of the most common and challenging psychological pressures and the care burden that the caregivers of clients with mental/psychiatric disorders face (5, 7). The stigma can be internalized in the labeled person by the society through a process known as the affiliate stigma (8). Affiliate stigma occurs when a person cognitively and emotionally accepts the common negative assumptions and stereotypes in the society, believes in them, and applies them to him/her (9). Mental health experts believe that the most important barrier for treating clients with psychiatric disorders is mental stigma, which also affects health care providers, clients, and caregivers (10). Moreover, the family members of these patients, who play a key role in caregiving of them, limit their social relationships and become isolated due to concerns about this affiliate stigma (11).

Studies show that there is a direct relationship between the affiliate stigma and the increase of care burden in caregivers of clients with psychiatric disorders (12, 13). In addition, the psychological burden imposed by stigma reduces the quality of care provided by the caregivers, and endangers the physical and mental health of the caregivers (10). Studies show that there is a direct relationship between the affiliate stigma and the signs and symptoms of depression and suicidal ideation in the caregivers (12, 14).

According to the World Health Organization, there are at least 450 million people with mental disorders, and it is estimated that 30% of these patients can be appropriately treated with the effective interventions, including destigmatization of their caregivers and return to the society (15). Therefore, based on what the health experts suggest, one of the ways to treat the clients with bipolar disorder is to increase the awareness and knowledge of their caregivers (16). In addition, since family-centered care is one of the main concepts of nursing, and nurses are in close interaction with the families of clients, thus, they will be able to assess the level of knowledge and awareness of the caregivers, and provide them with the necessary educational tools (17). Studies show that in addition to drug therapy, appropriate interventions for caregivers of clients with psychiatric disorders such as destigmatization training programs will play an effective role for the clients (11). In this regard, psycho-education can be helpful to increase knowledge and destigmatization in the family environment (10).

Psycho-education refers to a set of complementary therapies that are used with a systematic and structured approach in order to raise awareness and change the attitude of families about the nature of the disease, find a way to treat it, and increase communication skills and problem solving skills (10). Psycho-education is an effective way to help the families of clients to manages the problems caused by family disturbance, and to develop the necessary skills to support the rehabilitation of the patient (18). Therefore, the aim of this study is to investigate the effect of psycho-education on the affiliate stigma in the caregivers of clients with bipolar disorder.

**Materials And Methods**
The present study is a quasi-experimental study with control and intervention groups. The population consisted of all family caregivers of clients with bipolar disorder who referred to Ghods Psychiatric Hospital in Sanandaj in 2019-2020. The inclusion criteria for the caregivers included 18 to 65 years old, spending the most caring time for the client, lack of mental retardation, lack of drug and alcohol consumption, lack of vision and hearing impairment. The exclusion criteria were withdrawal from further research and non-participation in at least two sessions of the training program.

The sample size was measured according to the study of Shamsaei et al. (19), with the reliability level of 95% and statistical power of 80% using the following equation, and taking into account the 10% drop-out in the samples size, 32 people was considered in each group (total sample size was 64).

\[ n = \frac{(Z_{1-\alpha/2} + Z_{1-\beta})^2 \sigma^2}{(\mu_1 - \mu_2)^2} \]

After receiving the code of ethics (IR.MUK.REC 1398.151), obtaining the executive license and coordination with the officials of Ghods Psychiatric Hospital, the sampling procedure was performed on all wards of the hospital and the outpatient clinic based on inclusion criteria. In order to prevent any major intervening variable, the sampling was performed first for the control group and then for the intervention group. After recruitment of subjects of the control group as well as the intervention group, psycho-education presented to the intervention group.

Because the selection of the control and intervention groups was done simultaneously from one medical center, first the control group and then the intervention group were examined, so that the data collection would not be biased. Both groups completed the demographic questionnaires and the Affliate Stigma Scale in two intervals. The pre-test was administered at the beginning of the study and the post-test was administered four weeks after the pre-test.

