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The Effect of Happiness Training Based on Fordyce Model on Perceived Stress in the Mothers of Children with Cleft Lip and Palate

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ABSTRACT

Introduction: A child afflicted with facial deformities such as cleft lip and palate usually affects their parents, because of difficulties in nutrition, speech, aesthetics and social connections, and also imposing a lot of stress on them. The aim of this study was to investigate the effects of a happiness program on the perceived stress in the mothers of children with cleft lip and palate.

Methods: This study was a quasi-experimental study in which 64 mothers of children with cleft lip and palate were divided by simple random sampling into intervention and control groups (n=64). The program of happiness training was implemented within 10 sessions and the questionnaires of demographics and Cohen perceived stress were filled out prior to and two months after the last session in intervention group. Data analysis was done using SPSS Ver.13.

Results: Independent t-test indicated a significant difference in the perceived stress mean score after training in the intervention and control groups. Also paired t-test indicated a significant difference in perceived stress mean score before and after training in the intervention group, but the difference was not statistically significant for the control group.

Conclusion: Considering the effect of happiness program on reducing stress in the mothers of children with cleft lip and palate, it is recommended that this model can be used as an intervention in the maternal care for more involvement in the process of treatment and care of their child, in addition to reduce psychological problems in the parents.

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Introduction

Cleft lip and palate is the most common congenital malformations in the head and face. Risk factors include race, geographic region and the economic level.^{1,2} In the United States, the prevalence of cleft lip is 1 in every 1000 live births, and the prevalence of cleft palate is also 1 in 2000 live births. Additionally the prevalence of cleft lip with or without cleft palate is obtained to be (3.6 per thousand live births) among Native Americans, (2.1 per thousand live births) among Asians and (1.1

per thousand live births) among whites.³ In terms of the gender, cleft lip is more common among boys than girls (2: 1). While cleft palate is more common among girls than boys (2: 1).⁴

These disorders can result in problems such as nutrition, speech, aesthetics⁵ and social communications.⁶ These children are comparatively reluctant to get involved in social interactions because of their facial appearance and their speech.⁷ This affects the parents as well. These factors might undermine the efforts of the parents directed at the growth and development of their

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children.⁴ Since genetic factors are also known to be involved in this disease, there are a lot of parents who feel guilty over the situation, which ultimately increases their stress level. Additionally, there are a host of other factors that can seriously heighten the level of stress that parents go through, including the child's communication difficulties, the mothers' concerns about the stability in the conditions of their off springs, low acceptance in society and even by some family members, low social support, financial problems, isolation and the parents' lack of awareness of the child's development and growth that can increase their stress. In fact, stress is a condition which results in a conflict between the individual and the environment and cause disharmony between the requirements of a position and sources of biological, psychological and social of individuals. In general, parents' stress refers to the conditions or situations where the parents are facing demands and challenges handling which takes a lot more than the social and personal resources at their disposal. In the meantime, women experience is a lot of stress that is essentially associated with their satisfaction with life.⁸ High levels of parental stress makes them more inclined to use inflexible manners, intimidating and aggressive parenting and have fewer health programs and services to benefit children, then they fail in taking decisions about the most appropriate strategies for their children. This often has negative impacts on children's growth and can lead to more destructive behaviors.⁹

Lei *et al.*, found that high stress levels are observed in parents of children with cleft lip and palate.¹⁰ The study of O'Hanlon *et al.*, also showed that parents of children with cleft palate had lower compliance of parents with healthy children.¹¹ The results of another study in 2012 demonstrated the need of parents of children with cleft lip and palate for psychological and social supports to better adapt to their children.¹² Hasanzadeh *et al.*, in their study demonstrated that the mothers of children with cleft lip and palate faced chronic psychological disorders more frequently.¹³

So, considering the fact that high levels of parental stress can interfere with child's treatment and care processes,⁹ the use of early psychological intervention seems necessary for effective support of the parents. The psychological interventions may include happiness programs and creating support networks, which can be useful for increasing and improving family health and mental health.¹⁴ The findings suggest that happiness programs can have positive outcomes such as physical and mental health and optimal performance.¹⁵ In other words, happiness and health compose a mutual chain in which strengthening one will reinforce the other.¹⁶

