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The effectiveness of Mindfulness Based on Cognitive Therapy (MBCT) on quality of life and optimism of adolescent pregnant women

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Abstract---Background: Pregnancy during adolescence causes a person to face many challenges, so that its contradiction with the adolescent's identity structure can have negative effects on her psychological dimension, especially on optimism and quality of life. Since the health of the pregnant mother is one of the health priorities of any country, the present study aimed to investigate the effectiveness of mindfulness (MBCT) on the quality of life and the optimism of adolescent pregnant mothers. Methods: The present study was performed as an interventional study with a pre-test-post-test design on 88 adolescent pregnant women referring to health centers in Ahvaz. Participants were divided into 44 groups of intervention and control. For the intervention group, 8 sessions of 90-minute mindfulness counseling were held weekly. The control group also received routine pregnancy care. Participants completed the LOT-

R and SF-36 quality of life questionnaires before and after the intervention. Data were analyzed by SPSS26 software.

Findings: There was a significant difference in the overall quality of life between the control and experimental groups before and after the intervention ($p < 0.001$). Also in the experimental group the difference before and after the intervention was significant ($p < 0.001$) while in the control group this difference was not significant ($p = 0.854$). Also, there was a significant difference in the optimism variable between the control and test groups before and after the intervention ($p < 0.001$). In the experimental group, the difference before and after the intervention was significant ($p < 0.001$) but in the control group, this difference was not significant ($p = 0.150$). Conclusion: The findings of the present study indicate that mindfulness counseling can be used as an effective clinical approach to improve the quality of life and optimism of adolescent pregnant women who face many challenges.

Keywords---*Pregnancy in Adolescence, Mindfulness, Quality of Life, Optimism.*

Introduction

Adolescent pregnancy is one of the challenges of human societies that developed and developing countries with different cultures and customs face it (1). According to the WHO definition, a pregnancy that occurs between the ages of 10 and 19 refers to adolescent pregnancy (2).

Pregnancy during adolescence can be associated with many problems, including clinical and psychosocial problems. Clinical problems include maternal, fetal, and neonatal complications such as anemia, increased risk of miscarriage, eclampsia, low birth weight, neonatal malformations, difficult delivery, and cesarean section (3).

Regarding the psycho-social dimension during this period, the adolescent is forming her identity, if the phenomenon of parenting occurs simultaneously, it can cause conflict and duality in finding the individual and maternal identity of the adolescent, as a result of this identity conflict and Dualism decreases with changes in various dimensions of physical, mental and social health, quality of life and subsequent social functioning of pregnant women (4).

Quality of life is one of the main factors in improving the level of health, especially in adolescent girls. The quality of life of adolescent pregnant women is significantly reduced compared to adult women during pregnancy (5). So measuring the quality of life is important for policy makers and health care associations in planning for maternal and infant care and understanding the need for this kinds of cares (6).

Optimism is associated with better physical health symptoms and affects quality of life (7). Based on existing texts, optimistic thinking acts as a support factor against behavioral and emotional problems of young people (8).

Today, there are various Educational and counseling methods for adolescents in the world, one of these methods is mindfulness (9). Mindfulness plays a decisive role in mental health and has a positive relationship with mental well-being and psychological well-being and has long-term effects on quality of life (10). One of the new methods for self-regulation·increase individual performance and acquire skills to deal with stressful and challenging situations is mindfulness. (11). Bashar pour et al. (2015) in a study showed that mindfulness-based stress reduction program is effective in improving mental well-being and quality of life of pregnant women (12). Seyed Mousavi et al. (2014) in a study showed that mindfulness has a significant effect on improving depression, anxiety and stress in adolescent pregnant women (13).

Considering that mindfulness considers both physical and psychological dimensions as an approach and promotes the health of pregnant mothers, so the researcher intends to evaluate the effect of using mindfulness based on cognitive therapy on quality of life and optimism of adolescent pregnant women, who are a vulnerable and challenging group.

