Original Article

The Effect of a Happiness Education Program on the Expressed Emotion and Quality of Life of Mothers of Children with Autism Spectrum Disorder

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Abstract

Background: The mental health of the parents of Autism Spectrum Disorder (ASD), particularly the mothers, is poor due to the severity and complex nature of this condition, and they encounter numerous issues. This investigation aimed to determine whether happiness education affected mothers of children with ASD's Expressed Emotions (EE) and Quality of Life (QoL). **Materials and Methods:** A total of 70 mothers of children with ASD aged 3 to 13 years participated in this clinical trial study research. The experimental group received the Fordyce happiness training program once every 6 weeks via WhatsApp. In three stages, data were collected using a demographic form, the Family Questionnaire (FQ), and the World Health Organization Quality Of Life Instrument, Short Form (WHOQOL-BREF) (before the intervention, immediately afterward, and 1 month later). In the Statistical Package for Social Sciences (SPSS) software, the acquired data were analyzed using independent-sample *t*-tests, Chi-square tests, and repeated-measures Analysis of Variance (ANOVA). **Results:** There was no significant difference in EE and QoL mean scores between the two groups before the intervention, but after, the intervention group's mean score of EE (20.91 (4.355)) was substantially lower than the control group's (44.74 (4.77)) ($p < 0.001$). In comparison, the intervention group's mean score of QoL and its dimensions was more significant than the control group's ($p < 0.001$). **Conclusions:** Given the efficacy of the happiness education program in reducing EE and enhancing QoL in mothers of children with ASD, such treatment strategies should be developed and used.

Keywords: *Autism spectrum disorders, expressed emotions, happiness, mothers, quality of life*

Introduction

Autism Spectrum Disorder (ASD) is a developmental illness characterized by unusual interests and obsessions as well as delays and deviations in the growth of social, communication, and other skills.[1] According to the Centers for Disease Control and Prevention (CDC), ASD affects one of 44 children.[2] According to Samadi and McConkey, the prevalence of ASD in Iranian children is 92.2 per 10,000, and as with the global ratio, the prevalence is higher among boys than girls.[3] According to the study, parents of children with autism are more likely to experience the stress than parents who have children with mental retardation and Down syndrome.[4] The most important factors effective in increasing stress in them are the child's behavioral and communication problems, mothers' concerns about the stability of the child's condition, low acceptance of the child's behaviors by society and even other family members, low social support, financial problems, isolation, and lack of parental awareness about the child's development.[5] The display of unpleasant emotions is one of the stress-related outcomes for mothers of these children. Expressed Emotion (EE) is a broad measure of a family's emotional well-being that encompasses attitudes, feelings, actions, and emotion-based responses from people around the patient.[6] According to prior studies, having a high EE level is linked to having a negative Quality of Life (QoL).[7] Having an ASD child limits family interactions and social activities, affects interpersonal relationships, and limits opportunities for personal recreational interests, whereas engaging in leisure activities can be a strategy for caregivers to reduce stress, improve family relationships,

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and increase life satisfaction.[8,9] Caring for a kid with ASD has been found to have a considerable detrimental influence on parents' QoL.[10] All of these concerns can affect the moms' QoL and happiness, which is one of the components of QoL. Positive feelings, such as pleasure, tranquility, and the sense of feeling joyful and content, are all part of happiness, as is the feeling that one's life is worthwhile and valuable. The more time a person spends experiencing pleasant feelings, the less time they experience bad emotions. Happy people are more productive, have greater hope, and have a higher QoL.[11] According to Ebrahimi *et al*. study, group cognitive treatment enhanced QoL and its aspects in parents of children with autism, resulting in higher parental satisfaction.[12] As a result of the numerous obstacles and problems that families with children with autism face, intervention and educational programs are constantly required. Positive psychology, which, unlike other methods that focus on issues and weaknesses, stresses boosting positive mood and improving the purpose of life, is one of these psychological remedies that has lately been examined.[13] One of the positivity programs, including behavioral and social components in addition to cognitive ones, is Fordyce happiness training program.[14] The impact of a happiness education program on hemodialysis patients,[15] nurses,[16] pregnant women,[17] moms of cleft lip and palate children,[18] and older women has been studied in the past, with promising results. However, no research on the impact of Fordyce happiness education on moms of children with ASD has been conducted until now. The Fordyce happiness training program is a low-cost, simple-to-use, accessible, and non-adversarial technique. As a result, the researcher decided to study to determine whether this intervention may improve EE and QoL.

