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Effectiveness of Relaxation Techniques on Level of Depression and Coping Strategies among HIV Patients in Selected HIV Centres, Bengaluru

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Abstract:- People who are infected with HIV/AIDS are more likely to develop depression. Depression can be treated with relaxation techniques. The objectives of the study to assess level of depression and coping strategies among HIV patients, to determine the effectiveness of relaxation techniques in term of reduction mean post test level of depression and increase mean post test coping strategies, to correlate between level of depression and coping strategies, to find the association between pre test level of depression and coping strategies among HIV patients with selective demographical variables. A Pre experimental one group pretest and posttest design was administered on 60 HIV patients who were admitted in ART centre, K C General Hospital Bangalore. Non probability convenience sampling technique was used for the sample selection. The data obtained were analyzed by using descriptive and inferential statistics. Out of 60 subjects, 65% (39) had severe depression and 78.3% (47) had inadequate coping strategies. There was significance difference between mean difference of pre test and post test scores of level of depression (t=19.13, p<0.001) and coping strategies (t=24.13, p<0.001).There was negative correlation between level of depression and coping strategies (r=-0.612, p<0.001). Level of depression was associated with age in years ((χ=10.77,df =4,p>0.05) genders (χ=7.45,df =1,p>0.05) and occupation (χ=11.77,df =5, p>0.05). Similarly coping strategies with education (χ=8.581, df =3, p>0.05) and family support (χ=6.487, df =1, p>0.05). The study signifies that relaxation techniques can be used to maintain depression and promote coping strategies among HIV patients.

Keywords:- *Relaxation Techniques, Depression, Coping Strategies and HIV Patients.*

I. INTRODUCTION

Depression is a disorder of major public health importance, in terms of its prevalence and the suffering, dysfunction, morbidity, and economic burden.[1] According to the World Health Organization; unipolar depressive disorders were ranked as the third leading cause of the global burden of disease in 2004. [2]Today, depression is estimated to affect 350 million people.[3]One out of ten people suffer from major depression.[4]By 2020, depression will be the second leading cause of world disability and by 2030, it will move into the first place.[5] where, depression can be mild, moderate, severe or profound.[6]

For millions of people, chronic illnesses and depression are facts of life.[7]Having the diagnosis of a chronic disease, like HIV infection or AIDS, can make depressive symptoms worse.[8]The rates of depression in people with HIV are as high as 60%.[9] Depression has a significant impact on the quality of life of persons living with HIV and AIDS and is associated with HIV disease progression and mortality.[10] While the burden of depression is 50% higher for females than males.[11]

If depression is persistent, it must be treated. This can be treated with lifestyle changes, alternative therapies, and/or with medications.[12]Lifestyle changes include relaxation techniques. Such as: meditation, deep breathing exercises, regular exercise, laugh out loud, increased exposure to sunlight/be present, crank up the tunes, stress management, counselling, be grateful and improved sleep habits.[13]These changes will help to reduce level of depression and improve coping strategies among HIV patients. Untreated depression can cause to miss medication and lower quality of life. Depression is a “whole body” issue that can interfere with physical health, thinking, feeling, and behavior.[14]The researcher had applied meditation, be present, deep breathing exercises and get moving to manage depression and coping of HIV patients.

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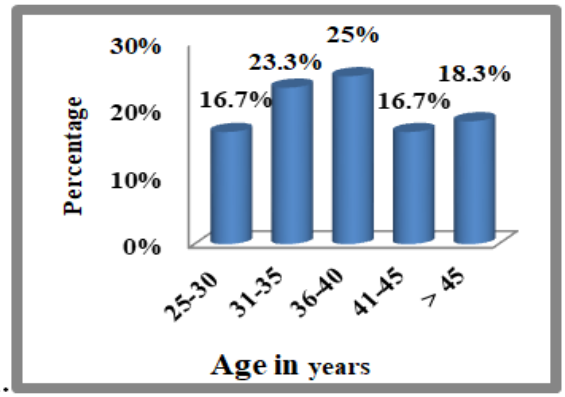
II. RESEARCH METHODOLOGY

Pre experimental one group pre test and post test design was used for the study. Non probability convenience sampling technique was applied to select 60 HIV patients, age groups of 25 years and above, read and write English or Kannada, and wish to take part in research at ART centre, K C General Hospital, Bengaluru. The tools used were self administered structured questionnaire. Beck modified depression inventory tool was applied to assess level of depression (r=0.98) and 3 point Likert scale to assess coping strategies (r=0.92). Pre test was conducted on the day 1. From the same day, continuous seven days sessions of relaxation techniques for 30-45 minutes by demonstration and re-demonstration method followed by post test on day 7immediately after practice. The data were collected in December, 2016. The data obtained were analyzed based on the objectives and hypotheses of the study using descriptive and inferential statistics.

