

Exploring the Therapeutic Effect of Yoga to Enhance Psychological Well-being among Adolescent Girl Students

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Authors' contributions

This work was carried out in collaboration between both authors. Author MKG has designed the study, wrote the protocol, managed the literature searches, performed the statistical data analysis, and wrote the first draft of the manuscript. Author ARS managed the analyses of the entire study, reviewed, and corrected the manuscript after completion. All authors read and approved the final manuscript.

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ABSTRACT

Background: Globally, Yoga is known as the wealth of India, the most oldest and powerful interventional method to develop healthy physical, mental/psychological, and spiritual up liftmen.

Aim: The present study's aim is to see the role of yogic practices in enhancing psychological well-being among adolescent girl students.

Methodology: A total of 60 unmarried adolescent girls were selected according to inclusion and exclusion criteria, between the age group 13-15 years and randomly divided into 02 groups (30-30 in experimental and control group). A Checklist for Psychological well-being prepared by the researcher at RINPAS has been used to assess adolescents' psychological well-being. All participants were assessed at the beginning (pre) and after 03 months (post). The experimental group received a structured yogic intervention program (techniques included Surya-Namaskara, Pranayama, and Yoga-Nidra; 24 sessions).

Result: Result has found significant changes on experimental group participants on various domains of psychological well-being at 0.01 and 0.05 levels as compared to control group participants.

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Conclusion: The result found that yogic practice is quite effective to enhance psychological well-being among adolescent girl students. As an intervention yoga and its techniques have the potential to develop positive healthy mental health, self-awareness as well as mental relaxation.

Keywords: Adolescent; girl students; yogic practice; yoga; psychological well-being; mental well-being.

1. INTRODUCTION

Human society has changed day by day much over the last centuries and this progress of modernization has profoundly affected everyone's lives in positive as well as negative ways, nobody can deny the effect of modernization on overall aspects of human life. Adolescents are crucial for humanity's future, and they are also involved and engaging in today's fast-paced environment. Adolescence age is a stage of development, a blooming phase in human life that occurs between childhood and adulthood, having all attention of mental and physical health professionals and interesting subject matter for research. Meanwhile, adolescents are the most vulnerable group having challenges to adaptation, adjustment, and coping in interpersonal and social relationships are a great priority for adolescents in the present era which affected their life negatively with hard and fast movement.

The World Health Organization (WHO) defines adolescence as the phase of life between the ages of 10 to 19 years when a human being undergoes significant changes. In this phase, an individual's life is through significant changes in all aspects including physiologically, psychologically, intellectually, emotionally, and socially in all areas. In this age, individuals attain sexual maturity, about the girls, when they see changes directly in physical, hormonal, and sexual which dipped into 10 years from 12-13 years earlier, not just in India but globally [1]. The girls are having experiences of 'Menarche' the first menstrual period during this phase and had the experience of menstruation which is marked by feelings of stress and anxiety, and eagerness to know about this natural phenomenon. Furthermore, the Indian family pushes the girl child to perform in a certain way through a code of conduct, and especially for girls, most families set many limitations for the females and demonstrate different behaviours between boys and girls. The patriarchal system-based society is a supportive environment that discriminates based on gender, and it has cost both physical and mental/psychological health resulting in an

imbalance in females' homeostatic reactions, as well as serious psychological and pathological disorders in both mental and physical health [2].

'Yoga' the Indian traditional healing method or an indigenous technique which are the source of Indian Psychology (Atharva Veda & Upanishad) is more beneficial than westernized psychotherapy [3] not only for the Indian population but worldwide acceptable. It is advocating and uniting the individual's mind, body, and spirits along with an ardent significance, through emanating powerful and everlasting outcomes for a healthy lifestyle. Our great Sage Patanjali stated about yoga as "CittaVrittiNirodah," which means it has a stabilizing effect on the mind. The Buddhist and Yoga psychologies of India include a plethora of material about psychological health, post-traditional transpersonal development, remarkable skills, and how to cultivate them [4]. Meditation and yoga, according to a huge body of research, have impacts on psychology, physiology, and biochemistry, and can improve both psychological and physical health [5].

2. METHODOLOGY

2.1 Aim

The aim of the present study is to see the role of yogic practices in enhancing psychological well-being (PWB) among adolescent girl students.

2.2 Venue of the Study

Ranchi Institute of Neuro-Psychiatry and Allied Science (RINPAS), Kanke, Ranchi, Jharkhand, India.

