IV. RESULTS AND DISCUSSION

The findings of the present study on "**Effectiveness of Music and Mediation on Psychological Status of Pregnant Women in Lakhimpur District, Assam**" are presented under the following headings.

4.1 Socio-demographic profile of the pregnant women.

4.2 Levels of psychological status among pregnant women.

4.3 Levels of psychological status among pregnant women based on dimensions.

4.4 Mean, SD values of psychological status among pregnant women under preintervention group

4.5 Results of Psychological Status among final selected respondents before intervention.

4.6 Results of Post-intervention group.

4.6.1 Effectiveness of music intervention on psychological status of pregnant women.

4.6.2 Effectiveness of meditation intervention on psychological status of pregnant women.

4.6.3 Comparison between two intervention protocol.

4.6.4 Post-test results of psychological status of pregnant women based on dimensions in music and meditation intervention group.

4.1 Socio-demographic profile of the pregnant women.

Table-1

Socio-demographic Profile of the selected pregnant women (*n*=300)

Sl. No.	Variables	Classification	*n*	%
1	Age	18-24 Years	151	50.30
		25-40 years	149	49.70
		Illiterate	14	4.70
		Upto 10^{th}	118	39.30
2	Education	12^{th}	70	23.30
		Graduate	74	24.70
		Post graduate	24	8.00
		Housewife	232	77.30
3	Occupation	Government Employee	35	11.70
		Private Employee	33	11.00
		5000-30000	248	82.70
4	Income	30,001-55,000	33	11.00
		55,001-80,000	19	6.30
5	Family Type	Nuclear	96	32.00
		Joint	204	68.00
6	Area of Living	Rural	227	75.70
		Urban	73	24.30
7	Type of Pregnancy	Planned	145	48.30
		Unplanned	155	51.70
8	Number of	1^{st}	180	60.00
	Pregnancy	2^{nd}	101	33.70
		3^{rd}	19	6.30

Table 1 deals with the socio-demographic and economic profile of the 300 pregnant women. It details the age, educational qualification, occupation, family income, type of family, area of living, type of pregnancy and number of pregnancies. This will enable an understanding of the background information of the participants before detailing their other aspects.

Age: More than half of the respondents (50.00%) belonged to the age category of 18-24 years and the remaining 49.70% were between 25-40 years of age.

Education: Glancing at the educational qualification a least (4.7%) respondents were illiterate and did not go to school at all. Majority of respondents (39.3%) had completed their education up to the 10th standard. 23.30% of respondents had completed 12th-grade school. 24.70% of respondents graduated and only 8.00% of respondents had completed post-graduation courses.

Occupation: Regarding occupation, it was noted that the majority of respondents i.e., 60.00% were housewives whereas 27.00% were government employees and a least respondents (13.00 percent) worked as private employees.

Income: With respect to income, Majority of the respondents i.e. 82.70% of them belonged to 5,000-30,000 income group, 11.00% of them were in 30,001-55,000 income group and only 6.30% belonged to 55,001-80,000 income group.

Type of family: In case of type of family, 32.00% of them were from nuclear family and the remaining 68.00% of them were from joint family.

Area of Living: Regarding area of living, majority of respondents i.e., 75.70 per cent pregnant mothers belonged to rural area and the rest 24.30 per cent were from Urban area.

Type of pregnancy: In case of type of pregnancy, 48.30% of respondents belonged to planned pregnancy and the majority were i.e., 51.70% unplanned pregnancies.

Number of pregnancy: In case of number of pregnancy, the majority of the respondents i.e. 60.00% belonged to 1st pregnancy whereas 33.70% were 2nd pregnancy and the least respondents i.e. only 6.30% were in 3rd pregnancy.

4.2 Levels of psychological status among pregnant women

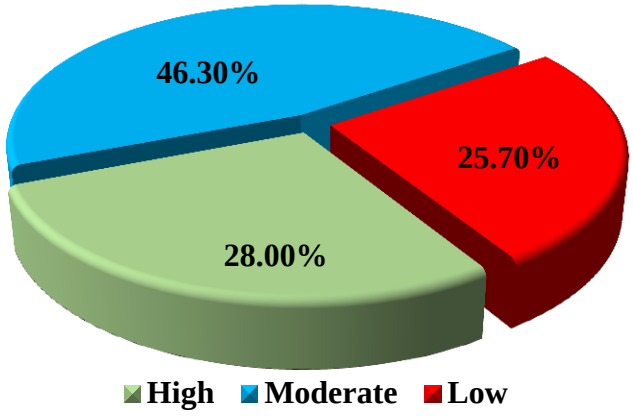

Fig. 1 Levels of PS of pregnant women (*n*=300)

From the above Fig. 1, it was observed that majority of total respondents i.e., 46.30% were having moderate psychological status, and the remaining 28.00% and 25.70% belonged to high and psychological status.

4.3 Levels of psychological status among pregnant women based on dimensions

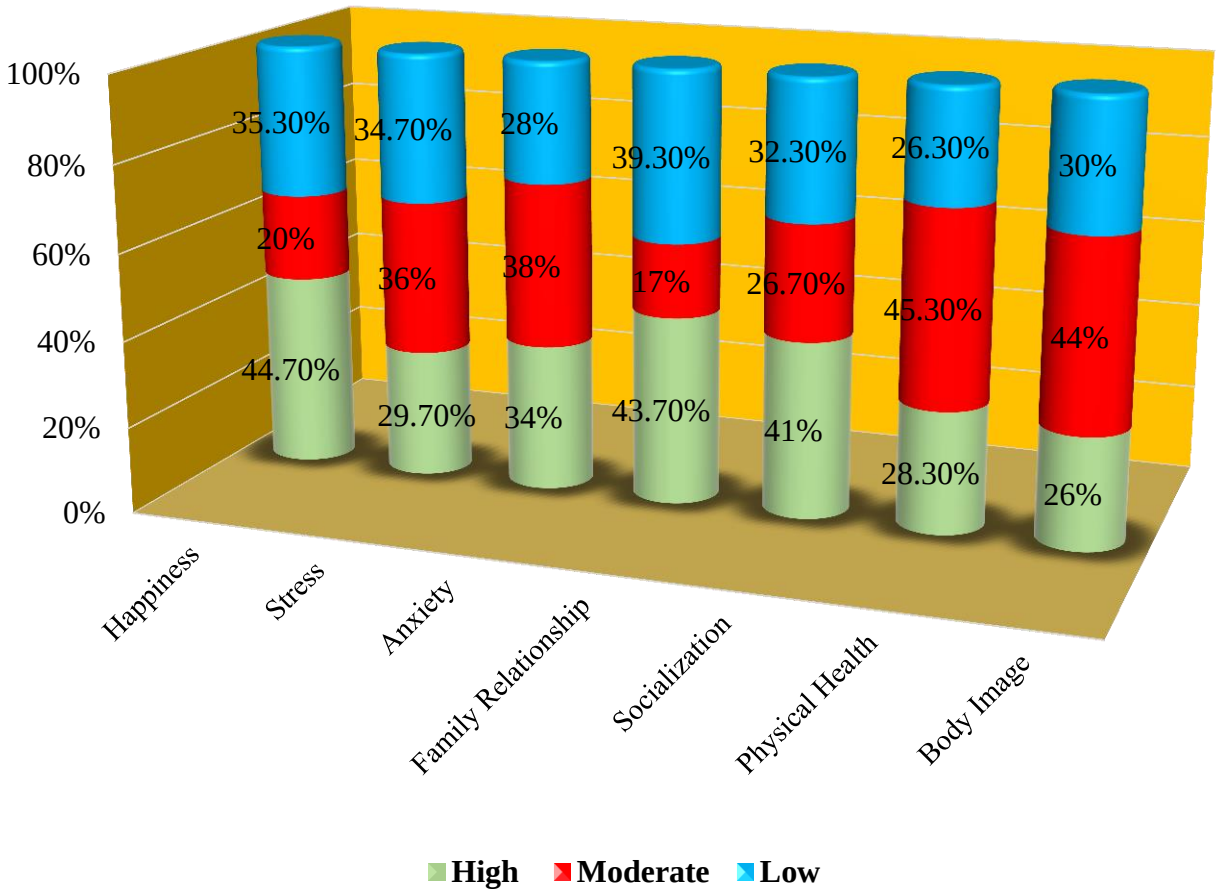

Fig. 2 Levels of PS of pregnant women based on dimensions (*n*=300)

Fig.2 illustrates the different levels of psychological status of pregnant women based on dimensions. Psychological well-being refers how people evaluate their lives in terms of cognition, emotion, or feelings. It expresses the frequency with which people experience pleasant or unpleasant moods and emotions which affects pregnant women's emotional state and this state, in turn, plays a vital role in foetal development and delivery of the child. In present study psychological of pregnant women has seven dimensions namely: Happiness, Stress, Anxiety, Family Relationships, Socialization, Physical Health, and Body Image. It is clearly seen that out of 300 participants, 44.70% reported high level of happiness, 20.00% reported moderate level, and 35.30% reported low-level happiness. Additionally, 29.70% of participants stated high stress, 35.70% reported moderate stress, and 34.7% were

found to have low stress. In the anxiety dimension, 34.00% were in high levels of anxiety, 38.00% reported moderate levels, and 28.00% pregnant women were found to have low levels of anxiety. Regarding family relationships, 43.70% of pregnant women reported good family relationship, 17.00% had moderate satisfaction in family relationships, and 39.30% reported poor family relationships. In socialization, 41.00% pregnant women had good level of socialization, 26.70% had moderate level, and 32.3% had poor socialization. In terms of physical health, 28.30% pregnant women were found to have good physical health, 45.30% were having moderate physical health, and 26.30% of them reported poor physical health. About 26.0% pregnant women were highly satisfied with their body image, 44.0% were moderately satisfied, and 30.0% pregnant women were dissatisfied. Similarly, for overall majority of pregnant women (46.30%) were found to have moderate psychological status, 28.00% had good and the rest 25.70% reported poor psychological status. It is noted that dimensions like stress, anxiety, physical health and body image were found to be moderate psychological status among pregnant women.

Overall, the Fig. 2 provides insights into the distribution of psychological status among pregnant women across different dimensions, allowing for a comprehensive understanding of their psychological well-being.

Table 2

Levels of psychological status of pregnant women based on variables (*n*=300)

Categories	**Number of respondents**	**Levels of psychological status**						
Age		**High**		**Moderate**		**Low**		***Mean (±SD)***
		n	**%**	***n***	**%**	***n***	**%**	
18-24 Years	151	39	25.8	72	47.7	40	26.5	103.13 (±10.38)
25-40 years	149	37	24.8	75	50.3	37	24.8	**108.10 (±10.75)**
Education								
Illiterate	14	4	28.6	7	50.0	3	21.4	109.00 (±10.29)
Upto 10th	118	30	25.4	59	50.0	29	24.6	103.73 (±10.39)
12th	70	17	24.3	35	50.0	18	25.7	105.10 (±9.97)
Graduate	74	22	29.7	33	44.6	19	25.7	105.84 (±11.34)
Post graduate	24	6	25.0	12	50.0	6	25.0	**113.50 (±10.97)**

Categories	Number of respondents	Levels of psychological status						
Age		High		Moderate		Low		*Mean (±SD)*
		n	%	*n*	%	*n*	%	
Occupation								
Housewife	232	63	27.2	106	45.7	63	27.2	104.84 (±10.49)
Government Employee	35	10	28.6	16	45.7	9	25.7	**109.46 (±10.64)**
Private Employee	33	9	27.3	16	48.5	8	24.2	106.79 (±12.69)
Income								
5,000-30,000	248	64	25.80	116	46.80	68	27.40	105.04 (±11.09)
30,001-55,000	33	10	30.30	17	51.50	6	18.20	106.33 (±8.15)
55,001-80,000	19	10	52.60	6	31.60	3	15.80	111.63 (±10.06)
Family type								
Nuclear	96	25	26.0	47	49.0	24	25.0	**106.98 (±9.13)**
Joint	204	54	26.5	94	46.1	56	27.5	104.95 (±11.52)
Area of Living								
Rural	227	62	27.3	105	46.3	60	26.4	105.37 (±11.24)
Urban	73	36	49.3	36	49.3	19	26.0	**106.32 (±9.53)**
Type of Pregnancy								
Planned	145	37	25.5	71	49.0	37	25.5	**108.22 (±10.28)**
Unplanned	155	43	27.7	73	47.1	39	25.2	103.14 (±10.81)
No. of Pregnancy								
1st	180	45	25.0	88	48.9	47	26.1	104.62 (±11.54)
2nd	101	26	25.7	47	46.5	28	27.7	106.99 (±9.07)
3rd	19	6	31.6	8	42.1	5	26.3	**107.42 (±12.04)**

Table 2 illustrates the distribution of psychological status (High, Moderate, Low) among pregnant women in different variables such as age, education, occupation, income, family type, area of living, type of pregnancy and number of pregnancy.

Among pregnant women aged 18-24, 25.80% were observed as having a good psychological status, 47.70% had moderate psychological status, and 26.50% reported low psychological status. The same breakdown applies to the age group of 25-40 years, where

24.8% had high psychological status, 50.3% had a moderate psychological status, and 24.8% observed low psychological status.

Regarding education levels, among illiterates, 28.60% displayed high psychological status, with a notable majority (50%) falling into moderate psychological status category and 21.40% experiencing low psychological status. For pregnant women who had completed up to the 10th standard, 25.40% exhibited high psychological status, 50% exhibited moderate psychological status, and 24.60% reported low psychological status. Similarly, pregnant women with a 12th-grade education showed good psychological status in 24.30% of cases, 50.00% exhibited moderate psychological status, and 25.70% had poor psychological status. Among graduates, 29.70% demonstrated good psychological levels, 44.60% displayed moderate psychological status, and 25.70% experienced poor psychological status. 25.00% Postgraduate degree holders reported high psychological levels, 50.00% with moderate levels, and 25.00% with low psychological levels.

Based on the occupation, among housewives, 27.20% showed good, 45.70% experienced moderate psychological status, and 27.20% encountered poor psychological status. Among Government employees, 28.60% exhibited good psychological status, 45.70% had moderate psychological status, and 25.70% reported low psychological status. Among private employees 27.30% demonstrated good psychological status, 48.50% in the moderate range, and 24.20% indicating low psychological status.

Regarding Income, respondents who have monthly 5,000-30,000 incomes demonstrated that 46.80% of them have moderate, 27.40% had low and remaining 25.80% had high psychological status. Respondents who fall in 30,001-55,000 income group, 51.50% showed moderate psychological status, 30.30% showed good and 18.20% fell in low psychological status. Regarding 55,001-80,000 income group, majority i.e., 52.60% had high psychological status whereas 31.60% and 15.80% were found to have moderate and low psychological status respectively.

Regarding the type of family, pregnant women in nuclear families, 49.00% reported moderate status, 26.00% exhibited high psychological status, and 25.00% had low psychological status. Among those in joint families, 46.10% displayed moderate status, and 27.50% pregnant women reported low, and 26.50% showed high psychological status.

Regarding the living area, pregnant women from rural areas had 46.30% with moderate, 27.30% with high, and 26.40% with low psychological status. Among urban areas,

equal percentage i.e., 49.30% had high moderate status, and 26.00% pregnant women reported low psychological status.

Among type of pregnancy, 49.00% of panned pregnant women had moderate psychological status, similar percentage i.e., 25.50% had good and low psychological status. In case of unplanned pregnancies, 47.10% had moderate status, 27.70% of pregnant women exhibited good psychological status, and 25.20% experienced low psychological status.

In case of number of pregnancy, 48.90% of pregnant women who conceived first time had moderate status, 26.10% had low and 25.00% had good psychological status. Among second pregnancies, majority i.e., 46.50% exhibited moderate, 27.70% reported low and 25.70% revealed good psychological status. Among third pregnancies, majority i.e., 42.10% and 31.60% displayed moderate and good psychological status, whereas only 26.30% experienced low psychological status.

In comparing the psychological status of pregnant women based on sociodemographic factors, higher mean values were observed in certain groups. Specifically, pregnant women aged 25-40 years (108.10), post graduated (113.50) women working in the government sector (109.46), 55,001-80,000 monthly income group (111.63), belonged to nuclear families (106.98), from urban areas (106.32) reported higher mean values with respect to other groups. These women had planned pregnancies (108.22) with 3rd time pregnancy (107.42) exhibited better mean scores compared to other groups.

The above findings underscore the complex interplay of multiple factors in shaping pregnant women's psychological status, providing valuable insights into understanding, and addressing their psychological status during pregnancy.

Regrading type of pregnancy, 41.4% planned pregnant women with planned pregnancies were found to have high anxiety, 35.2% were found moderate anxiety, and 23.4% showed low anxiety. On the other hand, among unplanned pregnancies, 40.6% were found to have moderate level of anxiety, 32.3% reported low anxiety and 27.1% experienced high anxiety levels.

Based on the number of pregnancies, women with 1st pregnancy, 36.10%, 32.20% and 31.7% reported moderate, low and high anxiety levels respectively. Among those who were in their 2nd pregnancy, 43.6% reported moderate levels, 37.6% of them experienced high anxiety, and only 18.8% reported low anxiety. Whereas pregnant women on their 3rd pregnancy, 36.8% of them reported high as well as low anxiety and 26.3% reported moderate anxiety.

4.4 Mean, SD values of psychological status among pregnant women under preintervention group.

It presents comprehensive analysis of the relationship between the psychological status of pregnant women and various sociodemographic variables, based on a sample size of 300 participants. This study aimed to investigate how sociodemographic/ independent factors such as age, education, occupation, income, family type, area of living, type of pregnancy, and number of pregnancies influences with the respondents overall psychological well-being.

Table 3

Mean, SD, *t* & *F* values of PS of pregnant women in pre-intervention group (*n*=300)

Variables	*n*	Overall psychological status			
		Mean	***SD***	***t/F***	***p***
Age					
18-24 Years	151	103.13	10.39	4.08	0.001**
25-40 years	149	**108.10**	10.75		
Education					
Illiterate	14	109.00	10.29	4.68	0.001**
Upto 10^{th}	118	103.73	10.39		
12^{th}	70	105.10	9.97		
Graduate	74	105.84	11.34		
Postgraduate	24	**113.50**	10.97		
Income					
5,000-30,000	248	105.04	11.09	3.41	0.034*
30,001-55,000	33	106.33	8.15		
55,001-80,000	19	**111.63**	10.06		
Occupation					
Housewife	232	104.84	10.49	3.02	0.050*
Government Employee	35	**109.46**	10.64		
Private Employee	33	106.79	12.69		
Family type					
Nuclear	96	**106.98**	9.13	1.52	0.067^{NS}
Joint	204	104.95	11.52		
Area of Living					

Variables	*n*	Overall psychological status			
		Mean	***SD***	***t/F***	***p***
Rural	227	105.37	11.24	0.65	0.480^{NS}
Urban	73	106.32	9.53		
Type of Pregnancy					
Planned	145	**108.22**	10.28	4.17	0.001**
Unplanned	155	103.14	10.81		
Number of Pregnancy					
1^{st}	180	104.62	11.54	1.84	0.160^{NS}
2^{nd}	101	106.99	9.07		
3^{rd}	19	107.42	12.04		

****Significant at 1% level *Significant at 5% level NS-Non-Significant**

Table 3 findings revealed that there was a statistically significant difference in psychological status between different age groups, with the younger cohort (18-24 years) experiencing poor psychological stress compared to the older group (25-40 years). This difference was supported by a *t*-value of 4.078 with *p*-value of 0.001.

Education levels also played a significant role in psychological well-being, as there were significant differences observed among participants with varying levels of education. Specifically, participants who were illiterate and those with graduate degrees exhibited significant differences in psychological status, with a *t*-value of 4.677 and a *p*-value of 0.001. The results indicated post graduate women scored higher mean values with good psychological status compared to others.

Monthly income of the family was found to be associated with psychological status, with the income of 55,001-80,000 showed a higher mean (*Mean*=111.63, *t*=3.41, *p*=0.05) psychological status score compared to other groups.

The type of pregnancy was found to be associated with psychological status, with planned pregnancies showing a higher mean psychological status score compared to unplanned pregnancies. This difference was reflected in a t-value of 4.165 and a *p*-value of 0.001which is significant.

The results indicate there is a significant change in the levels of PS among pregnant women, hence **$H0_1$: There would be no significant difference in the psychological status**

and its dimensions among pregnant women based on sociodemographic variables, statement can be rejected except in case of family type, area of living and number of pregnancy.