III. RESULTS

➢ *Section 1: Description of demographic variables of HIV patients in selective HIV centre.*

a.



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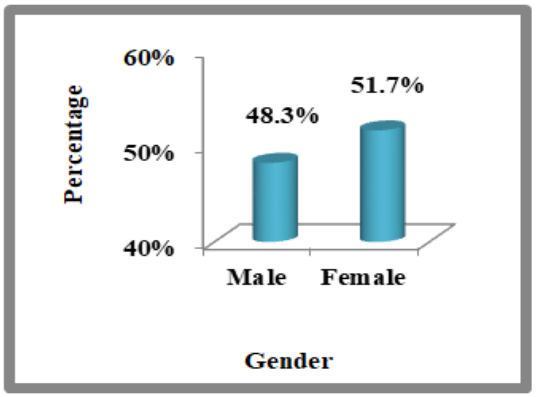

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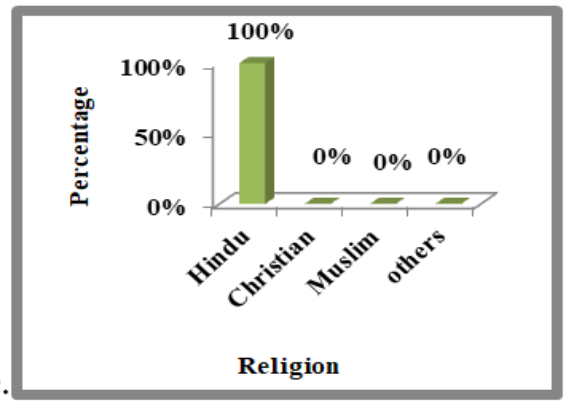

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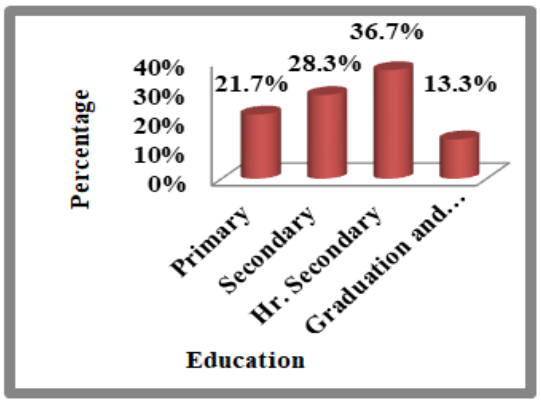

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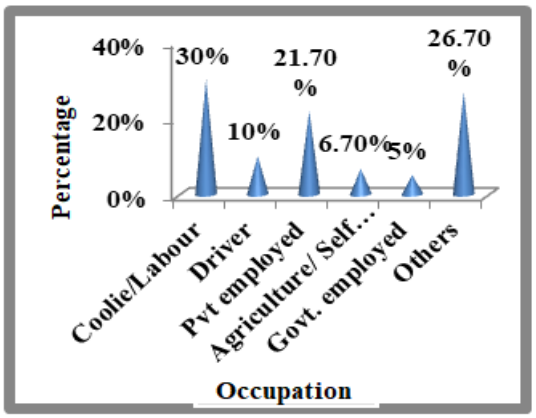

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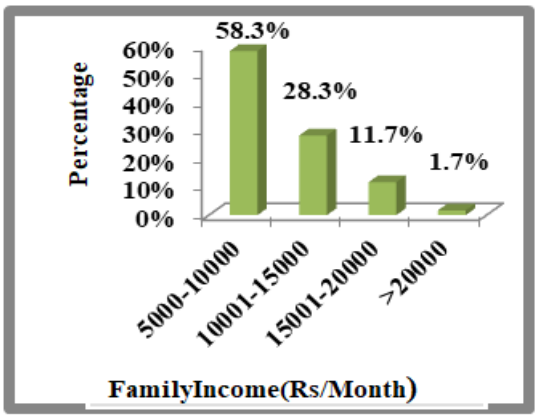

