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A Study to Assess the Effectiveness of a Progressive Muscular Relaxation Technique on Anxiety, Depression and Quality of Life of Post Menopausal Women at B.V.V.Sangha's Akkanabalaga, Bagalkot

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KEYWORDSABSTRACT:Post menopausal women, Depression, Anxiety, Quality of life, Effectiveness, Progressive Muscular RelaxationABSTRACT: Background of the study: Women's health has been a global concern for many decades. Postmenopaus uwomen have to face many problems, both physical and mental. Progressive Muscular Relaxation Technic have main role for reduce psychological problems. Therefore, researchers believe that the effectiveness muscle relaxation techniques on depression, anxiety, and quality of life in postmenopausal women should evaluated at B.V.V.Sangha's Akkanabalaga, Bagalkot. Methodology: This was true experimental study w Pre-test post-test control group design with 66 subjects selected through simple random sampling technic and assigned 33 post menopausal women to experimental group and 33 post menopausal women to control group by using computer generated random numbers. Data was collected using Center for Epidemiologi Research Studies- Depression Scale, General Anxiety Disorder- 7 Scale and WHO Quality of life Bref scale Progressive Muscular Relaxation Technique for every alternative day for 1 month (15 sessions) for the progressive Muscular Relaxation Technique for every alternative day for 1 month (15 sessions)	(Received: 0	7 October 2023	Revised: 12 November	Accepted: 06 December)
Technique and Socio demographic variables menopausal women of experimental group. Data were analyzed using descriptive and inferential statistics terms of Frequency distribution, percentage, mean, Standard Deviation, Fisher's Exact Probabil Independent't' test, Friedman's ANOVA, Pearson correlation and Multiple Regression analysis. Resul Findings related to Pre-intervention comparison of Depression, Anxiety and Quality of Life. There was significant differences were found in any of the outcome variables between experimental and control group [Depression t= 1.396, Anxiety t= - 0.823, QOL t= 1.039 (table value= 1.96), p<0.05]. Effectiveness Progressive Muscular Relaxation Technique: Within the Group and between the group Comparison Outcome Variables revealed that, a statistically significant difference in experimental group from baseline 4 th month assessment compared to control group. Depression score were positively correlated with anxiety =0.143) and negatively correlated with quality of life(r = -0.217) indicating increase depression increases anxiety and decreases the quality of life. There was negative correlation with anxiety and quality of life (0.038) indicating increase in anxiety decreased quality of life. No significant association was found betwe 4 th month post intervention assessment of Depression and Anxiety with socio demographic variables clinical characteristics among post menopausal women and there is a significant association was found between 4 th month post intervention assessment of Quality of life with socio demographic variables studies have proven that the benefits of exercise on positive muscles for postmenopausal women's depressi anxiety and quality of life are positive, scientific, reasonable and accurate, and are effective in treat postmenopausal women's depression and anxiety and improving their quality of life.	KEYWORDS Post menopausal women, Depression, Anxiety, Quality of life, Effectiveness, Progressive Muscular Relaxation Technique and Socio demographic variables	ABSTRACT: Background of the women have to face have main role for the muscle relaxation tea evaluated at B.V.V.S Pre-test post-test con and assigned 33 pos group by using com Research Studies- D Progressive Muscula menopausal women terms of Frequency Independent't' test, Findings related to D significant difference [Depression t= 1.39] Progressive Muscul Outcome Variables of 4 th month assessmen =0.143) and negative anxiety and decrease 0.038) indicating ind 4 th month post inter clinical characteristii between 4 th month (occupation and nu Studies have proven anxiety and quality postmenopausal wor	study: Women's health has been a glob many problems, both physical and menta educe psychological problems. Therefor chniques on depression, anxiety, and qual angha's Akkanabalaga, Bagalkot. 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There was negative of rease in anxiety decreased quality of life vention assessment of Depression and <i>A</i> cs among post menopausal women and post intervention assessment of Quali nber of children) among post menopau- that the benefits of exercise on positive m of life are positive, scientific, reasonab- nen's depression and anxiety and improvi-	al concern for many decades. Postmenopausa al. Progressive Muscular Relaxation Technique e, researchers believe that the effectiveness o ity of life in postmenopausal women should be dology: This was true experimental study with ed through simple random sampling technique pup and 33 post menopausal women to contro vas collected using Center for Epidemiologica er- 7 Scale and WHO Quality of life Bref scale tive day for 1 month (15 sessions) for the pos- ed using descriptive and inferential statistics in dard Deviation, Fisher's Exact Probability on and Multiple Regression analysis. Results on, Anxiety and Quality of Life. There was no ables between experimental and control groups (table value= 1.96), $p<0.05$]. Effectiveness o froup and between the group Comparison o ference in experimental group from baseline to score were positively correlated with anxiety (17) indicating increase depression increases the correlation with anxiety and quality of life (r= . No significant association was found between Anxiety with socio demographic variables and there is a significant association was found ty of life with socio demographic variables and women. Interpretation and conclusion uscles for postmenopausal women's depression ide and accurate, and are effective in treating ing their quality of life.