Other sociodemographic variables, including occupation, family type, area of living, and the number of pregnancies, did not show statistically significant differences in overall psychological status among pregnant women.

Table 4

Mean, SD and *t* values of dimensions PS of pregnant women based on age (*n*=300)

Psychological Status	Age				*t*	*p*
	18-24 years (*n*=151)		25-40 years (*n*=149)			
	Mean	*SD*	*Mean*	*SD*		
Happiness	11.67	1.63	**12.06**	1.74	2.015	0.045*
Stress	22.88	4.32	23.56	3.84	1.446	0.149^{NS}
Anxiety	15.62	2.75	**17.25**	2.98	4.913	0.001**
Family Relationships	14.52	2.17	**15.35**	1.84	3.553	0.001**
Socialization	11.34	2.36	**12.12**	2.37	2.872	0.004**
Physical Health	15.66	3.09	15.63	3.08	0.069	0.945^{NS}
Body Image	11.44	2.34	**12.13**	2.74	2.346	0.020*
Overall psychological	103.13	10.38	**108.10**	10.75	4.078	0.001**

****Significant at 1% level *Significant at 5% level NS-Non-Significant**

Table 4 examined the differences of psychological status of pregnant women based on age across various dimensions. The table presented distinct psychological status including happiness, stress, anxiety, family relationships, socialization, physical health, body image, and overall well-being. Each psychological status was analysed in two age groups i.e., 18-24 and 25-40.

Overall psychological status of pregnant women was found to be better among the 25-40 years age group (*Mean*= 10.8.10, *SD*=10.748, *p*< 0.001) than 18-24 years with significant differences. Similarly, 25-40 years age group pregnant women predicted less Anxiety (*Mean*=17.25, *SD*=2.975, *p*< 0.001), happier (*Mean*=12.06, *SD*=1.737, *p*= 0.045), good in family relationships (mean=15.35, SD= 1.841, *P*< 0.001) and socialization (*Mean*= 12.12, *SD*= 2.365, *p*= 0.004), and satisfied with their body image (*Mean*=12.13, *SD*= 2.744,

p=0.020) since the obtained mean value was higher among them compared to 18-24 years age group. However, pregnant women aged 18-24 years found to report higher levels of anxiety compared to those aged 25-40 years and they were found to have poor psychological status. Conversely, Age did not significantly influence stress levels and physical health. These findings underscored the relationship between age and various psychological dimensions among pregnant women, shedding light on the need for tailored support and interventions. The reasons observed by the study that 25-40 years pregnant women had better psychological status than 18-24 years due to individual experiences that may vary, different expectations and preparedness for their pregnancies, pregnant women of both age groups accessed to have different support networks comprising partners, family members, friends, or healthcare professionals, and adequate social support.

The result indicates there is a statistical change in the levels of psychological status among pregnant women based on age, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is rejected except stress and physical health.

The study conducted by Ulfah *et al.* (2021) which supports the above results, found a significant relationship between stress and psychological well-being with age (p<0.01). Thus, maternal characteristics like age, gestational age, and parity all had an impact on psychological well-being.

Table 5

Mean, SD, and F values of dimensions PS of pregnant women based on Education (*n*=300)

Dimensions of Psychological Status	**Education**					***F***
	PG (*n*=24)	**Graduate (*n*=74)**	**12th (*n*=70)**	**10th (*n*=118)**	**Illiterate (*n*=14)**	
	Mean (SD)	***Mean (SD)***	***Mean (SD)***	***Mean (SD)***	***Mean (SD)***	
Happiness	12.21	11.99	11.86	11.62	12.71	1.873^{NS}
	(1.719)	**(**1.891)	(1.591)	(1.648)	(0.994)	
Stress	24.88	22.78	23.53	22.76	25.00	2.358^{NS}
	(4.465)	(4.208)	(4.046)	(3.956)	(3.419)	
Anxiety	**18.46**	17.08	15.84	16.09	15.29	5.576**
	(3.718)	(3.243)	(2.690)	(2.589)	(2.644)	

Dimensions of Psychological Status	Education					*F*
	PG (*n*=24)	**Graduate (*n*=74)**	**12th (*n*=70)**	**10th (*n*=118)**	**Illiterate (*n*=14)**	
	Mean (SD)	***Mean (SD)***	***Mean (SD)***	***Mean (SD)***	***Mean (SD)***	
Family	**16.08**	14.85	15.01	14.61	15.71	3.278*
Relationship	(1.742)	(2.085)	(2.109)	(2.026)	(1.541)	
Socialization	**13.13**	11.82	11.57	11.43	12.07	2.742*
	(2.232)	(2.389)	(2.151)	(2.517)	(2.056)	
Physical Health	16.38	15.72	15.80	15.31	16.07	0.815^{NS}
	(3.019)	(3.134)	(3.086)	(2.971)	(3.832)	
Body Image	12.38	11.59	11.49	11.91	12.14	0.788^{NS}
	(2.516)	(2.694)	(2.658)	(2.446)	(2.598)	
Overall PS	**113.50**	105.84	105.10	103.73	109.00	4.677**
	(10.97)	(11.34)	(9.97)	(10.39)	(10.29)	

****Significant at 1% level *Significant at 5% level NS- Non Significant value within brackets refers SD**

Table 5 depicts ANOVA results to explore the relationship between different levels of education and psychological status among pregnant women.

Anxiety exhibited a noteworthy connection with education, with a statistically significant F value (F = 5.576, p < 0.001). This suggests that educational levels have an impact on anxiety levels among pregnant women. Additionally, Family Relationship and Socialization both displayed significant F values (F = 3.278, p = 0.05 and F = 2.742, p = 0.05, respectively), indicating that education levels influence satisfaction levels in these areas. Conversely, happiness, stress, physical health and body image displayed no significant differences among the education groups, indicating that education might not have been a prominent factor influencing these dimensions.

Remarkably, overall psychological status demonstrated a highly significant F value (F= 4.677, p< 0.001), indicating that higher educational levels have a notable impact on the overall psychological status of pregnant women because higher levels of education providing enhanced coping skills, access to resources, and a sense of control, while those with the lowest education qualification may face additional stressors and limited support, potentially impacting their mental health during this critical period.

The result indicates there is a statistical change in the levels of psychological status among pregnant women based on education, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is rejected except happiness, stress, physical health and body image.

Kotimaki et al. (2020) investigated educational gaps in anxiety and depression symptoms during pregnancy, which are harmful to both the mother and the child. The study found that highly educated pregnant women had fewer anxiety and depressed symptoms. After accounting for educational differences, it discovered support for both the social selection and the social causation viewpoints. Adverse childhood experiences accounted for some of the educational gaps, underscoring the importance of a stable early environment in prenatal mental health disparities. The regression models' results, as well as the sensitivity analyses, indicated that education is likely to buffer against prenatal distress.

Tesfaye et al. (2023) investigated the prevalence of psychological discomfort during pregnancy in women attending prenatal clinics in Addis Abeba public hospitals and identified any relevant variables. In comparison to previous studies, the research indicated a significant rate of psychological disturbance during pregnancy. The study revealed parameters related with psychological discomfort during pregnancy. This includes declining age, lack of formal education, a history of abortion, intimate relationship abuse, and a lack of social support. Psychological distress screening and possible risk factors for mental illness examinations should be performed during pregnancy to aid in early identification and intervention.

Table 6

Mean, SD and F values of dimensions of PS of pregnant women based on occupation (*n*=300)

Psychological Status	Occupation			ANOVA	
	Housewives (*n*=232)	Government Employee (*n*=35)	Private Employee (*n*=33)	*F*	*p*
	Mean (SD)	*Mean (SD)*	*Mean (SD)*		
Overall PS	104.84 (10.49)	**109.46** (10.64)	106.79 (12.69)	3.02	**0.050***
Happiness	11.89 (1.68)	11.91 (1.72)	11.61 (1.77)	0.43	0.651^{NS}

Psychological Status	Occupation			ANOVA	
	Housewives (*n*=232)	Government Employee (*n*=35)	Private Employee (*n*=33)	*F*	*p*
	Mean (SD)	*Mean (SD)*	*Mean (SD)*		
Stress	23.11 (3.98)	23.66 (3.36)	23.52 (5.50)	0.36	0.695^{NS}
Anxiety	16.21 (2.79)	17.20 (3.38)	17.15 (3.57)	2.81	0.062^{NS}
Family Relationship	14.75 (2.07)	**15.89** (1.73)	15.21 (1.98)	5.14	**0.006****
Socialization	11.58 (2.39)	12.60 (2.03)	11.85 (2.58)	2.87	0.058^{NS}
Physical Health	15.57 (3.06)	16.37 (2.76)	15.36 (3.53)	1.17	0.310^{NS}
Body Image	11.73 (2.61)	11.83 (2.64)	12.09 (2.19)	0.29	0.746^{NS}

**** Significant at 1% level** ***Significant at 5% level** **NS-Non-Significant** **Note: Value within brackets refers to SD**

Table 6 illustrates ANOVA results to explore the relationship between occupation and psychological status among pregnant women.

The overall psychological status of pregnant women exhibited a noteworthy connection with occupation, with a statistically significant F value (F= 3.02, p< 0.005). It was noted that government employees mean score is higher (*Mean*=109.46, *SD*=10.64) than housewives and private employees indicating better psychological status. Additionally, Family Relationship displayed significant F values (F= 5.14, p< 0.01) among government-employed pregnant women which indicates better family relationship compared to others. However, happiness, stress, anxiety, Physical Health and Body Image did not exhibit significant differences among pregnant women with respect to occupation.

The reasons observed and sighted by the study for pregnant women of government sector having better psychological status than others were due to better family and social support, financially independence specially amidst Covid-19 crisis.

The result indicates there is statistical change in the levels of psychological status among pregnant women based on occupation, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based**

on sociodemographic variables, is rejected in terms of family relationships and overall psychological status.

The present finding is being contradicted by cross-sectional research of 324 pregnant women that investigated maternal depression and anxiety levels. The study found that working pregnant women had greater levels of sadness and anxiety than housewives, with a statistically significant difference in mean total depression and anxiety scores (Dawood & Habib, 2018).

Table 7

Mean, SD, and F values of dimensions of PS of pregnant women based on income (*n*=300)

Psychological Status	**Income**			**ANOVA**	
	5,000-30,000 (*n*=248)	**30,001-55,000 (*n*=33)**	**55,001-80,000 (*n* =19)**	***F***	***p***
	Mean (SD)	***Mean (SD)***	***Mean (SD)***		
Overall PS	105.04 (11.09)	106.33 (8.15)	**111.63** (10.06)	3.41	**0.034***
Happiness	11.85 (1.70)	11.64 (1.87)	12.47 (1.17)	1.55	0.214^{NS}
Stress	23.08 (4.18)	23.24 (3.66)	24.95 (3.52)	1.83	0.162^{NS}
Anxiety	16.34 (2.93)	16.64 (3.22)	17.21 (3.19)	0.82	0.433^{NS}
Family Relationships	14.77 (2.08)	15.55 (1.72)	**16.05** (1.65)	5.27	**0.006****
Socialization	11.66 (2.38)	11.85 (2.58)	12.37 (2.27)	0.82	0.442^{NS}
Physical Health	15.57 (3.10)	15.67 (2.74)	16.58 (3.37)	0.95	0.388^{NS}
Body Image	11.77 (2.57)	11.76 (2.53)	12.00 (2.75)	0.07	0.929^{NS}

****Significant at 1% level** ***Significant at 5% level** **NS- Non-Significant** **Note: Value within brackets refers to SD**

Table 7 depicts ANOVA results to explore the relationship between different groups of income and psychological status among pregnant women.

Overall Psychological Status demonstrated a significant F value (F= 3.41, p=0.05), suggesting that income levels had a notable impact on the overall psychological status of pregnant women.

Additionally, Family Relationship displayed significant F values (F= 5.27, p> 0.01), indicating that income levels have influenced satisfaction levels. Conversely, Happiness, Stress, Anxiety, Socialization, Physical Health and Body Image did not exhibit significant differences based on income.

From the above table, the mean scores observed that overall psychological status of pregnant women was found statistically significant among 55,001-80,000 income group and they were better with their psychological status than other income groups. However, this group was capable of maintaining good family relationships since the obtained mean value was higher among them.

The result indicates there is a statistical change in the levels of psychological status among pregnant women based on income, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is rejected in terms of family relationships and overall psychological status.

Table 8

Mean, SD and *t* values of dimensions of PS among pregnant women based on family type (*n*=300)

Psychological Status	Family Type				*t*	*p*
	Nuclear (*n*=96)		Joint (*n*=204)			
	Mean	***SD***	***Mean***	***SD***		
Overall PS	106.98	9.13	104.95	11.52	1.519	0.067^{NS}
Happiness	12.09	1.60	11.75	1.73	1.623	0.336^{NS}
Stress	**23.44**	3.57	23.12	4.33	0.630	**0.035***
Anxiety	16.53	2.80	16.38	3.06	0.404	0.254^{NS}
Family Relationship	14.93	1.99	14.94	2.09	0.036	0.849^{NS}
Socialization	**12.14**	2.18	11.53	2.46	2.043	**0.030***
Physical Health	16.03	2.95	15.46	3.13	1.499	0.116^{NS}
Body Image	11.82	2.66	11.76	2.53	0.198	0.308^{NS}

***Significant at 5% level NS-Non-Significant**

Table 8 examines the differences between the type of family of pregnant women and their psychological status across various dimensions. The table presented distinct psychological status including happiness, stress, anxiety, family relationships, socialization, physical health, body image, and overall well-being. Each psychological status was analysed in two groups i.e., nuclear and joint family.

Stress and socialization showed statistically significant differences, with p-values of 0.035 and 0.030, respectively at 5% significance level. Analysing the mean scores, it is observed that pregnant women in nuclear families tend to have higher scores in both stress (mean of 23.44 compared to 23.12) and socialization (mean of 12.14 compared to 11.53) dimensions and can be inferred that they can able to cope up with stress levels and who have better socialization compared to joint families. However other dimensions like happiness, anxiety, family relationships, physical health and body image did not predict any significant difference in case of family type.

The findings revealed that pregnant women belonged to nuclear families found it easier to cope with stress and enhanced socialization due to potentially lower interpersonal conflicts, more focused support systems, and cultural factors specific to the region. Whereas, joint families face challenges related to extended familial responsibilities and differing opinions which impact stress management and social interactions for pregnant women during this period.

The result indicates there is no statistical change in the levels of psychological status among pregnant women based on family type, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is accepted except stress and socialization.

Table 9

Mean, SD and *t* values of dimensions of PS of pregnant women based on area of living (*n*=300)

Psychological Status	Area of Living				*t*	*p*
	Rural (*n*=227)		Urban (*n*=73)			
	Mean	*SD*	*Mean*	*SD*		
Overall PS	105.37	11.24	106.32	9.53	0.650	0.480^{NS}
Happiness	11.89	1.61	11.79	1.94	0.399	0.690^{NS}
Stress	23.27	4.16	23.05	3.92	0.395	0.693^{NS}
Anxiety	16.25	2.89	16.99	3.20	1.844	0.066^{NS}
Family Relationship	14.90	2.08	15.04	1.98	0.515	0.607^{NS}

Socialization	11.74	2.41	11.67	2.35	0.227	0.820^{NS}
Physical Health	15.62	3.14	15.71	2.91	0.220	0.826^{NS}
Body Image	11.69	2.50	12.05	2.77	1.051	0.294^{NS}

NS- Non-Significant PS-Psychological Status

Table 9 shows the differences between the area of living of pregnant women and their psychological status across various dimensions. The table presented distinct psychological status including happiness, stress, anxiety, family relationships, socialization, physical health, body image, and overall well-being. Each psychological status was analysed in two age groups: rural and urban area.

The result of psychological status of pregnant mothers based on area of living did not show any significant difference. Thus, area had no significant difference in pregnant women's psychological status. But the mean value of pregnant mothers of urban area were higher in overall psychological status (106.32 compared to 105.37), anxiety (16.99 compared to 16.25), family relationship (15.04 compared to 14.90), physical health (15.71 compared to 15.62) and body image (12.05 compared to 11.69). Thus, it suggests that pregnant women of urban area had better psychological status in these aspects than rural area.

However, pregnant mothers of rural area had a higher mean value in the areas of happiness (11.89 compared to 11.79), stress (23.27 compared to 23.05) and socialization (11.74 compared to 11.67) dimensions, suggesting comparable or slightly better psychological well-being in these aspects compared to their urban counterparts. Although the differences are not significant, the table shows valuable information about the psychological status of pregnant women across different living environments.

The present study observed that there is no significant relationship between where pregnant women live and their psychological status because how they cope with stress, their financial condition, and support from friends and family, have no difference. Also, different cultural norms and various experiences in both cities and rural areas can make it hard to see a straightforward link between where someone lives and how they feel during pregnancy.

The result indicates there is no statistical change in the levels of psychological status among pregnant women based on age, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is accepted.

Table 10

Mean, SD and *t* values of dimensions of PS of pregnant women based on type of pregnancy (*n*=300)

Psychological Status	Type of Pregnancy				*t*	*p*
	Planned (*n*=145)		Unplanned (*n*=155)			
	Mean	*SD*	*Mean*	*SD*		
Overall PS	108.22	10.28	103.14	10.81	4.165	0.001**
Happiness	12.08	1.64	11.66	1.72	2.117	0.035*
Stress	23.92	3.98	22.57	4.11	2.886	0.004**
Anxiety	17.08	3.20	15.83	2.62	3.714	0.001**
Family Relationship	15.22	2.11	14.66	1.97	2.364	0.019*
Socialization	12.14	2.38	11.34	2.34	2.919	0.004**
Physical Health	16.00	2.95	15.31	3.17	1.948	0.052^{NS}
Body Image	11.79	2.64	11.77	2.51	.085	0.932^{NS}

****Significant at 1% level** ***Significant at 5% level** **NS-Non-Significant**

Table 10 examined the intriguing association between the type of pregnancy of pregnant women and their psychological status across various dimensions. The table presented distinct psychological status including happiness, stress, anxiety, family relationships, socialization, physical health, body image, and overall well-being. Each psychological status was analysed in two groups i.e., planned and unplanned pregnancy.

The t-test analysis examined the relationship between the type of pregnancy (planned or unplanned) and psychological status of pregnant women revealed statistically significant associations in several domains. The analysis of psychological dimensions in relation to type of pregnancy revealed significant relationships. Based on the overall psychological status of pregnant women was found to be better among mothers of planned pregnancy (Mean=108.22, $p< 0.001$) than women of unplanned pregnancy with significant differences. However, women of planned pregnancy predicted happier (Mean=12.08, $p= 0.035$), less

Anxiety (Mean= 17.08, $p< 0.001$), can cope with stress (Mean= 23.92, $p= 0.004$), good family relationships (Mean= 15.22, $p= 0.019$) and socialization (Mean= 12.14, $p=0.004$) since the obtained mean value was higher among them. Whereas other dimensions did not show a significant difference.

They tend to experience higher happiness levels, enhanced overall psychological well-being, and greater satisfaction with family relationship, less stress and anxiety and good in socialization as compared to those with unplanned pregnancies. On the other hand, unplanned pregnancies were associated with low levels of physical health and body image satisfaction as the mean value is lower than planned pregnant women. Furthermore, overall well-being exhibited a difference, with planned pregnancies linked to better psychological well-being. These findings indicate that the type of pregnancy significantly influences various aspects of psychological status among pregnant women.

The present study cited the reasons among planned pregnant women who experienced better psychological well-being due to preparedness, and positive anticipation, whereas unplanned pregnancies bring increased stress and uncertainty. The intentional nature of planning allows for a more emotionally stable environment, contributing to a more positive pregnancy experience, while unexpected pregnancies face challenges in adjustment, financial and emotional readiness.

The result indicates there is a statistical change in the levels of psychological status among pregnant women based on type of pregnancy, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is rejected except physical health and body image.

Yanikkerem *et al.* (2012) investigated the prevalence and characteristics of women with unplanned pregnancy (UP) in Manisa, Turkey. They found that UP women engaged in fewer healthy practices and experienced more depressive symptoms. The study recommends early screening for UP and offering health education programs to help women develop positive health practices and improve their emotional health.