Materials and Methods

The present study was an interventional study with a pre-test-post-test design on pregnant women aged 14-19 years referred to health centers in Ahvaz and Karun in 2020. In the first stage, by referring to the files available in the health centers and extracting the telephone numbers of the samples, a telephone call was made to them and they were invited to attend the health center. The researcher then explained the objectives of the study, obtaining written consent from the participants, assuring them that the information was confidential, and the possibility of leaving the study if desired. Finally, 88 adolescent pregnant women were randomly selected as a sample and divided into two groups of 44: intervention and control.

Inclusion criteria include: age 19-14 years, completion of informed consent form, scores based on quality of life questionnaire score (score 51 and less) and optimism (one standard deviation below average), gestational age 16-22 weeks and Having a minimum of primary education. Exclusion criteria included: history of receiving mindfulness counseling based on cognitive approach, current severe and known mental illness, high-risk pregnancy.

For the intervention group, 8 sessions of 90-minute weekly counseling were held by mindfulness method. For the control group, only routine pregnancy care was performed during the study. 4 weeks after the end of the counseling sessions, the quality of life questionnaire (SF-36) and life orientation questionnaire (LOT-R) were completed for both groups. In order to analyze the data, SPSS-26 software was used and the significance level was considered 0.05.

Results and Discussions

Table 1
Demographic characteristics of research subjects in two groups of intervention and control in qualitative variables

	Variable	Studied groups				p.value
		Control		intervention		
		Percentage	Number	Percentage	Number	
ethnicity	Fars	4/5	2	9/1	40	0/264
	Arab	90/9	40	90/9	4	
	Lor	4/5	2	0/0	0	
Educational Degree	Primary	40/9	18	36/4	16	0/919
	First High School	31/8	14	36/4	16	
	Secondary High school	27/3	12	27/3	12	
Spouse Educational Degree	Primary	13/6	6	12/7	6	0/525
	First High School	43/2	19	59/1	26	
	Secondary High	34/1	15	22/7	10	
	Above Diploma	9/1	4	4/5	2	
Occupation	Housewife	95/5	42	100	44	0/153
	Employed	4/5	2	0/0	0	
Spouse Occupation	Freelance	86/4	38	88/6	39	0/747
	Employee	13/6	6	11/4	5	
Economic Situation	Weak	13/6	6	9/1	4	0/52
	Medium	86/4	38	90/9	40	
The whole sample		100	44	100	44	

According to the results of Chi-square (Ch2) test, there is no significant difference between the two groups of intervention and control in the variables of ethnicity, education, spouse education, occupation, spouse occupation and economic status ($p > 0.05$).

Table2
Demographic characteristics of research subjects in two groups of intervention and control in quantitative variables

Variable	Studied groups					
	Control		intervention			
	Percentage	number	Percentage	number		
	M ± SD	number	M ± SD	number	p.value	
Age (years)	1/54 ±	44	1/35 ±	44	0/464	

	17/36		17/59		
Spouse age (years)	3/57 24/32±	44	±3/32 25/73	44	0/059
Duration of marriage (months)	8/15 ± 16/73	44	9/16 ± 19/73	44	0/108
Note. M=Mean, SD=Std. Deviation					

According to the results of independent t-test in the variables of age, spouse age and duration in the two groups of intervention and control there is no significant difference ($p > 0.05$).

