

The Effectiveness of Mindfulness Exercise on Mental Health During Pregnancy Among Primigravida Mothers

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Key Words:

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Abstract:

Becoming a mother is a challenging process that involves both internal thoughts and external behaviors, which can cause significant stress and anxiety for new mothers. Mindfulness is an effective technique for reducing stress. The purpose of this study was to evaluate the effectiveness of mindfulness exercises on the mental health of primigravida mothers during pregnancy in urban and rural areas of Vadodara. The study utilized a Non-Equivalent Control Group Quasi Experimental Research Design and recruited 60 primigravida mothers aged between 20 to 35 years through nonprobability convenience sampling. The Perceived Stress Scale (PSS) was used to collect data, which were analyzed using descriptive and inferential statistics such as independent t-test and chi-square test. The results indicated a significant difference in the level of stress between the experimental and control groups, with the experimental group showing a lower mean stress level than the control group after the intervention. The study concluded that teaching and practicing mindfulness exercises during pregnancy can help reduce stress in pregnant mothers, regardless of socio-demographic factors.

1. Introduction

Pregnancy is perhaps the main, energizing and sometimes fearful encounters that women experience in their life. The encounters and emotional well-being of a woman during pregnancy and all through the post-pregnancy period are of most extreme significant occasions for the prosperity of both the mother and child.¹ Turning into a mother is frequently a distressing change, including long haul processes that subjectively perceive both inward contemplations and external considerations and outer ways of behaving. This change might be full of troubles and extra anxieties that render the new mothers more helpless against stress.² Pregnancy is a period that brings about physical and mental changes, which can be a critical time for mothers to develop mental health problems.³ Growing evidence suggests that perinatal stress and depression represent a sense of powerlessness that can negatively

impact a new mother's personal and social life⁴, with potential risks to the cognitive and neurobehavioral development of infants and children.⁵ Postpartum depression (PPD) affects approximately 17.7% of women worldwide, and stress inventories have been shown to predict depression.^{6,7} As such, reducing psychological distress during pregnancy and the first year postpartum should be a vital public health objective.⁸ Mindfulness can effectively reduce stress levels and training in mindfulness techniques encourages a non-judgmental and intentional approach to the present moment.⁹ Mindfulness-based interventions have led to improvements in the mental health of pregnant populations since the 1990s, and there is now evidence supporting their effectiveness in reducing psychological stress in both Europe and North America.¹⁰ Mindfulness exercises involve focusing intensely on present sensory experiences without interpretation or judgment and can be useful in

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reducing stress and depression.¹¹⁻¹³ Mindfulness-based interventions have been successful in reducing stress, anxiety, and depression during pregnancy, and this study aimed to examine the effectiveness of mindfulness exercises on the mental health of primigravida mothers in selected areas of Vadodara, Gujarat.

2. Methodology:

The study used a Convenient Non-Probability sampling technique to select samples who met specific criteria for inclusion and exclusion. The samples were obtained from two locations: Kapurai (U-PHC) and Palpura Village, Vadodara. In Kapurai, 30 primigravida mothers were selected, while in Palpura Village, 30 primigravida mothers were selected. Inclusion criteria for the study were primigravida women between 20 to 35 years of age and primigravida women whose gestational age is between 14 to 28 weeks, while exclusion criteria were primigravida pregnant women with complicated pregnancy. Before data collection, the student researcher introduced herself and explained the study's purpose to the volunteers who fulfilled the inclusion and exclusion criteria, and written consent was obtained from them.