Intervention

The psycho-education program for the intervention group was performed for 4 weeks, one session per week for 60 to 90 minutes. The training sessions were held in groups of 4 to 5 participants, several times a week, according to the request and conditions of the caregiver through group discussion. At the end of the psycho-education program, the post-test was administered for the intervention group.

The implementation of the psycho-education program, the number of sessions, and the general framework of the educational content were as follows:

The first session started with the introduction of the individuals and the researcher stated the purpose of the study. Then the researcher discussed about the disease and its treatments, and the way of caring the ill member.
The second session started by reviewing the previous session. Then, continuing by the explaining of the concept of stigma and the strategies to cope with it for the caregivers. Also the participants shared their experiences of being labeled by those around them because of their client's disorder and mentioned how they coped with the situation.

At the beginning of the third session the concept of stigma and its coping strategies reviewed. Then, the session continued with a discussion of life skills and how they can use that skills in their life in order to live better.

The fourth session was a continuation of practice on life skills. Then the educational content of previous session reviewed. At the end, the whole necessary educational content was presented to the participants as booklet and pamphlet. Table 1 shows the headings of the educational content for each session.

Instruments

The demographic questionnaire: This questionnaire consist of information about the caregivers, including age, gender, marital status, education, job, economic status, the number of family members, caregiver-client relationship, the history of patient's disease, the family history of the disease and the number of times of the previous hospitalization.

Affiliate stigma scale: This scale designed by Shamsaei et al. in 2016 has 30 items on 5-point Likert scale (always (4), most of the time (3), sometimes (2), rarely (1), and never (0)). The affiliate stigma score was ranged between 0 and 120. A score between (0-30) indicates no stigma, (30-60) indicates mild stigma, (60-90) indicates moderate stigma, and (90-120) indicates high stigma. The validity and reliability of the Affiliate Stigma Scale designed by Shamsaei et al. in 2016 were determined and confirmed through content validity. The validity of the questionnaire was 0.8 and its reliability was determined through Cronbach's alpha coefficient at 0.94 (19).

To ensure the reliability of the questionnaire, it was administered to fifteen caregivers of clients who were not part of the research community. They had similar characteristics to this population. Employing the internal consistency method, the calculated Cronbach's alpha coefficient for this questionnaire was 0.85, which indicates the optimal reliability for this tool. The data were analyzed through SPSS-22 using descriptive statistics and inferential statistics.

Results

Demographic characteristics: The total sample included 64 caregivers of clients with bipolar disorder; most of them were women (54.7%), and married (73.4%). The mean age of the caregivers was 41.48 ± 10.16 years, the most of them were spouses of the clients (29.7%), and were self-employed (28.1%), and had moderate economic status (64.1%). In terms of education the most of caregivers had diploma degree (31.3%). The majority of the participants did not have a family history of the disease (62.5%). Mean
duration of the disease was 4.61 ± 2.97 years with the mean of 4.67 ± 3.23 times of previous hospitalizations (Table 2).

Affiliate stigma: According to Table 3, the mean scores of affiliate stigma was 73 ± 14.72 in control group and was 69.63 ± 14.66 in intervention group, respectively. No significant difference was found between the two groups at baseline (P = 0.36), and all of them had moderate level of affiliate stigma. After 4 weeks, the score of the post-test of affiliate stigma in the control group was 74 ± 14.21, and in the intervention group was 35.06 ± 8.31, which showed a statistically significant difference (P< 0.001).

The comparison of the affiliate stigma scores in the pre-test and post-test stages, in each group separately, shows that the affiliate stigma scores in the pre-test and post-test stages in the control group were not statistically significant (P = 0.17), while, there was a statistically significant difference in the post-test stage compared to the pre-test in the intervention group (P <0.001) and the level of affiliate stigma was decreased (Table 4).

**Discussion**

The literature indicates that one of the problems and challenges of the caregivers in life with a psychiatrically disordered patient is stigma (23 – 20), and affiliate stigma can lead to destructive effects on caregivers, and the consequences of it intensify when the caregivers endorse or accept the negative attitude they perceive (shi 2018). The results of this study in the pre-test stage in both control and intervention groups that showed a moderate affiliate stigma in the caregivers, confirms this point.