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1. Introduction

Women's health has been a global concern for many decades. Due to recent changes indicating increased life expectancy for postmenopausal women, the focus of women's health researchers and healthcare professionals has also shifted to postpartum women. Postmenopausal women face many physical and mental problems.¹India has a population exceeding the 1 billion mark, including 71 million people over the age of 60 and nearly 43 million pregnant women. A total of 130 million Indian women are expected to survive by 2015. The average gestational age of Indian women is 47 years and the average life expectancy is 71 years. Menopause Society of India 2011 is dedicated to pre-menopausal and post menopausal women who suffer in silence; the theme is "Helping her breeze through menopause" (Srivastava Saroj, 2011)². Post-menopausal women are important because physical changes have psychological, social and emotional impacts. When someone faces a mental problem, they use different methods to solve the problem. Similarly, post-menopausal women face many psychological problems such as depression, anxiety, low self-confidence, insomnia, fatigue resulting from decreased personal confidence. They use different strategies to overcome psychological coping problems.³Psychological interventions have an important role in reducing psychological problems; Like yoga, it is currently being evaluated for its therapeutic effects in reducing anxiety and other diabetes related symptoms.³ Jacobson relaxation technique, also known as relaxation therapy, is a treatment that focuses on tightening and relaxing specific muscles. Dr. Edmund Jacobson developed this technique in 1929 as a way to help patients cope with stress. Jacobson believes that activating the muscles relaxes the mind, thus releasing tensions.⁴ Postmenopausal mental illness, which is a serious mental illness at every stage of life, should be treated with psychological interventions and psychotropic medications. Psychological interventions have been shown to be effective in reducing psychological problems in postmenopausal women.

2. Methods

It was a Pre-test post-test control group design with longitudinal measurement of study included a sample of 66 postmenopausal women subjects' i.e 33 subjects in each group would be sufficient to achieve statistical significance for the dependent variables (Depression, Anxiety and Quality of Life) who are in the age group of 48-55 years with mild to moderate depression and anxiety attending B.V.V.Sangha's Akkanabalaga, Bagalkot. A sample was selected by simple random sampling technique. The final Sample size was determined with the help of power analysis using data from pilot study.

3. Study participants

The study participants were Postmenopausal women who are in the age group of 48-55 years attending B.V.V.Sangha's Akkanabalaga, Bagalkot. The sample included women with mild to moderate depression and anxiety, at least one year postpartum, able to understand Kannada, present at the time of information collection, and willing to participate in this study. Those who could not physically relax their muscles and cooperate during the study period were excluded from the study sample.Sample size calculation: The final Sample size Sample size for the main study was estimated using Power analysis was carried out by using G* Power 3.1.9.2 software program by keeping the power of study at 95% (p<0.05 two tailed, Effect size: 0.35). The power analysis revealed that, a sample of 66 subjects' i.e 33 subjects in each group would be sufficient to achieve statistical significance for the dependent variables (Depression, Anxiety and Quality of Life).

4. Setting of the study

The setting is where the population or the portion of it being studied is located and where the study is carried out. Present study was conducted at B.V.V.Sangha's Akkanabalaga, Bagalkot. The researcher enrolled 66 postmenopausal women from the setting.

5. Data collection Instrumen

Center for Epidemiological Research Studies-Depression Scale to assess the depression among post menopausal women which consists of 20 items. General Anxiety Disorder- 7 Scale to assess anxiety among post menopausal women which has got 7 items. WHO Quality of life Bref scale for assess the Quality of life among post menopausal women which has got 26 items.

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6. Validity, reliability and translation of data collection instruments

Reliability for the Kannada translated tool in the present study was established by Test-retest method and splithalf method. Center Epidemiological Research Studies-Depression Scale was (CES-D) is highly reliable with high internal consistency with Cronbach's alpha ranging between 0.88- 0.97. Reliability established for Kannada tool Cronbach's α (Test-retest method) is 0.972, Spearman - Brown (Split-half method) is 0.935. The Generalized Anxiety Disorder Scale-7 (GAD-7) for assessment of anxiety. Reliability established for Kannada tool Cronbach's a (Test-retest method) is 0.978, Spearman – Brown (Split-half method) is 0.941. WHO Quality of life Bref scale for assess the Quality of life. Reliability established for Kannada tool Cronbach's α (Test-retest method) is 0.983, Spearman – Brown (Split-half method) is 0.961. Which indicates the tools are highly reliable and which are reliable for data collection.

7. Ethical clearance

Ethical clearance certificate was obtained from Institutional ethical clearance committee, B.V.V.S Sajjalashree Institute of Nursing sciences, Bagalkot (ref No. BVVSSIONS-IEC/2019-20/63. Dt: 21/06/2019) Written consent of participation was obtained from participants and their parents before data collection.