Two data collection tools were used in this study: a demographic information questionnaire and the Perceived Stress Scale. The demographic information questionnaire gathered data on the maternal age, week of gestational age, educational qualification of the mother, occupation of the mother, monthly income of the family, and pregnancy intention. The Perceived Stress Scale, a standardized tool developed by Sheldon Cohen, consisted of 10 items that assessed the level of stress. Scores on the PSS were obtained by reversing responses to the four positively stated items and then summing across all scale items. Scores of 0 to 13 indicated low stress, 14 to 26 indicated moderate stress, and 27 to 40 indicated high stress. The data were analyzed using various statistical methods. Frequency and percentage distribution were used to describe the socio-demographic data. Mean, mean percentage, and standard deviation were used to describe the level of stress. Chi-square was used to determine the association between the level of stress and selected socio-demographic variables. Paired t-tests were used to compare the level of stress among primigravida mothers in the experimental and control groups, while unpaired t-tests were used to compare the level of stress among urban and rural primigravida mothers.

3. Result:

TABLE 1: Frequency And Percentage Distribution Of Primigravida Mothers Based On Their Socio-Demographic Variables

Variables		Urban Area		Rural Area	
		Frequency	Percentage	Frequency	Percentage
Age	20 to 30	22	73.3%	26	86.7%
	>30	8	26.7%	4	13.3%
Weeks of gestational age	14 to 20 weeks	18	60%	19	63.3%
	20 to 28 weeks	12	40%	11	36.7%

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Educational qualification	Illiterate	4	13.3%	15	50%
	Primary	16	53.3%	14	46.7%
	High secondary	10	33.35	1	3.3%
Occupation	Daily wage	0	0%	4	13.3%
	Government employee	0	0%	0	0%
	Private employee	7	23.3%	1	3.3%
	Self-employee	5	16.7%	4	13.3%
	Housewife	18	60%	21	70%
Income of family	<5000/month	0	0%	0	0%
	5000-10,000/month	0	0%	0	0%
	10,000-15,000/month	5	16.7%	20	66.7%
	>15,000 / month	25	83.3%	10	33.3%
Pregnancy intention	Intentional	30	100%	30	100%
	Unintentional	0	0%	0	0%

Table 1 shows that the majority of urban primigravida mothers 22(73.3%) and rural

primigravida mothers 26(86.7%) were in age group of 20 to 30 years. Among the participants, 18(60%)

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urban primigravida mothers and 19(63.3%) rural primigravida mothers were having gestational age of 14 to 20 weeks. Among urban participants 16 (53.3%) having primary education and 15(50%) rural participants were illiterate. Among the urban participants 18 (60%) and 21(70%) rural participants

were housewives. Among the urban participants 25 (83.3%) were having >15,000 monthly income and 20(66.7%) rural participants were having monthly income of 10,000-15,000 Rs. Among the urban and rural participants 30 (100%) were having intentional pregnancy.

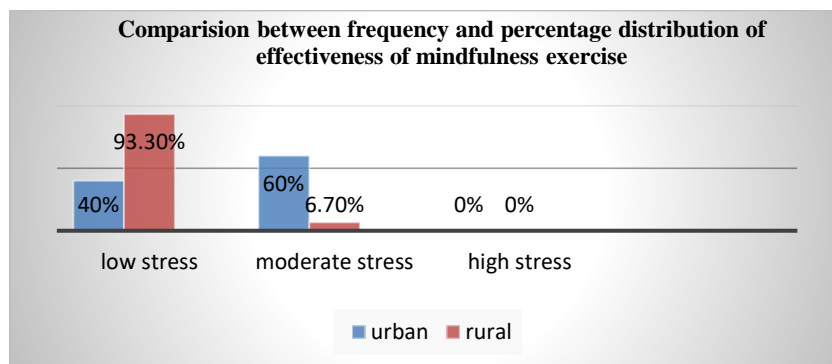


Figure 1: Comparison between frequency and percentage distribution of effectiveness of mindfulness exercises on level of stress

Figure 1 depicts the comparison between frequency and percentage distribution of effectiveness of mindfulness exercise on level of stress among urban and rural primigravida mothers of experimental group.

