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Effective yogic intervention to maintain the anxiety level on HIV affected adolescents

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Abstract

The study was designed to find out the effect of yogic practices on psychological variable anxiety among HIV affected adolescents. The pretest and posttest repeated measures experimental design developed to reach the goal of the study, 30 boys were having HIV staying at child care center in Puducherry city aged between 13 to 19 selected underwent for yoga practices for 24 weeks, five days for a week for a maximum of one hour in the evening, the test were conducted before and after the training of each three months. The variable measured by Hamilton anxiety rating scale (HAM-A) questionnaire. The data were statistically analyzed by using computer/SPSS. Repeated Measures ANOVA was done to determine the significance difference and tested at 0.05 level of significance. The result of the study was showed that there was a significant difference on anxiety before and after the yogic practices; hence the hypotheses were accepted at 0.05 level of confidence. The conclusion was that there was a significance difference in anxiety before and after the yogic practices among HIV affected adolescents.

Keywords: Yoga, HIV, adolescents, psychology

Introduction

Yoga and yoga therapy

For healthy happy life one should have sound health, content mind and good intellect. Yoga is beneficial for health and our ancestors created in way that modern science just started to understand that how differently it deals with the ordinary human life. Even though it used for therapeutic purpose for thousands of years, now only yoga is emerging as a therapeutic discipline. The new studies shows that yoga works in different layers of human the flexible tools of yoga practices helping the efficient teacher to create different module for each individual according to their needs, asanas Pranayamas and meditations not only working physically, mentally and physiologically it goes deep into the system and normalizing the hormonal and enzymes secretions and bringing back to the systems to the normal conditions this will lead the harmonization of the human existence inside as well as with the nature.

Yoga is well known for its psychological approach towards life. The practice mainly focuses on the psychological devolvement of the person. The definition itself shows the importance of psychology. Maharshi Pathanjali says that "Yoga Chittavritti Nirodhaha" which means to understand and control the fivefold manifestations or Vrittis. They Vrittis are namely Pramana-Correct knowledge, Viparyaya-Incorrect knowledge, Vikalpa-Imagination or fantasy, Nidra-Sleep, and Smrti-Memory. He suggests a group of tools known as Astanga yoga or eight limbed yoga to control the Vrittis. The eight limbs of yoga are "Yama, Niyama, Asana, Pranayama, Pratyahara, dharana Dyana, Samadi which enabling you to understand your own system and helping you to build a healthy life.

Yoga and adolescents

According to most of the studies there are lots of physiological and psychological changes happening through yoga practices especially in adolescents. It balances the systematic and natural growth. The yogic practices will improve the circulation which is vital to the proper functioning of the body, stimulate the endocrine glands which govern growth and development, promote structural development, improve digestion and respiratory volume and also help the adolescent to build up self-control and self-confidence.

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Yoga and HIV

AIDS or acquired immunodeficiency syndrome was first recognized in 1981. It is caused by Human immunodeficiency virus (HIV-1). Since 1981, the prevalence of AIDS has assumed significant proportions worldwide. "As per the recently released, India HIV Estimation 2017 report, National adult (15–49 years) HIV prevalence in India is estimated at 0.22% (0.16% – 0.30%) in 2017. In 2017, adult HIV prevalence is estimated at 0.25 % (0.18-0.34) among males and at 0.19% (0.14-0.25) among Females. The adult HIV prevalence at national level has continued its steady decline from an estimated peak of 0.38% in 2001-03 through 0.34% in 2007, 0.28% in 2012 and 0.26% in 2015 to 0.22% in 2017" (<http://naco.gov.in/surveillance-epidemiology-0>, n.d.)

"According to the UNAIDS data in 2017 July, 2.1 million adolescents worldwide between the ages of 10 to 19 are living with HIV. This comes to about the six percentage of the total affected people and fifteen percentages of the total newly affected. Almost 610,000 people who were newly infected with HIV were young and aged Between 15 to 24. In this 260,000 were adolescents aged between 15 to the other important trend is that HIV related deaths among adolescents have increased over the past decade while decreasing among all other age groups". Another significant fact is that there is large group of adolescents as well as a generation of children infected with HIV who are growing into adolescence. Adolescents are developmentally at a difficult stage in all aspects. Their needs for autonomy and independence and their evolving decisional capacity intersect and compete with their concrete thinking processes, risk-taking behaviors, preoccupation with self-image. There is also the need to fit in with their peers. This makes it challenging to attract and sustain adolescents' focus on maintaining their health. These challenges are not specific to any particular transmission mode or stage of disease. Thus, irrespective of disease duration or mode of HIV transmission, every effort must be made to engage and retain adolescents in care so that they can improve and maintain their health for the long term. More than that, the social isolation may give antisocial elements in their character. Recent studies found that yoga is very good to deal with psychological problems like anxiety, depression and related problems which is present in HIV patients and through complementary medicine and yoga even they can improve their life expectancy.