Shahveysi et al. (2007), Ahmed and Ghaith (2018), Östman and Kjellin (2002), and Yin et al. (2014), stated that the lack of knowledge and awareness about mental illness as well as the stigma imposed by the society on caregivers leads to a negative attitude towards mental illness, feeling ashamed of having such a patient in the family, trying to hide and eventually ignoring the ill member (21, 24, 25 and 26).

Considering that the stigma related to mental illness is a global health problem (27), and destigmatization in psychiatric disorders is one of the main goals of WHO programs (28), therefore this study was conducted to investigate the effect of psycho-education program on the affiliate stigma of the caregivers of clients with bipolar disorder. For this purpose, the educational session were arranged to conduct a psycho-education program to the caregivers and the results showed the effectiveness of psycho-education program in decreasing the level of affiliate stigma of the caregivers of clients with bipolar disorder.

The findings of studies of Uchino et al. (2012), Cuhadar and Cam (2014), Shamsaei et al. (2018) and Vagheie et al. (2015) showed that the mean stigma score, after the psycho-education program, for the caregivers of clients with psychiatric disorders had a significant reduction (19, 29, 30 and 31). Findings of Cuhadar and Cam (2014) and Cook et al. (2014) also showed that the rate of the clients' concealment by the caregivers was significantly reduced after the intervention (31, 32), and the amount of social interactions in the caregivers was increased (30–32). Findings of Shamsaei et al. (2018) also showed
that, after the psycho-education program, the parents of the clients did not blame themselves for their child's mental illness (19). Bernhard et al. (2006) and Young et al. (2014) also noted that the psycho-education programs, which improved the level of knowledge and attitudes of caregivers about mental illness led to a positive attitude in caregivers towards the clients and their illness and has a significant impact on the recovery of clients with psychiatric disorders (33, 34).

Conclusion

The present study showed that stigma is one of the problems of caregivers of clients with bipolar disorder. Due to the key role of the caregivers in the caring process, the follow-up investigation, and the constant treatment of clients, it should be noted that the lack of sufficient knowledge and awareness about the concept of stigma may reduce the quality of care provided by the caregivers and endanger their physical and mental health. Therefore, monitoring and examining the perceived stigma in caregivers seems to be vital and necessary.

Based on the findings of the present study, it can be said that one of the destigmatization strategies in the caregivers of clients with bipolar disorder is conducting the psycho-education program in parallel with the others therapies; therefore, it is suggested that more attention should be paid to this educational intervention.

One of the limitations of the present study is the short duration of the psycho-education program, because it seems that the long-term training is more effective in improving the quality of the intervention. Another limitation was the lack of follow-up investigation about the effectiveness of psycho-education in the periods of 1, 3, 6, and 12 months after performing the psycho-education program. Despite the above limitations, the findings of the present study provided significant empirical evidence on the effectiveness of psycho-education program on the affiliate stigma of the caregivers of clients with bipolar disorder.

Declarations

Acknowledgment

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No part of the work has been published before. In addition, this project has been confirmed by the Committee on Ethics of (Kurdistan University of Medical Science). The authors would like to advise that all authors listed have contributed to the work. All authors have agreed to submit the manuscript to the (Annals of General Psychiatry). In addition, all the authors are responsible for the content of the manuscript.
References

1. Michalak E, Livingston J, Hole R, Suto M, Hale S, Haddock C. It’s something that I manage but it is not who I am: Reflections on internalized stigma in individuals with bipolar disorder. Chronic Illn. 2011; 7:209-24.

2. Gania AM, Kaur H, Grover S, Khan AW, Suhaff A, Baidya K, Damathia P. Caregiver burden in the families of the patients suffering from bipolar affective disorder. British Journal of Medical Practitioners. 2019;12(1):a006.

3. Miklowitz D, Chung B. Family-focused therapy for bipolar disorder: reflections on 30 years of research. Fam Proc. 2016; 55:483-99

4. Cardoso TA, Farias CdA, Mondin T, Silva GD, Souza LdM, Silva Rd, et al. Brief psychoeducation for bipolar disorder: Impact on quality of life in young adults in a 7-month follow-up of a randomized controlled trial. Psychiatry research. 2014;220(3):896-902.