Materials and Methods

In 2020–2021, there were three iterations of this clinical study (IRCT20200614047773N1) (before, immediately after, and 1 month after the intervention). The participants were divided into two groups: intervention and control. The mothers of ASD-affected children (boys and girls aged 3 to 13 years) who were admitted to the Ordibehesht Autism Clinic and Autism Association (Hazrat Zahra Center) in Isfahan, Iran, in 2021 and who met the inclusion criteria were included in this study. The mother of a kid with ASD who is the child's primary caregiver and is in charge of all of the child's needs had to be interested in participating in the study; be able to speak, read, and write Persian; be familiar with cyberspace and the Internet; have access to a smartphone; care for only one chronic patient in the family; has no drug addiction and is not taking any psychiatric medication; has not experienced crisis or stress in the last 6 months; is not participating in similar research programs or workshops at the time of the study; and complies with the rules of the training sessions. The mother's refusal to continue participating in educational sessions, the incidence of any health or psychological difficulties in the mother, and absence from more than two sessions were also exclusion grounds. The study and implementation procedures were first taught to all mothers, and then, they were randomly allocated to the experimental and intervention groups after completing the online research instruments. Accordingly, a list of participants' numbers was created and then numbered from one to 70. Then, random allocation software was used to randomly allocate numbers 1–70 to two groups.

As a result, we continued sampling until the necessary sample volume was attained. At the start of the sessions, immediately afterward, and 1 month later, the researcher collected data using an online questionnaire that included a demographic profile form, the Family Questionnaire (FQ), and the World Health Organization Quality of Life Instrument, Short Form (WHOQOL-BREF). Only the pretest, post-test, and follow-up steps were required of the control group. As a result, the control group participants did not get the intervention planned for the experimental group. The control group simply discussed their problems, feelings, and experiences with each other in one session supervised by the researcher at a time other than the time of implementing the intervention for the experimental group at the agreed times.

To ensure that everyone could attend, the meetings were organized with the moms after the survey findings were taken into account. After gathering the required sample volume in the experimental group, the researcher conducted the virtual educational program in 6-weekly, 60-minute sessions in groups on WhatsApp Messenger while sending files, audio, and SMS messages in the supervisor's and the center's presence. Each session was officially opened by taking attendance. Question and answer sessions were used by the group to evaluate the tasks and questions. At the theater intervention, participants in the control and intervention groups received a Compact Disk (CD) with the session's material. Fordyce happiness training program includes 14 elements, eight of which are cognitive and six behavioral, and to increase planned happiness includes increasing activity, increasing social relationships, increasing creativity, planning, and organizing, avoiding anxiety, reducing expectations, increasing positive thinking and optimism, living in the present, cultivating a healthy personality, cultivating a social personality, being yourself, eliminating negative emotions, strengthening close and sincere relationships, and finally, prioritizing happiness. Using the steps outlined in Table 1, the number of subjects in each group was 32. The researcher took into account sample loss based on the exclusion criteria, and assuming a 10% loss from the start, 35 participants were evaluated in each category.

The Camberwell Family Interview (CFI) was used to assess EE for the first time. Animosity, intense emotional turmoil, and pleasant and warm words are part of the CFI. The FQ was developed by Weidman *et al*. to investigate EE

