

The Effectiveness of Viktor Frankl's Logo therapy on the Mental Health of Pediatric Patients with Cystic Fibrosis

Sepideh Nematollah¹, Maryam Zadahmad², Mohammad Reza Javadani³, Mahin Ghaheri⁴,
*Javad Seyed Jafari⁵, Sara Mousavi⁶

¹Master of Clinical Psychology, Research Sciences, Tehran, Iran.

²Master of Clinical Psychology, Islamic Azad University, Tehran Research Sciences Branch, Tehran, Iran.

³General Psychology Azad University of Tehran Center,

⁴Master of Clinical Master of Sari Free University, Sari, Iran.

⁵PhD candidate in Psychology, Allameh Tabataba'i University, Tehran, Iran.

⁶Instructor, department of Psychology, Payame Noor University, Tehran, Iran.

Abstract

Background

Individuals with cystic fibrosis (CF) are at high risk of clinically significant anxiety, which can be related to lower treatment adherence and poorer health outcomes. So, it is associated with poor psychosocial and quality of life outcomes. The aim of this study was to assess the effectiveness of Viktor Frankl's Logo therapy on the mental health of pediatric patients with CF.

Materials and Methods: This research was a quasi-experimental based on pretest and posttest with a control group. The population under study includes pediatric patients with CF referring to Emam Khomeini hospital, Tehran, Iran, during 2018-19. The range of the participants' age was between 12 and 16 years. The sample size was selected based on the convenience sampling method. The participants divided randomly into two groups: experimental, n=11 and control n=11. Participants in both experimental and control group completed questionnaires on The General Health Questionnaire (GHQ) before and after training. Treatment process for 45 minutes a week was applied among experimental group.

Results: The mean and standard deviation of the patient's age in this study were 15.83 ± 0.87 years old. The results of this research showed that the score of mental health in the experimental group (25 ± 6.8) increased after the intervention training ($p < 0.01$), compared the control group.

Conclusion

Based on the results of this study, the effectiveness of logo therapy in fostering mental health among pediatric cystic fibrosis patients with a mean age of 13-18 years was approved after nine sessions, 45 minutes once a week. According to the results, logo therapy helped children with cystic fibrosis improve their mental health.

Key Words: Cystic fibrosis, Logo-therapy, Mental health, Pediatric patients.

*Please cite this article as: Nematollah S, Zadahmad M, Javadani MR, Ghaheri M, Seyed Jafari J, Mousavi S. The Effectiveness of Viktor Frankl's Logo therapy on the Mental Health of Pediatric Patients with Cystic Fibrosis. Int J Pediatr 2021; 9(6): 13803-810. DOI: **10.22038/IJP.2021.56871.4455**

*Corresponding Author:

Javad Seyed Jafari, PhD candidate in Psychology, Allameh Tabataba'i University, Tehran, Iran.

Email: javad_jafari90@yahoo.com

Received date: Dec. 17, 2020; Accepted date: Mar. 22, 2021

1- INTRODUCTION

A chronic illness is one that lasts for an extended period of time, does not normally go away under its own, and is only occasionally completely cured (1). Asthma, diabetes, cystic fibrosis, musculoskeletal and inflammatory diseases, and gastroenterological disorders are also included. If survival rates improve, the number of children dealing with chronic illnesses rises, necessitating a greater understanding of the family impacts of caring for a child with a chronic illness (1, 2). Children and young adults who deal with a chronic medical condition face a variety of ongoing stressors that may raise their risk of mental illness (3).

These children may, for instance, have to deal with conditions that cause physical and lifestyle restrictions, such as limited activity in school and sports, as well as medical side effects and the influence of integrating continued treatment into everyday lives. These factors can restrict creativity, make social interactions difficult, and raise questions about the future (4). Comorbidities have a negative effect on both lifespan wellbeing and chronic disease health care costs (5). As the majority of mental health disorders present in the first two decades of life, and are often experienced across the lifespan, attention to behavioral health, as well as early detection and intervention, are viewed as increasingly important for lifespan health (5, 6). This is especially important for children with CF, who frequently survive into adulthood (6).

Cystic fibrosis is a difficult disease to live with. People with CF may be concerned about their symptoms, medications, and related costs. CF may make everyday tasks such as going to work or school, socializing with family and friends, and handling finances more difficult for either the person with CF or their family and friends. These stressors may have a detrimental effect on the mental health and

well-being of children with CF over time (7, 8). Effective avoids stress from being intolerable and can shield children with CF from experiencing more severe anxiety or depressive symptoms (9). Depression and anxiety have been shown in studies to have a detrimental impact on CF patients' health effects, including lower BMI, reduced lung function, increased hospital visits, increased child anxiety, and depression, and decreased child quality of life (10). Receiving assistance and care is a healthy and important aspect of coping with the challenges of cystic fibrosis. In the literature, the role of spirituality and hope in pediatric patients with CF has rarely been studied. A variety of scientific developments in recent years, such as lung transplantation and gene therapy, may have given adults with CF more hope (11).