8. Statistical analysis

The data was analysed using SPSS version 25. The obtained data was entered in MS excel sheet. The data was edited for accuracy and completeness. The categorical responses were coded with numerical codes. The data was presented with frequency and percentage distribution tables and diagrams. Frequency and percentage distribution were used for analysis of socio demographic and clinical characteristics. The description of postmenopausal women was presented with Frequency distribution, percentage, mean and standard deviation and mean percentage of psychosocial factors (Depression. Anxiety and Quality of life) scores of postmenopausal women. Non-parametric tests such as Chi-square were used for comparing categorical variables and for continuous variables Fisher's Exact Probability was used and for depression, anxiety and quality of life score Independent 't' test was used.

Friedman's ANOVA was run to compare within group and between the group differences for both experimental and control group subjects on Depression, Anxiety, and Quality of life from baseline to four months (i.e. from pre-intervention to months follow up). Spearman's Rank order correlation was calculated to examine the relationship between depression, anxiety and quality of life scores. Multiple regression analysis was carried out to determine the association of dependent variables (fourth month) of the study viz; Depression, Anxiety and Quality of Life of post menopausal women.

9. Data collection Procedure

The data was collected study was conducted at 1st April 2022 to 30th July 2022 from post menopausal women. Prior formal administrative approval from the Principal of Sajjalashree institute of nursing science, Bagalkot. Obtained approval from institutional ethical clearance committee. Obtained administrative approval from concerned authorities of B.V.V.Sangha's Akkanabalaga, Bagalkot. The purpose of the study was explained to all participants, and the information or data they provided will be kept confidential and their identities will not be disclosed. Written consent from postmenopausal women. A pretest was applied to postmenopausal women in the experimental and control groups on day 1 to evaluate psychological problems (depression, anxiety and quality of life). Postmenopausal women in the experimental group were applied muscle relaxation technique for 1 hour (15 sessions) every day for 1 month. The first post intervention evaluation regarding depression, anxiety and quality of life in postmenopausal women in the experimental group and control group was made on the 30th day. The second post-intervention evaluation was on depression, anxiety and quality of life in postmenopausal women in the experimental group and the control group at 30. 60. The third post-intervention analysis on depression, anxiety and quality of life in postmenopausal women in the experimental group and control group was on day 90 and the fourth evaluation was on the 90th day and the fourth evaluation was on depression, anxiety after the intervention. was carried out later. Postpartum quality of life and quality of life of female mothers in the experimental and control groups on the 120th day. Researcher thanked all the participants.



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10. Results

Section 1: Socio-demographic characteristics of Postmenopausal women

Majority of postmenopausal women (45.45%) in experimental group and (45.45%) were in control group were in the age group of 48-50 yrs. (90.90%) in experimental group and in control group (81.81%) were in Hindu religion. (45.45%) in experimental group and (45.45%) in control group were illiterate. (30.30%) in experimental group were house wives and also doing agriculture and (39%) in control group were house wives. (66.66%) in experimental group and (57.57%) in control group were had their family monthly income Rs. 5001-Rs. 10000. (78.78%) in experimental group and (93.93%) in control group were married. (69.69%) in experimental group and (72.72%) in control group were married below 20 yrs of age. (30.30%) in experimental group and (30.30%) in control group were having 3 children. (60.60%) in experimental group were had normal weight and in control group (51.51%) of them were had overweight. (51.51%) in experimental group were had menarche below 12 yrs of age and (51.51%) of them were in control group had menarche in the age of 13-15 yrs. (66.66%) in experimental group and (72.72%) of them in control group had passed 4-5 yrs after

attainment of menopause. (66.66%) in experimental group were having no habit of brisk walking and (57.57%) of them in control group were having the habit of brisk walking. (100%) in experimental group and (100%) of them in control group were having no habit of tobacco chewing and alcohol consumption. (96.96%) of them in experimental group and (96.96%) of them in control group were having the habit of excessive consumption of tea and coffee beverages. (51.51%) of them in experimental group were having the lifestyle diseases like DM/HTN and (57.57%) of them in control group were not having the lifestyle diseases like DM/HTN. (84.84%) of them in experimental and (96.96%) of them in control group were not attended any Psychosocial Intervention previously.

Section II: Descriptive statistical information of outcome variables

The average depression score of the experimental group was found to be 34.27 ± 2.388 , and the average depression score of the control group was 33.24 ± 3.500 . The average stress score of the experimental group was 12.85 ± 0.939 , and that of the control group was 13.06 ± 1.144 . The average life score of the experimental group was 60.12 ± 2.607 , and that of the control group was 59.48 ± 2.360 .