Table 11

Mean, SD and *F* values of dimensions of PS of pregnant women based on number of pregnancy (*n*=300)

Psychological Status	Number of Pregnancy				ANOVA	
	1st (*n*=180) *Mean (SD)*	2nd (*n*=101) *Mean (SD)*	3rd (*n*=19) *Mean (SD)*	Total (*n*=300) *Mean (SD)*	*F*	*p*
Overall PS	104.62 (11.543)	106.99 (9.074)	107.42 (12.043)	105.60 (10.838)	1.842	.160^{NS}
Happiness	11.72 (1.715)	12.08 (1.501)	12.11 (2.283)	11.86 (1.691)	1.702	.184^{NS}
Stress	23.09 (4.260)	23.29 (3.793)	24.11 (4.175)	23.22 (4.097)	0.548	.579^{NS}
Anxiety	16.22 (3.160)	16.84 (2.603)	16.21 (2.936)	16.43 (2.975)	1.462	.233^{NS}
Family Relationship	14.73 (2.166)	15.21 (1.829)	15.42 (1.895)	14.93 (2.052)	2.366	.096^{NS}
Socialization	11.60 (2.442)	11.99 (2.274)	11.53 (2.503)	11.73 (2.390)	0.933	.395^{NS}
Physical Health	15.79 (3.196)	15.35 (2.920)	15.84 (2.834)	15.64 (3.081)	0.708	.494^{NS}
Body Image	11.48 (2.423)	**12.24 (2.736)**	12.21 (2.699)	11.78 (2.568)	**3.163**	.044*

***Significant at 5% level NS- Non Significant Note: Values within brackets refer to SD**

Table 11 showcases the results of an ANOVA analysis investigating the potential relationship between number of pregnancy and various dimensions of psychological status among pregnant women. The dimensions evaluated Happiness, Stress, Anxiety, Family Relationship, Socialization, Physical Health, Body Image, and Overall Psychological status. The analysis categorized participants into three pregnancies i.e., 1st, 2nd, and 3rd pregnancy.

Upon analysing the results, it was found that there were no statistically significant differences in Happiness scores among number of pregnancies (F=1.702, p>0.05).

Similarly, no significant variations were observed in Stress levels (F= 0.548, p>0.05), Anxiety levels (F=1.462, p>0.05), Family Relationship scores (F=2.366, p>0.05), Socialization scores (F= 0.933, p>0.05), physical health (F=0.708, p>0.05) and Overall Psychological well-being scores (F=1.842, p>0.05) based on the number of pregnancy. However, there was a statistically significant difference in the dimension of Body Image (F=3.758, p<0.05) were observed, indicating that the number of pregnancies might be associated with differences in the perception of body image of pregnant women.

From the above table it can be concluded that majority of psychological dimensions, including Happiness, Stress, Anxiety, Family relationships, Socialization, physical health and overall psychological status, did not exhibit statistically significant differences based on number of pregnancy. This implies that the distribution of these psychological dimensions was similar across the different numbers of pregnancy. However, an exception was noted in the Body Image dimension, where a statistically significant difference was observed among the 2nd pregnancy women. This group showed a noticeable increase in mean scores (Mean=12.2, SD= 2.736) compared to the rest which indicates that pregnant women who were going to have their second baby were more satisfied and happier with their body image as they might have experienced the situations during previous pregnancies.

Women who are under second pregnancy have a more positive body image perception compared to those in their first or third pregnancies, possibly because prior experience provides a sense of familiarity and self-acceptance. The anticipation and adjustment to physical changes during the first pregnancy and potential concerns about increased demands or changes in body image during the third pregnancy may contribute to variations in body image perceptions among women.

The result indicates there is no statistical change in the levels of psychological status among pregnant women based on number of pregnancy, hence **$H0_1$: There would be no significant difference in the psychological status and its dimensions among pregnant women based on sociodemographic variables**, is accepted except body image.

4.5 Results of Psychological Status among final selected respondents before intervention.

As discussed in methodology, out of 300 pregnant women 120 respondents were taken for further investigation with intervention module. The selection of sample is as shown in Fig. 3.3 and Fig.3.4 in methodology chapter and the results are interpreted as below:

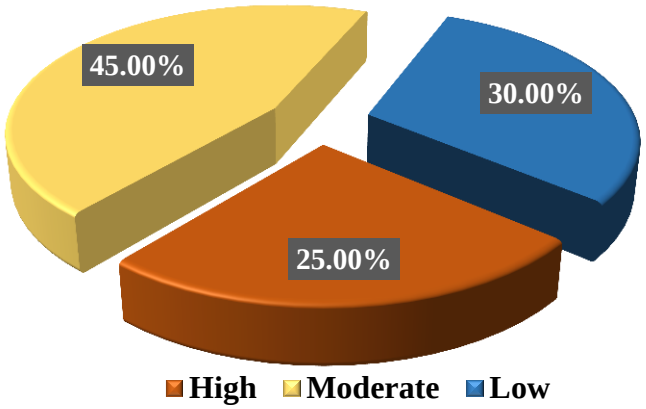

Fig:3 Levels of PS of pregnant women (*n*=120)

From the **Fig. 2.,** it was observed that majority of respondents i.e., 45.00% were having moderate psychological status, followed by low (30.00%) and high (25.00%) psychological status.

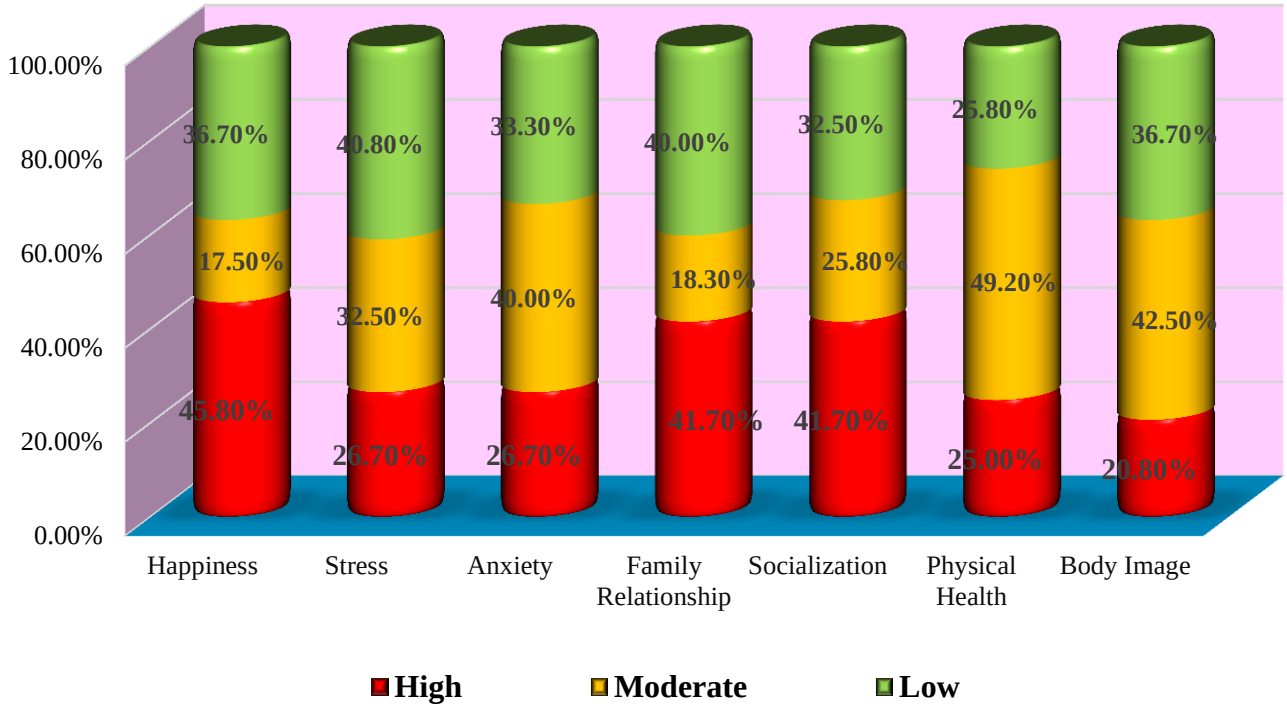

Fig. 4 Levels of PS of pregnant women based on dimensions (*n*=120)

Fig. 4 illustrates the different levels of psychological status of pregnant women based on its dimensions. It is clearly seen that majority i.e., 45.8% reported a high level of happiness, 17.50% reported a moderate level, and 36.7% reported a low-level happiness. Additionally, 26.7% of participants stated better in managing stress, 32.5% reported moderate stress, and 40.80% were found poor to manage stress. In the anxiety dimension, 26.70% good in managing anxiety, 40.0% reported moderate levels, and 33.3% reported that they are poor in managing anxiety. Regarding family relationships, 41.7% of pregnant women reported high satisfaction, 18.3% had moderate and 40.0% reported poor satisfaction. In case of socialization, 41.70% pregnant women have good socialization, 25.8% had a moderate level, and 32.50% have poor socialization. In terms of physical health, 25.0% pregnant women were found to have good physical health satisfaction levels, 49.2% reported moderate levels, and 25.8% of them reported poor physical health. About 20.80% pregnant women were highly satisfied with their body image, 42.50% were moderately satisfied, and 36.7% were dissatisfied.

Overall, Fig.4 provides insights into the distribution of psychological status among pregnant women across various dimensions, allowing for a comprehensive understanding of their psychological well-being in post intervention group.

4.6 Results of Post-intervention group

Out of 120 selected pregnant women, music and meditation intervention was carried out under control and experimental group. the results are depicted as follows.

4.6.1 Effectiveness music intervention on psychological status of pregnant women

Music intervention module was prepared and the detailed list is provided under table 6 in methodology chapter. This selected music intervention was applied to 30 pregnant women experimental group and 30 respondents kept under control group without intervention. In the experimental group, music sessions were administered over 20 sessions starting from the fourth to the eighth month of pregnancy. The psychological status for each trimester was assessed using the Pregnancy Psychological Status Scale for both the control and experimental groups. The data were analysed using Repeated Measures ANOVA, paired t-tests, and Pearson correlation analysis.

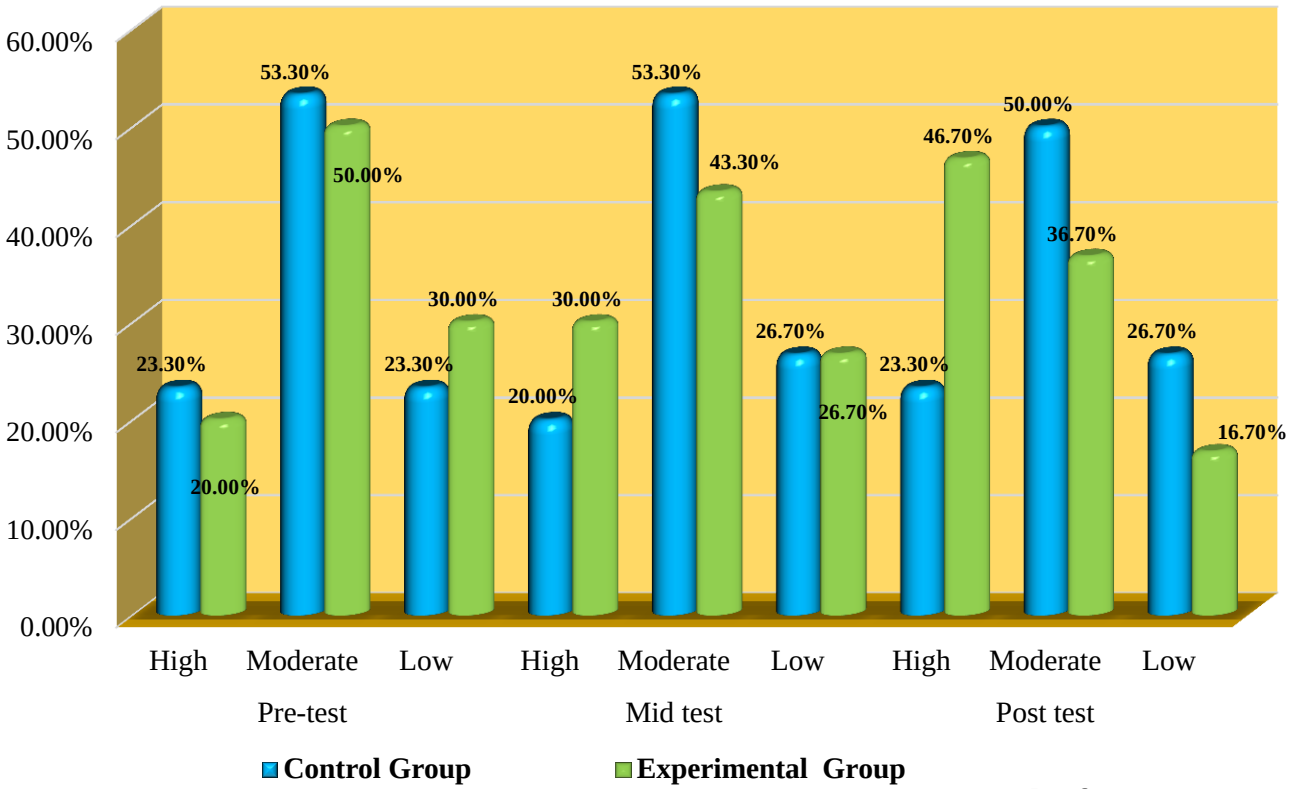

Fig. 5 Levels of PS among Control and Experimental groups in Pre, Mid and Post Music intervention

In the control group, which did not receive the music intervention, there were marginal fluctuations in levels psychological status throughout the study period. From **Fig. 5**, it was observed that in pretest phase (first trimester), 53.30% of respondents were found to have moderate psychological status while 23.30% were under high and low psychological status respectively. In case of mid-test (second trimester) majority of the respondents i.e. 53.30% were in the moderate level while 26.70% of them were found to have low psychological status and 20.00% experienced high psychological status. Whereas in post-test (third trimester) majority i.e. 50% of respondents, stated moderate psychological status and 26.7% stated low psychological status, and only 23.30% were under high psychological status.

On the contrary, the experimental group, which underwent the music intervention, exhibited more distinguished changes in psychological status. Initially, at the pretest phase (first trimester), before the intervention, most respondents (50%) encountered moderate psychological status, and 30% and 20% of respondents expressed low and high psychological status, respectively, similar to the control group. However, during the mid-test (second trimester), there was a prominent improvement in the levels of psychological

status among pregnant women and most respondents (43.30%) reported moderate psychological status, and 30% and 26.70% reported high and low status. By the post-test phase (third trimester), the effects of the music intervention became more pronounced. Noticeably, in post-test (third trimester), most pregnant mothers (46.70%) reported high psychological status, and 36.70% and only 16.70% stated moderate and low psychological status respectively.

Table 12

Mean Scores of Pre, Mid, and post-tests of PS among pregnant women in Experimental and Control groups (*n*=60) with music intervention

Psychological status	Groups	Phases						Change / gain
		Pre-test (1st trimester)		Mid (2nd trimester)		Post-test (3rd trimester)		
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Happiness	Experimental	11.33	2.040	13.00	2.477	13.20	2.747	1.87
	Control	11.97	2.220	12.10	2.881	12.87	1.925	0.9
	Total	11.65	2.138	12.55	2.702	13.03	2.358	1.38
Stress	Experimental	23.43	4.485	24.57	5.380	26.97	4.597	3.54
	Control	23.00	5.153	23.30	4.435	22.00	5.233	-1
	Total	23.22	4.794	23.93	4.930	24.48	5.488	1.26
Anxiety	Experimental	15.90	4.245	16.23	4.141	18.43	4.014	2.53
	Control	15.87	3.461	15.50	4.125	15.70	4.356	-0.17
	Total	15.88	3.840	15.87	4.115	17.07	4.376	1.19
Family Relationships	Experimental	14.30	2.452	13.87	2.956	14.27	2.766	-0.03
	Control	14.93	2.449	13.70	3.007	11.67	3.209	-3.3
	Total	14.62	2.450	13.78	2.958	12.97	3.247	-1.65
Socialization	Experimental	10.87	2.837	10.90	3.478	10.13	2.738	-0.74
	Control	11.60	2.554	9.83	2.902	9.17	2.692	-2.43
	Total	11.23	2.702	10.37	3.221	9.65	2.736	-1.58
Physical Health	Experimental	14.53	3.830	15.47	3.126	18.47	3.298	3.94
	Control	15.23	4.174	13.73	4.242	14.00	4.283	-1.23
	Total	14.88	3.988	14.60	3.797	16.23	4.409	1.35
Body Image	Experimental	11.00	3.373	10.40	3.047	11.63	2.659	0.63

Psychological status	Groups	Phases						Change / gain
		Pre-test (1st trimester)		Mid (2nd trimester)		Post-test (3rd trimester)		
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Overall PS	Control	11.17	3.086	10.13	2.813	9.67	2.783	-1.5
	Total	11.08	3.206	10.27	2.910	10.65	2.875	-0.43
	Experimental	101.37	17.993	104.43	18.801	113.10	18.378	11.73
	Control	103.77	16.872	98.30	15.777	95.07	18.268	-8.7
	Total	102.57	17.336	101.37	17.483	104.08	20.316	1.51

Table 12 reveals mean and SD scores of the psychological status among experimental and control group in the pre, mid, and post-intervention phases of music intervention.

In terms of the happiness dimension, on the whole, the mean happiness total scores were 11.65 in the pre-test (first trimester), 12.55 in the mid-test (second trimester), and 13.03 in the post-test (third trimester), respectively. The experimental group improved its happiness by 1.87 points (pre11.33; post13.20) compared to the control group, with slight improvement in happiness by 0.9 points (pre11.97; post12.87).

With respect to the stress dimension, on the whole, the mean stress scores were 23.22 in the pre-test (first trimester), 23.93 in the mid-test (second trimester), and 24.48 in the post-test (third trimester). The experimental group improved in coping stress levels by 3.54 (pre23.43; post26.97) compared to the control group, which showed increased stress levels of -1.00 (pre23.00; post22.00). The experimental group's psychological status improved as a result of coping with stress, but the control group's stress level did not change much.

For anxiety, on the whole, in the pre-test, i.e., first trimester, the mean anxiety score was 15.88, which was similar to 15.87 in the mid-test or second trimester and slightly rose to 17.07 in the post-test or in the third trimester. The experimental group improved coping in anxiety levels by 2.53 (pre 15.90; post18.43) compared to the control group, which showed negative anxiety scores by -0.17 (pre15.87; post15.70). The experimental group's psychological status improved as a result of coping with the anxiety, as compared to the control group, which exhibited no change.

In case of the family relationships dimension, on the whole, the mean Family relationships scores were 14.62 in the pre-test (first trimester), 13.78 in the mid-test (second trimester), and 12.97 in the post-test (third trimester). The experimental group exhibited no

improvement in family relationships with the given score of -0.03 (pre14.30; post14.27), however, in control group family relationship scores decreased with -3.3 (pre14.93; post11.67). Thus, there was no such improvements seen in both groups.

In case of socialization, the observed total mean socialization scores were 11.23 in the pre-test (first trimester), 10.37 in the mid-test (second trimester), and 9.65 in the post-test (third trimester). Where we found that in both experimental and control group dropped socialization scores by -0.74 (pre10.87; post10.13) and -2.43 (pre11.60; post9.17) respectively. This indicates music intervention did not show improvements in socialization among experimental group.

Based on physical health, on the whole, the mean physical health scores were 14.88 in the pre-test (first trimester), 14.60 in the mid-test (second trimester), and 16.23 in the post-test (third trimester). Where we find that the experimental group raised its physical health scores by 3.94 (pre 14.53; post 18.47) compared to the control group, which dropped physical health scores by -1.23 (pre15.23; post14.00). Thus, the experimental group was more satisfied with their physical health than those of control group after music intervention.

In terms of body image, on the whole, the mean body Image scores were 11.08 in the pre-test (first trimester), 10.27 in the mid-test (second trimester), and 10.65 in the post-test (third trimester). Based on the mean scores, we find that the experimental group boosted its body image scores by 0.63 (pre11.00; post11.63) compared to control group, which shows lower scores of -1.5 (pre11.17; post9.67). Thus, the experimental group was pleased with their body image, but the control group experienced unfavourable attitudes about body image based on as trimester increases.

However, with regard to overall psychological status, the total mean psychological status scores in the pre-test, i.e. first trimester, were 102.57, which was slightly reduced to 101.37 in the mid-test or second trimester and then increased to 104.08 in the post-test or third trimester. The experimental group had higher psychological status scores by 11.73 (pre101.37; post113.10) than control group, which showed reduced psychological status scores by -8.7 (pre103.77; post95.07). As a result, the music experimental group had a better psychological status than the control group, which gradually deteriorated and this group was not subjected to music intervention.