Logo therapy is a treatment for children with cystic fibrosis. This technique is an existential solution that provides a meaningfulness framework to assist patients who are having difficulty finding meaning in their lives (12). The affirmation of unique human potentials is what matters in logo therapy. Having a sense of purpose in life is a significant factor in mental health, and it is linked to a variety of psychological factors (13). People who are helpless, sad, nervous, or lonely, according to Frankl, often lament a lack of sense of purpose in their lives. Nothing ties them to life or gives them meaning. The psychological approach to individuals and their life is known as logo therapy. It covers essential topics and ideas such as the sense of suffering, spiritual void, life and death, liberation, self-and other-responsibility, the quest for meaning, and dealing with meaninglessness. This method forces people to look past their everyday struggles and activities (14). The research shows that therapeutic approaches focused on logo therapy are useful in improving the emotional and physical conditions of chronic illness patients,

particularly pediatric patients with CF (15-16). Patients' self-confidence and desire to cope with problems are expected to improve as they are assisted in strengthening faith and purpose in their lives (16). Overall, it is clear that community treatments, such as logo therapy, are beneficial strategies for mitigating depression in children with cystic fibrosis. However, we think there has limited studies to examine the effectiveness of group therapy (logo therapy) in increasing mental health among pediatric patients with CF.

2- MATERIALS AND METHODS

2-1. Study design and population

This research was a quasi-experimental study based on pretest and posttest with a control group. The population under study includes pediatric patients with cystic fibrosis referring to Pulmonary and Critical Care section in Emam Khomeini hospital, Tehran, Iran, during 2018-19. The sample size was selected based on the convenience sampling method. The experimental group consisted of 11 children with cystic fibrosis, while the control group comprised 11 children with cystic fibrosis without any intervention. A minimum sample of 98 participants with adequate capacity (0.8) to discern a meaningful difference between mean scores was calculated using mean estimates based on normative scores (17), and a hypothesized impact size of 0.2. ($\alpha = 0.05$). It is important to note that depending on the inclusion and exclusion criterion, 22 patients were selected from these trials.

2-6. Inclusion and exclusion criteria

The inclusion criteria include being able to answer the questions, not having a particular mental illness, being under the age of 18 years, and suffering from at least one type of cystic fibrosis. Non-participation in the evaluation, the absent

of more than two days during testing sessions, and the disprovement of any original psychological conditions in correlation with major depressive disorder, and limitation of time were both exclusion factors.

2-2. Methods

At first, participants in both groups before any intervention completed The General Health Questionnaire (GHQ) (18). Both groups were asked to complete a questionnaire after therapy sessions again (9 treatment sessions on the experimental group). The participant's mean age was between 13-18 years old in the year 2018-2019 in Tehran, Iran. Each participant had to fill a conscious consent form in order to participate. To conduct this research, samples were chosen using a convenience method based on entry and exit criteria. In the Helsinki report, ethical principles were observed. It is worth noting that the participants were classified into experimental ($n=11$), and control ($n=11$) categories by lottery. The procedure was carried out in both groups before the intervention. Because patients from all over Tehran referred for treatment and due to the impossibility of conducting research in another environment with the advice of Imam Khomeini Hospital officials in a suitable environment in the same hospital and after the medical treatment process for 45 minutes a week an interventional approach was used. The quality of the intervention was one of the major factors for the intervention's limited duration. It is worth mentioning that almost half of the participants were absent from one intervention session. The study's first author, who has undertaken Viktor Frankl's Logotherapy Training courses, carried out the intervention and the activities of each session are described in **Table.1**.

2-3. Measuring tools

2-3-1. The General Health Questionnaire (GHQ): This questionnaire is an indicator of contemporary mental health that has been widely used in a variety of contexts and communities since its development by Goldberg et al. in the 1970s (18). While the GHQ-30, GHQ-28, GHQ-20, and GHQ-12 were initially planned as a 60-item instrument, shorter versions of the questionnaire are now available, including the GHQ-30, GHQ-28, GHQ-20, and GHQ-12. The scale asks whether the respondent has recently encountered a new symptom or behavior. Each object is scored on a four-point scale (less than normal, no more than usual, slightly more than usual, or significantly more than usual), and the GHQ-12, for example, provides a Bi-modal (0-0-1-1) and Likert scoring types are the most popular scoring strategies (0-1-2-3).