Section III: Pre-intervention comparison of Socio-demographic and Outcome variables

Characteristics	Experime	ntal Group n=33	3 Contr	ol Group n=33	□ ² /Fisher Exact/ U	P Value
	f	%	f	%		
Age				·		
48-50 yrs	15	45.45%	15	45.45%		
50-52 yrs	7	21.21%	6	18.18%	0.120	0.108
52-55 yrs	11	33.33%	12	36.36%		
Religion						
Hindu	30	90.90%	27	81.81%		
Muslim	3	9.09%	3	9.09%	2.848	0.069
Christian	0	0%	3	9.09%		
Educational status	6					
Illiterate	15	45.45%	15	45.45%		
Up to 10 th std	14	42.42%	13	39.39%	0.219	0.139
PUC/ HS/ Dip	4	12.12%	5	15.15%		
Occupation						
House wife	10	30.30%	13	39%		
Agriculture	10	30.30%	6	18.18%	1.870	0.077
Employed	4	12.12%	6	18.18%		
Self employed	9	27.27%	8	24.24%		
Family Monthly In	ncome					

Table 1: Pre-intervention comparison of Socio-demographic characteristics of Postmenopausal women

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Below 5000Rs	1	3.03%	0	0%		
5001- 10000Rs	22	66.66%	19	57.57%		
10001- 15000Rs	5	15.15%	12	36.36%	5.193	0.130
15000Rs & above	5	15.15%	2	6.06%		
Marital status						
Married	26	78.78%	31	93.93%		
Unmarried	7	21.21%	2	6.06%	3.216	0.061
Age at marriage						
Below 20 yrs	23	69.69%	24	72.72%		
21-25 yrs	7	21%	9	27.27%		
26-30 yrs	1	3.03%	0	0%	2.853	0.082
30 yrs & above	2	6.06%	0	0%		
No of Children						
Zero	3	9.09%	2	6.06%		
One	6	18.18%	2	6.06%		
Two	9	27.27%	9	27 27%	3.825	0.021^{*}
Three	10	30.30%	10	30.30%		
Four & above	5	15 15%	10	30.30%		
Woight	5	13.1370	10	50.5070		
Under weight	h	6.06%	h	6 0.60/		
Normal	20	60.60%	14	42 4294	2 /32	0.078
Normai Osian suojaht	20	00.00%	14	42.42%	2.432	0.078
Over weight	11	33.33%	1 /	51.51%		
Age at menarche	17	F1 50/	1.0	40.50		
Below 12 yrs	17	51.5%	16	48.5%	0.061	0.190
13-15 yrs	16	48.48%	17	51.51%	0.061	0.189
Time period after	· attainmei	nt of menopause	<u>}</u>			
1-2 yrs	2	6.06%	0	0%		
2-3 yrs	4	12.12%	4	12.12%		
3-4 yrs	4	12.12%	5	15.15%	2.869	0.098
4-5 yrs	22	66.66%	24	72.72%		
5 yrs & above	1	3.03%	0	0%		
Habit of exercise,	Yoga					
Yes	11	33.33%	19	57.57%		
No	22	66.66%	14	42.42%	3.911	0.029^{*}
Habit of tobacco	and alcoho	bl				
Yes	0	0%	0	0%		
No	33	100%	33	100%		
Habit of tea & co	ffee bevera	ages	•	•	•	
Yes	1	3.03%	1	3.03%		
No	32	96,96%	32	96.96%	——————————————————————————————————————	0.508
Lifestyle diseases	like DM &	2 HTN			I	
Yes	17	51,51%	14	42.42%		
No	16	48 48%	19	57 57%	0.547	0 149
Attended any Per	rho social	Intervention pr	eviouely	51.5170		0.117
Ves	5	15 15%	1	3 03%		
No	<u></u>	Q1 Q104	32	06.060/	2 933	0.086
110	20	04.04%	52	90.90%	2.755	0.000

*p<0.05

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	1	1	5		
Variables	Experimental Group	Control Group (n=33)	df	't' value	P value
	(n=33)				
	Mean± <i>SD</i>	Mean±SD			
Depression	34.27±2.388	33.24±3.500	64	1.397	0.167
Anxiety	12.85±0.939	13.06±1.144	64	-0.823	0.413
Total Quality of life	60.12±2.607	59.48±2.360	64	1.039	0.302

Table 2: Pre-intervention comparison of Depression, Anxiety and Quality of Life.

Section IV: Effectiveness of Progressive Muscular Relaxation Technique: Within the Group and between the group Comparison of Outcome Variables.

Table 3: Within group and between the group comparisons of Depression score across the time points.