Table 3
Mean, standard deviation and comparison of effects within and between subjects in two stages of quality of life assessment in intervention and control groups

	Quality of Life	level	Studied groups				p.value
			control		intervention		
			M ± SD	number	M ± SD	number	
Physical Health	Physical function	Pre-test	27/87 ± 43/41	44	38/86±27/93	44	0/447
		Post-test	±25/93 42/80	44	59/94±24/39	44	**0/001
		p.value	0/820		**0/002		
	Role disorder because of physical health	Pre-test	38/11 ± 41/49	44	40/34±42/18	44	0/893
		Post-test	±32/71 42/06	44	53/41±39/47	44	0/059
		p.value	0/901		*0/029		
	Pain	Pre-test	± 13/26 49/15	44	47/67±13/22	44	0/602
		Post-test	13/18 ± 50/00	44	65/45±3/11	44	***0/001>
		p.value	0/730		***0/001>		
	General health	Pre-test	45/00±13/51	44	42/72±14/16	44	0/443
		Post-test	46/48±12/60	44	60/11±9/37	44	***0/001>
		p.value	0/340		***0/001>		
	Total physical health score	Pre-test	44/76±19/05	44	42/40±10/20	44	0/741
		Post-test	45/34±16/13	44	59/63±11/77	44	***0/001>
		p.value	0/714		***0/001>		
	Role disorder because of	Pre-test	46/97±36/88	44	44/70±39/34	44	0/780
		Post-test	45/45±36/01	44	61/36±36/62	44	*0/043

	Quality of Life	level	Studied groups				p.value
			control		intervention		
			M ± SD	number	M ± SD	number	
Mental Health	Emotional health	p.value	0/850		*0/034		
	Energy / Fatigue g	Pre-test	48/18±4/71	44	49/77±5/17	44	0/135
		Post-test	48/64±4/98	44	62/73±13/99	44	***0/001>
		p.value	0/682		***0/001>		
	Emotional well-being	Pre-test	39/45±8/99	44	38/00±7/19	44	0/404
		Post-test	39/09±9/56	44	49/63±9/50	44	***0/001>
		p.value	0/848		***0/001>		
	Social function	Pre-test	41/48±22/99	44	42/90±22/77	44	0/772
		Post-test	42/61±21/45	44	60/51±22/06	44	***0/001>
		p.value	0/807		***0/001>		
	Total mental health score	Pre-test	44/02±10/29	44	43/84±12/58	44	0/942
		post-test	Post-test	44	58/56±11/28	44	***0/001>
		p.value	0/971		***0/001>		
	Total quality of life score	Pre-test	44/39±12/28	44	43/12±4/98	44	0/527
		Post-test	44/64±8/77	44	59/09±8/78	44	***0/001>
Post-test		p.value	0/854		***0/001>		

- The results of analysis of covariance showed that by controlling the effect of pre-test quality of life scores and its components, the mean scores of total quality of life and also the overall scores of each dimension of physical health and mental health in the post-test significantly increased in the intervention group compared to the control group. Found (**p<0.001**).

_ The results of correlated t-test showed that in the intervention group, post-test means were the total score of quality of life and all its components increased significantly compared to the pre-test stage ($p < 0.05$). In the control group, no significant difference was found between the means of pre-test and post-test in the total score of quality of life and all components ($p > 0.05$).

Table 4
Mean, standard deviation and comparison of effects within and between
subjects in two stages of optimism assessment in intervention and control
groups

Dependent variable	Tools used	level	Studied groups				p.value
			Control		Intervention		
			M ± SD	Number	M ± SD	number	
Optimism	Orientation of life	pre-test	13/00±2/06	44	12/36±1/74	44	0/120
		Post-test	12/25±2/44	44	15/47±3/02	44	<0.001***
0/105					***<0.001		p.value

The results of analysis of covariance showed that by controlling the effect of pre-test optimism scores, in the post-test stage, the mean of optimism increased significantly in the intervention group compared to the control group ($p < 0.001$).

The results of correlated t-test showed that in the intervention group, the mean of optimism in the post-test stage increased significantly compared to the pre-test stage ($p < 0.001$). In the control group, no significant difference was found between the means of pre-test and post-test in optimism score ($p = 0/105$).