2.3 Research Design

The present study used the Pre and Post-test with Exp. (experimental) and Control group design and using the purposive sampling method for selecting participants. Prepared checklist (by researchers) administered on both groups as an assessment tool at the beginning of the research

program (Pre-assessment) and then post-assessment done after three months of intervention. The experimental group received a structured yogic intervention program for three months.

2.4 Sample

The sample (participants) was selected from a local Girl's High School (local school) and applied inclusion & exclusion criteria. A total number of 60 adolescent girl students, who fulfilled the inclusion and exclusion criteria were randomly selected after screening and divided into two groups as experimental and control groups through the odd-even method.

2.4.1 Inclusion & exclusion criteria

The adolescent girls between the age group of 13-15 years, who comprehend Hindi and English language with an average level of intellectual ability, continued in the same school for more than 02 years were included in the study. Adolescents having any major physical illness, psychiatric/chronic physical/medical illness, substance abuse, epilepsy, mental retardation, organicity/neurological disease, and/or recent traumatic life events were excluded.

2.5 Assessment Tools

2.5.1 Checklist for psychological well-being

The "Checklist for Psychological Well-Being" is prepared by the researcher to measure the PWB of adolescents and young adult students in the Hindi language under the supervision of expert faculty members. In this checklist, total consisted of 24 items to measures six domains of psychological well-being in sense of 'General Health, Personal Growth, Vitality, Autonomy, Self-Acceptance, and Positive

Relationship with Others'. On each statement, they have to mark either (√) for 'Yes' and (X) for 'No'. For the scoring, '1' mark is given for 'Yes' condition and '0' mark was given for 'No' condition for each statement in the checklist. The maximum score is 24 and the minimum is 0.

2.6 Intervention Package

The yogic intervention programme has been prepared approximately 45 minutes- 01 hours and twice a week over a period of three months (24 Sessions). In an intervention package the techniques are included: - Surya Namaskar, Pranayama (Nadi-shodhan, Bharstrika, Anulom-vilom and Bharamri, and Yoga Nidra.

2.7 Procedure of the Study

This study has been conducted to see the role of yogic practices as an intervention programme in enhancing the PWB among adolescent girls. After planning the present study, it was executed with a selection of a local girl's high school and took permission from the school authority for the research. Total 60 participants were selected according to inclusion and exclusion criteria, and all signed written consent, fill socio-demographical details taken by the researchers, and immediately after an assessment tool for collecting pre-assessment was applied. After the pre-assessment, all selected participants were divided randomly into two groups (Exp. and control groups). The Exp. group adolescent girls received the intervention sessions of yogic practices over the period of 03 months (twice a week for 01 hours). After 03 months of intervention, post-assessment was administered with the same assessment tool (*Checklist for PWB*) on respected groups (Fig.1).

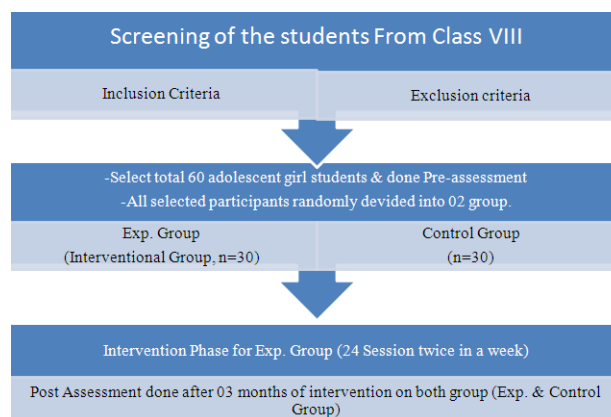


Fig.1. Consort figure of the entire study process

2.8 Statistical Analysis

The data corresponding to the values of various assessments, before and after intervention among both groups were analyzed through SPSS Ver.-25. The result of the therapeutic intervention was analyzed through mean, SD, Mean Rank, Mann Whitney U test, and Wilcoxon Sign Rank Test Z values to see the changes and comparison between and within groups on PWB.

3. RESULT

The results show a comparison between the Exp. and Control group's pre-pre and post-post assessment levels analyzed by $M \pm SD$, Mean Rank, and Mann-Whitney U test values in **Table 1**. At the pre-assessment level, significant differences were not found for both groups. However, when we see the post-assessment section the result found significant changes in the experimental group $M \pm SD$, when compared with control group $M \pm SD$ on various domains such as PWB total scores, GH, PG, Vit, Auto, and SA of PWB at .01 and .05 level. However, PosRel domain did not see significant changes in both group participants at post-assessment.