Table-2 Mean, mean% &SD of pre-existing level of stress among primigravida mothers of urban and rural area of experimental and control group

Test	Mean	Mean%	SD	Mean difference	t value
URBAN AREA					
Control group	20.8	52%	1.85	7.8	11.51
Experimental group	13	32.50%	1.85		
RURAL AREA					
Control group	22.13	55.33	2.19	11.93	14.4
Experimental group	10.2	25.5	2.33		

Table 2 reveals that there is higher level of mean score of control group than in experimental group in both urban and rural areas.

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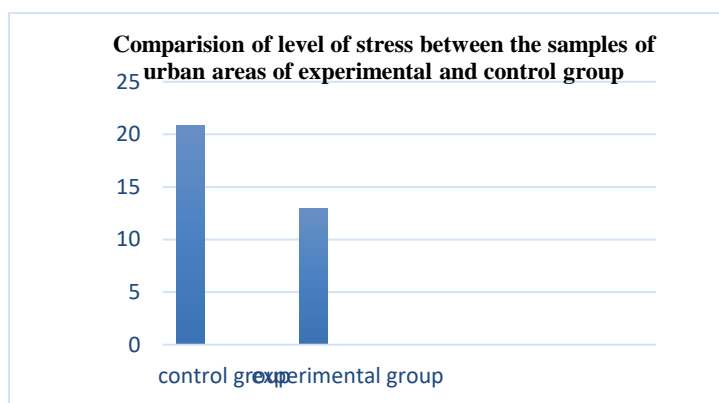


Figure 2: Comparison of level of stress among primiparous mothers of urban area of experimental group and control group according to mean

Figure 2 shows comparison of level of stress of urban experimental and control primiparous mothers according to mean after giving the intervention.

Table-3 Mean, mean% &SD of level of stress after intervening the mindfulness exercise among primigravida mothers of urban and rural area of experimental group

Test	Mean	Mean %	SD	Mean difference	t value
Urban	13.00	32.5	1.85	2.80	3.63
Rural	10.20	25.5	2.33		

Table 3 reveals that there is higher level of mean score of participants of urban area than in participants of rural area in experimental group.

Table-4 Association of pre-existing level of stress among primigravida mothers of urban and rural areas with their selected socio-demographic variables

Variables		Scores above the median	Scores below the median	Total	X ²	df	Table value	Level of significance
1. Maternal age								
URBAN	20-30 years	12	10	22	2.74	1	3.84	NS
	>30 years	7	1	8				
	Total	19	11	30				

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RURAL	20-30 years	15	11	26	1.48	1	3.84	NS
	>30 years	1	3	4				
		Total	16	14	30			
2. Weeks of gestational age								
URBAN	14 to 20 weeks	11	7	18	0.09	1	3.84	NS
	20 to 28 weeks	8	4	12				
	Total	19	11	30				
RURAL	14 to 20 weeks	10	9	19	0.01	1	3.84	NS
	20 to 28 weeks	6	5	11				
	Total	16	14	30				
3. Educational qualification of the mother								
URBAN	Illiterate	3	1	4	3.73	2	5.99	NS
	Primary education	8	8	16				
	Higher secondary education	7	3	10				
	Total	18	12	30				
RURAL	Illiterate	10	5	15	2.83	2	5.99	NS
	Primary education	6	8	14				
	Higher secondary education	0	1	1				
	Total	16	14	30				
4. Occupation of the mother								
URBAN	Daily wage	0	0	0	1.45	2	5.99	NS
	Government employee	0	0	0				

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	Private employee	5	2	7				
	Self-employee	2	3	5				
	Housewife	12	6	18				
	Total	19	11	30				
RURAL	Daily wage	3	1	4				
	Government employee	0	0	0				
	Private employee	0	1	1	1.92	3	7.81	NS
	Self-employee	2	2	4				
	Housewife	11	10	21				
	Total	16	14	30				
5. Monthly income of family								
URBAN	<5000	0	0	0	0.02	1	3.84	NS
	5001-10,000	0	0	0				
	10,001-15,000	3	2	5				
	>15,000	16	9	25				
	Total	19	11	30				
RURAL	<5000	0	0	0				
	5001-10,000	0	0	0				
	10,001-15,000	11	9	20	0.06	1	3.84	NS
	>15,000	5	5	10				
	Total	16	14	30				
6. Pregnancy intention								