Selection of subjects, variables and ethical consideration

For the present investigation thirty adolescents boys were selected from Pondicherry city. All the subjects and their age between 13 and 19 years old and school going children, totally six months of training were given of yogic practices to the subjects. Based on the existing studies, the investigator decided to conduct the pretest posttest repeated measures design, before the experimental research the data collected from all the samples as well as the end of three months and the end of six months the data again collected from the all samples. It was hypothesized that there would be significant difference due to the effect of yogic practices on psychological variable anxiety, among HIV affected adolescents. The research scholar reviewed various scientific literatures pertaining to the yogic practices, adolescents, HIV/AIDS and psychological variables from books journal, periodical, magazines and research papers. Taking into consideration of feasibility criteria, availability of instruments and the relevance of the variables of the present study, the Physiological variables were selected for the depth of the study

The researcher followed the research ethics as outlined by Beauchamp (1982) (cited in Alston & Bowels, 2003). the investigator got the individual consent from each subject as well as the consent from the concerned authority., The requirements of the experimental procedures, testing as well as exercise schedules were explained to them so as to avoid any ambiguity of the effort required on their part and prior to the administration of the study and the researcher has explained the respondents what the research is all about (Informed consent) and told the respondents that they could withdraw (right to privacy) from the research at any point of time. Right to anonymity and the right to confidentiality were also maintained during the process of data collection.

Pilot study

A pilot study was conducted to assess the initial capacity of the subjects in order to fix the exercise load, based on the response of the subjects in the pilot study the training schedules for the group were constructed, however the individual differences were not considered this enabled the investigator to adapt suitable training schedule for this study, for the yoga practices

Experimental design and training programme

The study was formulated as a repeated measures single group experimental design, consisting of pretest, posttest and posttest method, and the subjects were assigned in to a group and assigned as an experimental group. Pretests were conducted for all the subjects on Anxiety the group participated in their respective experimental treatment for a period of six months. Which are yogic asanas, relaxation and meditation techniques in every evening six days a week. The post tests were conducted after three months of yogic intervention again after six months of yogic intervention on anxiety after experimental treatments All the selected yogic practices were chosen by the investigator with the guidance and the help of the expert from the yoga field in order to find out the effect on Anxiety, the Psychological tool which used to find out the severity of symptoms of anxiety was the Questionnaire by Hamilton.

Statistical technique

The data collected from the subjects were treated statistically to find out the significant differences among HIV affected adolescence. The data T1, T2 and T3 are representing the data collected from the samples respectively before the intervention, after three months of intervention and six months of intervention. The statistical technique used for this study is repeated measures analysis of variance (ANOVA) to find out the significant difference in values of the variables. Mean and Standard Deviation has used to find out the difference between the pre and posttest. To find out the significant difference Mauchly's Test of Sphericity and Greenhouse-Geisser estimates of sphericity used to find out the sphericity, Pillai's trace has used to find out the exact statistics

Computation of analysis of repeated measures ANOVA and Mauchly's test of sphericity

Table 1: Hamilton Anxiety Rating Scale (HAM-A) (Total scores in points)

	Mean	SD
T1	17.17	7.666
T2	9.73	3.973
T3	6.20	2.722

The table shows the means cores of Anxiety Inventory at three time periods. Higher scores indicate high level of anxiety among the respondents. The mean scores have significantly reduced from T1 to T3. This shows that the intervention is effective to reduce the anxiety among the respondents.