The rating scale in this analysis was scored using the Likert system. The Likert scale runs from 0 to 3, with 0 representing the healthiest with 3 representing the healthiest, with an overall score ranging from 0 to 36. There were four choices for constructive and negative elements on the GHQ-12 questionnaire. "Better than usual," "Same as usual," "Worse than usual," and "Much worse than usual" were the four choices for good products, and they were graded as 0, 1, 2, and 3, respectively. For bad things, the four choices were "Not at all," "Less than normal," "Same as usual," and "More than usual," with ratings of 0, 1, 2, and 3 for each. Goldberg et al. (18) reported a validity of 0.95 for the entire questionnaire (Cronbach's alpha coefficient = 0.95). Montazeri et al. (19) investigated Iranian reliability and found satisfactory results (Cronbach's alpha coefficient = 0.87).

2-4. Interventions

In a study on the effectiveness of a 9-week logo- Logo therapy on the mental health of pediatric patients with cystic fibrosis conducted by authors of this study. Frankl saw logo therapy as a way to complement current treatments by stressing human beings' "meaning-dimension" or metaphysical dimension. Frankl's logo therapy is based on three metaphysical and therapeutic concepts: Willpower, purpose, and the meaning of life are both examples of independence of will. The program is designed to meet the needs of professionals from various fields (doctors, psychologists, social workers, pedagogues, teachers, educators, and therapists), students, as well as all others interested in personal growth and development, and is based on value-oriented principles of logo therapy.

2-5. Ethical consideration

For ethical reasons. It should be noted that this article is the result of the first author's proposal research approved by the Vice-Chancellor of Research, Azad University of Tehran, ID-number 1398.021.

2-6. Data Analyses

SPSS software version 18.0 was used to evaluate the data. It used the mean (standard deviation) to express quantitative data and the percent to express qualitative data. The analysis variables were tested using one-way ANCOVA. $P < 0.05$ was determined to be statistically meaningful. The conclusions of One-way analysis of variance, i.e. Box test, were tested before the findings of One-way analysis of variance and t- test were examined.

Table-1: Description of Viktor Frankl's Logotherapy Training Sessions (20).

Once a week for 45 minutes each session / Pulmonary and Critical Care, Emam Khomeini hospital, Tehran, Iran.	
Session 1	Educating clients on the basic concepts of Logo therapy by referrals (meeting other members of the association and the therapist).
Session 2	Discussion on the most critical aspect of Logo therapy: stating the issue and assessing the nature of a child's life from the viewpoint of children and mothers (to live a meaningful life).
Session 3	Defining anxiety and depression, comprehending the causes of anxiety and depression, and recognizing mothers' cancer beliefs.
Session 4	Anticipated nervous speech – Reverse psychology methodology and its use in practice.
Session 5	Human rights, obligation, and the connection between the vision and the realities of life
Session 6	The Essence of Suffering – Creating a Sense of Pain and Suffering – Physical Therapy Methods Speech.
Session 7	Strategies for expressing and correcting behaviors - discussion on constructive thought.
Session 8	The fact of death and its meaning - Discussion in the area of transient existence - perception and interpretation of death's meaning.
Session 9	Summary and conclusion of topics covered, client comprehension - Answers to questions

3-Results

In this study, the mean age of patients were (15.83 ± 0.87 years old), according to **Table.2**, the majority of patients age (31.8%) were between 14 to 15 years and the higher level of education (31.8%) was

related to the third year of guidance. In the as can be seen in **Table-3**, the mean scores of mental health in the experimental group in the post-test stage is higher than the pre-test scores.

Table-2: Describing demographic characteristics of sample individuals, n=22.

Demographic variables		Frequency	Percentage
Age	12 to13 years	6	30
	13 to 14 years	5	22.7
	14 to 15 years	7	31.8
	15 to 16 years	4	18.1
Level of Education	The first year of guidance	6	30
	The second year of guidance	5	22.7
	The third year of guidance	7	31.8
	The first year of high school	4	18.1

Table-3: Mean mental health scores in the two groups before and after the intervention in pre-test and post-test.