Table 13

Test of Sphericity of PS with Music intervention

Within Subject Effect (*n*=60)	Variables	Mauchly's W	Chi-square	*df*	*p*	Greenhouse Geisser
Trimester	Happiness	.950	2.921	2	0.232	-
	Stress	.789	13.504	2	0.001	.826
	Anxiety	.953	2.750	2	0.253	-
	Family Relationships	.933	3.952	2	0.139	-
	Socialization	.695	20.729	2	0.001	.766
	Physical Health	.785	13.826	2	0.001	.823
	Body Image	.762	15.462	2	0.001	.808
	Overall PS	.578	31.253	2	0.000	.703

Table 13 shows that Mauchly's W value is significant in the dimensions of stress, socialization, physical health, body image, and overall psychological status, indicates that the sphericity condition was not met in the data, i.e., unequal covariance across the three trimesters, this was then corrected using Greenhouse-Geisser correction. Table 13 further shows that for the interaction effect, the sphericity test is not significant for happiness (X^2 =2.921, p=0.232), anxiety (X^2=2.750, p=0.253), and family relationships (X^2=3.952, p=0.139). The rule of thumb indicates that reject the null hypothesis if p<0.05. Thus, sphericity (homogeneity) appears to be met. The major within-subject interaction effects were then calculated through multivariate analysis of variance.

Table 14

Multivariate analysis of variance for music intervention and PS of pregnant women

Dependent variable	Measure	Wilk's Lambda Value	*F* (*df1, df2*)	*p*	η^2
Happiness	Trimester	0.82	6.23 (2,57)	0.004**	0.18
	Trimester * Group	0.95	1.44 (2,57)	0.247^{NS}	0.05
Stress	Trimester	0.97	0.96 (2,57)	0.390^{NS}	0.03
	Trimester * Group	0.84	5.26 (2,57)	0.008**	0.16

Dependent variable	Measure	Wilk's Lambda Value	*F* (*df1, df2*)	*p*	η^2
Anxiety	Trimester	0.91	2.73 (2,57)	0.074^{NS}	0.09
	Trimester * Group	0.92	2.56 (2,57)	0.086^{NS}	0.08
Family Relationships	Trimester	0.84	5.56 (2,57)	0.006**	0.16
	Trimester * Group	0.81	6.75 (2,57)	0.002**	0.19
Socialization	Trimester	0.79	7.72 (2,57)	0.001**	0.21
	Trimester * Group	0.95	1.66 (2,57)	0.200^{NS}	0.06
Physical Health	Trimester	0.85	4.86 (2,57)	0.011*	0.15
	Trimester * Group	0.83	5.90 (2,57)	0.005**	0.17
Body Image	Trimester	0.97	1.00 (2,57)	0.373^{NS}	0.03
	Trimester * Group	0.87	4.43 (2,57)	0.016*	0.13
Overall PS	Trimester	0.96	1.35 (2,57)	0.269^{NS}	0.05
	Trimester * Group	0.76	9.11 (2,57)	0.001**	0.24

****Significant at 1% level *Significant at 5% level NS-Non-Significant**

Table 14 depicts the multivariate analysis of variance on overall psychological status of music intervention among pregnant women. Even after assessing psychological status for three times, the results showed no significant difference across the three trimesters, regardless of group. However, the result demonstrates no interaction effects between the trimester but there is a strong association between the groups (experimental and control group) with *F* (2,57) value 9.11, which is significant at 0.01 level, and the partial eta squad *η2* is 0.242, demonstrating a large effect size with music intervention.

In case of dimensions, happiness levels throughout trimesters (first, second, and third) with *F* (2,57) value 6.23, significant at 0.01 level, with a partial eta square value of 0.18 indicates large effect size. The multivariate analysis found no significant interaction effects between trimesters and groups.

In case of stress, the multivariate analysis of variance with music intervention among pregnant women revealed no significant difference throughout the three trimesters, irrespective of group. The multivariate analysis shows a significant interaction effect between trimesters and groups (experimental and control), with *F* (2,57) value 5.26, significant at 0.01 level and partial eta squad *η2* = 0.16, indicating a large effect size with music intervention.

In case of anxiety, results of multivariate analysis of variance with music intervention among pregnant women failed to demonstrate a significant difference between trimesters, and also between trimesters and groups, with medium effect size *(*η^2=0.08).

In family relationships, the results show a significant difference between the three trimesters, with *F* (2,57) value 5.56, which is significant at the 0.01 level, and the partial eta square value η^2 is 0.16, indicates large effect size. Similarly, trimester and group also exhibited significance difference with *F* (2,57) value 6.75 (significant at 0.01 level) and partial eta squad $\eta 2$=0.19 indicates large effect of music intervention.

However, in case of socialization across trimesters, the obtained *F* (2,57) value is 7.72, which is significant at the 0.01 level, with a partial eta square value η^2 of 0.21, indicating a large effect size of intervention, whereas, it was observed that there is no significant interaction effects between trimesters and groups (experimental and control group) and found medium effect size (η^2=0.06).

Regarding Physical Health**,** the multivariate analysis of variance for music intervention among pregnant women shows a significant difference between trimesters (1st, 2nd, and 3rd). with *F* (2,57) value 4.86, which is significant at the 0.05 level, and the partial eta square value η^2 is 0.15, showing a large effect size in intervention. Similarly, it was also noted that significant interaction effects between trimester and group (experimental and control), with *F* (2,57) value 5.90 (significant at 0.01 level) and partial eta squad η^2=0.17, showing a large effect size in music intervention.

Finally, in terms of body image, the multivariate analysis of variance for music intervention in pregnant women found no significant difference across the three trimesters, however, interaction effects between the trimesters and groups, found to be significant at the 0.05 level with *F* (2,57) value 4.43, and partial eta squad η^2 is 0.13, denotes medium effect size in music intervention.

Table 15

Results of repeated measures ANOVA in Pre, Mid, and Post-test of PS among pregnant women in Experimental and Control group (*n*=60) with Music Intervention

Variables	Source of variation	Sum of squares	*df*	Mean square	*F*	*p*	η^2
	Within Subject Effect						
Happiness	Trimester	59.14	2	29.57	5.78	.004**	.091
	Trimester * Group	18.03	2	9.02	1.76	.176^{NS}	.029
	Error (Trimester)	593.49	116	5.12			
Stress	Trimester	48.41	1.65	29.31	1.22	.294^{NS}	.021
	Trimester * Group	174.68	1.65	105.76	4.40	.021*	.071
	Error (Trimester)	2302.91	95.79	24.04			
Anxiety	Trimester	56.81	2	28.41	2.36	.099^{NS}	.039
	Trimester * Group	58.90	2	29.45	2.45	.091^{NS}	.040
	Error (Trimester)	1396.29	116	12.04			
Family Relationships	Trimester	81.68	2	40.84	6.12	.003**	.095
	Trimester * Group	85.08	2	42.54	6.37	.002**	.099
	Error (Trimester)	774.58	116	6.68			
Socialization	Trimester	75.43	1.53	49.22	5.73	.009**	.090
	Trimester * Group	30.70	1.53	20.03	2.33	.116^{NS}	.039
	Error (Trimester)	763.87	88.88	8.59			
Physical Health	Trimester	91.41	1.65	55.55	3.08	.060^{NS}	.050
	Trimester * Group	200.43	1.65	121.80	6.76	.003**	.104
	Error (Trimester)	1720.82	95.44	18.03			
Body Image	Trimester	20.03	1.62	12.40	1.39	.253^{NS}	.023
	Trimester * Group	38.14	1.62	23.60	2.64	.088^{NS}	.044
	Error (Trimester)	837.82	93.73	8.94			
Overall PS	Trimester	222.41	1.41	158.14	0.48	.553^{NS}	.008
	Trimester * Group	3159.74	1.41	2246.69	6.84	.005**	.105
	Error (Trimester)	26791.18	81.57	328.44			

****Significant at 0.01 level** ***Significant at 0.05 level** **NS-Non Significant**

Table 15 shows repeated measures ANOVA results among control and experimental groups with music intervention.

Regarding the happiness dimension, repeated measures ANOVA revealed a significant improvement in happiness scores (F=5.78, p=.004) regardless of trimesters. Furthermore, the happiness score was compared among trimesters and groups, but no significant differences were found.

Regarding the stress dimension, repeated measures ANOVA revealed no significant changes in stress scores (F=1.22, p=.294) throughout all trimesters. However, the increase in stress scores was verified with trimesters and group with a significant difference (F=4.40; p=.021) and showed better coping in stress dimension.

While for anxiety, repeated measures ANOVA revealed no statistically significant difference in anxiety (F=2.36, p=.099) throughout trimesters, and also with trimester and group with F value of 2.45 (p=.091). this shows music intervention did not reflect on anxiety levels.

Regarding family relationships dimension, repeated measures ANOVA revealed a significant increase in family relationships scores (F=6.12, p=.003) in case of trimesters as well as in trimester and groups (F=6.37; p=.002). this indicates music intervention has significant impact on improving pregnant ’omen's relationships with their families.

While in Socialization, repeated measures ANOVA revealed a significant increase in Socialization scores (F=5.73, p=.009) in trimesters. However, no significant scores were observed across trimesters and groups (F=2.33; p=.116). This indicates music intervention enhances pregnant women socialization as trimester increases.

Based on physical health, repeated measurements. ANOVA revealed that there was no significant difference in Physical Health scores (F=3.08, p=.060) among trimesters. Whereas, physical health scores were assessed with significant difference among trimesters and groups (F=6.76; p=.003). this indicated improvements in physical health in case of groups was notified with music intervention.

In case of body image, repeated measures ANOVA revealed that there was no significant increase in scores (F=1.39, p=.253) among trimesters and trimester with groups (F=2.64; p=.088). So, music intervention proved no changes in body image of pregnant women.

However, in overall psychological status, repeated measures ANOVA revealed no significant difference in overall psychological scores (F=0.48, p=.553), however there was observed change in trimester and groups which denotes significance difference among groups followed with trimesters (F=6.84; p=.005). this denotes music intervention improved overall PS among trimesters and groups.

The post-hoc values for the paired comparisons between trimesters (pre, mid & post) with music intervention is depicted below under table and graphs.

Table 16

Pairwise comparisons of Music Experimental group on PS of Pregnant Women in pre, mid and post-test

Variables	(I) Trimester	(J) Trimester	Mean Difference (I-J)	Std. Error	Sig.
Happiness	Pretest (1st trimester	Mid test	-1.67*	0.60	.028
		Post test	-1.87*	0.60	.013
	Midtest (2nd trimester)	Pre test	1.67*	0.60	.028
		Post test	-.20NS	0.44	1.000
	Posttest (3rd trimester)	Pre test	1.87*	0.60	.013
		Mid test	0.20NS	0.44	1.000
Stress	Pretest (1st trimester	Mid test	-1.13NS	1.18	1.000
		Post test	-3.53*	1.25	.025
	Midtest (2nd trimester)	Pre test	1.13NS	1.18	1.000
		Post test	-2.40*	0.93	.047
	Posttest (3rd trimester)	Pre test	3.53*	1.25	.025
		Mid test	2.40*	0.93	.047
Anxiety	Pretest (1st trimester	Mid test	-0.33NS	1.03	1.000
		Post test	-2.53*	0.94	.034
	Midtest (2nd trimester)	Pre test	0.33NS	1.03	1.000
		Post test	-2.20**	0.64	.005
	Posttest (3rd trimester)	Pre test	2.53*	0.94	.034
		Mid test	2.20**	0.64	.005
Family Relationships	Pretest (1st trimester	Mid test	0.43NS	0.68	1.000
		Post test	.033 NS	0.64	1.000
	Midtest (2nd trimester)	Pre test	-0.43 NS	0.68	1.000
		Post test	-0.40 NS	0.47	1.000
	Posttest (3rd trimester)	Pre test	-0.03 NS	0.64	1.000
		Mid test	0.40 NS	0.47	1.000
Socialization	Pretest (1st trimester	Mid test	-0.03 NS	0.87	1.000
		Post test	0.73 NS	0.67	.840
	Midtest (2nd trimester)	Pre test	0.03 NS	0.87	1.000
		Post test	0.77 NS	0.50	.408
	Posttest (3rd trimester)	Pre test	-0.73 NS	0.67	.840
		Mid test	-0.77 NS	0.50	.408
Physical Health	Pretest (1st trimester	Mid test	-0.93 NS	0.95	.999
		Post test	-3.93**	0.94	.001
	Midtest (2nd trimester)	Pre test	0.93 NS	0.95	.999
		Post test	-3.00**	0.73	.001
	Posttest (3rd trimester)	Pre test	3.93**	0.94	.001
		Mid test	3.00**	0.73	.001
Body Image	Pretest (1st trimester	Mid test	0.60 NS	0.96	1.000
		Post test	-0.63 NS	0.76	1.000
	Midtest (2nd trimester)	Pre test	-0.60 NS	0.96	1.000
		Post test	-1.23 NS	0.60	.147
	Posttest (3rd trimester)	Pre test	0.63 NS	0.76	1.000
		Mid test	1.23 NS	0.60	.147
	Pretest (1st trimester	Mid test	-3.07 NS	4.95	1.000

Variables	(I) Trimester	(J) Trimester	Mean Difference (I-J)	Std. Error	Sig.
Overall PS	Midtest (2nd trimester)	Post test	-11.73*	4.60	.049
		Pre test	3.07 NS	4.95	1.000
	Posttest (3rd trimester)	Post test	-8.67**	2.17	.001
		Pre test	11.73*	4.60	.049
		Mid test	8.67**	2.17	.001

****Significant at 1% level** ***Significant at 0.05 level** **NS-Non-Significant**

Post-hoc paired comparisons were used to investigate the influence of the music intervention on psychological status in the pre, mid, and post-intervention phases under experimental group.

Based on the happiness dimension, Table 16 reveals a significant mean difference in happiness between the pre and mid intervention phases (M=-1.67, $p<0.05$). There was also a significant mean difference between pre and post intervention periods (M =-1.87, $p<0.05$). The preceding table also demonstrates a substantial mean difference between the mid and pre-intervention phases (M =1.67, $p<0.05$). However, there was no significant mean differences reported between the mid and post intervention phases (M=-.20, $p>0.05$). in case of post and pre-intervention phases (M=1.87, $p<0.05$) also significant difference exists. However, no significant mean difference was seen between the post and mid-intervention phases (M=.20, $p>0.05$).

Based on the stress dimension, significant mean difference was not observed in pre- and mid intervention phases (M=-1.13, $p>0.05$). However, there was a significant mean difference reported in pre- and post-intervention phases (M=-3.5, $p<0.05$). The preceding values of mid test demonstrates that there was no significant mean difference observed in mid and pre-intervention (M=1.13, $p>0.05$), however, there was a significant mean difference observed in mid and post-intervention phases (M = -2.40, $p<0.05$). with post-test there was a significant mean difference between the post and pre-intervention phases (M=3.53, $p<0.05$). Also, there was a significant mean difference was seen in the post-intervention and mid-intervention periods (M=2.40, $p<0.05$)

In case of anxiety, in the pre- and mid intervention phases (M=-.33, $p>0.05$) no significant mean difference was observed. However, a significant mean difference was observed in the pre-and post-intervention phases (M=-2.53, $p<0.05$). The preceding values demonstrates that there was no significant mean difference in the mid and pre-intervention periods (M = 0.33, p>0.05). But there was a significant mean difference reported in the mid

and post-intervention phases (M=-2.20, p<0.01). in case of post intervention, a significant mean difference was observed in post and pre-intervention phases (M=2.53, p<0.05) and also, in the post-intervention and mid-intervention phases (M=2.20, p<0.01). it was noted music intervention has showed improvements in managing anxiety.

With respect to Physical Health dimension, no significant mean difference in physical health in the pre- and mid intervention phases (M=-0.93, p>0.05). However, there was a significant mean difference reported in pre- and post-intervention phases (M=-3.93, p<0.01). In case of mid-test, there was no significant mean difference observed in mid and pre-intervention (M=-0.93, p>0.05). However, a significant mean difference was observed in mid and post intervention phases (M=-3.00, p<0.01). In case of post-test, a significant mean difference was observed in the post and pre-intervention phases (M= 3.93, p<0.01) as well as in the post and mid-intervention phases (M=3.00, p<0.01). the results interpreted that music intervention has improvements in physical health indicators of pregnant women.

With respect to overall psychological status, no significant mean difference was observed in the pre- and mid intervention phases (M=-3.07, p>0.05). However, there was a significant mean difference reported in pre- and post-intervention phases (M=-11.73, p<0.05). in case of mid-test, there was no significant difference observed in mid and pre-intervention (M=3.07, p>0.05). However, significant mean difference was observed in mid and post intervention phases (M=-8.67, p<0.01). with respect to post-test, a significant mean difference in the post and pre-intervention phases (M= 11.73, p<0.05) was observed and also in post- and mid-intervention phases (M=8.67, p<0.01). this indicates music intervention has impact on pregnant women's overall PS.

Regarding family relationships, socialization and body image dimension, there was no significant differences found in pre, mid and post-intervention phases.

The profile plots among experimental and control groups with dimensions of psychological status are shown further.

Mean pre-test, Mid and post test scores on psychological status of pregnant women of Experimental and Control group (*n*=60) in Music intervention