Table 1: The content of the Fordyce's 14 fundamentals for happiness program

Sessions	The proceedings	Time (minutes)
First	Defining happiness and describing its value and necessity, as well as the findings of happiness research and studies, as well as the good and wrong notions about it	60
	Task: Note and express your understanding of happiness in the next session.	
Second	Reviewing previous session's homework, learning to spend more time in community and group activities, being creative, and participating in worthwhile activities	60
	Task: Explain their activities and creativity and influential social communication.	
Third	Reviewing prior session's assignments, teaching ideas of better planning and organization, minimizing worry, and decreasing expectations and aspirations	60
	Task: List expectations and explain the learned methods for reducing worries and having a coherent plan to achieve goals.	
Forth	Reviewing the assignments of the previous session, teaching the principles of optimistic thinking, living in the present, cultivating a healthy personality	60
	Task: Prepare a list of positive events and express their understanding of these events and ways to be popular.	
Fifth	Reviewing the assignments of the previous session, teaching the principles of cultivating a social and extroverted personality, being honest, and leaving aside problems and negative emotions	60
	Task: Discuss your abilities and power in dealing with problems, how to communicate with others, and joyful factors.	
Sixth	Reviewing prior session's assignments, teaching ideas of better planning and organization, minimizing worry, and decreasing expectations and aspirations	60
	After reviewing the assignments of the previous session, the post-test was taken, and the time of the follow-up test (1 month later) was determined.	

in relatives of people with psychotic disorders. According to Deman *et al*. (2002).'s study, the reliability of the entire scale was 0.92, the reliability of the subscale measuring critical comments was 0.84, and the reliability of the subscale measuring acute emotional involvement was 0.91. According to Khodabakhshi *et al*., the reliability of the scale in Iran is 0.85 in total, 0.83 for the severe emotional conflict subscale, and 0.88 for critical comments. This survey has a total of 20 questions. The critical remark subscale has a cut-off point of 23, and the emotional severe conflict subscale has 27. In this questionnaire, the questions on the critique scale are questions 2, 4, 6, 8, 12, 10, 14, 16, 18, and 20, and the questions on the extreme emotional conflict scale are questions 1, 3, 5, 7, 9, 11, 13, 15, 17, and 19. FQ has concurrent validity and has shown a significant correlation with the CFI.[19]

The third section of the questionnaire contains the WHOQOL-BREF, which consists of 26 questions. The WHOQOL-BREF assesses four categories of health: physical (three questions), mental (six questions), social (seven questions), and environmental (seven questions) (eight questions). The first two questions are unrelated to any of the topics and measure overall health and QoL. The questionnaire thus has a total of 26 questions, each of which is evaluated on a scale of 1 to 5, except questions 4, 3, and 26, which are reverse-scored. In each area, a score equal to 0–100 was given, where 0 is the worst sign and 100 is the best sign of the desired situation. The World Health Organization's QoL survey was created simultaneously in more than 15 different countries. Nejat *et al*.[20] translated and verified this questionnaire for the first time ever in Iran. The internal consistency dimension has been tested for dependability using Cronbach's alpha.[20]

The quantitative (discrete and continuous) and qualitative (nominal rank) data in this study were analyzed in the Statistical Package for Social Sciences (SPSS) software using descriptive statistics (mean and standard deviation) and inferential statistics (independent-sample *t*-test, Chi-square test, and repeated-measures analysis of variance (ANOVA)) (version 18; SPSS Inc., Chicago, IL, USA).

Ethical considerations

The study was approved by the ethics committee of Isfahan University of Medical Sciences with the approval code IR.MUI.RESEARCH.REC.1399.348. Before the intervention, all participants were informed of the study's purpose, method, and voluntary nature, as well as their anonymity. All participants signed informed written consent forms online, and they were promised access to the study's findings.

Result

A total of 70 people took part in this investigation. Tables 2 and 3 detail the characteristics of the individuals. In terms of quantitative and qualitative demographic factors, the results of the Chi-square test and independent-sample *t*-test revealed no statistically significant difference between the two groups [Tables 2 and 3]. The independent-sample *t*-test revealed no statistically significant difference between the study groups in terms of the mean age of mothers

Table 2: Mean age of mother and child and duration of infection in the experimental and control groups

Group	Interventionists	Control	Independent-sample *t*-test		
Variable	Mean (SD)	Mean (SD)	t	df	*p*
Mother's age	35.97 (5.90)	35.77 (5.29)	-0.15	68	0.88
Age of the child	8.17 (2.91)	7.79 (3.49)	-0.49	68	0.62
Duration of infection	5.39 (3.54)	5.54 (3.49)	-0.18	68	0.85