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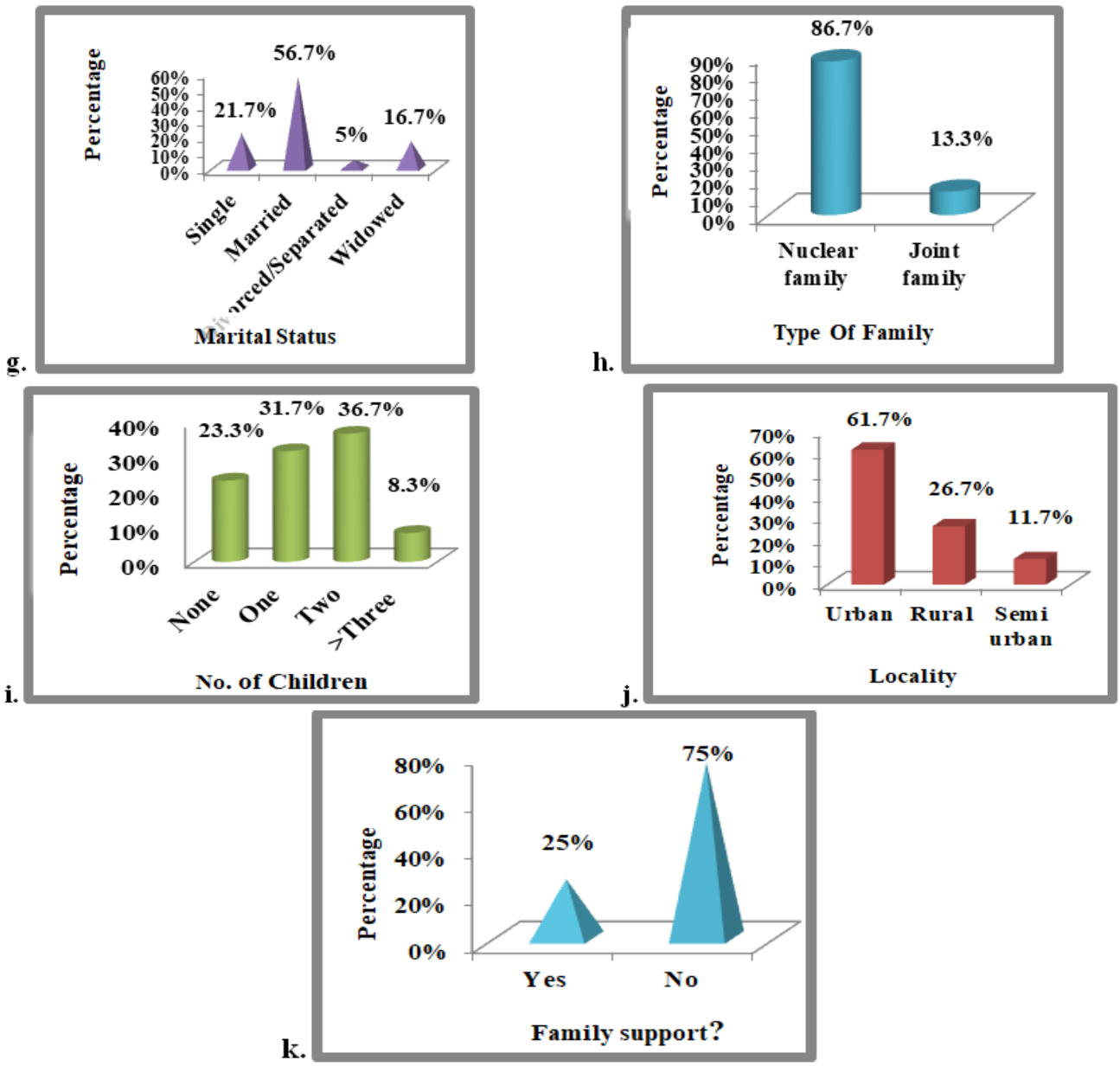

Fig 1

Figure 1: Percentage distribution of HIV patients according to **a.** Age in years, **b.** Gender, **c.** Religion, **d.** Education, **e.** Occupation, **f.** Family income (Rs/Month), **g.** Marital status, **h.** Type of family, **i.** Number of children, **j.** Locality and **k.** Family support.