5. Shamsaei F, Cheraghi F, Esmaeilli R. The family challenge of caring for the chronically mentally ill: a phenomenological study, Iran. Behav Sci. 2015;9(3):1898.

6. Ergetie T, Yohanes Z, Asrat B, Demeke W, Abate A, Tareke M. Perceived stigma among non-professional caregivers of people with severe mental illness, Bahir Dar, northwest Ethiopia. Ann Gen Psychiatry. 2018; 17:42.

7. Corrigan P, Morris S, Michaels P, Rafacz J, Rüsch N. Challenging the public stigma of mental illness: a meta-analysis of outcome studies. Psychiatr Serv. 2012;63(10):963-73.

8. Ahmedani B. Mental Health Stigma: Society, Individuals, and the Profession. Journal of Social Work Values and Ethics. 2011;8(2):23-6

9. Drapalski A, Lucksted A, Perrin P, Aakre J, Brown C, DeForge B, et al. A model of internalized stigma and its effects on people with mental illness. Psychiatric Services. 2013;64(3):264-9

10. Girma E, Moller-Leimkuhler A, Dehning S, Mueller N, Tesfaye M, Froeschl G. Self-stigma among caregivers of people with mental illness: Toward caregivers’ empowerment. J Multidiscip Healthc. 2014; 7:37-43.

11. Chang C, Yen C, Jang F, Su J, Lin C. Comparing affiliate stigma between family caregivers of people with different severe mental illness in Taiwan. Journal of Nervous and Mental Disease. 2017; 205:542-9.

12. Mak W, Cheung R. Psychological distress and subjective burden of caregivers of people with mental illness: the role of affiliate stigma and face concern. Community Ment Health J. 2012; 48:270-274.

13. Werner P, Mittelman M, Goldstein D, Heinik J. Family stigma and caregiver burden in Alzheimer’s disease. Gerontologist. 2012; 52:89-97.

14. Chan K, Mak W. The mediating role of self-stigma and unmet needs on the recovery of people with schizophrenia living in the community. Quality of Life Research. 2014; 23:2559-68.

15. Tawiah P, Adongo P, Aikins M. Mental health-related stigma and discrimination in Ghana: Experience of patients and their caregivers. Ghana Med J. 2015;49(10):30-6
16. Sajedianfard F, Salehi S, Zarshenas L. Comparison of the effect of postdischarge education with multimedia and group discussion methods on family caregiving for patients with bipolar disorder in Shiraz Psychiatric Hospitals. J Family Med Prim Care [serial online] 2019 [cited 2020 Mar 31]; 8:3840-4.

17. Modanloo S, Rohani C, Farahani Shirin Abadi A, Pourhossein gholi A. Assessment of family function among parents of children with cancer. Iranian Journal of Nursing Research. 2015;10(1):56-65. Eng

18. Corsentino E, Molinari V, Gum A, Roscoe L. Family caregivers’ future planning for younger and older adults with serious mental illness (SMI). Journal of Applied Gerontology. 2009; 29:460-65

19. Shamsaei F, Nazari F, Sadeghian E. The effect of training interventions of stigma associated with mental illness on family caregivers: a quasi-experimental study. Annals of general psychiatry. 2018 Dec;17(1):1-5

20. Pittman JO, Noh S, Coleman D. Evaluating the effectiveness of a consumer delivered anti-stigma program: Replication with graduate-level helping professionals. Psychiatric Rehabilitation Journal. 2010;33(3):236.

21. Yin Y, Zhang W, Hu Z, Jia F, Li Y, Xu H, Zhao S, Guo J, Tian D, Qu Z. Experiences of stigma and discrimination among caregivers of persons with schizophrenia in China: a field survey. PLoS One. 2014;9(9)

22. Kenneth A, Korley D, Kwaku Poku A, Seth O. Experiences of caregivers of people living with serious mental disorders. Glob Health Action. 2015; 8:1-9.