Conclusion

The results of the present study showed that mindfulness based on cognitive therapy is effective on quality of life and optimism of adolescent pregnant women. These findings are in line with the findings of Yuner et al. (2020), Pan et al. (2019), Basharpour et al. (2015), Mousavi et al. (2014), Walidi Pak et al. (2013) and Yazdani Mehr et al. (2014). Yuner et al. In a study entitled The effect of mindfulness on quality of life in adolescent girls aged 8-18 years with primary dysmenorrhea showed that mindfulness is effective in reducing menstrual pain and stress and improving quality of life (14).

Pan et al. Showed that mindfulness reduces stress, anxiety, depression and increases labor self-efficacy and overall psychological health of pregnant women and suggested the use of this method as an effective therapeutic approach (15).

Basharpour et al. In a study aimed at investigating the effectiveness of mindfulness-based stress reduction training on improving the quality of life and mental well-being of pregnant women found that this method is effective on improving the mental well-being and quality of life of pregnant women (12).

The study of Mousavi et al. Shows that cognitive therapy-based mindfulness (MBCT) is effective on stress (13).

In Walidi Pak et al.'s study entitled "Evaluation of the effectiveness of mindfulness training on increasing optimism in diabetic pregnant women" it was observed that mindfulness training based on cognitive therapy had a significant positive effect on increasing optimism in diabetic pregnant women (16).

The findings of Yazdani Mehr et al.'s study were conducted to investigate the effect of mindfulness training on the quality of life of pregnant women, indicating the positive effect of mindfulness training on the psychological components of quality of life in pregnant women (17).

Explaining this finding, it can be said that adolescence is a transitional stage and preparation for the transition from childhood to adulthood in various dimensions and areas and is characterized by physical, physiological, psychological and behavioral changes in adolescents. These changes can affect her whole life under the influence of personal, cultural and social factors (18). The beginning of pregnancy is also an important transitional period during which women experience many and multifaceted changes in their lives. According to many pregnancy psychologists, it is a critical time in terms of social and psychological stresses that reflect the crises related to the formation of motherhood identity (19). Becoming a mother during adolescence means that a teenage girl faces parental responsibilities at a time when she has to adjust to the developmental tasks of puberty, including shaping her identity and starting sex, so the teen has less time to adjust to physical, emotional and psychological puberty changes before facing the changes and challenges of pregnancy (20).

During pregnancy, many biochemical, physiological and anatomical changes occur in the body. In other words, physical, mental, social and overall quality of life of pregnant women undergo many changes (21). Even in normal pregnancies, women have constant changes that may reduce their quality of life (22). Also, according to existing texts, health-related quality of life is one of the variables that is associated with many factors, including optimism and pessimism (23).

Optimism has a positive and significant relationship with various aspects of health, which leads to greater life satisfaction by increasing mental health (7). On the other hand, they provided evidence of the protective effect of optimism on adolescents' quality of life. Adolescents with high levels of optimism usually did not report low quality of life (24).

One of the cognitive therapies that has many applications today and its effectiveness has been proven for many psychological problems, especially depression, and has also been successful in changing people's attitudes (optimism) is the MBCT (mindfulness). Many existing texts confirm that mindfulness exercises can lead to changes in thought patterns or changes in attitudes and thoughts (26). Also, according to a study, there is a significant relationship between mindfulness and quality of life, so that people with more mindfulness experience report more well-being (25).

In general, the results show that mindfulness based on cognitive therapy (MBCT) is effective on quality of life and optimism of adolescent pregnant women. Therefore, it is recommended that health officials plan and implement preventive

as well as treatment policies in this field in order to prevent further problems of adolescent pregnant women who play a key role in community and family health. The limitations of this research includes: 1) All the answers given by women were assumed to be the correct answer, which was beyond the researcher's responsibility to ensure the correctness of the answers. 2) Individual-social differences and lifestyles of individuals Research can affect quality of life and optimism. Of course, this limitation was tried to be adjusted by random selection of individuals and using statistical tests. It is also suggested that this study be performed on other groups of women or using other cognitive therapy methods such as CBT to generalize the findings of the study more accurately and reliably.

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