Sl. No.	Demographic variables	Range (years)	Mean ±SD
1	Duration of illness	1-12	5.20±3.16
2	ART treatment	1-11	4.43±2.71

Table 1:- Range, Mean and SD of duration of illness and taking ART treatment among HIV patients. (n= 60)

➢ *Section 2: Assessment of pre test and post test level of depression and coping strategies among HIV patients in selective HIV centre. (n=60)*

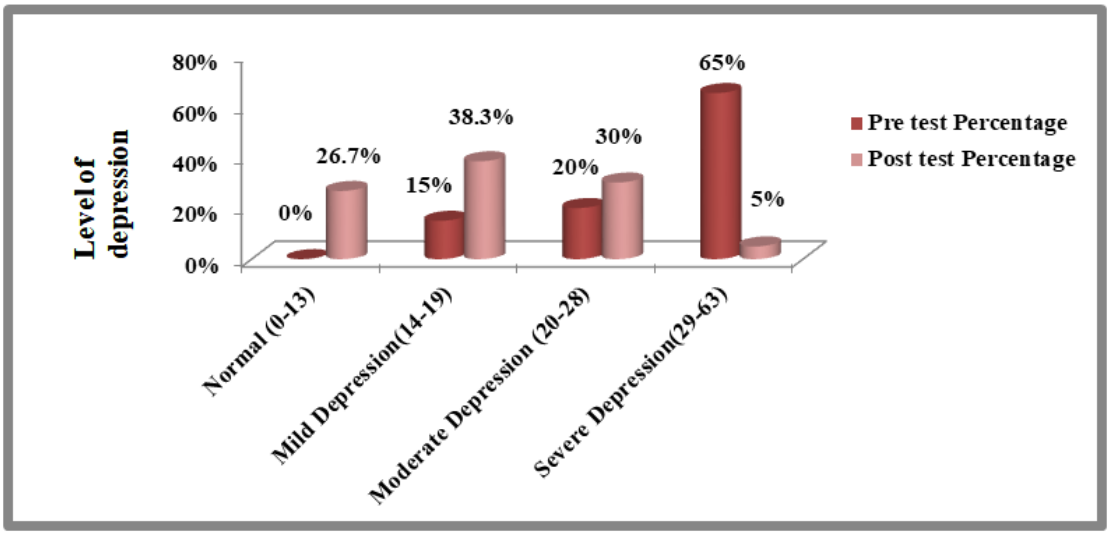

Fig 2

Sl. No.	Pre and Post test	Max score	Level of Depression			
			Range	Mean	SD	Mean %
1.	**Pre test**	63	14-50	31.40	8.62	**49.8**
2.	**Post test**	63	8-30	17.45	5.21	**27.7**

Table 2:- Range, Mean and SD of pre and post test level of depression among HIV patients in selected HIV centre. (n=60)

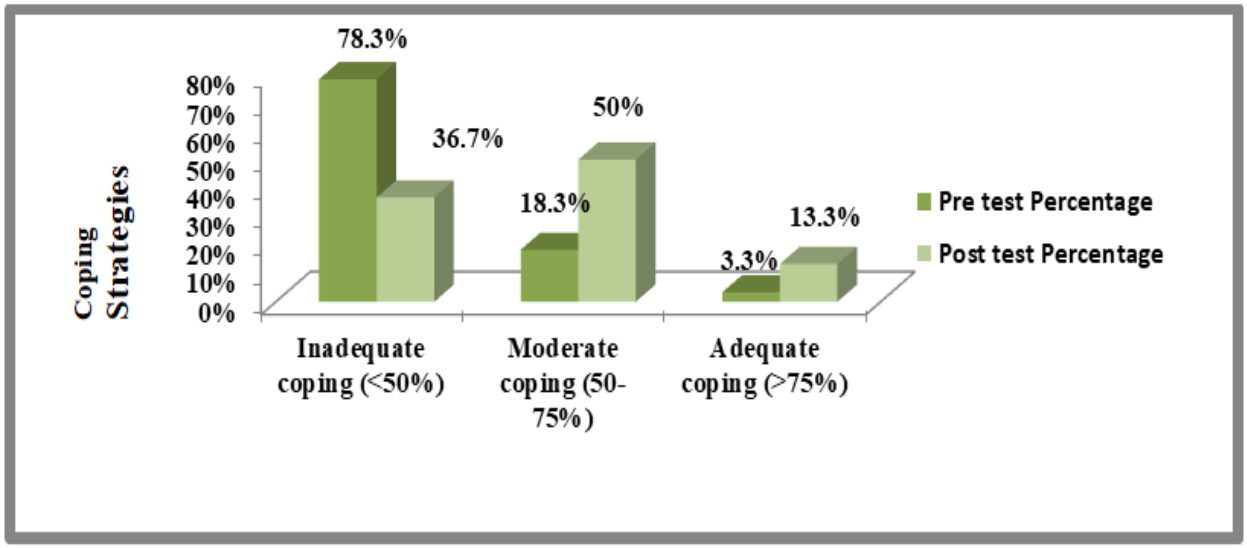

Fig 3

Sl. No.	Pre and Post test	Max score	Coping Strategies			
			Range	Mean	SD	Mean %
1.	Pre test	50	10-39	20.30	7.17	**40.6**
2.	Post test	50	21-43	28.08	5.99	**56.16**