23. Steel Z, Marnane C, Irarpour C, Chey T, Jackson JW, Patel V, Silove D. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. International journal of epidemiology. 2014 Apr 1;43(2):476-93.

24. Shahveysi B, Shoja-Shefti S, Fadaei F, Dolatshahi B. Comparison of Mental Illness Stigmatization in Families of Schizophrenic and Major Depressive Disorder Patients without Psychotic Features. Archives of Rehabilitation. 2007 Jun 15; 8:21-7.

25. Östman M, Kjellin L. Stigma by association: psychological factors in relatives of people with mental illness. The British Journal of Psychiatry. 2002 Dec;181(6):494-8.

26. Ahmed HA, Ghaith RF. Effect of psycho-educational program on families’ perception of burden and attitudes toward mental illness among caregivers of patients with schizophrenia. Egyptian Nursing Journal. 2018 Sep 1;15(3):331

27. Karidi MV, Vassilopoulou D, Savvidou E, Vitoratou S, Maillis A, Rabavilas A, Stefanis CN. Bipolar disorder and self-stigma: A comparison with schizophrenia. Journal of affective disorders. 2015 Sep 15; 184:209-15.

28. Büchter RB, Messer M. Interventions for reducing self-stigma in people with mental illnesses: a systematic review of randomized controlled trials. GMS German Medical Science. 2017;15

29. Vaghee S, Salarhaji A, Asgharipour N, Chamanzari H. Effects of psychoeducation on stigma in family caregivers of patients with schizophrenia: A clinical trial. Evidence Based Care. 2015;5(3):63-76
30. UCHINO T, MAEDA M, UCHIMURA N. Psychoeducation may reduce self-stigma of people with schizophrenia and schizoaffective disorder. The Kurume medical journal. 2012 Sep 30;59(1.2):25-31.

31. Çuhadar D, Çam MO. Effectiveness of psychoeducation in reducing internalized stigmatization in patients with bipolar disorder. Archives of psychiatric nursing. 2014 Feb 1;28(1):62-6.

32. Cook JE, Purdie-Vaughns V, Meyer IH, Busch JT. Intervening within and across levels: A multilevel approach to stigma and public health. Social science & medicine. 2014 Feb 1; 103:101-9

33. Bernhard B, Schaub A, Kümmler P, Dittmann S, Severus E, Seemüller F, Born C, Forsthoff A, Licht RW, Grunze H. Impact of cognitive-psychoeducational interventions in bipolar patients and their relatives. European psychiatry. 2006 Mar 1;21(2):81-6

34. Yang LH, Lai GY, Tu M, Luo M, Wonpat-Borja A, Jackson VW, Lewis-Fernández R, Dixon L. A brief anti-stigma intervention for Chinese immigrant caregivers of individuals with psychosis: adaptation and initial findings. Transcultural psychiatry. 2014 Apr;51(2):139-57

35. Kiropoulos LA, Griffiths KM, Blashki G. Effects of a multilingual information website intervention on the levels of depression literacy and depression-related stigma in Greek-born and Italian-born immigrants living in Australia: a randomized controlled trial. Journal of medical Internet research. 2011;13(2): e34

Tables

Table 1: psychoeducation program provided for 4 weeks

| Training Sessions | Educational Content |
|-------------------|---------------------|
| 1                 | • Introduction      |
|                   | • Bipolar disorder, prevalence, sign and symptoms, causes, and treatments |
|                   | • How to take care of the client |
|                   | • Introducing famous and successful people with bipolar disorder |
| 2                 | • Explaining the concept of affiliate stigma |
|                   | • Strategies to cope with stigma |
| 3                 | • Life skills |
| 4                 | • Review and summarize the presented content |