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URBAN	Intentional	19	11	30	0	0	0	NS
	Unintentional	0	0	0				
	Total	19	11	30				
RURAL	Intentional	16	14	30	0	0	0	NS
	Unintentional	0	0	0				
	Total	16	14	30				

Table 4 shows that the significant association found between selected socio-demographic variables with level of stress. Hence, there was no significant association between level of stress with selected socio-demographic variables.

4. Discussion

In this study, it highlights that in the pre-test of experimental group most of the urban primigravida mothers 13(86.7%) had moderate stress level, 2(13.3%) mothers had high stress level, 0(0%) mothers had low stress level, while every rural primigravida mothers 15(100%) had moderate stress level. While, the pre-test of control group all of the urban primigravida mothers 15(100%) had moderate stress level, while majority of rural primigravida mothers 14(93.3%) had moderate stress level and 1(6.7%) mother had high stress level. After administering the mindfulness exercise, the majority of the urban experimental primigravida mothers 9(60%) had moderate stress level while 6(40%) mothers had low stress level, which is reduced than the pre-existing level of stress before administering the mindfulness exercise as mentioned above. After administering the mindfulness exercise, the majority of the rural experimental mothers 14(93.3%) had low stress level and only 1(6.7%) mother had moderate stress level which is reduced than the pre-existing level of stress before administering the mindfulness exercises. In the experimental group of Urban area, the post-test mean score was 13 with SD 1.85 and in the control group the post-test mean score was 20.80 with SD 1.85. The calculated 't' value of 11.51 was statistically highly significant at $p < 0.001$ level. This clearly shows that level of stress has reduced in the urban experimental

group than in the urban control group of primigravida mothers after the intervention. Hence the research hypothesis is accepted, which states that there is significant difference between effectiveness of mindfulness exercise on level of stress among primigravida mothers of urban area of experimental and control group. In the rural experimental group, the post-test mean score was 10.20 with SD 2.33 and in the control group the post-test mean score was 22.13 with SD 2.19. The calculated 't' value of 14.40 was statistically highly significant at $p < 0.001$ level. This clearly shows that level of stress has reduced in the rural experimental group than in the rural control group of primigravida mothers after the intervention. Hence the research hypothesis is accepted, which states that there is significant difference between effectiveness of mindfulness exercise on level of stress among primigravida mothers of rural area of experimental and control group. In the urban experimental group, the post-test mean score as 13 with SD 1.85 and in the rural experimental group the post-test mean score was 10.20 with SD 2.33. The calculated 't' value of 3.63 was statistically highly significant at $p < 0.001$ level. This clearly shows that the mindfulness exercise had significant effect by reducing the level of stress among primigravida mothers in the rural experimental group than in the urban experimental group. Hence the research hypothesis was accepted, which states that there was significant difference between effectiveness of mindfulness exercise on level of stress among primigravida mothers of urban and rural areas of experimental group. The chi-square was applied to find out the association between the pre-test level of stress among primigravida mothers and their selected socio-demographic variables like maternal age, weeks of

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gestational age, educational qualification of the mother, occupation of the mother, monthly income of mother, pregnancy intention and it shows that there is no any association between level of stress and selected socio-demographic variables. Hence the research hypothesis is rejected, which states that there is significant association between level of stress among primigravida mothers of urban and rural areas with their selected socio-demographic variables.

5. Conclusion

This study was directed to assess the effectiveness of mindfulness exercises on mental health among primigravida mothers. This result may play important role in prioritize the intervention. The intervention program had effectively reduced the level of stress. The mental health was good in experimental group than in control group. The teaching and practice of mindfulness exercise during pregnancy may help reduce stress in pregnant mothers.

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