Table 3:- Range, Mean and SD of pre and post test coping strategies among HIV patients in selected HIV centre (n=60)

- *Section 3: Effectiveness of relaxation techniques on level of depression and coping strategies among HIV patients in selected HIV centre.*

Sl. No.	Depression & Coping	Max score	Paired t-difference (Enhancement)			Paired t-test value	P-value
			Mean	SD	Mean%		
1.	Level of Depression	63	13.95	5.64	**22.1**	19.13*	p<0.001
2.	Coping strategies	50	7.78	2.49	**15.7**	24.13*	p<0.001

Table-4: Outcomes paired t-test analyses for comparison of pre and post test scores of level of depression and coping strategies in selected HIV centre. (n=60) {Note: *-denotes significant at p<0.001 level.}

- *Section 4: Assessment of correlation between level of depression and coping strategies among HIV patients. (n=60)*

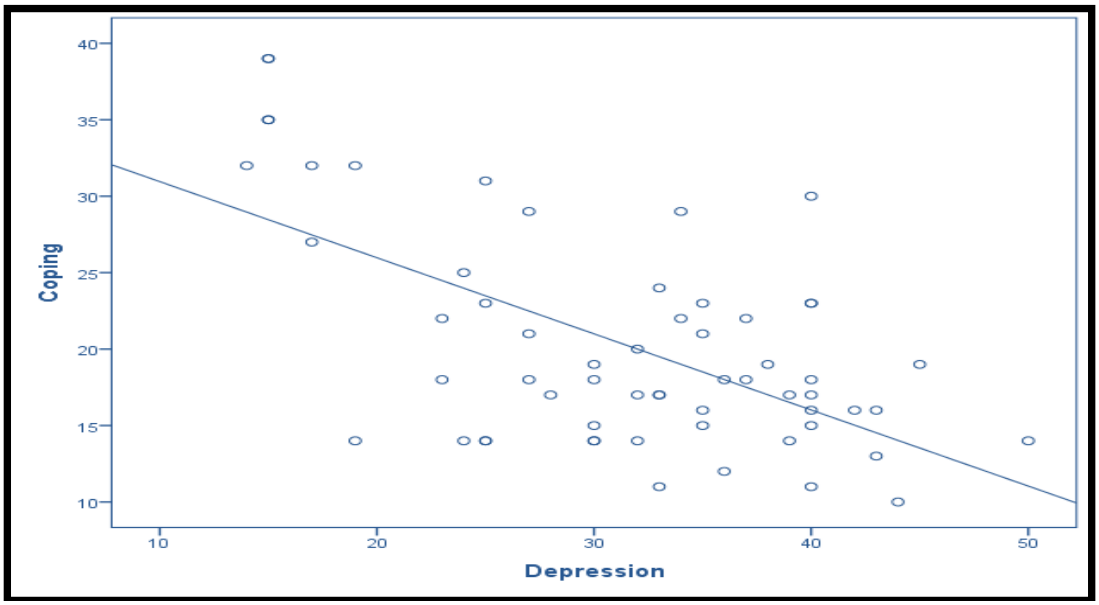

Fig 4

- *Section 5: Association between level of depression and coping strategies of HIV patients with their demographical variables*

Sl. No.	Demographic variables	Sample (n=60)		Level of depression				Chi square value	p-value
				≤Median		>Median			
		F	%	F	%	F	%		
1	**Age in years**								
	a. 25-30 years	10	16.7	3	10.3	7	22.6	**10.77, df=4, S**	**p<0.05**
	b. 31-35 years	14	23.3	9	31.0	5	16.1		
	c. 36-40 years	15	25.0	5	17.2	10	32.3		