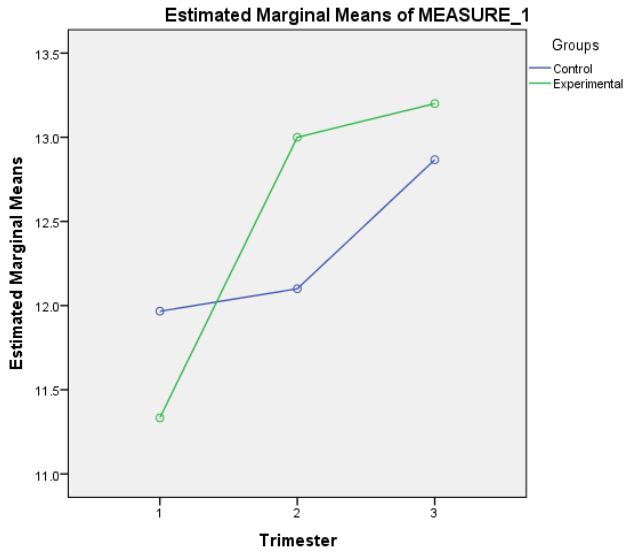

Fig. 6 Happiness with respect to Music intervention

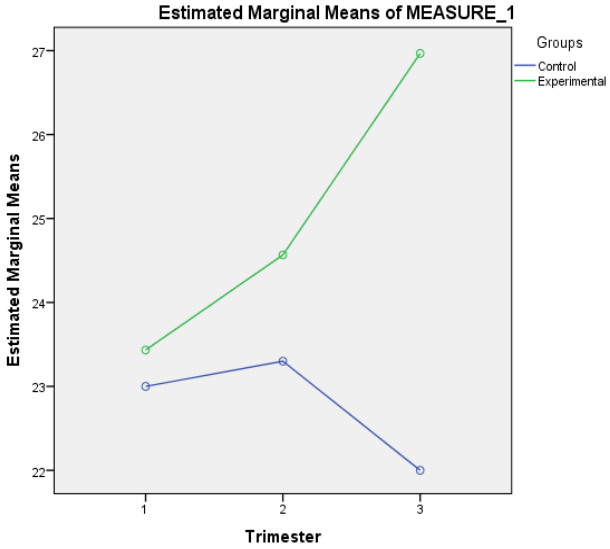

Fig. 7 Stress with respect to Music intervention

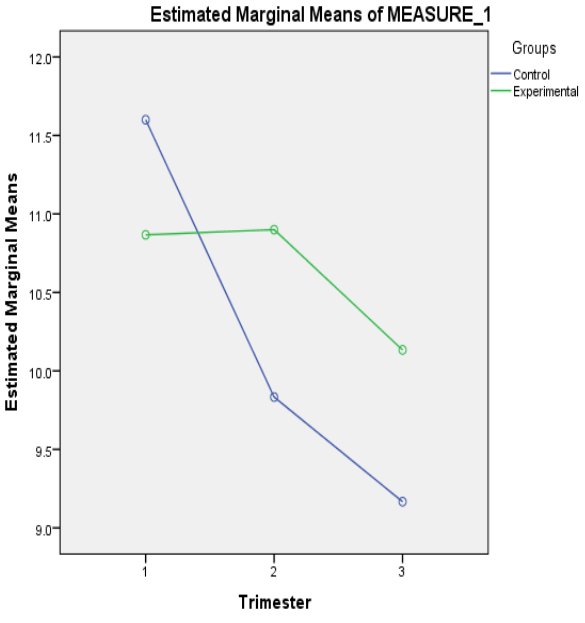

Fig. 8 Anxiety with respect to Music intervention

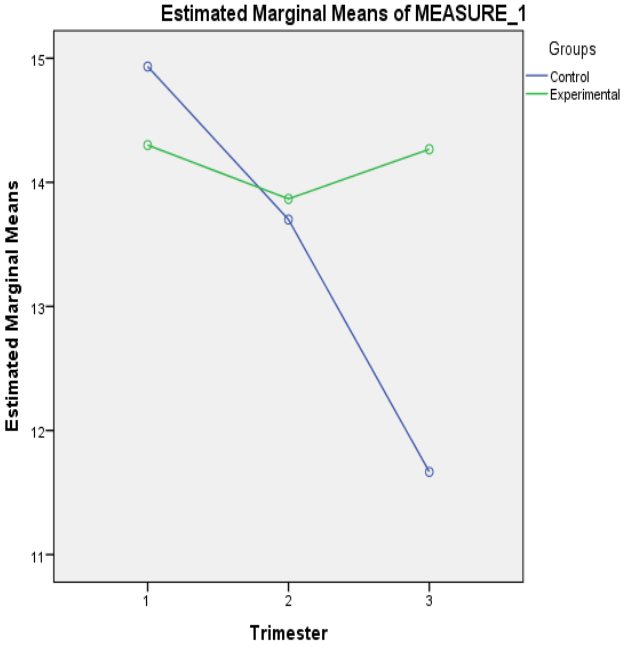

Fig. 9 Family Relationships with respect to Music intervention

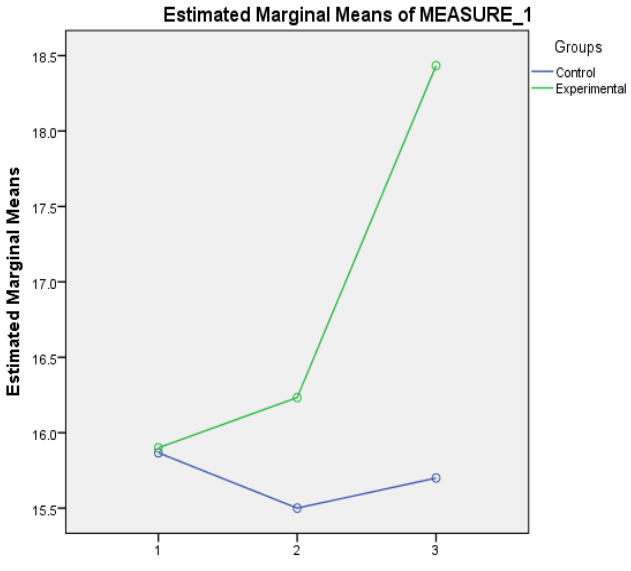

Fig. 10 Socialization with respect to Music intervention

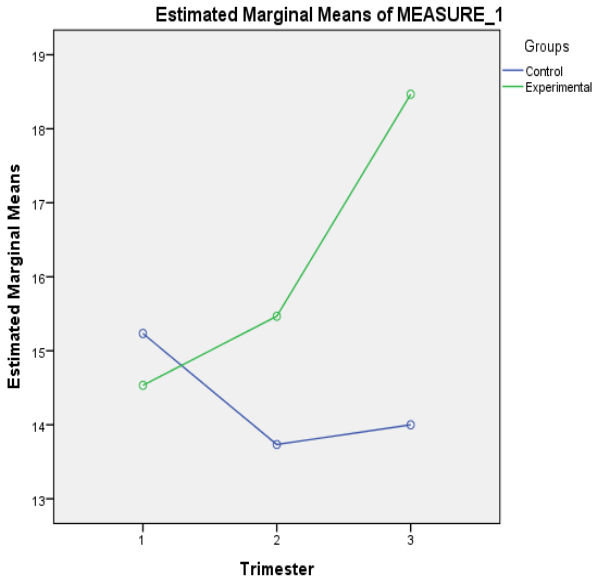

Fig. 11 Physical Health with respect to Music intervention

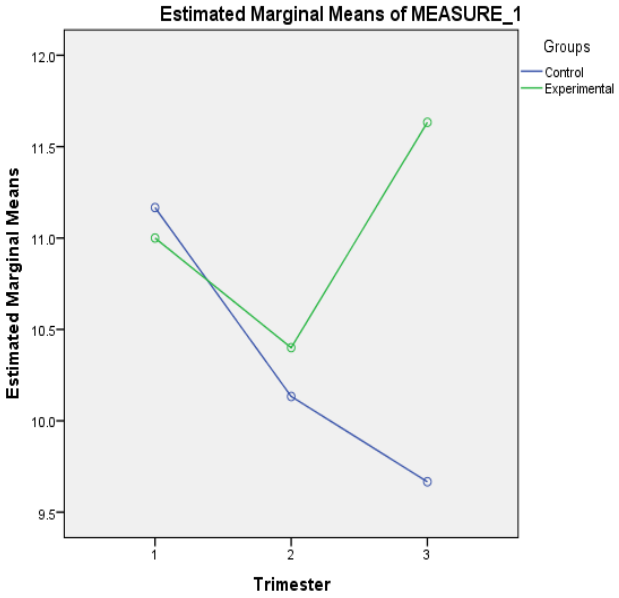

Fig. 12 Body Image with respect to Music intervention

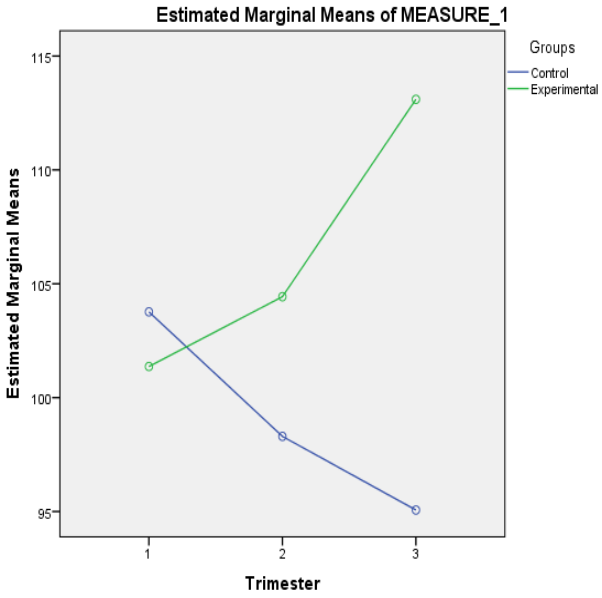

Fig. 13 Overall PS with respect to Music intervention

Figures 6-13 indicates the estimated mean values of control and experimental group with music intervention indicating in terms of psychological well-being. In terms of experimental group plots on stress, family relationships, socialization, physical health, body image, and overall psychological status, indicates that music has a significant effect on these dimensions compared to control group in the mid and post-test results (second and third trimesters). The graph depicts higher psychological status among pregnant women in the music experimental group as the trimester progresses.

However, in happiness and anxiety dimensions, the observed mean values between the music experimental and control groups are almost equal. Meanwhile, pregnant women's psychological health tends to improve as the trimester progresses.

$H0_2$: There might be no significant difference in psychological status of pregnant women Pre, Mid and Post-test under music intervention group. The statement can be rejected since there is a improvement in psychological status among pregnant women in experimental group, however it can be accepted in case of happiness, anxiety and socialization. But $H0_2$ is accepted in case of control group in music intervention.

The therapeutic effectiveness of music therapies for anxiety reduction in pregnant women was investigated in the Lin et al. (2019) study. There were 1482 individuals in 11 trials that made up the research. According to the meta-analysis, listening to music at home has significant anxiolytic advantages and dramatically lowers anxiety levels when compared to other therapies. On the other hand, there was no discernible trend toward greater anxiety-reducing benefits as mother age rose. The study found that music therapies might help lower anxiety and could be used with expectant mothers.

A study by Pal (2017) supports the above results as it investigated the effects of music therapy on anxiety, pain, and clinical parameters among primigravida women during the first stage of labour. The study involved 30 primigravida women and used a non-probability purposive sampling technique. Results showed that all primigravida women experienced pain and anxiety during the first stage of labour. Post-intervention observation showed a significant decrease in maternal pulse, respiration, and blood pressure in the experimental group. However, no significant difference was found for foetal heart rate. The study concluded that music therapy can effectively reduce anxiety and pain in primigravida women during labour, and that it can be used as a therapeutic intervention for pregnant mothers.

4.5.2 Effectiveness of meditation intervention on psychological status of pregnant women.

Meditation intervention module was prepared and the detailed list is provided under table 5 in methodology chapter. These pregnant women were divided into control (30 participants) and experimental (30 participants) groups. The experimental group underwent 14 meditation sessions that encompassed breathing exercises, relaxation techniques, deep belly breathing, pranayama, loving-kindness meditation, and visualization. These sessions were meticulously guided and practiced until participants achieved proficiency, spanning the fourth to eighth month of pregnancy. Pre- and post-intervention data were collected and assessed using a self-constructed Pregnancy Psychological Status Scale.

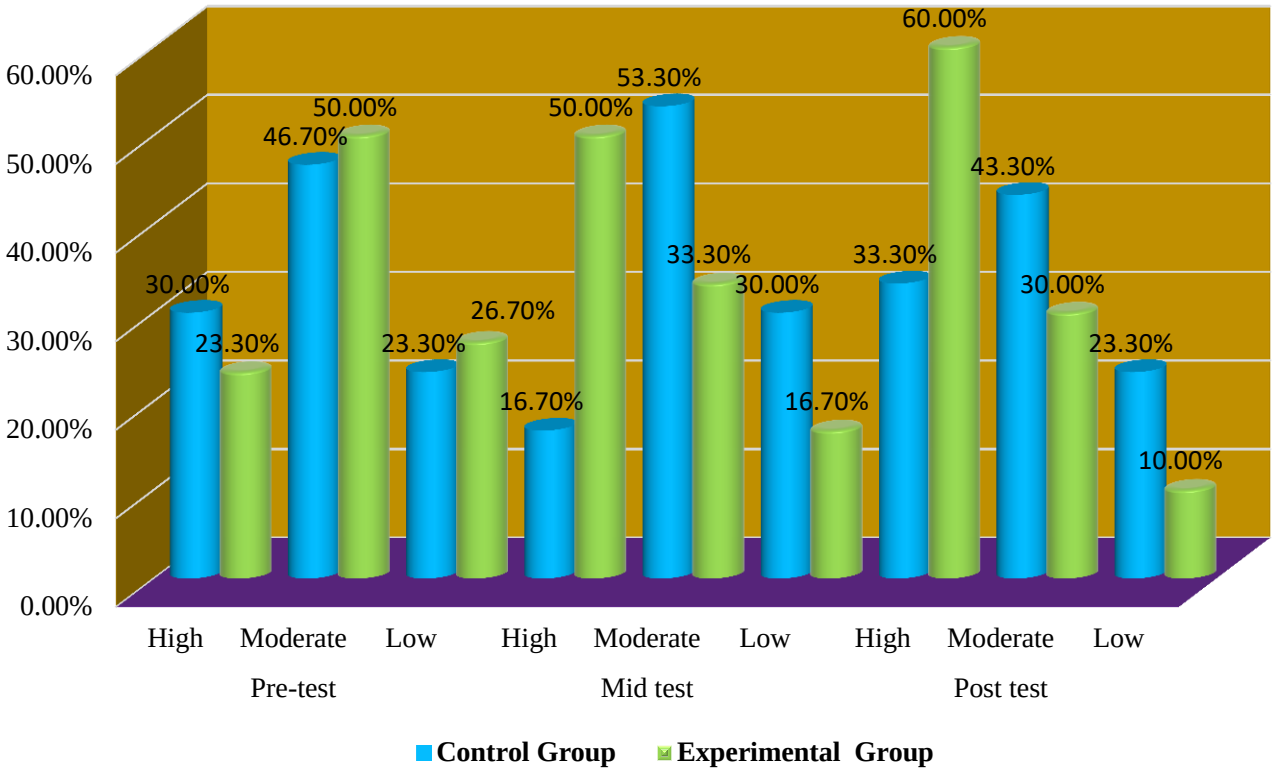

Fig. 14 Levels of PS among Control and Experimental groups in Pre, Mid and Post Meditation intervention

Fig.14 explains levels of the psychological status in control and experimental group under meditation intervention during pre, mid and post intervention phases.

In the control group, which did not receive the meditation intervention, there were marginal fluctuations in levels psychological status throughout the study period. From Fig. 6,

it was observed that in pretest phase (first trimester), 46.70% of respondents were found to have moderate psychological status while 30% and 23.30% were under high and low psychological status respectively. In case of mid-test (second trimester) majority of the respondents (53.30%) reported moderate levels of psychological status, while 30% and 16.70% revealed low and high psychological status respectively. Similarly, in post-test (third trimester) majority i.e. 43.30% of respondents stated moderate psychological status and 33.30% stated high psychological status and remaining 23.30% were under low psychological status.

However, the experimental group, which underwent the meditation intervention, exhibited more notable variations in psychological status. Initially, at the pretest phase (first trimester), before the intervention, majority of respondents (50%) encountered moderate psychological status, and 26.70% and 23.30% of respondents expressed low and high psychological status respectively. However, during the mid-test (second trimester), there was a prominent improvement in the levels of psychological status among pregnant women and majority of respondents (50%) reported high psychological status, 33.30% and 16.70% reported moderate and low psychological status. By the post-test phase (third trimester), the effects of the music intervention became more pronounced. Noticeably, in post-test (third trimester), more than half of the pregnant mothers (60%) reported high psychological status, and 30% and a least i.e. 10% stated moderate and low psychological status respectively.

Table 17

Mean Scores of Pre, Mid, and Post-test of PS among pregnant women in Experimental and Control groups (*n*=60) with Meditation intervention

Psychological status	Groups	Phase						Change/ gain
		Pre-test (1st trimester)		Mid (2nd trimester)		Post-test (3rd trimester)		
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Happiness	Experimental	11.47	2.209	13.70	2.548	13.87	2.360	2.4
	control	11.00	1.965	12.37	3.102	13.43	2.596	2.43
	Total	11.23	2.086	13.03	2.893	13.65	2.469	2.42
Stress	Experimental	22.00	4.549	17.93	4.472	26.87	4.485	4.87
	control	23.40	5.568	22.10	5.492	24.03	5.654	0.63
	Total	22.70	5.090	20.02	5.391	25.45	5.258	2.75

Psychological status	Groups	Phase						Change/ gain
		Pre-test (1st trimester)		Mid (2nd trimester)		Post-test (3rd trimester)		
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Anxiety	Experimental	14.73	2.586	24.67	5.416	19.47	4.216	4.74
	control	16.47	3.340	16.33	3.708	16.93	4.456	0.46
	Total	15.60	3.087	20.50	6.231	18.20	4.487	2.6
Family Relationships	Experimental	14.13	2.030	13.63	2.871	15.87	2.788	1.74
	control	14.20	3.274	13.10	2.833	13.97	2.798	-0.23
	Total	14.17	2.701	13.37	2.840	14.92	2.930	0.75
Socialization	Experimental	11.00	3.096	11.80	2.413	11.50	2.146	0.5
	control	11.53	2.837	9.27	3.162	10.30	2.902	-1.23
	Total	11.27	2.957	10.53	3.067	10.90	2.602	0.37
Physical Health	Experimental	16.13	3.758	15.70	2.879	19.27	3.073	3.14
	control	14.97	2.846	14.07	3.463	14.30	4.252	-0.67
	Total	15.55	3.357	14.88	3.263	16.78	4.450	1.23
Body Image	Experimental	12.30	2.654	10.73	2.959	12.17	2.902	0.13
	control	12.30	2.654	10.20	2.592	10.87	3.003	-1.43
	Total	11.52	3.067	10.47	2.771	11.52	3.000	0
Overall PS	Experimental	100.20	17.103	108.17	19.061	119.00	15.974	18.8
	control	103.87	17.743	97.43	17.874	103.83	19.064	-0.04
	Total	102.03	17.376	102.80	19.103	111.42	19.041	9.39

Table 17 reveals mean and SD scores of the psychological status among experimental and control group in the pre, mid, and post-intervention phases of meditation intervention.

With regard to happiness dimension, on the whole, the mean happiness total scores were 11.23 in the pre-test (first trimester), 13.03 in the mid test (second trimester), and 13.65 in the post-test (in the third trimester), respectively. The experimental group improved its happiness by 2.40 scores (pre-11.47; post13.87) compared to control group, with slight improvement in happiness by 2.43 scores (pre 11.00; post13.43).

With respect to the Stress dimension, the total mean stress scores were 22.70 in the pre-test (first trimester), 20.02 in the mid-test (second trimester), and 25.45 in the post-test (third trimester). The experimental group improved in coping stress by 4.87 (pre22.00; post26.87), while the control group boosted stress scores by 0.63 (pre23.40; post24.03). The

experimental group's psychological status improved as a result of coping with stress, but the control group's stress level did not change much.

In terms of anxiety, the total mean anxiety scores were 15.60 in the pre-test (first trimester), 20.50 in the mid-test (second trimester), and 18.20 in the post-test (third trimester). Whereby we find that the experimental group improved c oping in anxiety levels by 4.74 (pre14.73; post19.47) compared to the control group, which had minor or no change in anxiety scores by 0.46 (pre16.47; post16.93). The experimental group's psychological status improved as a result of coping with the anxiety as compared to control group, which exhibited no change.

For Family Relationship dimension, the total mean scores were 14.17 in the pre-test, or first trimester, which reduced to 13.37 in the mid-test or second trimester and then rose to 14.92 in the post-test or third trimester. However, the experimental group increased family relationships scores by 1.74 (pre14.13; post15.87) compared to the control group, which lowered family relationship scores by -0.23 (pre14.20; post13.97). As a result, the experimental group had better family relationships than the control group, which showed no improvement.

In case of socialization dimension, on the whole, the observed mean socialization scores were 11.27 in the pre-test (first trimester), 10.53 in the mid-test (second trimester), and 10.90 in the post-test (third trimester). The experimental group slightly improved socialization scores by 0.05 (pre11.00; post11.50) compared to the control group, which dropped socialization scores by -1.23 (pre11.53; post10.30). This indicates meditation intervention showed slight improvements in socialization among experimental group.

With respect to physical health dimension, on the whole, the mean physical health scores were 15.55 in the pre-test (first trimester), 14.88in the mid test (second trimester) and16.78 in the post-test (third trimester). The experimental group raised its physical health scores by 3.14 (pre16.13; post 19.27) compared to control group, which dropped physical health scores by -0.67 (pre 14.97; post 14.30). Thus, experimental group was more satisfied with their physical health than those of control group after meditation intervention.

With regard to body image dimension, on the whole, the mean body image scores were 11.52 in the pre-test (first trimester), 10.47 in the mid test (second trimester) and 11.52 in the post-test (third trimester). Based on the mean scores, we find that the experimental group boosted its body image scores by 0.13 (pre12.30; post 12.17) compared to control

group, which shows lower scores of -1.43 (pre 12.30; post 10.87). Thus, the experimental group was satisfied with their body image, while control group experienced unfavourable attitudes about body image as trimester increases.

However, the total mean psychological status scores of pregnant women were 102.30 in the pre-test (first trimester), which was slightly raised to 102.80 in the mid-test (second trimester), and again to 111.42 in the post-test (third trimester). The experimental group's psychological status scores improved by 18.8 (pre 100.20; post 119.00) compared to the control group's lower scores of -0.04 (pre103.87; post103.83). As a result, the experimental group had a higher psychological status than the control group, which subsequently deteriorated and this group was not subjected to meditation intervention

Table 18

Test of Sphericity of PS with Meditation intervention

Within Subject Effect (*n*=60)	**Variables**	**Mauchly's W**	**Chi-square**	***df***	***p***
Trimester	Happiness	.984	0.916	2	0.63
	Stress	.973	1.538	2	0.46
	Anxiety	.905	5.685	2	0.06
	Family Relationships	.994	0.361	2	0.84
	Socialization	.977	1.310	2	0.52
	Physical Health	.966	1.972	2	0.37
	Body Image	.889	6.714	2	0.90
	Overall PS	.932	3.984	2	0.14

As the above **Table 18,** indicates, for the interaction effect, the test of sphericity is not significant, X^2=0.92, p=0.63, for happiness, X^2 =1.54, p=0.46 for stress, X^2=5.69, p=0.06 for anxiety, X^2=0.36, p=0.84 for family relationships, X^2=1.31, p=0.52 for socialization, X^2=1.97, p=0.37 for physical health, X^2=6.71, p=0.90 for body image and X^2=3.98, p=0.14for overall psychological status. The rule of thumb indicates that reject the null hypothesis if p<0.05.