Table 3: Frequency distribution of disease severity, employment status, and level of education and income in the intervention and control groups

Group	Variable	Control group	Intervention group	Chi-square		
		n(%)	n(%)	χ^2	df	*p*
Illness severity	Low	15 (42.90%)	19 (54.30%)	1.00	2	0.60
	High	3 (8.60%)	3 (8.60%)			
	Medium	17 (48.60%)	13 (37.10%)			
Job-status	Housewife	31 (88.60%)	28 (80.0%)	2.75	1	0.25
	Unemployed	1 (2.90%)	0 (0.0%)			
	Employed	3 (8.60%)	7 (20.0%)			
Education	High school diploma	23 (65.70%)	16 (45.70%)	3.59	2	0.16
	Pre-diploma education	5 (14.30%)	5 (14.30%)			
	Academic	7 (20.0%)	14 (40.0%)			
The economic status of the family	Equal to life expenses	21 (30.0)	25 (35.70)	1.01	1	0.31
	Less than life expenses	14 (20.0)	10 (14.30)			
Marital status	Married	33 (47.10)	32 (45.70)	5.02	2	0.08
	Single	2 (2.90)	0 (0.00)			
	Divorced	0 (0.0)	3 (4.30)			

and children and illness duration ($p > 0.05$), as shown in Table 2. The EE score of moms of children with ASD was substantially different between the intervention and control groups immediately and 1 month after the intervention compared to before the intervention. Furthermore, the mean EE score of mothers in the intervention group was considerably lower immediately and 1 month after the intervention ($p < 0.05$) than before the intervention. However, there was no statistically significant difference in the intervention group's EE score immediately afterward the intervention and 1 month later ($p > 0.05$) [Table 4]. The QoL score and domains in moms of children with ASD are substantially different between the intervention and control groups immediately and 1 month after the intervention compared to before the intervention. The intervention group's mean QoL and domain scores were considerably higher immediately after and 1 month after the intervention ($p < 0.05$). Still, there was no statistically significant difference between immediately after and 1 month after the intervention ($p > 0.05$) [Table 4].

Discussion

The goal of this research was to see how a happiness education program affected the degree of EE and QoL of mothers of children with ASD in Isfahan in 2021. This study's first finding was that a happiness education program based on Fordyce's cognitive-behavioral theory improved the QoL of mothers of children with ASD. The study intervention's beneficial effects on QoL and decreased EE can be attributed to the fact that it helps people better comprehend their problems and more successfully cope with them by boosting their abilities. Feeling happy, leading a happy life, and being free of unpleasant emotions, such as anxiety or sadness, are the three major ingredients of happiness. Life satisfaction may not be much impacted by happiness training, but its focus on physical exercise, emotional expression, optimism, social connections, and stress avoidance can lessen unpleasant emotions behavioral.[21]

While the behavioral components of the program offer a variety of suggestions for how to effectively employ the cognitive components, the cognitive programs of Fordyce program work to promote happiness by focusing on the management of the underlying reasons of harmful thoughts and behaviors.[22] The findings of our study demonstrated that Fordyce happiness training program was most successful in improving the social and environmental aspects of QoL compared to other aspects. The findings of the study are in line with those of Nourbakhsh *et al*., who discovered that Fordyce happiness training program could increase the QoL of women with physical limitations-disability limitations as well as their capacity to bear the condition.[23] The study by Kousha *et al*. training classes for families of children with ASD should be offered to improve mental health, happiness, and QoL, as well as to assist decrease issues.[24] According to a study by Sheidaei

Table 4: Compared the mean changes in the expressed emotion score and QoL score and dimensions in mothers of children with Autism Spectrum Disorder (ASD) before the intervention, immediately, and 1 month after the intervention