	d. 41-45 years	10	16.7	8	27.6	2	6.5		
	e. Above 45 years	11	18.3	4	13.8	7	6.5		
2	**Gender**								
	a. Male	29	48.3	19	65.5	10	32.3	**7.45, df=1, S**	**p<0.05**
	b. Female	31	51.7	10	34.5	21	67.7		
3	**Religion**								
	a. Hindu	60	100.0	29	100	31	100	Invalid	
	b. Christian	-	-	-	-	-	-		
	c. Muslim	-	-	-	-	-	-		
	d. others	-	-	-	-	-	-		
4	**Education**								
	a. Primary	13	21.7	5	17.2	8	25.8	1.338, df-3, NS	p>0.05
	b. Secondary	17	28.3	10	34.5	7	22.6		
	c. Hr. Secondary	22	36.7	10	34.5	12	38.7		
	d. Graduation and above	8	13.3	4	13.8	4	12.9		
5	**Occupation**								
	a. Coolie/Labour	18	30.0	7	24.1	11	35.5	**11.77, df=5, S**	P<0.05
	b. Driver	6	10.0	5	17.2	1	3.2		
	c. Pvt employed	13	21.7	9	31.0	4	12.9		
	d. Agriculture/ Self employed	4	6.7	0	0	4	12.9		
	e. Govt. employee	3	5.0	2	6.9	1	3.2		
	f. Others	16	26.7	6	20.7	10	32.3		
6	**Family income(Rs/month)**								
	a. 5000-10000	35	58.3	16	55.2	19	61.3	3.009, df=3, NS	p>0.05
	b. 10001-15000	17	28.3	10	34.5	7	22.6		
	c. 15001-20000	7	11.7	2	6.9	5	16.1		
	d. Above 20000	1	1.7	1	3.4	0	0		
7	**Marital status**								
	a. Single	13	21.7	7	24.1	6	19.4	2.064, df=3, NS	p>0.05
	b. Married	34	56.7	18	62.1	16	51.6		
	c. Divorced/ Separated	3	5.0	1	3.4	2	6.5		
	d. widowed	10	16.7	3	10.3	2	6.5		
8	**Type of family**								
	a. Nuclear family	52	86.7	25	86.2	27	87.1	0.010, df=1, NS	p>0.05
	b. Joint family	8	13.3	4	13.6	4	12.9		
9	**No. of children**								
	a. None	14	23.3	6	20.7	8	25.8	3.375, df=3, NS	p>0.05
	b. One	19	31.7	12	41.4	7	22.6		
	c. Two	22	36.7	8	27.6	14	45.2		
	d. Three and above	5	8.3	3	10.3	2	6.5		
10	**Locality**								
	a. Urban	37	61.7	19	65.5	18	58.1	0.354, df=2, NS	p>0.05
	b. Rural	16	26.7	7	24.1	9	29.0		
	c. Semi urban	7	11.7	3	10.3	4	12.9		
11	**Do you have family support?**								
	a. Yes	15	25.0	11	37.9	4	12.9	5.006, df-1, NS	p>0.05
	b. No	45	75.0	18	62.1	27	87.1		

Table 5:- Outcomes of Chi-square analysis for the association between levels of depression among HIV patients with their selected demographic variables. (n=60) {Note: S-significant (p<0.05); NS-Not significant (p>0.05).}