Time of	Experimental Group	Control group (n=33)	Combined Mean	Repeated measures
assessment	(n=33) Mean ±SD	Mean ±SD	±SD	ANOVA
Baseline	34.27±2.388	33.24±3.500	33.76±3.018	Time
1 st month	10.55±1.394	31.76±2.372	21.15±10.860	F(4,64) = 626.536,
2 nd month	4.58±1.601	31.61±3.030	18.09±13.829	p=0.000***
3 rd month	20.42±2.926	31.00±2.861	25.71±6.053	2
				np =0.907
4 th month	33.00±2.487	30.27±2.908	31.64±3.016	
	Group F(1, 64)= 642.2	290,	Time x Group F(4	, 64)= 610.992,
	p=0.000*** n ² =0.909		$p=0.000^{***} n^2 = 0.$	905
	р		р	

***P<0.001 n²=Partial Eta Squared Effect Size

The results showed that the depression scores of the subjects in the experimental group were lower compared with the subjects in the control group, indicating the effectiveness of the Progressive Muscular Relaxation Technique intervention.

Table 4: Within group and between the group comparisons of Anxiety score across the time points.

Time of	Experimental Group	Control group (n=33)	Combined Mean	Repeated measures
assessment	(n=33) Mean ±SD	Mean ±SD	±SD	ANOVA
Baseline	12.85±0.939	13.06±1.144	12.95±1.044	Time
1 st month	5.94 ± 0.827	14.00 ± 1.414	9.97±4.221	F(4,64)=1186.082,
2 nd month	1.82 ± 0.635	14.21±1.576	8.02±6.357	p=0.000***
3 rd month	20.42±2.926	31.00±2.861	25.71±6.053	2
				np =0.949
4 th month	14.48 ± 1.642	13.70±1.960	14.09 ± 1.837	
	Group F(1, 64)= 619.4	410,	Time x Group F(4,	, 64)= 226.957,
	p=0.000*** n ² =0.906		$p=0.000*** n^2 = 0.2$	780
	р		р	

***P<0.001 np2=Partial Eta Squared Effect Size

The results showed that the Progressive Muscular Relaxation Technique intervention was very effective in reducing anxiety scores from baseline to 4 months.

Table 5: Within and between the groups comparison of Quality of Life score across the time points.

Time of	Experimental Group	Control group (n=33)	Combined Mean	Repeated measures
assessment	(n=33) Mean ±SD	Mean ±SD	±SD	ANOVA

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<u></u>	p		р	
	p=0.000*** n 2 =0.	966	$p=0.000*** n^2=0$	4, 64 <i>)</i> = 2718.274,).977
-	C moup $E(1, 64) - 1$	701 775	Time v Crown E	(4, 64) = 2718, 274
4 th month	74.45±3.751	59.61±4.358	67.03±8.500	-
				np =0.960
3 rd month	98.58±3.674	58.64 ± 4.091	78.61±20.489	2
2 nd month	121.88±2.247	57.39±3.766	89.64±32.635	p=0.000***
1 st month	104.30±2.921	57.18±3.531	80.74±23.958	F(4,64)= 1519.890,
Baseline	60.12 ± 2.607	59.48±2.360	59.80±2.488	Time

***P<0.001 np2=Partial Eta Squared Effect Size

The results showed that the Progressive Muscular Relaxation Technique intervention was very effective in improving quality of life scores from baseline to 4 months.

Section V: Correlation between Dependent Variables

Table 6: Correlation between Depression, Anxiety, andQuality of Life Scores at Baseline.

	n=33+33=66			
Variables	Depression	Anxiety		

Section – VI: Association of outcome variables

Anxiety	0.143	-
Quality of Life	-0.217	-0.038
***P<0.01, *P<0.05		

Table 6 displays that, Depression scores were positively related to anxiety (r = 0.143) and negatively related to quality of life (r = -0.217); This suggests that increased anxiety can lead to anxiety and decreased quality of life. Stress is negatively related to quality of life (r = -.038), indicating that increased stress increases quality of life.

Table 7: Multiple Regression Model for the assessment of association between 4th month post intervention assessment of Depression with socio demographic variables and clinical characteristics among post menopausal women.

n=33+33= 66

Independent Variables	Standardized	t	P value
F	cCoefficients (β)	Ĩ	
Age in Years	-0.152	-0.920	0.362
Religion	-0.101	-0.706	0.483
Educational Status	0.050	0.327	0.745
Occupation	0.359	1.986	0.053
Family Monthly Income	0.085	0.446	0.657
Marital Status	-0.031	-0.182	0.856
Age at Marriage	-0.020	-0.133	0.895
No. of Children	0.203	1.348	0.184
Weight	0.015	0.110	0.913
Age at menarche	-0.163	-1.039	0.304
Time after menopause	0.128	0.787	0.435
Habit of Exercise	0.248	1.523	0.134
Habit of tea & amp; coffee	0.060	0.393	0.696
DM & HTN	0.092	0.598	0.553
PSI previously	-0.093	-0.616	0.541

**P<0.05

Table 8: Multiple Regression Model for the assessment of association between 4th month post intervention assessment of Anxiety with socio demographic variables and clinical characteristics among post menopausal women.