Additionally, the happiness training has proved to be effective in increasing efficacy and reducing anxiety and depression.^{17,18} Bitsko *et al.*, found that happiness affects the quality of life, depressive symptoms and treatment severity of teens who survived the cancer.¹⁹ North *et al.*, also showed that happiness training causes changes in family relationships, increasing efficacy, reducing anxiety and depression.²⁰

Relevantly, Khodadadi *et al.*, demonstrated that positivist group psychotherapy was effective in promoting health and led to an enhanced level of happiness in the mothers of children with special needs.²¹ Fordyce actually developed a model to enhance happiness.²² More clearly, Fordyce happiness training leads to certain changes in cognitive and affective status of people and helps them adopt a more positive attitude towards life events and respond to circumstances and situations optimistically and adaptively.²³

Therefore, considering the vital role that women play in maintaining the psychosocial-social stress, their high level stress leads to appearance of disorders in their family such as anxiety, depression, aggression and problems in the family interactions,²⁴ and since there is no research on related to psychological interventions on mothers of children with cleft lip and palate, this study aimed to study the effect of happiness on the perceived stress in mothers of children with cleft lip and palate.

Materials and methods

This semi experimental study was conducted from March, 2015 to December 2015 (during a period of 10 months). In this study, the sample size was calculated to be 32 in each group ($\alpha=0.05$, $\beta=0.2$).²⁵

Ethical approval was issued by Research and Technology Deputy of Isfahan University of Medical Sciences (ethics code number: 293076) and relevant authorities for this study.

The study was conducted at cleft lip and palate clinic of Faculty of Rehabilitation affiliated to Isfahan University of Medical Sciences. The sampling was done among the patients referring to cleft lip and palate clinic. For sampling, the patients were enrolled by simple random sampling so that the first referring individual with inclusion criteria was assigned to intervention group and the second to control. The sampling continued until the desired number was reached.

Inclusion criteria were mothers with Iranian nationality, literacy, ability to discuss and debate in training classes, and children with cleft lip and palate at the age range of 0-12 years (because of psychological effects on family due to an affected child within this age range,²⁶ and no previous participation in similar training. The exclusion criteria were failure to attend two consecutive and/or one fourth of all sessions and discontinue participate in the study, or having emergency severe conditions throughout the study (that is the participants possessed complete mental health and consciousness and no mental retardation at the time of the research).

The researcher completed pretest questionnaires after she described the research purposes for the mothers and received written consent from them. Then, the training sessions were scheduled and the classrooms of Faculty of Rehabilitation were appointed.

Consisting of eight cognitive components and six behavioral components, teaching material was offered according to Fordyce approach.

The material for each session was as follows:²⁷

First session: Participants' getting acquainted with each other, reviewing sessions' structure, relevant regulations and protocol, and training techniques of getting more active, Second session: Techniques of enhancing social relationships and intimacy, Third session: Techniques of expressing emotions and developing optimism and positive thinking, Fourth session: Techniques of decreasing expectations and appreciating, Fifth session: Living at present, Sixth session: Techniques of giving value to happiness and resolving problems and negative emotions, Seventh session: Techniques of discontinuing worries, Eighth session: Techniques of enhancing creativity, Ninth session: Techniques of planning and organizing daily activities; and Tenth session: Filling out the questionnaires two months after the ninth session. The training was done by a psychologist as a group and individually through speech, brainstorming and educational aids such as PowerPoint within a 2-hour session a week. Also, the participants were given the researcher's phone number to demand further advice and support during the two-month follow-up if necessary. Therefore the mothers could call if they had any questions.

After the follow-up, the participants in both groups filled out the questionnaire of Cohen Perceived Stress again. For ethical considerations, the researcher trained the patients in both groups similarly after filling out the questionnaires. The data were gathered by a questionnaire on demographic data and Cohen Perceived Stress Questionnaire.