Table 2: Demographic characteristics of the samples
| Demographic Features of Caregivers | Control Group | Intervention Group | Total | P-value |
|-----------------------------------|---------------|--------------------|-------|---------|
| 1. Age by year (mean ± SD)        | 40.91±10.88   | 42.06±9.53         | 41.48±10.16 | 0.65    |
| 2. Gender                         |               |                    |       |         |
| Male                              | 14 (43.8%)    | 15 (46.9%)         | 29 (45.3%) | 0.80    |
| Female                            | 18 (56.2%)    | 17 (53.1%)         | 35 (54.7%) |         |
| 3. Marital Status                 |               |                    |       |         |
| Single                            | 9 (28.1%)     | 6 (18.8%)          | 15 (23.4%) | 0.77    |
| Married                           | 22 (68.8%)    | 25 (78.1%)         | 47 (73.4%) |         |
| Widow                             | 1 (3.1%)      | 1 (3.1%)           | 2 (3.2%)   |         |
| 4. Education                      |               |                    |       |         |
| Illiterate                        | 3 (9.4%)      | 2 (6.3%)           | 5 (7.8%)   | 0.58    |
| Primary School                    | 7 (21.9%)     | 4 (12.5%)          | 11 (17.2%) |         |
| Junior High School                | 5 (15.6%)     | 10 (31.3%)         | 15 (23.4%) |         |
| Diploma                           | 9 (28.1%)     | 11 (34.4%)         | 20 (31.3%) |         |
| Bachelor and more                 | 8 (25%)       | 5 (15.6%)          | 13 (20.3%) |         |
| 5. Job                            |               |                    |       |         |
| Housekeeper                       | 8 (25%)       | 8 (25%)            | 16 (25%)   | 0.56    |
| Self-employment                   | 10 (31.3%)    | 8 (25%)            | 18 (28.1%) |         |
| Employee                          | 2 (6.3%)      | 6 (18.86%)         | 8 (12.5%)  |         |
| Worker                            | 5 (15.6%)     | 7 (21.9%)          | 12 (18.8%) |         |
| Unemployment                      | 5 (15.6%)     | 2 (6.3%)           | 7 (10.9%)  |         |
| Retired                           | 2 (6.3%)      | 1 (3.1%)           | 3 (4.7%)   |         |
| 6. Economic status                |               |                    |       |         |
| Week                              | 8 (25%)       | 7 (21.9%)          | 15 (23.4%) | 0.99    |
| Medium                            | 20 (62.5%)    | 21 (655.6%)        | 41 (64.1%) |         |
| Good                              | 4 (12.5%)     | 4 (12.5%)          | 8 (12.5%)  |         |
| 7. Number of the family members   | 2.72±0.96     | 3.09±0.69          | 2.91±0.85  | 0.08    |
| 8. Relationship of the caregiver with the client |  |  | |   |
| Father                            | 3 (9.4%)      | 4 (12.5%)          | 7 (10.9%)  | 0.24    |
| Mother                            | 7 (21.9%)     | 2 (6.3%)           | 9 (14.1%)  |         |
| Sister                            | 2 (6.3%)      | 7 (21.9%)          | 9 (14.1%)  |         |
| Brother                           | 2 (6.3%)      | 4 (12.5%)          | 6 (9.4%)   |         |
| Affiliates         | Group     | Mean ± standard deviation | Value of test statistics | Degrees of freedom | p-value |
|-------------------|-----------|---------------------------|--------------------------|--------------------|---------|
| Spouse            | Control   | 73±14.72                  | 0.92                     | 62                 | 0.36    |
|                   | Intervention | 69.63±14.66              |                          |                    |         |
| Child             | Control   | 74±14.21                  | 13.38                    | 50                 | <0.001  |
|                   | Intervention | 35.06±8.31              |                          |                    |         |

Table 3: Comparison of affiliate stigma scores before and after the intervention in the two groups

| p-value   | Degree of freedom | Test statistic value | Standard deviation | Difference mean | Group |
|-----------|-------------------|----------------------|--------------------|-----------------|-------|
| 0.17      | 31                | 1.40                 | 4.06               | 1               | Control |
| <0.001    | 31                | 18.24                | 10.72              | 34.56           | Intervention |

Table 4: Comparison of the mean affiliate stigma scores of the pre-test and post-test in the control and experimental groups