Hence the sphericity (homogeneity) seems to be met. The main withing subjects' interaction effects were then computed through multivariate analysis of variance.

Table 19
Multivariate analysis of variance for Meditation intervention and PS of pregnant women

Dependent variable	Effect	Wilk's Lambda Value	*F (df1, df2)*	*p*	η^2
Happiness	Trimester	0.61	18.47 (2,57)	0.001**	0.39
	Trimester* Group	0.97	0.83(2,57)	0.443^{NS}	0.03
Stress	Trimester	0.48	30.92 (2,57)	0.001**	0.52
	Trimester * Group	0.69	12.72 (2,57)	0.001**	0.31
Anxiety	Trimester	0.51	27.33 (2,57)	0.001**	0.49
	Trimester * Group	0.48	30.60(2,57)	0.001**	0.52
Family Relationships	Trimester	0.84	5.42 (2,57)	0.007**	0.16
	Trimester * Group	0.93	2.21 (2,57)	0.120^{NS}	0.07
Socialization	Trimester	0.97	1.04 (2,57)	0.359^{NS}	0.04
	Trimester * Group	0.86	4.48 (2,57)	0.016*	0.14
Physical Health	Trimester	0.81	6.58 (2,57)	0.003**	0.19
	Trimester * Group	0.82	6.44 (2,57)	0.003**	0.18
Body Image	Trimester	0.86	4.60(2,57)	0.014*	0.14
	Trimester * Group	0.87	4.09 (2,57)	0.022*	0.13
Overall PS	Trimester	0.76	8.87 (2,57)	0.000**	0.24
	Trimester * Group	0.83	5.87 (2,57)	0.005**	0.17

****Significant at 1% level** ***Significant at 5% level** **NS-Non Significant**

Table 19 displays the multivariate analysis of variance of meditation intervention among pregnant women. The results demonstrate a significant difference between the three trimesters, that is, the first, second, and third trimester, and after three times assessments of psychological status, the *F* (2,57) value is 8.87, which is significant at the 0.01 level, and the partial eta square value η^2 is 0.24, indicates a large effect size. The multivariate analysis shows significant interaction effects between trimesters and groups (experimental and control group), with *F* (2,57) value 5.87 (significant at 0.01 level) and partial eta squad η^2=0.17, indicating a large effect size.

In case of dimensions, a significant difference in happiness was observed levels between trimesters (first, second, and third) with an *F* (2,57) value of 18.47, significant at the 0.01 level, with a partial eta square value *η2* of 0.39 showing a large effect size. The multivariate analysis revealed no significant interaction effects between trimesters and groups.

In case of stress, the multivariate analysis of variance with meditation intervention among pregnant women showed a significant difference throughout the trimesters. After the three times assessment of the stress dimension, the *F* (2,57) is 30.92, which is significant at the 0.01 level. The partial eta square value *η2* is 0.52, showing a large effect size. The multivariate analysis finds significant interaction effects between trimesters and groups, with an *F* (2,57) value of 12.72 (significant at 0.01 level) and a partial eta squad *η2* of 0.31, indicating a large effect size.

In terms of anxiety, multivariate analysis of variance with meditation intervention among pregnant women reveals a significant difference between trimesters with *F* (2,57) value 27.33, which is significant at the 0.01 level and the partial eta square value (η^2) is 0.49, indicates a large effect size. The multivariate analysis shows significant interaction effects between trimesters and groups (experimental and control group), with *F* (2,57) value of 30.60 (significant at 0.01 level) and partial eta squad η^2=0.52, denotes a large effect size.

In case of family relationships, results show a significant difference between the trimesters with *F* (2,57) value 5.42, which is significant at the 0.01 level, and the partial eta square value η^2 is 0.16, indicating a large effect size of intervention. Whereas, it was observed that there is no significant interaction effects between trimesters and groups and found medium effect size (η^2=0.07) in intervention.

However, in case of socialization, results showed no significant differences across trimesters. However, the multivariate analysis finds significant interaction effects between the trimesters and groups with *F* (2,57) value 4.48, which is significant at the 0.05 level, and the partial eta squad *η2* is 0.14, indicating medium effect size in intervention.

Regarding Physical Health, the multivariate analysis of variance of meditation intervention among pregnant women indicates a significant difference across trimesters, with an *F* (2,57) value of 6.58, which is significant at the 0.01 level, and the partial eta square value η^2 is 0.19, which indicates a large effect size in intervention. Similarly, it was also noted that there is a significant interaction effect between trimesters and groups with *F* (2,57) value 6.44, which is significant at 0.01 level, and partial eta squad η^2=0.18 which denotes a large effect size in meditation intervention.

Finally, in terms of body image, the meditation intervention among pregnant women resulted in a significant difference across the trimesters (*F* (2,57) =4.60, $p< 0.05$), and the partial eta square value (η^2) was 0.14, indicating a medium effect size of the intervention. The multivariate analysis also shows significant interaction effects between trimesters and groups

with F (2,57) value 4.09 which is significant at the 0.05 level and the partial eta squad η^2 is 0.13, which denotes medium effect size of meditation intervention.

Table 20

Results of repeated measures ANOVA in Pre, Mid, and Post-test of PS among pregnant women in Experimental and Control groups (n=60) with Meditation intervention

Variables	Source of variation	Sum of squares	*df*	Mean square	*F*	*p*	η^2
	Within Subject Effect						
	Trimester	189.21	2	94.61	18.74	0.001**	.244
Happiness	Trimester * Group	7.81	2	3.91	0.77	0.464NS	.013
	Error (Trimester)	585.64	116	5.05			
	Trimester	885.68	2	442.84	27.18	0.001**	.319
Stress	Trimester * Group	372.88	2	186.44	11.44	0.001**	.165
	Error (Trimester)	1890.11	116	16.29			
	Trimester	721.20	2	360.60	35.01	0.001**	.376
Anxiety	Trimester * Group	765.911	2	382.96	37.18	0.001**	.391
	Error (Trimester)	1194.89	116	10.30			
Family	Trimester	72.10	2	36.05	5.66	0.005**	.089
Relationships	Trimester * Group	30.48	2	15.24	2.39	0.096NS	.040
	Error (Trimester)	738.76	116	6.37			
	Trimester	16.13	2	8.07	1.06	0.351NS	.018
Socialization	Trimester * Group	70.93	2	35.47	4.64	0.011*	.074
	Error (Trimester)	886.27	116	7.64			
Physical	Trimester	111.51	2	55.76	5.98	0.003**	.093
Health	Trimester * Group	128.84	2	64.42	6.90	0.001**	.106
	Error (Trimester)	1082.31	116	9.33			
	Trimester	44.10	2	22.05	3.16	0.046*	.139
Body Image	Trimester * Group	66.08	2	33.04	4.74	0.011*	.125
	Error (Trimester)	809.16	116	6.98			
	Trimester	3257.63	2	1628.82	8.42	0.001**	.127
Overall PS	Trimester * Group	2908.54	2	1454.27	7.52	0.001**	.115
	Error (Trimester)	22429.156	116	193.36			

****Significant at 1% level** ***Significant at 5% level** **NS-Non Significant**

Repeated measures ANOVA results among experimental and control group during the Meditation intervention is presented in **Table 20**.

Regarding the happiness dimension, repeated measures ANOVA showed a significant improvement in happiness scores (F=18.74, p<0.01) throughout the trimesters. Furthermore, the happiness score was compared groupwise, but no significant differences were found.

In terms of the Stress dimension, the repeated measures ANOVA revealed significant improvements in stress scores (F=27.18, p<0.01) throughout all trimesters. Moreover, a significant difference was observed when the increase in stress scores was analysed group-wise (F=11.44; p<0.01) and showed better coping in stress dimension.

In terms of the anxiety dimension, repeated measures ANOVA showed a significant improvement in anxiety levels (F=35.01, p<0.01) in case of trimesters as well as in trimesters and groups (F=37.18; p<0.01). This showed better coping in anxiety dimension.

Regarding family relationships, repeated measures ANOVA revealed a significant increase in its scores (F=5.66, p<0.01). however, it was found that there were no significant differences found between the experimental and control groups (F=2.39; p>0.05) when compared groupwise. This shows meditation intervention did not impact on improving pregnant women's relationships with their families.

While in socialization, repeated measures ANOVA showed no significant increase in socialization scores (F=1.06, p>0.05) in trimesters. However, groupwise verification of the increase in socialization scores revealed a significant difference (F=4.64; p<0.05). This indicates meditation intervention enhances pregnant women socialization as trimester increases.

Based on physical heath dimension, repeated measures ANOVA revealed a significant difference in Physical Health scores (F=5.98, p<0.01) among trimesters. Additionally, physical health scores were verified with a significant difference among trimesters and groups (F=6.91; p<0.01). this indicated improvements in physical health in case of groups was notified with meditation intervention.

In case of body image, repeated measures ANOVA revealed a significant difference in body image scores (F=3.16, p>0.05) among trimesters and trimesters with groups (F=4.74; p<0.05). So, meditation intervention proved that there was a change in body image of pregnant women as trimester increases.

However, in overall psychological status, repeated measures ANOVA showed a significant difference in its scores (F=8.42, p<0.01) among trimesters, as well as a highly significant difference was found (F=7.52, p<0.01) among groups followed with trimesters. This denotes meditation intervention improved overall psychological status pregnant women.

The post-hoc values for the paired comparisons between trimesters (pre, mid & post) with meditation intervention is depicted below under table and graphs.

Table 21

Pairwise comparisons of Meditation Experimental group on PS of pregnant women in the pre, mid and post-test

Variables	(I) Trimester	(J) Trimester	Mean Difference (I-J)	Std. Error	Sig.
Happiness	Pretest (1st trimester	Mid test	2.23**	0.50	0.001
		Post test	2.40**	0.58	0.001
	Midtest (2nd trimester)	Pre test	2.23**	50	0.001
		Post test	-0.17NS	0.46	1.00
	Posttest (3rd trimester)	Pre test	2.40**	0.58	0.001
		Mid test	0.17NS	0.46	1.00
Stress	Pretest (1st trimester	Mid test	-2.67NS	1.12	0.073
		Post test	-4.87**	1.04	0.001
	Midtest (2nd trimester)	Pre test	2.67NS	1.12	0.073
		Post test	-2.20NS	0.96	0.086
	Posttest (3rd trimester)	Pre test	4.87**	1.04	0.001
		Mid test	2.20NS	0.96	0.086
Anxiety	Pretest (1st trimester	Mid test	-3.20**	0.88	0.003
		Post test	-4.73**	0.76	0.001
	Midtest (2nd trimester)	Pre test	3.20**	0.86	0.003
		Post test	-1.53*	0.57	0.034
	Posttest (3rd trimester)	Pre test	4.73**	0.76	0.001
		Mid test	1.53*	0.57	0.034
Family Relationships	Pretest (1st trimester	Mid test	0.50NS	0.51	1.00
		Post test	-1.73*	0.63	0.030
	Midtest (2nd trimester)	Pre test	-0.50NS	0.51	1.00
		Post test	-2.23*	0.72	0.013
	Posttest (3rd trimester)	Pre test	1.73*	0.63	0.030
		Mid test	2.23*	0.72	0.013
	Pretest (1st trimester	Mid test	-0.80NS	0.63	0.634
		Post test	-0.50 NS	0.75	1.00

Variables	(I) Trimester	(J) Trimester	Mean Difference (I-J)	Std. Error	Sig.
Socialization	Midtest (2nd trimester)	Pre test	0.80 NS	0.63	0.634
		Post test	0.30 NS	0.58	1.00
	Posttest (3rd trimester)	Pre test	0.50 NS	0.75	1.00
		Mid test	-0.30 NS	0.58	1.00
Physical Health	Pretest (1st trimester	Mid test	0.43 NS	0.76	1.00
		Post test	-3.13**	0.88	0.004
	Midtest (2nd trimester)	Pre test	-0.43 NS	0.76	1.00
		Post test	-3.57**	0.71	0.001
	Posttest (3rd trimester)	Pre test	3.13**	0.88	0.004
		Mid test	3.57**	0.71	0.001
Body Image	Pretest (1st trimester	Mid test	0.00 NS	0.61	1.00
		Post test	-1.43 NS	0.78	0.234
	Midtest (2nd trimester)	Pre test	0.00 NS	0.61	1.00
		Post test	-1.43 NS	0.64	0.100
	Posttest (3rd trimester)	Pre test	1.43 NS	0.78	0.234
		Mid test	1.43 NS	0.64	0.100
Overall PS	Pretest (1st trimester	Mid test	-7.97 NS	3.64	0.111
		Post test	-18.80**	3.82	0.001
	Midtest (2nd trimester)	Pre test	7.97 NS	3.64	0.111
		Post test	-10.83**	3.05	0.004
	Posttest (3rd trimester)	Pre test	18.80**	3.82	0.001
		Mid test	10.83**	3.05	0.004

****Significant at 1% level *Significant at 5% level NS-Non Significant**

Post-hoc paired comparisons were used to investigate the influence of the meditation intervention on psychological status in the pre, mid, and post-intervention phases under experimental group.

Based on the happiness dimension, **Table 21** reveals a significant mean difference in happiness between the pre and mid intervention phases (M=2.23, $p<0.01$). There was also a significant mean difference between the pre- and post-intervention periods (M = 2.40, $p<0.01$). The preceding values shows a significant mean difference between the mid and pre-intervention periods (M=2.23, $p<0.01$). However, there was no significant mean differences reported between the mid and post intervention phases (M=-0.17, $p>0.05$). In case of post-test, a significant mean difference between the post and pre-intervention phases (M=2.40, $p<0.01$). However, no significant mean difference was seen between the post and mid-intervention periods.

Based on the stress dimension, there was no a significant mean difference was observed in pre- and mid intervention phases (M=-2.67, p>0.05). However, a significant mean difference reported in pre- and post-intervention phases (M=-4.87, p<0.01). The preceding table also demonstrates that there was no significant mean difference observed in mid and pre-intervention (M=2.67, p>0.05) as well as in mid and post-intervention periods (M=-2.20, p>0.05). In case of post-test, a significant mean difference was observed between the post and pre-intervention phases (M= 4.87, p<0.01). However, no significant mean difference was seen between the post and mid-intervention phases.

For the Anxiety dimension, significant mean differences in pre- and mid intervention phases (M=-3.20, p<0.01). There was also a significant mean difference between the pre-and post-intervention periods (M=-4.73, p<0.01). The preceding values demonstrate a significant mean difference in the mid and pre-intervention periods (M= 3.20, p<0.01). Also, there were significant mean differences reported in the mid and post-intervention phases (M=-1.5, p<0.05). likewise, in post-test, a significant mean difference in the post and pre-intervention phases (M=4.73, p<0.01). Also, a significant mean difference was seen in the post and mid-intervention periods (M=1.53, p<0.05).

Based on the Family relationships dimension, the results showed that there was no significant mean difference in pre- and mid intervention phases (M=0.50, p>0.05). However, a significant mean difference was reported in pre and mid-intervention phases (M=-1.73, p<0.05). In case of midtest, there was no significant mean difference observed in mid and pre-intervention (M=-0.50, p>0.05). However, a significant mean difference was observed in mid and post intervention phases (M=-2.23, p<0.05). it was also revealed that there was a significant mean difference in the post and pre-intervention phases (M= 1.73, p<0.05) as well as in the post and mid-intervention phases (M=2.23, p<0.05).

With respect to Physical Health dimension, no significant mean difference was observed in pre- and mid-intervention phases (M=0.43, p>0.05). However, there was a significant mean difference reported in pre- and post-intervention phases (M=-3.13, p<0.01). In case of mid test, there was no significant mean difference observed in mid and pre-intervention (M=-0.43, p>0.05). However, a significant mean difference was observed in mid and post intervention phases (M=-3.57, p<0.01). Similarly, a significant mean difference in the post and pre-intervention phases (M= 3.13, p<0.01) and also, in post and mid-intervention phases (M=3.57, p<0.01) were observed.

With respect to overall psychological status, there was no significant mean difference observed in psychological status in pre- and post-intervention phases (M=-7.97, p>0.05). However, a significant mean difference was reported in pre- and post-intervention phases (M=-18.80, p<0.01). The preceding values also shows that there was no significant mean difference observed in mid and pre-intervention (M=7.97, p>0.05). However, a significant mean difference was observed in mid and post intervention phases (M=-10.83, p<0.01). Additionally, a significant mean difference was reported in the post and pre-intervention phases (M= 18.80, p<0.01). as well as in the post- and mid-intervention periods (M=10.83, p<0.01).

Regarding socialization and Body image dimension, there was no significant differences found in pre, mid and post-intervention phases.

The profile plots among experimental and control groups with dimensions of psychological status are shown further.

Mean pre-test, Mid and post test scores on psychological status of pregnant women of Experimental and Control group (*n*=60) in Meditation intervention