This Scale has three versions, 4, 10, and 14-item, administered to measure overall perceived stress. This scale measures thoughts, stress-causing incidence, and control, overcoming, coping with the psychological pressure and experienced stresses. The items are scored on a 5-point Likert scale as never (0), almost never (1), sometimes (2), often (3), and many times (4). The items 4-13 are scored inversely ranging from never (4) to many times (0). It should be noted that for positive statements (4, 5, 6, 7, 9, 10, and 13) the scores were calculated inversely. Overall, the scores

ranged from 0 to 56, and the high scores showed higher levels of stress.²⁸

The concurrent validity with the scales of positive and negative emotions, happiness, and depression was employed to assess the validity of the questionnaire. There was a significant correlation between positive emotion and positive ($r=0.73$) and negative ($r=0.53$) perceived stresses, as there was a significant correlation between negative emotion and positive ($r=0.68$) and negative ($r=0.68$) perceived stresses. Happiness was found to be significantly correlated with positive ($r=0.68$) and negative ($r=0.43$) perceived stresses while depression was found to be correlated with positive ($r=0.57$) and negative ($r=0.49$) perceived stresses. The results of the study in Iran showed that its reliability was $r = 0.84- 0.86\%$.²⁹

In the present study, Cronbach's alpha was 0.76. The data were analyzed by descriptive and analytical statistics (paired t-test, independent t-test, Pearson correlation coefficient) in SPSS software ver.13.

Results

The mean age of the mothers in intervention and control groups was 33.3 (6.3) and 33.5 (5.8) years, respectively. The mean age of the children in the intervention and control groups was 6.34 (3.37) and 5.03 (3.36) years,

respectively, with no significant difference between the two groups by independent t-test ($P>0.05$). Also, there were no significant differences in the mothers' education and occupation, and the number of children in the families between the two groups ($P>0.05$).

Independent t-test indicated a significant difference between the mean perceived stress scores of the two groups after training ($P<0.05$), while the difference was not statistically significant in the two groups before training. Also, paired t test exhibited a significant difference in the mean perceived stress score before and after the training in the intervention group ($P<0.05$), but the difference was not statistically significant for the control group ($P>0.05$), (Table 1).

Results of Pearson's correlation coefficient indicated that in the intervention group, perceived stress was significantly associated with child's age and mother's occupation ($P<0.05$), and was not significantly associated with child's gender or mother's age, gender, education, and number of children.

In addition, the perceived stress was significantly associated with child's age, and mother's age in the control group, and was not significantly associated with child's gender, mother's education or mother's Occupation, and number of children ($P>0.05$), (Table 2).

Table 1. Demographic characteristics of participants in the two groups

Demographic variables	Intervention group N (%)	Control group N (%)	P -value
Child Sex			0.7
Male	20(62.5)	18(56.3)	
Female	12(37.5)	14(43.7)	
Mother Education level			0.3
Elementary	3(9.4)	6(18.8)	
Secondary	4(12.5)	6(18.8)	
Diploma	16(50)	15(46.9)	
University degree	9(28.1)	5(15.5)	
Mother Employment status			0.6
Housekeeper	30(93.7)	28(87.5)	
Employment	2(6.3)	4(12.5)	
Number of children[‡]	2.03 (0.73)	2.0 (0.84)	0.8

[‡]Mean (SD)

Table 2. Comparison of mean (standard deviation) score of perceived stress in the intervention and control groups before and after training

Time	Group		P-Value [‡]
	Intervention Mean (SD)	Control Mean (SD)	
Before training	25.36 (6.97)	28.09 (6.33)	0.11
After training	21.30 (8.86)	26.43 (5.51)	0.007
P-value (Paired sample t-test)	0.02	0.25	

[‡]Independent sample t-test

Table 3. The relationship between demographic characteristics and mean perceived stress score in the two groups

Variables	Intervention		Control	
	Statistical indicator		Statistical indicator	
Child age	P=0.002	r=0.99	P=0.009	r=0.96
Child gender	P=0.11	r=-0.52	P=0.06	r=0.75
Number of children	P=0.41	r=-0.01	P=0.2	r=0.24
Mother age	P=0.11	r=-0.54	P=0.02	r=0.88
Mother education	P=0.34	r=0.05	P=0.07	r=-0.55
Mother occupation	P=0.02	r=0.89	P=0.08	r=-0.66