Variable	Sub-group	Groups	Mean \pm SD	Min	Max	T	P-value
Mental Health	Experimental	Pre-test	20.6 \pm 4.45	18	33	3.3	0.4
		Post-test	25 \pm 6.8	17	31	4.6	0.36
	Control	Pre-test	21.65 \pm 4.30	12	28	3.5	0.31
		Post-test	22.7 \pm 4.52	16	30	3.9	0.05

As **Table.4**, prior to performing one-way ANCOVA, the presumption of homogeneous variation between the groups was tested using Levene's test on mental health ratings. Results of Levene's test indicated that the presumption of equal variances held ($p=0.24$).

Consequently, the one-way ANCOVA assumptions are true and can be used. According to the findings **Table.5**, the score of mental health in the intervention group increased after the intervention training ($p<0.01$).

Table-4: Box test to ensure homogeneity of mental health variances.

Variables	F	Degree of freedom 1	Degree of freedom 2	P-value
Mental Health	1.37	6	141230.00	0.24

Table-5: Results of ANCOVA test in experimental and control groups with control of pre-test effect.

Variables	Source of change	Sum of square	Degree of freedom	Mean Square	F	P-value
Mental Health	Pre-test	765.100	1	765.100	331.344	0.066
	Group	466.176	1	466.176	282.926	0.00
	Error	1.365	27	61.00		

4- DISCUSSION

We aimed to investigate the effect of logo therapy on the mental health of children with cystic fibrosis. According to the findings, logo therapy was successful in improving mental wellbeing among pediatric cystic fibrosis patients. The experimental group had better mental health than the control group during the treatments. A number of studies, including this one, showed that logo therapy can help children with cystic fibrosis improve their mental health [such as Mueller et al. (9), Bray (10), Mueller et al. (11), and Robotmili et al.], (14). Individuals with CF can benefit from strategies that improve coping and problem-solving skills while encouraging hope and optimism. The implementation and testing of positive mental health and fitness promotion strategies in people with CF should be the subject of future study (21). Based on previous studies, the Logo therapy approach has been shown to be beneficial in reducing anxiety and depression in pediatric cystic fibrosis patients. These results were the same as results obtained in some other studies that were down in patients with history of malignancy; they recommended logo therapy for reducing anxiety and depression besides of exclusive treatment (22). To clarify these findings, Frankl claimed that life is simply nothing more than seeking the best answers to life's problems and performing our responsibilities properly. This puts the individual in the position of choosing the

path that makes realization of his potentials possible, even in the face of hardships. Hence, in the best possible conditions, choices may be accompanied by pain and suffering and conflicts may not be resolved, but one should realize that the meaning may be a hidden beyond all that. The focus here is on choosing. According to the results, logo therapy is effective on diabetic patients' depression (23). Several experiments have been done in accordance with the logo therapeutic forecast of both meanings in life as a resilience factor in states of psychological distress and emotional suffering as a challenge for meaning in life. Khaledian et al. (2016) conducted a study to increasing in hope and depression. These authors found logo therapy was effective in reducing depression and increasing hope in drug addicts (24). Assessing and promoting positive mental health and wellbeing may contribute to improving or maintaining physical and mental health, and health related quality of life in patients with cystic fibrosis. It provides valuable clinical information to complement depression and anxiety screening and has potential to track the effectiveness of mental health promotion strategies by assessing and monitoring positive mental health and wellbeing over time (25).

4-1. Study Limitations

The current analysis has some drawbacks, including Failure to follow up research, a small sample size, and a lack of attendance at training sessions, a lack of full influence

over variables such as environmental, personal, familial, psychological, and physical influences (e.g., problems relating to disease relapse and medications), but the researchers did recognize and control a range of them. Furthermore, restricting the population to those who participated in this study may restrict the findings' generalizability to other patients. Furthermore, the researchers had to delegate a limited number of participants to each group due to the adverse physical and psychological circumstances of a significant number of patients, as well as possible complications that might occur because of their involvement. The effectiveness of logo therapeutic treatments in clinical trials is an important research subject. Since the current research was not performed in a clinic or hospital environment, a replication of it using hospital-based samples could be helpful in that reliable evidence from medical reports could be conveniently accessed, adding to the study's richness.

5- CONCLUSION

The efficacy of logo therapy in promoting mental health among pediatric patients with cystic fibrosis, with a mean age of 13-18 years, was approved after nine sessions, 45 minutes once a week, based on the findings of this report. According to the findings, logo therapy was successful in improving mental health in children with cystic fibrosis. The findings of this study have a number of consequences for pediatric patients with cystic fibrosis in terms of counseling and support. Meaning, peace, and purpose in life, in particular, were observed to be more closely related to psychological well-being than other more commonly viewed facets of spirituality embedded in religious themes, such as transcendence, a successful reaction by health care practitioners and psychologists

6- CONFLICT OF INTEREST: None.

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