The comparisons of pre-post assessment for the Exp. group (within-group) and Control group (within-group) are shown in **Table 2** in two broad columns as Exp. Group and Control group were analyzed through $M \pm SD$, Wilcoxon Sign Rank Test values (Z) with Mean Rank (negative and positive rank). The findings revealed that there were significant changes seen on various domains of experimental group participants such as total scores, GH, PG, Vit, Auto, and SA. However, the domain of PosRel of Exp. group has not seen changes at a significant level. The pre-post assessment result of the control group showed no significant changes were noticed at the post-assessment level.

According to the results, at the pre-assessment level, no significant differences were found between the Exp. and Control Group (pre-pre assessment). However, at the post-assessment level of between-group significant changes were found in various domains of PWB in between-group results (post-post assessments between the Exp. group and control group). As well as in within-group (Exp. Group) pre-post assessment level results found significant changes, but in the

control group pre-post (within-group) assessment changes were not noticed.

4. DISCUSSION

The findings of the present study suggest that all participants of the experimental group improved their PWB after intervention as compared with the control group participants. Firstly, at pre-assessment, we found no significant differences between the experimental and control group's mean and SD scores. They were similar at pre-assessment in the first round. In the second step, the result found a significant improvement shows on various domains such as PWB total scores, GH, PG, Vit, Auto, and PG among experimental group participants as compared to the control group of adolescent girls who didn't receive intervention sessions at post-assessment. As well as a within-group result also found significant changes when compared within-group pre-post Mean and SD scores of experimental group results. However, within the group, pre-post Mean & SD scores were not significantly found for control group participants. The Experimental group girls also reported that they are more aware and started to feel the changes in themselves, had a peaceful mind, were more comfortable, increased their confidence, and were able to reduce their mental stress who bothered them and positively tackle all situations. PWB is conceptualized as lives going well, a combination of feeling good and functioning effectively in daily life [6]. A previous study's result is supported the present finding and stated that yogic intervention significantly works on academic stress and psychological well-being for school-going female students [7].

Yoga is quite effective as an intervention to improve emotional intelligence (EI), emotional regulation, and anger management and significantly confirms the positive effect on psychological fitness for adolescents. The short-term courses are effective and induce positive behavioral signatures [8]. It is influencing healthy mental health and psychological well-being with respect to boys or girls and establishing the connectivity between healthy mental health and psychological well-being [9]. The yoga, breathing exercises, and mindfulness-based training for inculcating deep-rooted impact on physical, mental well-being, and as the spiritual practice advocating the union of mind, body, and soul with an ardent significance, thereby emanating powerful and everlasting effects [10].

Table 1. Showing Between Group compression of Experimental and Control Group Pre-Post Assessment (M±SD, Mean Rank, U and Z value)

Var.	Pre-assessment					Post-assessment			
	Group	M±SD(N=6)	Mean Rank	U	Z	M±SD(N=60)	Mean Rank	U	Z
GH	Exp.G.	1.70±.88	30.00	435.0	.24 ^{NS}	2.40±.86	35.20	31.00	2.17**
	Cont. G.	1.80±1.13	31.00	0		1.73±1.23	25.80		
PG	Exp. G.	2.96±.67	30.48	449.50	.01 ^{NS}	3.73±.45	38.43	21.00	3.89*
	Cont. G.	2.97±.61	30.52			3.00±.79	22.57		
Vit	Exp. G.	2.23±.90	30.73	443.00	.11 ^{NS}	3.17±.70	35.42	30.50	2.309**
	Cont. G.	2.17±.99	30.27			2.53±1.07	25.58		
Auto	Exp. G.	2.03±.64	30.55	448.50	.025 ^{NS}	2.63±.61	36.25	27.500	2.76*
	Cont. G.	2.03±.76	30.45			2.10±.88	24.75		
SA	Exp. G.	2.13±1.01	27.97	374.00	1.19 ^{NS}	3.03±.85	34.62	33.50	1.92*
	Cont. G.	2.33±.92	33.03			2.53±.94	26.38		
PosRel	Exp. G.	3.10±.96	31.92	407.50	.67 ^{NS}	3.27±.64	30.63	45.00	.07 ^{NS}
	Cont. G.	3.03±.72	29.08			3.27±.58	30.37		
PWB	Exp. G.	14.23±1.92	29.73	427.00	.34 ^{NS}	18.10±1.92	40.13	16.00	4.305*
Total	Cont. G.	14.33±1.98	31.27			15.23±2.57	20.87		

Significant at *= .01; **= .05; NS= Not Significant; M±SD=Mean±SD; PWB-Psychological Well-Being; GH-General Health; PG-Personal Growth; Vit- Vitality; Auto- Autonomy; SA- Self Acceptance; PosRel- Positive Relationship with Others; Exp.G.= Experimental Group; Cont.G.= Control Group.