Variable	Group	Before	After	Follow-up	*p*-time	*p*-intervention	*p*-interaction
Quality of life Total	Intervention	33.84 (8.107)	68.62 (6.80)	68.86 (6.179)	<0.001	<0.001	<0.001
	Control	34.54 (5.984)	33.47 (5.32)	33.65 (6.92)	0.76		
	p	0.685	<0.001	<0.001			
Physical quality	Intervention	42.31 (12.56)	59.94 (10.94)	61.49 (9.91)	<0.001	<0.001	<0.001
	Control	41.17 (11.68)	40.29 (11.35)	37.77 (13.14)	0.48		
	p	0.695	<0.001	<0.001			
Psychological quality	Intervention	35.43 (11.65)	68.66 (11.10)	66.66 (12.07)	<0.001	<0.001	<0.001
	Control	36.51 (10.26)	37.43 (12.40)	37.63 (11.61)	0.91		
	p	0.680	<0.001	<0.001			
Environmental quality	Intervention	28.14 (10.71)	73.89 (10.17)	75.11 (9.23)	<0.001	<0.001	<0.001
	Control	32.20 (11.21)	29.20 (8.20)	26.71 (10.38)	0.45		
	p	0.126	<0.001	<0.001			
Social quality	Intervention	29.49 (20.11)	72.00 (19.16)	72.17 (13.74)	<0.001	<0.001	<0.001
	Control	28.26 (20.56)	26.9714 (14.97)	32.49 (20.08)	0.08		
	p	0.801	<0.001	<0.001			
Family Questionnaire (FQ)	Intervention	45.09 (4.68)	20.66 (5.69)	20.91 (4.35)	<0.001	<0.001	<0.001
	Control	45.89 (5.90)	45.74 (4.73)	44.74 (4.77)	0.606		
	p	0.532	<0.001	<0.001			

et al. titled "Education of a Positive Attitude on Stress, Anxiety, Depression, and Quality of Life of Hemodialysis Patients," the intervention group's average scores for stress and anxiety decreased, and their QoL increased, but their average score for depression significantly not changed after the intervention because the severity of a person's depression could play a role in the amount of treatment they receive for stress and anxiety.[25]

This finding is in line with the results of a 2017 study by Öksüz *et al*., who found that providing psychological education to family members of schizophrenia patients lowers EE, such as rage and harsh criticism. It also increases family members' abilities to solve material and spiritual issues, create a good family connection, communicate sentiments, display interest, show love and proper care for family members, and demonstrate acceptable behavior. The findings of this investigation are utterly incongruently different from the findings of Sin and Norman's systematic review study. They found that in families of persistent schizophrenia patients, psychological education has less of an impact on mental health or EE levels.[26] Sellwood *et al*. (2003)found that despite family intervention, the EE levels of family members of chronic schizophrenia patients did not change. The difference between the intervention and the research community can be used to explain the variation in the observed result. The different measurement methods were employed in the two studies to determine the intensity of the emotions portrayed. Additionally, because exhibited excitement is a legitimate component, possibly this result can be explained by taking cultural factors into account.[26]

As a result, the mothers of these children require psychological and behavioral follow-up in addition to care, as a result of the excitement they experience in caring for their children for such a long time. As a result, a happiness education program that covers the mothers of these children in terms of emotion control and improves their QoL is beneficial. Cheerful individuals have lower stress levels and a more robust and more creative immune system than sad ones, therefore moms of children with happy autism respond more favorably to their surroundings and adaptively to various experiences. Mothers gained valuable abilities as a result of happy education. These abilities, which included improving closeness, settling disagreements, being thankful, living in the present, and others, have been proven to improve their QoL. This means that many minor issues fade away on their own in the setting of enjoyment.

Conclusion

According to the findings of this research, Fordyce happiness training program had a positive impact on the participants' QoL and EE. The happiness training program is a cost-effective, simple, and accessible program with no side effects. Given the favorable findings gained about the program's results, a program focused on enhancing social support may be anticipated. To improve QoL and reduce EE in moms of children with autism, health and society will be effective. As a result, it is critical to organize and deliver such psychiatric care. Furthermore, such training programs are advised for nurses, organizations, and professionals who are in some way connected to the families of children with autism.

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Conflicts of interest

Nothing to declare.

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