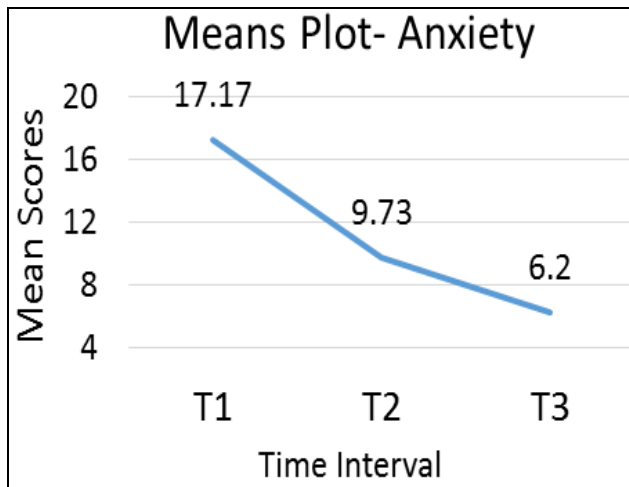


Fig 1: Stacked line diagram is showing the mean difference among the subject in three intervals on anxiety

Table 2: Anxiety at three time intervals

Anxiety	T1 (per cent)	T2 (per cent)	T3 (per cent)
Mild	60	96.7	100
Mild to Moderate	13.3	3.3	0
Moderate to Severe	26.7	0	0

The mild anxiety level of respondents at T1 period is 60 per cent and after intervention at T2 period the mild to moderate and moderate to severe anxiety level has reduced to mild anxiety level. All respondents were in the mild anxiety category at the end of the intervention.

Table 3: Mauchly's Test of Sphericity – Anxiety

Variable	Mauchly's W	Approx Chi-Square	Df	Sig.	Epsilon (ε)
Anxiety	.492	19.873	2	.001 S	Greenhouse-Geisser .663

*S = Significant ($p < .05$)

Mauchly's test indicated that the assumption of sphericity had been violated for the main effects of anxiety, $\chi^2(2) = 19.873$, $p < .05$, Therefore degrees of freedom were corrected using Greenhouse-Geisser estimates of sphericity ($\epsilon = .663$ for the main effect of anxiety).

Table 4: Test of within-subjects Effects – Anxiety

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Anxiety	Greenhouse-Geisser	1880.067	1.326	1417.784	84.846	.001 S
Error (Anxiety)	Greenhouse-Geisser	642.600	38.456	16.710		

*S = Significant ($p < .05$)

The intervention across time period is significant for anxiety, $F(1.326, 38.456) = 84.846$, $p < .05$. The effect size Cohen's r

is .86 which shows a large effect size for the intervention.

Table 5: Tests of Within-Subjects Contrasts – Anxiety

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
Anxiety	Level 1 vs. Mean	1128.533	1	1128.533	91.954	.001
	Level 2 vs. Mean	50.700	1	50.700	15.629	.001
Error (Anxiety)	Level 1 vs. Mean	355.911	29	12.273		
	Level 2 vs. Mean	94.078	29	3.244		

The tests of within-subject contrast (anxiety) is also significant ($p < .05$).

Table 6: Pairwise Comparison- Anxiety

(I) Anxiety	(J) Anxiety	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
1	2	7.433*	.902	.001	5.142	9.724
	3	10.967*	1.074	.001	8.238	13.695
2	1	-7.433*	.902	.001	-9.724	-5.142
	3	3.533*	.500	.001	2.263	4.804
3	1	-10.967*	1.074	.001	-13.695	-8.238
	2	-3.533*	.500	.001	-4.804	-2.263

*Significant ($p < .05$)

Table 7: Multivariate Test – Anxiety

Effect	Test	Value	F	Hypothesis df	Error df	Sig.
Anxiety	Pillai's Trace	.787	51.830 ^b	2.000	28.000	.001

b. Exact statistic

c. Computed using alpha = .05

The multivariate test (Pillai's Trace) is also significant ($p < .05$) and the result supports the decision to conclude the intervention given for anxiety is significant with the respondents.

Result and findings on anxiety

The pairwise comparison between three time intervals T1, T2 and T3 for anxiety is also significant. The mean difference between anxiety T3 and anxiety T1 is -10.967 ($p < .05$). The

mean difference between anxiety T2 and anxiety T1 is -7.433 ($p < .05$). The anxiety mean scores are negative because of the intervention given the anxiety levels have reduced in the respondents. The mean scores across three time intervals T1, T2 and T3 also emphasize the same. The mean scores of anxiety have reduced because of the intervention provided.

Conclusion

It was concluded that yoga practices significantly reduced the psychological variable Anxiety among HIV affected adolescent boys in both three months and six months intervals of yogic intervention. The data shows that the duration of the practice is important, the intervention is more effective when it becomes regular.

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