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Sl. No	Demographic variables	Sample (n=60)		Coping Strategies				Chi square value	p-value
				≤Median		>Median			
		F	%	F	%	F	%		
1	**Age in years**								
	a. 25-30 years	10	16.7	4	12.1	6	22.2	3.862, df=4, NS	p>0.05
	b. 31-35 years	14	23.3	6	18.2	8	29.6		
	c. 36-40 years	15	25.0	11	33.3	4	14.8		
	d. 41-45 years	10	16.7	6	18.2	4	14.8		
	e. Above 45 years	11	18.3	6	18.2	5	18.5		
2	**Gender**								
	a. Male	29	48.3	16	48.5	13	48.1	0.621, df=1, NS	p>0.05
	b. Female	31	51.7	17	51.5	14	51.9		
3	**Religion**								
	a. Hindu	60	100.0	33	100	27	100	Invalid	
	b. Christian	-	-	-	-	-	-		
	c. Muslim	-	-	-	-	-	-		
	d. others	-	-	-	-	-	-		
4	**Education**								
	a. Primary	13	21.7	6	18.2	7	26.9	**8.581, df-3, S**	**p<0.05**
	b. Secondary	17	28.3	12	36.4	5	18.5		
	c. Hr. Secondary	22	36.7	14	42.4	8	29.6		
	d. Graduation and above	8	13.3	1	3.0	7	25.9		
5	**Occupation**								
	a. Coolie/Labour	18	30.0	9	27.3	9	33.3	6.121, df=5, NS	P>0.05
	b. Driver	6	10.0	6	18.2	0	0		
	c. Pvt employed	13	21.7	6	18.2	7	25.9		
	d. Agriculture/ Self employed	4	6.7	2	6.1	2	7.4		
	e. Govt. employee	3	5.0	1	3.0	2	7.4		
	f. Others	16	26.7	9	27.3	7	25.9		
6	**Family income(Rs/month)**								
	a. 5000-10000	35	58.3	20	60.6	15	55.6	3.910, df=3, NS	p>0.05
	b. 10001-15000	17	28.3	11	33.3	6	22.2		
	c. 15001-20000	7	11.7	2	6.1	5	18.5		
	d. Above 20000	1	1.7	0	0	1	3.7		
7	**Marital status**								
	a. Single	13	21.7	7	21.2	6	22.2	2.906, df=3, NS	p>0.05
	b. Married	34	56.7	17	51.5	17	63.0		
	c. Divorced/ Separated	3	5.0	3	9.1	0	0		
	d. widowed	10	16.7	6	18.2	4	14.8		
8	**Type of family**								
	a. Nuclear family	52	86.7	30	90.9	22	81.5	1.142, df=1, NS	p>0.05
	b. Joint family	8	13.3	3	9.1	5	18.5		
9	**No. of children**								
	a. None	14	23.3	6	18.2	8	29.6	4.918, df=3, NS	p>0.05
	b. One	19	31.7	8	24.2	11	40.7		
	c. Two	22	36.7	15	45.5	7	25.9		
	d. Three and above	5	8.3	4	12.1	1	3.7		
10	**Locality**								
	a. Urban	37	61.7	19	57.6	18	66.7	0.972, df=2, NS	p>0.05
	b. Rural	16	26.7	9	27.3	7	25.9		
	c. Semi urban	7	11.7	5	15.2	2	7.4		
11	**Do you have family support?**								

	a. Yes	15	25.0	4	12.1	11	40.7	**6.487, df-1, S**	**P<0.05**
	b. No	45	75.0	29	87.9	16	59.3		

Table 6:- Outcomes of Chi-square analysis for the association between coping strategies among HIV patients with their selected demographic variables. (n=60) {Note: S-significant (p<0.05); NS-Not significant (p>0.05).}

➢ *Section 1: Description of demographic variables of HIV patients in selective HIV centre*

Background information of the sample characteristics collected using demographic variables is shown in figure 1. Out of 60 subjects, many 25% (15) and 23.3% (14) were at the age groups of 36-40 years and 31-35 years. Female were more than male. The entire samples were Hindu. Most had higher secondary education 36.7 %(22). One third was coolie/labour. More than half had family income between Rs.5000 to Rs.10, 000/- per month and were married. Maximum 86.7% (52) belonged to nuclear family. 36.7% (22) were having two children and 31.7% (19) were having once child. Majority 61.7% (37) live in urban. 75% (45) do not have any family support.

Background information of the sample characteristics collected based on duration of illness and duration of ART treatment is shown in table 1. The duration of illness ranged from 1-12years with mean ± SD of 5.20 ± 3.16 and duration of taking ART treatment ranged from 1-11 with mean± SD of 4.43±2.7majorly.

➢ *Section 2: Assessment of pre test and post test level of depression and coping strategies among HIV patients in selective HIV centre*

In pre test more than half of the HIV patients, 65% (39) had severe depression and maximum 78.3% (47) had inadequate coping. After intervention, in post test, only 5% (3) had severe depression and 36.7% (22) had inadequate coping and more information is exhibited in Figure 2 and Figure 3.

➢ *Section 3: Effectiveness of relaxation techniques on level of depression and coping strategies among HIV patients in selected HIV centre*

The Table 4 depicts that parametric paired t test was found to be significant on level of depression and coping strategies (t=19.13, p<0.001and t=24.13, p<0.001). It is clear from the Table 2 and Table 3, the post test mean percentage is reduced compared to the pre test mean percentage on level of depression and the post test mean percentage is increased compared to the pre test mean percentage on coping strategies. It provides evidence that the relaxation techniques were significantly effective in improving level of depression and coping strategies among the HIV patients.

➢ *Section 4: Assessment of correlation between level of depression and coping strategies among HIV patients*

It is understandable from figure 4, that there is a negative correlation between the level of depression and coping strategies among HIV patients (r= -0.612, p<0.001). It provides evidence that as improvement in level of depression, coping strategies also change among HIV patients.