Independent Variables	Standardized		
	Coefficients (β)	t	P value

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Age in Years	-0.070	-0.417	0.678
Religion	0.187	1.295	0.201
Educational Status	0.134	0.867	0.390
Occupation	-0.013	-0.070	0.945
Family Monthly Income	-0.300	-1.568	0.123
Marital Status	0.061	0.354	0.725
Age at Marriage	0.276	1.782	0.081
No. of Children	-0.028	-0.187	0.852
Weight	-0.008	-0.057	0.955
Age 0.at menarche	0.032	0.201	0.842
Time after menopause	0.245	1.497	0.141
Habit of Exercise	0.037	0.224	0.824
Habit of tea & coffee	-0.098	-0.635	0.528
DM & HTN	-0.051	-0.331	0.742
PSI previously	0.007	0.047	0.963

*P<0.05

I

Table 9: Multiple Regression Model for the assessment of association between 4th month post intervention assessment of Quality of life with socio demographic variables and clinical characteristics among post menopausal women.

			n=33+33=	
ndependent Variables	Standardized Coefficientst		P value	
	(β)			
Age in Years	-0.090	-0.608	0.546	
Religion	0.113	0.885	0.380	
Educational Status	0.020	0.146	0.885	
Occupation	-0.535	-3.317	0.002^{**}	
amily Monthly Income	-0.320	-1.885	0.065	
Iarital Status	0.016	0.102	0.919	
Age at Marriage	0.248	1.810	0.076	
lo. of Children	-0.343	-2.555	0.014^{**}	
Veight	0.036	0.283	0.778	
ge at menarche	-0.082	-0.581	0.564	
ime after menopause	-0.043	-0.295	0.769	
labit of Exercise	-0.289	-1.987	0.052	
labit of tea & coffee	-0.003	-0.022	0.983	
OM & HTN	-0.078	-0.568	0.572	
SI previously	-0.016	-0.118	0.907	

**P<0.05

11. Discussion

"A study to assess the effectiveness of a Progressive Muscular Relaxation Technique on anxiety, depression and Quality of life of post menopausal women. Study conducted at B.V.V.Sangha's Akkanabalaga, Bagalkot. The sociodemographic data and determinants were assessed by using a structured close ended questionnaire prepared by researcher and some standard questionnaire. Majority of postmenopausal women (45.45%) in experimental group and (45.45%) were in control group were in the age group of 48-50 yrs. **Makara S M, Kryś NK, Jakiel G** also conducted a similar study. In terms of the effect of menopausal symptoms group on populationpopulation selection, 39.05% of them are in the 45-50 age range⁶.**Agarwal AK, Kiron N, Gupta R**, Sengar A. A study was conducted to evaluate menopausal

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symptoms and coping strategies (82.7%) among Hindu women aged 40-60 years.7 (90.90%) in experimental group and in control group (81.81%) were in Hindu religion. Sajeera S. also conducted a similar study. The study was conducted to determine the awareness among Hindu women (86.67%) living in selected towns of Namakkal district regarding pre-menopausal symptoms and their management.⁸ (45.45%) in experimental group and (45.45%) in control group were illiterate. Ahlawat P, Singh MM, Garg S, Mala YM. conducted the research. Looking at the prevalence of depression among post-menopausal women in Delhi's urban migrant population and its relationship to the general population, 23.3% of women are illiterate.9 Current results This study contrasts with the existing study conducted by Makara S M, Kryś NK, Jakiel G. Regarding the impact of selected health problems on symptoms during pregnancy, 52.86% of them had completed secondary education.⁶ (30.30%) in experimental group were house wives and also doing agriculture and (39%) in control group were house wives. Agarwal AK, Kiron N, Gupta R, Sengar A conducted a similar study. Participants in the group where menopause symptoms and coping strategies were evaluated in women between the ages of 40-60 (51.3%) were housewives.⁷ (66.66%) in experimental group and (57.57%) in control group were had their family monthly income Rs. 5001- Rs. 10000. The findings of this study are supported by the current study by Agarwal AK, Kiron N, Gupta R, Sengar A. Evaluation of Menopausal Symptoms and Coping Strategies of Women in the Age Group of 40-60 (77.3%). Between 5000-12000 people fall into the middle class.⁷ Rana N, Rajamani S conducted research. Looking at the psychological problems and coping strategies of postmenopausal women in rural Panipat, 42% of them have a per capita monthly income of 5000-12000. 5001-10000 Rs..¹⁰ (78.78%) in experimental group and (93.93%) in control group were married. Armo M, Sainik S conducted the research. To analyze the gynecological symptoms of rural women in Rajnandgaon, Chhattisgarh in central India, 89.99% of the women were married.¹¹ Kalhan M, Singhania K, Choudhary P, Verma S, Kaushal P, Singh T. Determination of the prevalence of self-reported symptoms in women aged 35-60 years during transitional menopause and postmenopause, 69.8% of whom were married.¹² (69.69%) in experimental group and (72.72%) in control group were married below 20 yrs of age. (30.30%) in experimental group and (30.30%) in control group were having 3 children. Rana N, Rajamani S. studied the psychological problems and coping strategies of postpartum women with more than two children in rural areas of Panipat (67.00%).¹⁰ (60.60%) in experimental group were had normal weight and in control group (51.51%) of them were had overweight. Results of this study Agarwal AK, Kiron N, Gupta R, Sengar A. Evaluation of menopausal symptoms and coping strategies in men (68.7%) of mothers in the 40-60 age group had high (> 25) followed by normal (18.5 to < 25)) BMI.⁷ (51.51%) in experimental group were had menarche below 12 yrs of age and (51.51%) of them were in control group had menarche in the age of 13-15 yrs. Malik M, Mahjabeen M, Rana S, Hussain A, Hashmi A examined quality of life and depression among postmenopausal women in Pakistan, 55.7% of whom experienced menarche at age 13–14 years.¹³ (100%) in experimental group and (100%) of them in control group were having no habit of tobacco chewing and alcohol consumption. The results of this study reflect those by Ramón-Arbués E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. Depression, stress, anxiety and other factors affect 24.9%. from people who smoke.¹⁴ (51.51%) of them in experimental group were having the lifestyle diseases like DM/HTN and (57.57%) of them in control group were not having the lifestyle diseases like DM/HTN. Xi Li, Lu Li, Rui Yan, investigated the effects of information support methods combined with yoga practice on depression, anxiety, and sleep quality among pregnant women (men in the experimental group (78.85%) and the control group (78.85%)). 75.93% No personal medical history.¹⁵ (84.84%) of them in experimental and (96.96%) of them in control group were not attended any Psychosocial Intervention previously.