Table 2. Showing Within Group compression of Exp. Group Pre-post and Control Group Pre-Post Assessment (M±SD, Mean Rank, & Z value)

Var.	Exp. Group (N=30)					Control Group(N=30)				
	Pre-Ass. (M ±SD)	Post Ass. (M ±SD)	Mean Rank		Z	Pre-Ass. (M ± SD)	Post Ass. (M ± SD)	Mean Rank		Z
			- Rank	+ Rank				- Rank	+ Rank	
GH	1.70±.88	2.40±.86	8.50	11.42	3.31*	1.80±1.13	1.73±1.23	7.75	9.75	.52 ^{NS}
PG	2.97±.67	3.73±.45	9.00	11.75	3.73*	2.97±.61	3.00±.79	11.38	9.00	.17 ^{NS}
Vit	2.23±.90	3.17±.70	6.00	10.74	3.79*	2.17±.99	2.53±1.07	10.33	10.57	1.67 ^{NS}
Auto	2.07±.64	2.63±.61	6.00	8.86	3.02*	2.03±.76	2.10±.88	8.00	11.38	.26 ^{NS}
SA	2.13±1.01	3.03±.85	10.50	13.89	3.87*	2.33±.92	2.53±.94	7.50	7.50	1.60 ^{NS}
PosRel.	3.10±.96	3.27±.64	5.50	7.21	.97 ^{NS}	3.03±.72	3.27±.58	5.00	5.00	2.33 ^{NS}
PWB Total	14.23±1.92	18.10±1.92	.00	15.50	4.810*	14.33±1.99	15.23±2.57	11.35	15.56	1.835 ^{NS}

Significant at *= .01; **= .05; NS= Not Significant; PWB-Psychological Well-Being; GH-General Health; PG-Personal Growth; Vit- Vitality; Auto- Autonomy; SA- Self Acceptance; PosRel- Positive Relationship with Others; Exp.G.= Experimental Group; Cont.G.= Control Group.

A structured yogic technique Yoga-nidra and Vedic mantras have significantly effective on psychological well-being, school performance, and reduced stress and anxiety among students, and also effective in developing self-awareness [11]. Yoga is more powerful and better than any other exercise to improve a variety of health-related outcomes for healthy as well as on diseased populations for better efficacy [12]. Yoga, meditation, mindfulness, and these kinds of psychotherapies are very useful as an alternative option for children/adolescents with a way to combat stress and to reduce the pressure of living style which is highly charged in the present world [13]. Yoga and its techniques with treatment, as usual, emerged as an effective intervention strategy in enhancing PSW. Yogic techniques contribute to reducing stress, anxiety, depression mental health-related issues, significantly improving muscular stress, and relaxing the mind and body [14]. Yoga has been shown to have a significant impact on academic stress and psychological well-being in young adult females. Yogic techniques are also useful in raising self-esteem, improving mental health, and increasing self-awareness in people of all ages [15]. Research over these years has highlighted the positive effects of Yoga. Yoga is leading holistic development among individuals in all age groups people; however, younger age people are being quicker in contrast to the older ones.

5. CONCLUSION

Yogic intervention as a combination of mind-body exercises helps the adolescent girls to consolidate their body, mind, and spirit, and make them stronger and more confident as compared before the intervention they had themselves. While this study has focused on schoolgirl students, who faced lots of issues during this period as a girl child and due to the transitory phase of life. The finding of the present study may indeed provide evidence to change the current hassle-based lifestyle and make our mind and body fit and healthy. It has the potential to make a unique contribution in enhancing psychological well-being and healthy lifestyle and developing a positive self-image among adolescent students.

DISCLAIMER

Authors have declared that no competing interests exist. The products used for this research are commonly and predominantly use products in our area of behavioral and psychological research and country. There is absolutely no conflict of interest between the

authors of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge in interventional-based programmes in mental health areas. Also, the research was not funded by the producing company rather it was funded by the personal efforts of the authors.

CONSENT

All authors declare that 'written informed consent was obtained from the participants.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee DRC Committee of RINPAS, Kanke, Ranchi and Ranchi University, Ranchi.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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