➢ *Section 5: Association between level of depression and coping strategies of HIV patients with their demographical variables*

Level of depression was associated with age in years ((χ=10.77,df =4,p>0.05) genders (χ=7.45,df =1,p>0.05) and occupation (χ=11.77,df =5, p>0.05). Similarly coping strategies with education (χ=8.581, df =3, p>0.05) and family support (χ=6.487, df =1, p>0.05) which is transparent from Table 5 and Table 6. This signified that there is significant association between the pre test level of depression and coping strategies among HIV patients with their demographical variables.

IV. DISCUSSION

The findings of the present study showed more than half of the HIV patients 65% (39) HIV patients had severe depression. The finding supports the result of the study conducted to assess the depression level among 209 HIV positives in Tiruchirapalli district, Tamilnadu. The distribution of the respondents based on their level of depression, 110 (52.7%) of the respondents are having severe level of depression, 43(20.5%) of the respondents are having mild level of depression, and only a minimum of 17 (8.1 percent) of the respondents are having minimal level of depression. More than 70 percent of the respondents are having moderate to severe level of depression. The study has revealed that the level of depression of the HIV positives.[15]

The mean difference of pre and post test scores on level of depression signified the effectiveness of relaxation techniques (t=19.13 at p<0.001). The present study finding supports the experimental study conducted in ART centre, District Hospital, Udupi among 30 people living with HIV who were admitted at the centre to determine the effectiveness Jacobson's Progressive Muscle Relaxation (JPMR) training to reduce anxiety and depression among people living with HIV. Out of 30 subjects, 13.30% (4) experienced abnormal anxiety and 16.7% (5) abnormal depression. There was significance difference between mean difference of pretest and post test scores of anxiety (t=8.471, df =29, p=0.001) and depression (t=6.811, df=29, p=0.001). Anxiety is independent of the selected variables

(Demographic and disease specific). Depression is dependent on previous history of psychiatric illness ($\chi 2=6.584$, df =2, p=0.037). JPMR is a simple non-invasive, cost effective method. The result showed that JPMR training had a positive effect in reducing the anxiety and depression and JPMR can be used as an effective alternative therapy.[16]

The negative liner correlation observed in Figure 4 evidences decreased in the level of depression bears the increase in coping strategies (r=-0.612, p<0.001). The finding of the study supports the cross-sectional study was to examine the relationship between psychological resilience and symptoms of depression in a non-acute cardiac outpatient population. Psychological resilience is associated with an improved capacity to cope with chronic health challenges. A total of 419 adult cardiac outpatients (288 men; mean ± SD age 66.26±14.04 years) attending cardiovascular clinics completed the Sense of Coherence (SOC13) scale as a measure of psychological resilience and the Cardiac Depression Scale (CDS26) prior to their consultation. The total SOC13 score (mean ± SD 64.02±14.24, range 19–91) was within the moderate range. Older patients (⩾65 years) were significantly more resilient than those aged <65 (p<0.01). Psychological resilience (SOC13) was negatively correlated with depression (CDS26) (r=−0.79; p<0.001) and inversely associated with affective, cognitive and somatic symptoms of depression. These findings show that low psychological resilience was related to depression in this cohort of cardiac outpatients, particularly affective symptoms such as anhedonia and hopelessness.[17]

Also supports the cross-sectional study was conducted to investigate the mediating role of coping strategies in the relationship between caregiver burden and depressive symptoms among family caregivers caring for disabled older adults with musculoskeletal (MSK) conditions with samples of 494 pairs of disabled older adults and their primary family caregivers in Shanghai, China. Caregivers of adults with MSK conditions were more likely to use active coping to handle time dependence (β [SD]=0.182 [0.055]) and physical burden (β [SD]=0.226 [0.071]) and to use avoidant coping to handle developmental burden (β [SD]=0.414 [0.061]). Both coping strategies were used to handle social burden (active: β [SD] =0.179 [0.078]; avoidant: β [SD]=0.241 [0.073]). Experiencing emotional burden reduced the likelihood of using both coping strategies (active: β [SD]=-0.266 [0.066]; avoidant: β [SD]=-0.373 [0.062]). Active coping had a protective impact on depressive symptoms (β [SD] =-0.228 [0.050]), whereas avoidant coping had an adverse impact on depressive symptoms (β [SD]=0.232 [0.053]).The findings confirm the mediating effects of coping strategies in the relationship between caregiver burden and depressive symptoms.[18]

V. CONCLUSION

In the present pre experimental – one group pre test post test design, the samples received the intervention of relaxation techniques, where the relaxation techniques were found to be effective and appropriate for HIV patients to improve level of depression and coping strategies.

ACKNOWLEDGEMENT

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