Discussion

The present study was conducted to investigate the effect of happiness training on the perceived stress of mothers of children with cleft lip and palate. In this study, there was no significant difference between the intervention and control groups in demographics, including children's age and gender, mothers' age and education level as well as the number of children. The findings of Sharif et al., were in line with those of the our study.³⁰

In the present study, the mean score of the perceived stress of mothers in the control group was not statistically significant before and after the study, while in the intervention group the difference was found to be significant. In this regard, Sharif et al., aimed to evaluate the effectiveness of stress management on the mental health of mothers with hyperactive children in the intervention group and the results showed that the program contributes to improving mental health and reducing stress levels of mothers in the experimental group.³⁰ Khodadadi et al., indicated that the mean happiness score of the mothers after positivist psychotherapeutic intervention was significantly higher in the case group than the control one.²¹

Nazari et al., showed that increased supportive psychotherapy was effective in enhancing the children's awareness and allows mothers to express feelings and concerns outwardly about the disease and thus reduce their maternal anxiety.³¹

To elaborate on the results, we might add those parents, especially the mothers of children with developmental problems, or with problems such as reception disability, fatigue and coping are facing financial difficulties for the child care. Constant pressure and depression lead to further weakening of the mothers, making them unable to spend adequate time with the family and seriously undermines their relationship with their spouse, children and the affected community.²⁶ Therefore, psychological interventions can be very useful for the parents, especially mothers of children with disabilities, and might encourage proper control of the situation through education.

The results of the present study indicate that the mean score of maternal stress in the intervention and control groups showed a significant change before and after the treatment (Table 2). Sharif et al., studied the effect of cognitive-behavioral stress management training on the mental health

of mothers of children with ADHD and found

that cognitive-behavioral stress management techniques can reduce their stress, and thus lead to improvement of mothers' health.³⁰ The results of the study by Valizadeh *et al.*, also showed that training the mothers with stress-coping skills was an effective way to deal with stress and actually improved the coping skills in mothers of children with mental retardation.³² Hajloo *et al.*, also showed that stress management training has a significant effect on the quality of life and psychological dimensions of mothers.³³

Along these lines, Zandvakili *et al.*, showed that group training of positive thinking, encouraging the participants to be happy, in a good mood, and to have positive emotions, hope and satisfaction resulted in lower rates of depression and anxiety in the participants.³⁴ Furthermore, Riahi *et al.*, found that training the management of negative mood caused mental health to improve at the subscales of anxiety, insomnia, physical symptoms, and social functioning in the mothers of children with autism by enhancing their self-identification and helping them use efficient techniques to resolve conflicts.³⁵

In the present study, appropriate training caused the mothers of children with cleft lip and palate to further recognize themselves and their children further, to embrace the realities through identifying strengths and weaknesses and to cope with the existing circumstances more appropriately, which leading to happiness in them. Also the nature of the adopted group training in sessions, where individuals could find out that others may have problems similar to theirs, contributed to the mothers' embracing reality and coping with the current conditions.

In addition, the findings indicated that in the intervention group, the children's age and the mothers' employment status were directly and significantly associated with perceived stress. Because these children, as

they grow, tend to socialize less often because of their facial appearance and speech, their parents feel saddened and disappointed by having such children and hence become more and more agitated.^{4,7}

In addition, since these children need to refer to healthcare team repeatedly to undergo relevant therapeutic processes, the employment of their mothers can be considered as an obstacle facing these processes. These mothers, therefore, tend to tolerate high levels of stress.

The most considerable limitation of the study was scheduling of training classes with regard to work hours of employed mothers and therefore the researcher held the classes at weekends to allow all women attend all sessions. Small sample size was another limitation in this study. So, it is recommended that studies be conducted with a large sample size.

Conclusion

The results of the research, and the important role of supportive training and rehabilitation nurses offer the use this method of teaching, as a cost effective way and available in health centers for mothers of children with cleft lip and palate, and the use of this psychological intervention for the mothers of children with other special healthcare needs, as well.

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Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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