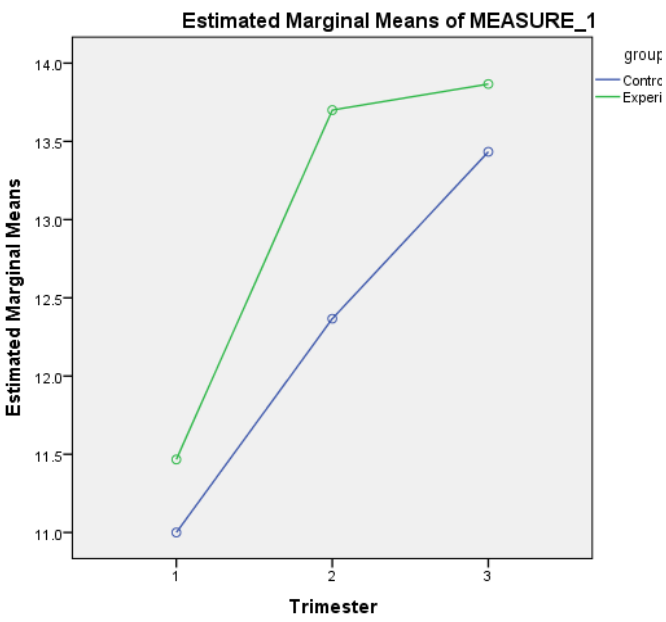

Fig. 15 Happiness with respect to Meditation intervention

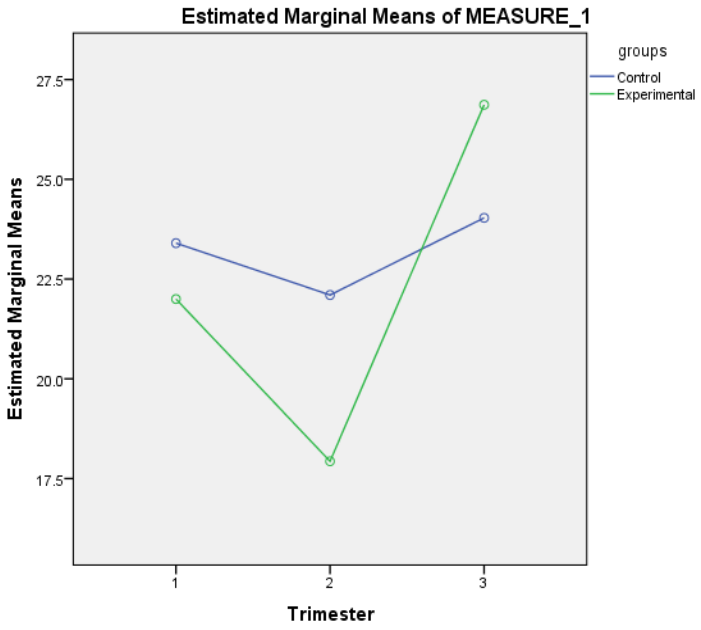

Fig. 16 Stress with respect to Meditation intervention

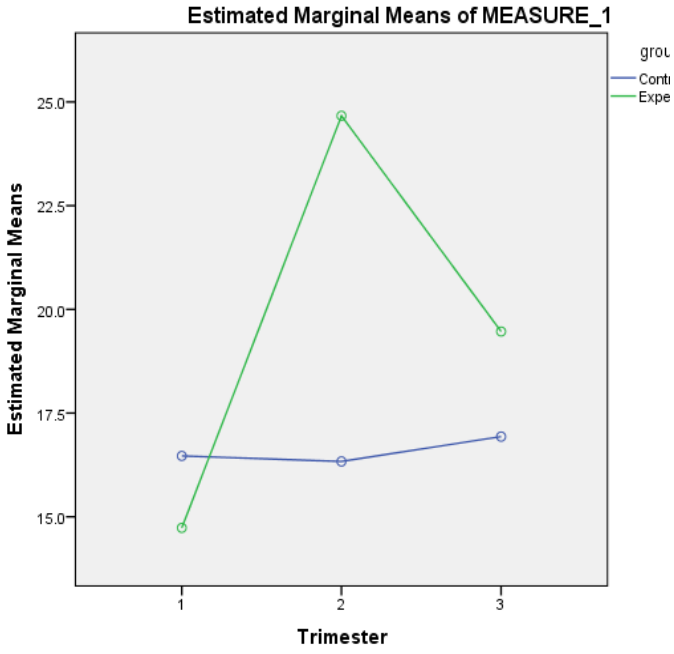

Fig. 17 Anxiety with respect to Meditation intervention

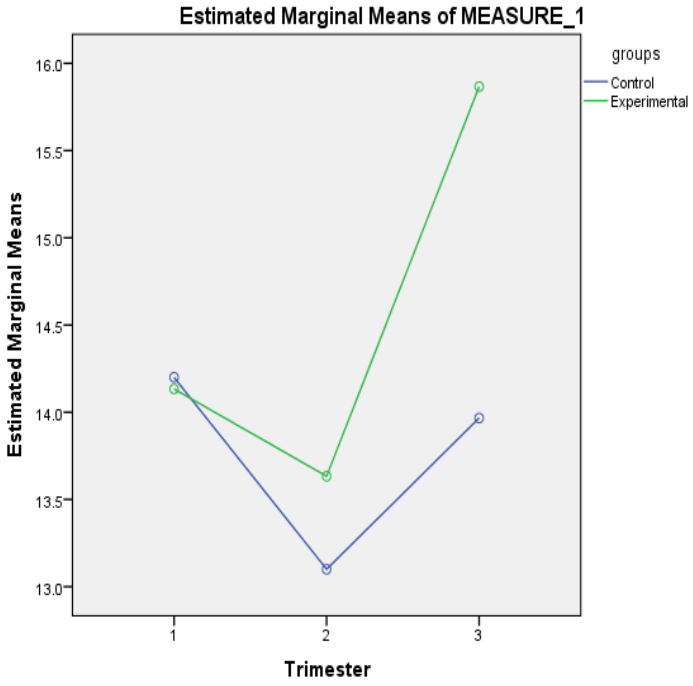

Fig. 18 Family Relationships with respect to Meditation intervention

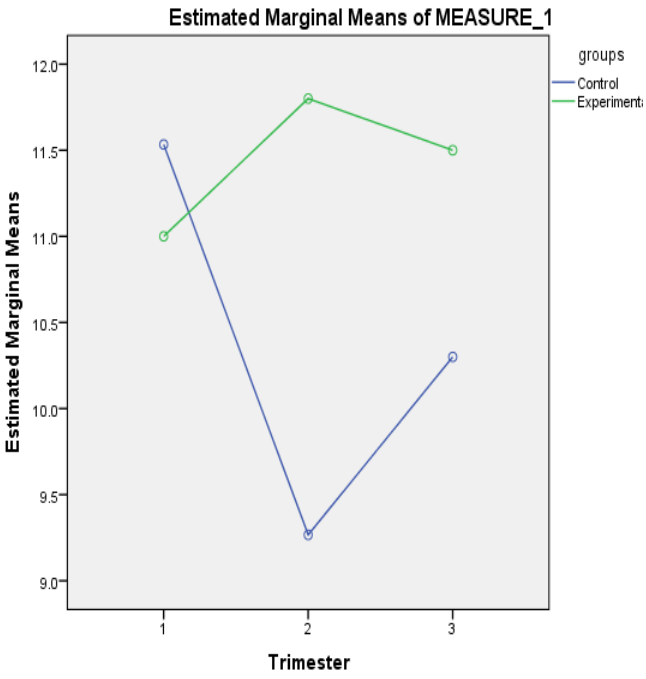

Fig. 19 Socialization with respect to Meditation intervention

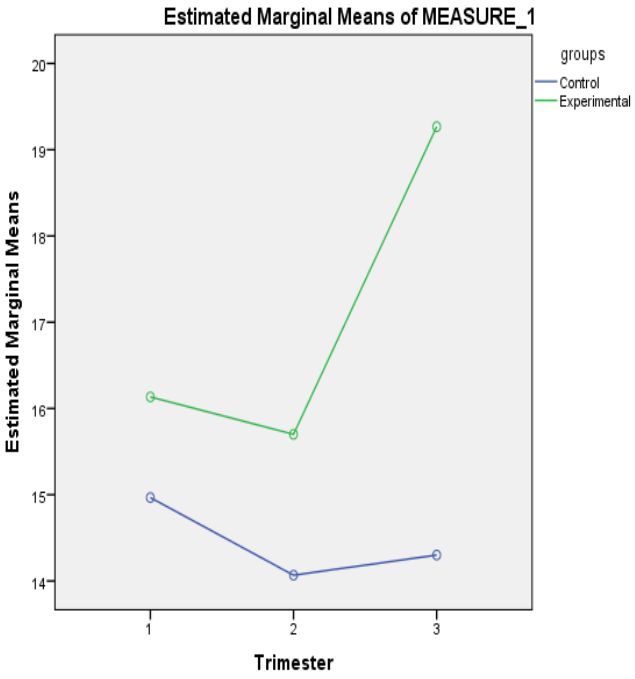

Fig. 20 Physical Health with respect to Meditation intervention

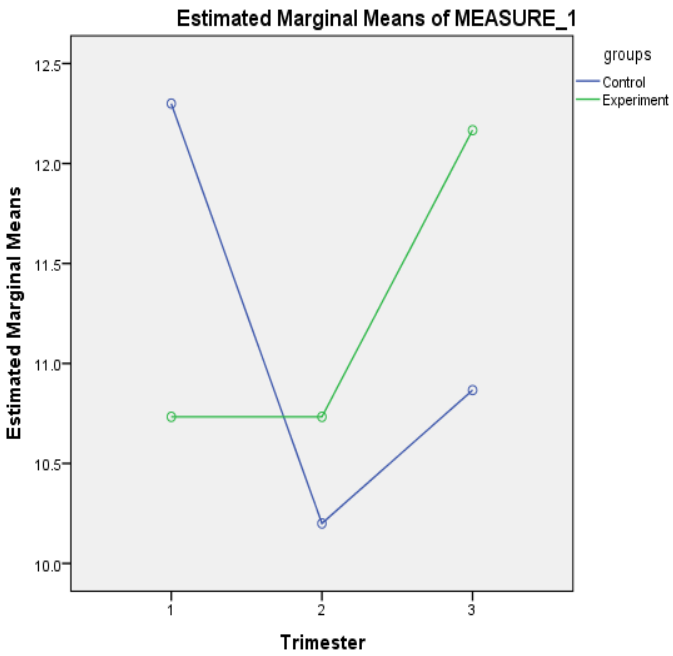

Fig. 21 Body Image with respect to Meditation intervention

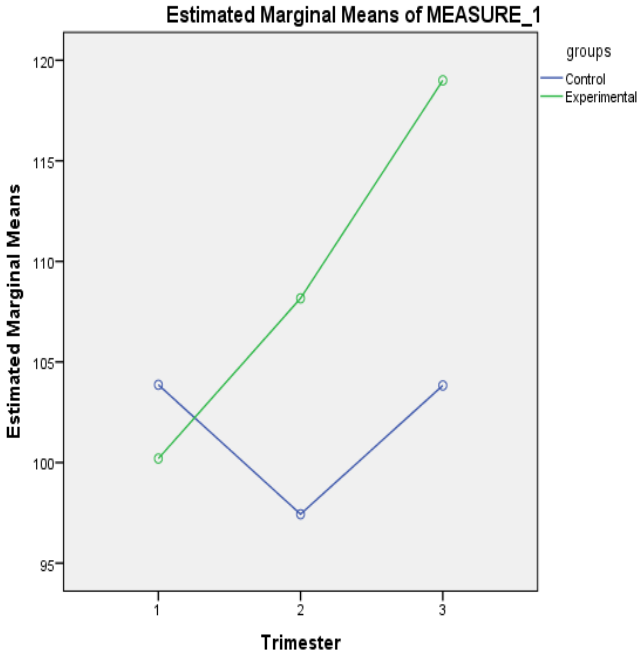

Fig. 22 Overall PS with respect to Meditation intervention

Figures 15–22 show the estimated mean values of the meditation experimental and control groups in terms of psychological well-being. Meditation has a significant effect on stress, family relationships, physical health, body image, and overall psychological status, as demonstrated by higher scores in the aforementioned dimensions as well as overall psychological status compared to the control group in the mid and post-test results, which occurred during the second and third trimesters. The graph illustrates a higher psychological status among pregnant women in the meditation experimental group as the trimester progresses.

However, on the happiness dimension, the observed mean value between the meditation experimental and control groups is nearly similar. Meanwhile, we can see that the mean value for the dimensions of anxiety and socialization increased during the mid-test or second trimester, but then fell significantly in the post-test or third trimester among the experimental group. Despite the fact that pregnant women in the experimental group experience an improvement in psychological status as the trimester progresses, the mean value in the control group does not change significantly.

$H0_3$: There may be no significant difference in psychological status of pregnant women Pre, Mid and Post-test under meditation intervention group. The statement can be rejected since there is an improvement psychological status among pregnant women in experimental, however it can be accepted in case of happiness and family relationships. But $H0_3$ is accepted in case of control in meditation intervention.

The studies of Chan (2015) and Bhutekar & Shirsath (2017) support the above results as they conducted studies on perinatal meditation and vipassana meditation in pregnant women, respectively. Chan's study found that perinatal meditation increased positive appraisal at 36 weeks, decreased physical distress at 5 weeks postpartum, and improved coping mechanisms. This suggests that meditation can help pregnant women reduce stress and improve physical discomfort during the postnatal period, which are risk factors for maternal, foetal, and child health. Bhutekar & Shirsath's study, on the other hand, found a significant difference in stress and anxiety levels among 50 pregnant women from the Dhamma Ajanta Vipassana Center in Aurangabad. Both studies suggest that meditation can help pregnant women cope with stress and anxiety, thereby promoting maternal, child, and family health. These findings suggest that incorporating perinatal meditation into perinatal counselling and programs can further enhance maternal, child, and family health.

4.5.3 Comparison between two intervention protocol.

Table 22

Mean Scores of Pre, Mid, and Post-test of PS among pregnant women in Music and Meditation Experimental group (*n*=60)

Psychological status	Groups	Phase						Change / gain
		Pre-test (1st trimester)		Mid (2nd trimester)		Post-test (3rd trimester)		
		Mean	*SD*	*Mean*	*SD*	*Mean*	*SD*	
Happiness	Music	11.33	2.040	13.00	2.477	13.20	2.747	1.87
	Meditation	11.47	2.209	13.70	2.548	13.87	2.360	2.4
	Total	11.40	2.109	13.35	2.517	13.53	2.561	2.13
Stress	Music	23.43	4.485	24.57	5.380	26.97	4.597	3.54
	Meditation	22.00	4.549	17.93	4.472	26.87	4.485	4.87
	Total	22.72	4.536	21.25	5.936	26.92	4.503	4.2
Anxiety	Music	15.90	4.245	16.23	4.141	18.43	4.014	2.53
	Meditation	14.73	2.586	24.67	5.416	19.47	4.216	4.74
	Total	15.32	3.534	20.45	6.398	18.95	4.115	3.63
Family Relationships	Music	14.30	2.452	13.87	2.956	14.27	2.766	-0.03
	Meditation	14.13	2.030	13.63	2.871	15.87	2.788	1.74
	Total	14.22	2.233	13.75	2.891	15.07	2.869	0.85
Socialization	Music	10.87	2.837	10.90	3.478	10.13	2.738	-0.74
	Meditation	11.00	3.096	11.80	2.413	11.50	2.146	0.5
	Total	10.93	2.945	11.35	3.002	10.82	2.534	-0.11
Physical Health	Music	14.53	3.830	15.47	3.126	18.47	3.298	3.94
	Meditation	16.13	3.758	15.70	2.879	19.27	3.073	3.14
	Total	15.33	3.847	15.58	2.982	18.87	3.186	3.54
Body Image	Music	11.00	3.373	10.40	3.047	11.63	2.659	0.63
	Meditation	10.73	3.290	10.73	2.959	12.17	2.902	1.44
	Total	10.87	3.306	10.57	2.982	11.90	2.772	1.03
Overall PS	Music	101.37	17.993	104.43	18.801	113.10	18.378	11.73
	Meditation	100.20	17.103	108.17	19.061	119.00	15.974	18.80
	Total	100.78	17.414	106.30	18.865	116.05	17.329	15.27

Table 22 reveals mean and SD scores of the psychological status among the Music and Meditation experimental group in the pre, mid, and post-intervention phases.

With regard to happiness dimension, On the whole, in the pre-test i.e. first trimester the total mean happiness scores were 11.40 which has been increased to 13.35 in the mid test (second trimester) and 13.53 in the post-test (third trimester). However, the music and meditation group improved it happiness by 1.87 scores (pre11.33; post13.20) and 2.40 scores (pre11.47; post13.87) respectively.

Regarding Stress dimension, on the whole, in the pre-test (first trimester) the mean stress scores were 22.72 which has been decreased to 21.25 in the mid test (second trimester) and increased to 26.92 in the post-test (third trimester). Both the experimental group, that is music and meditation group improved coping in stress levels by 3.54 (pre 23.43; post 26.97) and 4.87 (pre 22.00; post 26.87) respectively. Thus, music and meditation have equal effects in improving stress among pregnant women.

With respect to anxiety dimension, on the whole, in the pre-test i.e. first trimester the mean anxiety scores were 15.32 which has been increased to 20.45 in the mid test or second trimester and slightly decreased to 18.95 in the post-test or in the third trimester. We find that music experimental group improved anxiety scores by 2.53 (pre15.90; post18.43), while meditation experimental group improved its anxiety scores by 4.74 (pre14.73; post19.47). Thus, both the groups were able to cope with their anxiety level.

For Family Relationship dimension, on the whole, in the pre-test i.e. first trimester the mean Family Relationships scores were 14.22 which has been decreased to 13.75 in the mid test or second trimester and again increased to 15.07 in the post-test or in the third trimester. But music experimental group decreased Family relationship scores by -0.03 (pre14.30; post14.27). While meditation experimental group increased its family relationships scores by 1.74 (pre14.13; post15.87).

In socialization dimension, on the whole, in the pre-test i.e. first trimester the mean socialization scores were 10.93 which has been slightly increased to 11.35 in the mid test or second trimester and again decreased to 10.82 in the post-test or in the third trimester. The music group slightly decreased its socialization scores by -0.74 (pre10.87; post10.13) while meditation group showed slight increase in socialization scores by 0.5 (pre11.00; post11.50). It is clear that meditation experimental group had slight improvements in the socialization compared to music group.

With regard to physical health dimension, On the whole, in the pre-test i.e. first trimester the mean physical health scores were 15.33 which has been increased to 15.58 in

the mid test or second trimester and again increased to 18.87 in the post-test or in the third trimester. The music and meditation both the experimental group increased its physical health scores by 3.94 (pre14.53; post18.47) and 3.14 (pre16.13; post19.27) respectively.

Regarding Body Image dimension, on the whole, in the pre-test i.e. first trimester the mean Body Image scores were 10.87 which has been slightly decreased to 10.57 in the mid test or second trimester and again increased to 11.90 in the post-test or in the third trimester. The music and meditation experimental group increased its body image scores by 0.63 (pre11.00; post11.63) and 1.44 (pre10.73; post12.17) respectively.

Based on Overall psychological status of pregnant women, on the whole, in the pre-test i.e. first trimester the mean psychological status scores were 100.78 which has been slightly increased to 106.30 in the mid test or second trimester and again increased to 116.05 in the post-test or in the third trimester. The music and meditation experimental group increased its psychological status scores by 11.73 (pre101.37; post113.10) and 18.8 (pre100.20; post119.00) respectively. Hence, both interventions had an almost equal effect in improving psychological status of selected pregnant women.

Table 23

Test of Sphericity of PS with Music and Meditation Experiment group

Within Subject Effect (N=60)	Variables	Mauchly's W	Chi-square	*df*	*p*	Greenhouse Geisser
Trimester	Happiness	0.900	5.999	2	0.050	0.909
	Stress	0.927	4.319	2	0.115	-
	Anxiety	0.725	18.364	2	0.001	0.784
	Family Relationships	0.995	.271	2	0.873	-
	Socialization	0.864	8.315	2	0.016	0.880
	Physical Health	0.929	4.175	2	0.124	-
	Body Image	0.912	5.272	2	0.072	-
	Overall PS	0.728	18.109	2	0.001	0.786

Table 23 shows that Mauchly's W value is significant in the dimensions of happiness, anxiety, socialization, and overall psychological status, indicating that the sphericity condition was not met in the data, i.e., unequal covariance across the three trimesters; this was then corrected using Greenhouse-Geisser correction. Table 24 further shows that for the interaction effect, the sphericity test is not significant for stress (X^2=4.319, p=0.115), family

relationships (X^2=0.271, p=0.873), physical health (X^2=4.175, p=0.124), and body image (X^2=5.272, p=0.072). The rule of thumb indicates that reject the null hypothesis if p<0.05. Thus, sphericity (homogeneity) appears to be met. The major within-subject interaction effects were then calculated.

Table 24

Multivariate analysis of variance for Music and Meditation Experimental group

Dependent variable	Effect	Wilk's Lambda Value	*F (df1, df2)*	*p*	η^2
Happiness	Trimester	0.66	14.74 (2,57)	0.001**	0.34
	Trimester* Group	0.99	0.28 (2,57)	0.760^{NS}	0.01
Stress	Trimester	0.42	39.32 (2,57)	0.001**	0.58
	Trimester * Group	0.67	14.09 (2,57)	0.001**	0.33
Anxiety	Trimester	0.53	25.01 (2,57)	0.001**	0.47
	Trimester * Group	0.43	37.38 (2,57)	0.001**	0.57
Family Relationships	Trimester	0.86	4.65 (2,57)	0.014*	0.14
	Trimester * Group	0.91	2.70 (2,57)	0.076^{NS}	0.09
Socialization	Trimester	0.97	0.97 (2,57)	0.386^{NS}	0.03
	Trimester * Group	0.98	0.77 (2,57)	0.466^{NS}	0.03
Physical Health	Trimester	0.54	24.22 (2,57)	0.001**	0.46
	Trimester * Group	0.98	0.64 (2,57)	0.534^{NS}	0.02
Body Image	Trimester	0.85	4.94 (2,57)	0.011*	0.15
	Trimester * Group	0.99	0.27 (2,57)	0.768^{NS}	0.01
Overall PS	Trimester	0.58	20.64 (2,57)	0.001**	0.42
	Trimester * Group	0.98	0.72 (2,57)	0.490^{NS}	0.03

****Significant at 1% level** ***Significant at 5% level** **NS-Non Significant**

Table 24 shows the multivariate analysis of variance for music and meditation intervention among pregnant women. The results show a significant difference between 3 trimesters, that is, 1st, 2nd and 3rd trimester and after measures of psychological status, the F (2,57) is 20.64, which is significant at 0.01 level and the partial eta square value η^2 is 0.42, showing a large effect size. However, the multivariate analysis did not show significant interaction effects between the trimesters and group, that is music and meditation experimental group. Thus, both interventions are effective in their own way.

Table 24 also shows a significant difference between 3 trimesters, that is, 1st the 2nd and 3rd trimesters, and after the three measures of happiness dimension, the F (2,57) is 14.74, which is significant at 0.01 level, and the partial eta square value η^2 is 0.34, showing a large effect size. The multivariate analysis did not show significant interaction effects between the trimester and group, that is music and meditation experimental group.

Regarding stress dimension, the multivariate analysis of variance for music and meditation intervention among pregnant women shows a significant difference between 3 trimesters, that is, 1st, 2nd and 3rd trimester, and after the three measures of stress dimension, the *F* (2,57) is 39.32, which is significant at 0.01 level and the partial eta square value η^2 is 0.58, showing a large effect size. The multivariate analysis also reveals significant interaction effects between the trimester and group, that is music and meditation experimental, *F* (2,57) is 14.09, which is significant at 0.01 level and the partial eta squad η^2 is 0.33, showing a large effect size.