Section II: Descriptive statistical information of outcome variables

Mean depression score of Experimental group is 34.27 ± 2.388 and mean depression score of Control group is 33.24 ± 3.500 . Mean anxiety score of Experimental group is 12.85 ± 0.939 and Control group is 13.06 ± 1.144 . Mean quality of life score in Experimental group is 60.12 ± 2.607 and Control group is 59.48 ± 2.360 . **Rana N and Rajamani S** investigated the psychological

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problems and coping strategies of postmenopausal women in rural areas of Panipat. The results showed that the mean and standard deviation of the depression score was 17.89 ± 4.280 . The mean and standard deviation of the stress score were 18.67 ± 3.811 .¹⁰

Section III: Pre-intervention comparison of Sociodemographic, Clinical characteristics and Outcome variables

There is no significant difference was found between experimental and control groups in terms of sociodemographic variables of subjects. Except, No of Children, Habit of exercise, Yoga. But there was significant difference was found between experimental group compared to control group. The findings of this study are not consistent with the study conducted by **Sajeera S**. on knowledge of premenopausal symptoms and their management in women in Namakkal district. The results show that marital status, education level and monthly family income are significant at the 5% level, while other variables such as age, religion, profession and knowledge are not significant at the 5% level.⁸

There were no significant differences were found in any of the outcome variables between experimental and control groups. Hence both the groups were equal in terms of all the outcome variables at pre-intervention level. **Akbari F, Heydarpour S, Salari N** investigated the effects of various interventions on quality of life in postpartum women. The comparative results of pre-intervention TQOL scores showed that the mean and SD of the experimental group were 2.57 ± 1.10 , the mean and SD of the control group were 2.19 ± 0.85 , and the P value was 0.102. Therefore, there was no significant difference in TQOL between the experimental and control groups.¹⁶

Section IV: Effectiveness of Progressive Muscular Relaxation Technique: Within the Group and between the group Comparison of Outcome Variables.

The findings revealed there was a statistically significant difference depression from baseline to 4th month assessment in both experimental and control groups (F(4,64)= 626.536, P<0.001). Even there was a statistically significant differences in the groups and time by group (F(1, 64)= 642.290, P<0.001, F(4, 64)= 610.992, P<0.001) with a large effect size (n ²=0.909). **Gangadharan M, Madani AH** conducted a study on the

effectiveness of muscle relaxation on depression, anxiety and stress. The results of this study showed that the difference in depression scores was significant, p<0.01. While the mean and standard deviation were 15.21±4.58 before the intervention, it was 9.29±4.81 after the intervention. Muscle relaxation training has been shown to be effective in reducing depression.¹⁷Xi Li, Lu Li, Rui Yan, and others investigated the effects of information support methods along with their effects on depression, anxiety, and sleep quality in adult pregnant mothers. The preintervention mean and SD of the experimental group were 36.62 ± 2.37 . At the end of the 6month intervention, the mean and standard deviation were 30.22 ± 2.11 . The mean and standard deviation of the control group before the intervention were 37.04 ± 2.44 . At the end of the 6month intervention, the mean and standard deviation were 36.33 ± 2.54 . Although there was a significant difference in time between groups, F = 25.42, P<0.001 and F = 37.21, P<0.001.¹⁵