With respect to anxiety dimension, the multivariate analysis of variance for music and meditation intervention among pregnant women shows a significant difference between 3 trimesters, that is, 1st, 2nd and 3rd trimester, and after the three measures of anxiety dimension, the *F* (2,57) is 25.01, which is significant at 0.01 level and the partial eta square value η^2 is 0.47, showing a large effect size. The multivariate analysis also reveals significant interaction effects between the trimester and group; that is, music and meditation experimental group, *F* (2,57) is 37.38, which is significant at 0.01 level, and the partial eta squad η^2 is 0.57, showing a large effect size.

Table 24 also shows a significant difference between the 3 trimesters, that is, 1st, 2nd, and 3rd trimester, and after the three measures of the family relationships dimension, the *F* (2,57) is 4.65, which is significant at 0.05 level, and the partial eta square value η^2 is 0.14, showing a medium effect size. The multivariate analysis did not show significant interaction effects between the trimesters and group, that is, the music and meditation experimental groups.

With respect to socialization, the results did not show a significant difference between the trimesters as well as did not reveal significant interaction effects between the trimester and group, that is, music and meditation experimental as the *F* (2,57) is 0.77 and *p* value (0.466) indicates non-significant.

Regarding Physical Health, the multivariate analysis of variance shows a significant difference between 3 trimesters, that is, 1st, 2nd and 3rd trimester, and after the three measures of physical health dimension, the *F* (2,57) is 24.22, which is significant at 0.01 level and the partial eta square value η^2 is 0.46, showing a large effect size. However, the multivariate analysis did not show significant interaction effects between the trimester and both the experimental groups, *F* (2,57) is 0.64, which is not significant.

Lastly, regarding body image dimension, the multivariate analysis of variance reveals a significant difference between 3 trimesters, that is, 1st, 2nd and 3rd trimester, and after the three measures of body image dimension, the F (2,57) is 4.94, which is significant at 0.05 level and the partial eta square value η^2 is 0.15, showing a medium effect size. However, the multivariate analysis did not reveal significant interaction effects between the trimester and group, that is, music and meditation experimental, since F (2,57) is 0.27, which is not significant.

Table 25

Results of repeated measures ANOVA in Pre, Mid and Post-test of PS among pregnant women in Music and Meditation Experimental group

Variables	Source of variation	Sum of squares	*df*	Mean square	*F*	*p*	η^2
		Within Subject Effect					
Happiness	Trimester	167.74	1.82	92.25	19.62	0.001**	0.25
	Trimester * Group	3.03	1.82	1.67	0.36	0.682NS	0.01
	Error (Trimester)	495.89	105.46	4.70			
Stress	Trimester	1038.04	2	519.02	31.02	0.001**	0.35
	Trimester * Group	357.51	2	178.76	10.69	0.001**	0.16
	Error (Trimester)	1941.11	116	16.73			
Anxiety	Trimester	836.04	1.57	533.16	38.70	0.001**	0.40
	Trimester * Group	758.80	1.57	483.90	35.12	0.001**	0.38
	Error (Trimester)	1253.16	90.95	13.78			
Family Relationships	Trimester	53.48	2	26.74	4.70	0.011*	0.08
	Trimester * Group	32.43	2	16.22	2.85	0.062NS	0.05
	Error (Trimester)	660.09	116	5.69			
Socialization	Trimester	9.43	1.76	5.36	0.69	0.488NS	0.01
	Trimester * Group	11.63	1.76	6.61	0.85	0.419NS	0.01
	Error (Trimester)	796.93	102.14	7.80			
Physical Health	Trimester	466.54	2	233.27	22.28	0.001**	0.28
	Trimester * Group	14.14	2	7.07	0.68	0.511NS	0.01
	Error (Trimester)	1214.64	116	10.47			
Body Image	Trimester	58.71	2	29.36	3.60	0.030*	0.06
	Trimester * Group	5.20	2	2.60	0.32	0.728NS	0.01
	Error (Trimester)	946.09	116	8.16			
Overall PS	Trimester	7171.34	1.57	4561.60	16.38	0.001**	0.22
	Trimester * Group	393.21	1.57	250.12	0.90	0.389NS	0.02
	Error (Trimester)	25388.78	91.18	278.44			

****Significant at 1% level** ***Significant at 5% level** **NS-Non Significant**

Table 25 shows repeated measures ANOVA among music and meditation experimental group.

With regard to the happiness dimension, repeated measures ANOVA indicated a significant improvement in happiness scores (F=19.62, p<0.01) irrespective of the group. Further, happiness score was verified groupwise, but there was no significant difference was observed between the music and meditation group.

Regarding Stress dimension, Repeated measures ANOVA indicated a significant improvement in stress scores (F=31.02, p<0.01) irrespective of the group. Further, the increase in stress scores was verified groupwise and a significant difference was observed (F=10.68, p<0.01).

With respect to anxiety dimension, repeated measures ANOVA indicated a significant improvement in anxiety scores (F=38.67, p<0.01) irrespective of the group. Further, the increase in anxiety scores was verified groupwise, a significant difference was observed (F=35.12, p<0.01).

For Family Relationship dimension, repeated measures ANOVA indicated a significant increase in family relationships scores (F=4.70, p<0.05) irrespective of the group. Further, Family relationships scores was verified groupwise, there was no significant differences observed between music and meditation groups (F=2.85, p>0.05).

In socialization dimension, repeated measures ANOVA indicated no significant difference in Socialization scores (F=0.69, p>0.05) irrespective of the group. Further, the socialization scores were verified groupwise, but no significant difference was observed (F=0.85, p>0.05).

With regard to physical health dimension, repeated measures ANOVA indicated a significant increase in Physical Health scores (F=22.28, p>0.01) irrespective of the group. However, no significant difference was observed (F=0.68, p>0.05) between music and meditation experimental groups.

With regard to Body Image dimension, repeated measures ANOVA indicated a significant increase in Body Image scores (F=3.60, p<0.05) irrespective of the group. Further, Body Image scores were verified groupwise, but F value (0.32, p>0.05) reveals no significant difference was observed between the experimental groups.

Based on Overall psychological status of pregnant women, repeated measures ANOVA indicated a significant increase in overall psychological scores (F=16.38, p<0.01)

irrespective of the group. Further, psychological status scores were verified Groupwise. However, there was no significant difference observed (F=0.90, p>0.05) between the music and meditation experimental groups. The post hoc test cannot be computed as there are only two groups.

The profile plots among music and meditation experimental groups with dimensions of psychological status are shown further.

Mean pre-test, Mid and post-test scores on psychological status of pregnant women of music and meditation Experimental group (n=60)

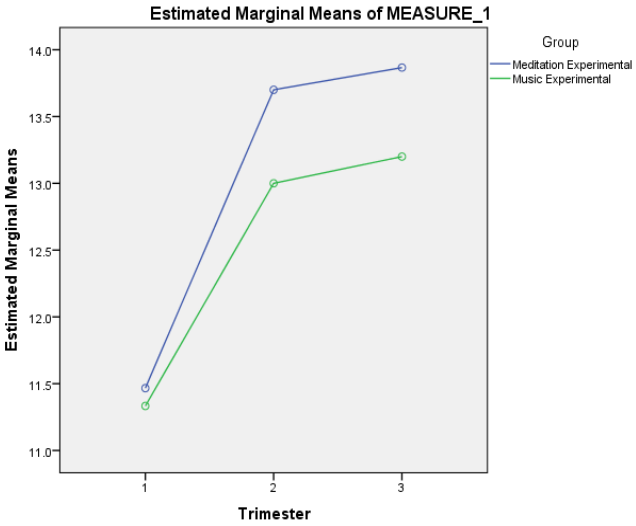

Fig. 23 Happiness with respect to music and meditation intervention

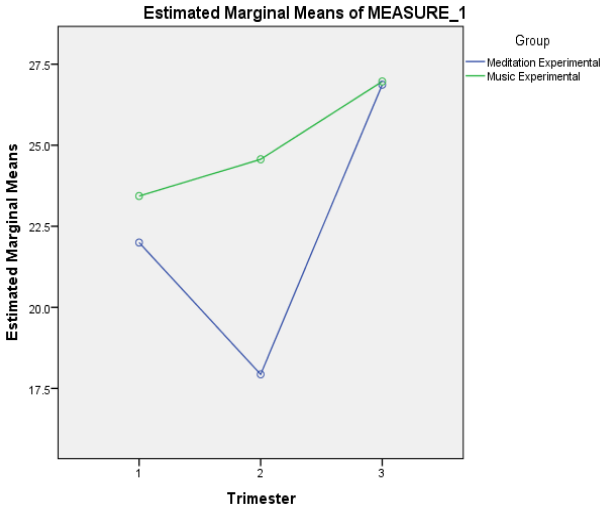

Fig. 24 Stress with respect to music and meditation intervention

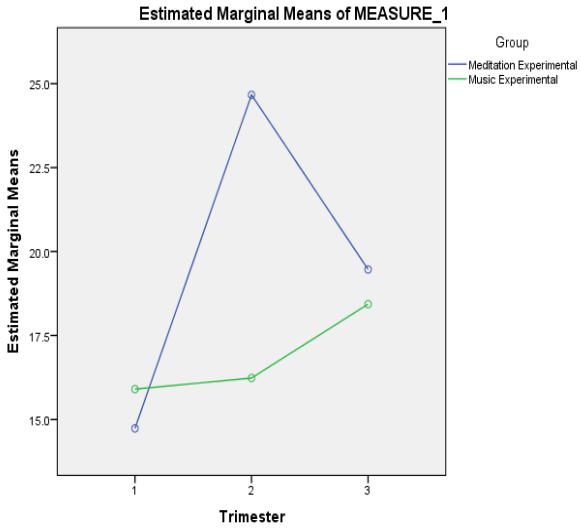

Fig. 25 Anxiety with respect to and meditation intervention

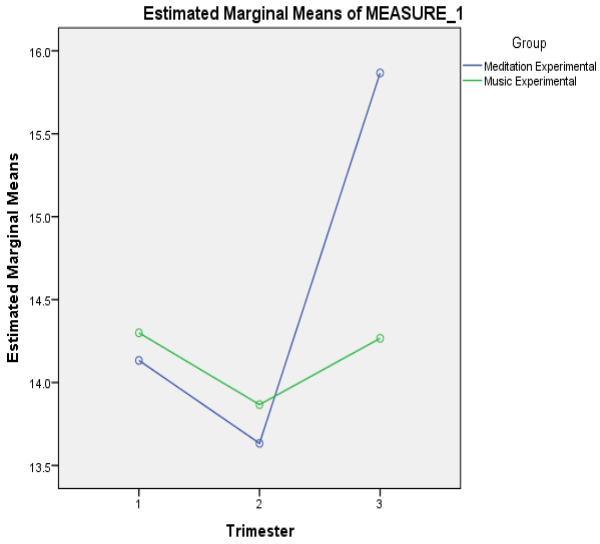

Fig. 26 Family Relationships with music respect to music and meditation intervention

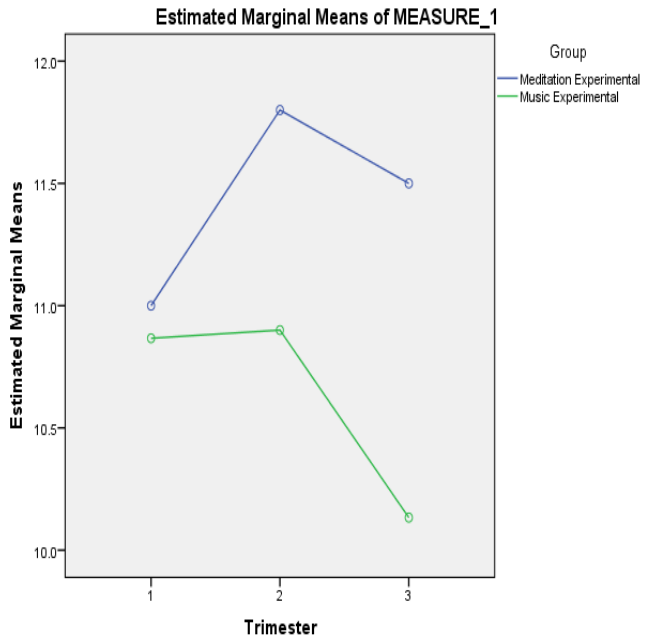

Fig. 27 Socialization with respect to music and meditation intervention

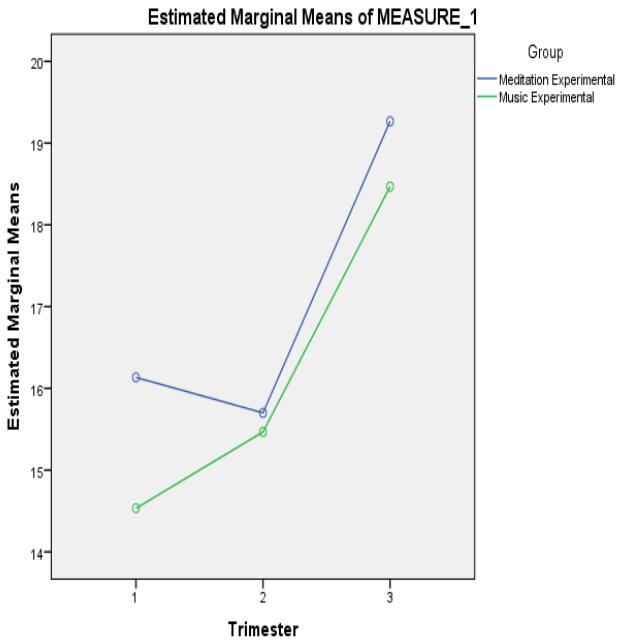

Fig. 28 Physical Health with respect to music and meditation intervention

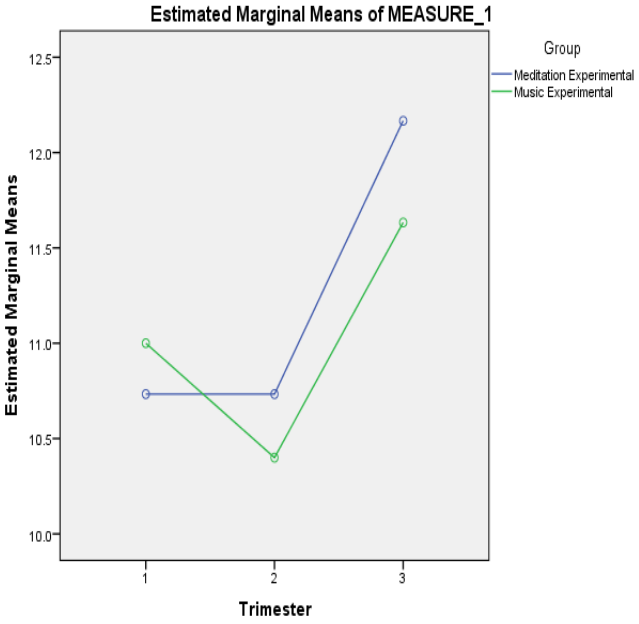

Fig. 29 Body Image with respect to music and meditation intervention

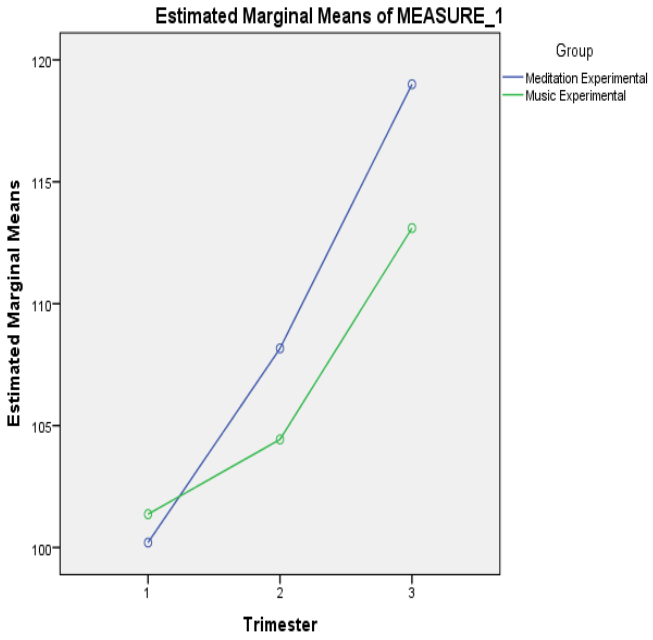

Fig. 30 Overall PS with respect to music and meditation intervention

The figures 23 to 30 reflect the estimated mean values of music and meditation interventions in terms of psychological well-being. In the areas of happiness, stress, anxiety, physical health, and overall psychological status, the observed mean values for music and meditation are almost the same.

However, in terms of body image and family connection dimensions, meditation had a greater effect than music in all three trimesters. The graph illustrates that pregnant women's psychological condition improves as the trimester progresses in both groups.

Meanwhile, we can see that the mean score in the socialization dimension for both groups decrease as the trimester progresses among pregnant women.

$H0_4$: There would be no significant difference found in effectiveness of music and meditation intervention in experimental group. The statement can be accepted since there is no improvement psychological status among pregnant women in experimental, however it can be rejected in case of stress and anxiety.

4.5.4 Post-test of psychological status of pregnant women based on dimensions in meditation and music experimental group

Table 26

Post-test comparison of PS among pregnant women under Music (*n*=30) and Meditation (*n*=30) Experimental group

Psychological status	Intervention group	Mean	SD	*t*	*p*	Cohen's *d*
Happiness	Music Post-test	13.20	2.75	0.997	0.327 ^{NS}	0.26
	Meditation Post-test	13.87	2.36			
Stress	Music Post-test	26.97	4.60	0.082	0.935 ^{NS}	0.42
	Meditation Post-test	26.87	4.49			
Anxiety	Music Post-test	18.43	4.01	1.020	0.316 ^{NS}	0.25
	Meditation Post-test	19.47	4.22			
Family Relationships	Music Post-test	14.27	2.77	**2.497**	**0.018** *	**0.58**
	Meditation Post-test	**15.87**	**2.79**			
Socialization	Music Post-test	10.13	2.74	1.969	1.969 ^{NS}	0.56
	Meditation Post-test	11.50	2.15			
Physical Health	Music Post-test	18.47	3.30	0.996	0.327 ^{NS}	0.25
	Meditation Post-test	19.27	3.07			
Body Image	Music Post-test	11.63	2.66	0.632	0.532 ^{NS}	0.19
	Meditation Post-test	12.17	2.90			
Overall PS	Music Post-test	113.10	18.38	1.317	0.198 ^{NS}	0.34
	Meditation Post-test	119.00	15.97			

***Significant at 5% level NS-Non-Significant**

Table 26 presented the post-test results of the psychological status of pregnant women who were part of two different intervention groups: the meditation group and the music group. The table aimed to compare the mean scores, standard deviations (SD), *t*-values, and *p*-values for various psychological dimensions between these two intervention groups.

In the examination of Happiness post-test scores, it was found that there was no statistically significant difference between the meditation and music groups, as indicated by a *t*-value of 0.997 and a *p*-value of 0.327. Similarly, the analysis of Stress post-test scores showed no significant difference between the two groups, with a *t*-value of -0.082 and a *p*-value of 0.935. For Anxiety post-test scores, no statistically significant distinction was observed between the meditation and music groups, as indicated by a *t*-value of 1.020 and a *p*-value of 0.316. In the assessment of Family Relationships post-test scores, a significant difference emerged between the two groups, favouring the meditation group. The *t*-value of 2.497 and the *p*-value of 0.018 indicated a statistically significant improvement in Family Relationships for the meditation group compared to the music group. Socialization post-test scores revealed a near-significant difference between the two groups, with a *t*-value of 1.969 and a *p*-value of 0.059, just slightly above the significance threshold of 0.05. While no statistically significant difference was found in Physical Health post-test scores between the meditation and music groups, with a *t*-value of 0.996 and a *p*-value of 0.327. Similarly, Body Image post-test scores did not exhibit a significant difference between the two groups, as indicated by a *t*-value of 0.632 and a *p*-value of 0.532. Finally, the assessment of overall psychological status post-test scores did not reveal a significant difference between the meditation and music groups, with a *t*-value of 1.317 and a *p*-value of 0.198.

The above table shows the post-intervention psychological status of pregnant women in both the meditation and music groups. While Family Relationships showed a significant improvement in favour of the meditation group, other dimensions did not exhibit significant differences between the two intervention groups.

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