The findings revealed there was a statistically significant difference anxiety from baseline to 4th month assessment in both experimental and control groups (F(4,64)= 1186.082, P<0.001). Even there was a statistically significant differences in groups and time by group (F(1, 64)= 619.410, P<0.001, F(4, 64)= 226.957, P<0.001) with a large effect size (n ²=0.906). **Gangadharan M, Madani AH** conducted a study on the effectiveness of muscle relaxants on depression, anxiety and stress. The results showed that the difference between pre- and post-intervention stress scores was significant, p<0.01. While the mean and standard deviation were 13.98±4.36 before the intervention, it was 6.18 ± 3.77 after the intervention.¹⁷

A significant improvement of quality of life from baseline to 4th month assessment in both experimental and control groups (F(4,64)= 1519.890, P<0.001). Even there was a statistically significant differences in quality of life found between the groups and time by group (F (1, 64)= 1791.775, P<0.001, F(4, 64)= 2718.274, P<0.001) with a large effect size (n ²=0.960).

Section V: Correlation between Dependent Variables

Depression score were positively correlated with anxiety (r = 0.143) and negatively correlated with quality of life (r = -0.217) indicating increase depression increases the anxiety and decreases the quality of life. There was negative correlation with anxiety and quality of life (r = -0.038) indicating increase in anxiety decreased quality of

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life. **Anju S, Rani A, Priya S, and Soni K** investigated the quality of life and mental health of non-pregnant and postmenopausal women in southern India. The results of this study show that depression scores are positively related to stress (r = 0.571) and negatively related to quality of life (r = -0.215); This suggests that increased stress will increase anxiety and reduce quality of life. There is a negative correlation between stress and quality of life r = -0.119, indicating that increased stress will reduce quality of life.¹⁸

Section - VI: Association of outcome variables

Multiple regression analysis carried out to find the association between 4th month post intervention assessment of Depression and anxiety with socio demographic variables and clinical characteristics among post menopausal women. No any variables found significant association found with socio demographic variables and clinical characteristics. Research conducted by Wang X, Zhao, G, Di J. "Prevalence of symptoms and risk factors associated with depression and anxiety among middle-aged women in China". The results of this study show an association between latent variables and menopausal symptoms assessed using multivariable logistic regression (P < 0.1 in all univariate models). Older age, higher household income, and regular physical activity are protective factors for depressive symptoms; Chronic disease, vasomotor symptoms, somatic pain, and genitourinary symptoms have been shown to be risk factors for depressive symptoms.¹⁹ The results of this study are not supported by existing research conducted by Wang X, Zhao, G, Di J. Prevalence and risk factors of depression and anxiety symptoms in middle-aged Chinese women: A population-based study. The results of this study showed that, in multiple models, place of residence, regular physical activity, chronic disease, vasomotor, somatic, and genitourinary symptoms were independently associated with the risk of anxiety symptoms and pain symptoms (all P < 0.05)¹⁹. Assessment of Quality of life with socio demographic variables and clinical characteristics among post menopausal women. Results show that only occupation and number of children has significant association with the quality of life. The results of this study do not support the current study conducted by Barati M, Akbari-H H, Samadi-Y E, Jenabi E, Jormand H, Kamyari N. Factors associated with quality of life after aging in women. The results of this study showed a positive relationship (p < 0.01) between the total quality of life score and work, work, smoking, exercise, Omega-3 supplementation, and the postpartum period.²⁰

12. Limitation of the study

This study is limited to post menopausal women between the age group of 48-55 years attending B.V.V.Sangha's Akkanabalaga, Bagalkot. The sample for the study was limited to 66 post menopausal women. This was only a small sample for generalization. The intervention was implemented only for every alternative day for 1 month (15 sessions).

13. Conclusion and Recommendation:

Results based on the results of comparative measures of preintervention depression, anxiety, and quality of life among postmenopausal women found no significant differences in any of the outcomes that differed between the experimental and control groups. Therefore, the two groups were similar on the overall outcome variable at the preintervention level. Compared with the control group, there were significant differences in depression, anxiety, and quality of life in the experimental group from baseline to the 4month assessment. Stress has a negative relationship with quality of life; This suggests that increased stress levels lead to decreased quality of life. No significant associations were found between depression and anxiety and changes in social and clinical characteristics 4 months after the intervention. There is a positive association between quality of life scores at 4 months postintervention and changes in social and clinical characteristics such as work and children. Based on the findings, the study recommends that similar studies be conducted with a broadly stratified sample, including postmenopausal women from different segments of society, to expand the findings. A study can be conducted to understand the emergence of psychological problems in postmenopausal women. A study could be conducted to evaluate the effectiveness of various training strategies (such as SIM, manual, and computer-based training) on women's postpartum depression, anxiety, and quality of life.

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