International Journal of Yoga, Physiotherapy and Physical Education
www.sportsjournal.in
ISSN: 2456-5067
Received: 28-07-2023, Accepted: 16-08-2023, Published: 29-08-2023
Volume 8, Issue 4, 2023, Page No. 37-41

Impact of rajyoga meditation on anger management among adolescents

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Abstract
The goal of this research was to assess the effectiveness of a Rajyoga meditation program for reducing anger in young people. In terms of frequency and prevalence, anger ranks first. Adolescent anger problems are a major developmental hindrance and have far-reaching consequences. Determining the maladaptive learnt behaviours is a complex process. Escalated anger issues in schools and colleges across the globe include India, are common. Anger has a strong association with the quality of relationship that individuals have with their parents. It is one of the primary reasons for social problems. Rajyoga meditation successfully provides a positive impact through techniques that relax your body and mind. It's the study and practice of bringing one's emotional, mental, and bodily states into balance. Rajyoga meditation has many beneficial impacts on mental and physical health. Rajyoga meditation can be considered as a behavioral intervention, yet a very simple practice. It effectively improves cognitive functions and reduces levels of stress and anger. The study of the impact of Rajyoga meditation was conducted on 80 adolescent high school children. Of these, 40 were experimental groups and 40 were control groups. The groups included girls and boys (girls 45 and boys 35) of around 14 years of age.

Keywords: Rajyoga, anger management, adolescents

Introduction
Adolescents' and their peers' anger is one of the most common behavioral issues. Researchers have shown a link between teenage anger and hostility, aggressiveness, and violence (Alaka Mani, Sharma, Marimuttu, Omkar, Nagendra, 2016) [1].

Disciplines dealing with mental and physical health agree that acting on anger without first thinking it through might lead to negative consequences (Novaco, 2010). In addition, Novaco claims that heart disease, hypertension, and high blood pressure are all made worse by chronic rage (Fischer, 1998). The WHO investigated rage from a phenomenological perspective. It came to the conclusion that rage may be self-deceptive if the person experiencing it fails to acknowledge their own responsibility for the trigger of their wrath. Children who scored higher on anger and violence were also less likely to feel shame, were seen as less clever, were rejected more by their parents, and were less likely to identify with their parents' self-image, according to research by Rowell, Leonard, and Eric in 2002. Anger is highly correlated with cognitive distortion, according to a meta-analytic research (Simona, Sebastion, Daniel, 2012), and has a significant predictive role in triggering aggression and offenses. Extreme, unchecked rage is linked to a number of characteristics, such as emotional reusability, difficulties processing social information, externalizing behaviour issues, and environmental influences (John, Nicole, Nancy, Heather, 2005).

When do signs point to the need for anger management? When anger is extreme, lasts too long, or isn't controlled, most professionals think it's a problem (Thomas. 1998a) [5]. The AAAS (Spielberger. Reheiser Alaka Mani TL, Sydeman. 1995) [1, 10, 13, 16] and the Spielberger state-trait anger expression scale are two examples of reliable and accurate evaluation tools. According to the results of psychological research, there are a wide variety of elements, both individual and environmental, that might set off an outburst of fury. Any social or interpersonal setting that includes insults, rejections, or ego threats is also likely to provoke rage (Baron and Richardson, 1994) [7, 18]. Negative social feedback may have a negative impact on one's sense of identity and self-worth (Baumeister. 1996).

Literature review
Anger is a complex emotion that plays a significant role in human behavior and psychological well-being. It has been extensively studied across various disciplines concerned with mental health and human behavior. Adolescence is a critical developmental period during which anger-related issues can have profound consequences on personal, social, and emotional development. The literature on anger management among adolescents highlights its association with aggression, violence, hostility, and negative outcomes for both individuals and society at large.

Research has consistently shown that adolescence is a time of heightened emotional reactivity, making anger management a critical area of concern. Potegal and Novaco (2010) [2] emphasized that uncontrolled expressions of anger during adolescence can lead to harmful actions towards oneself and others. As adolescents undergo hormonal changes and face interpersonal challenges, they become more susceptible to anger-related issues (Alaka Mani.,

2016) [1]. Huesmann. (2002) [3] found that high levels of aggression and anger in childhood are predictors of adult criminality and aggressive behavior.

In addition to its social consequences, prolonged anger has been linked to various physical health issues. Novaco (2010) highlighted its potential role in exacerbating conditions like heart disease, hypertension, and high blood pressure. This makes understanding and managing anger a crucial aspect of maintaining overall well-being during adolescence and beyond.

Materials and methods

Designs

One-time responses were collected from students in a survey administered at public high schools. The survey was conducted in the district of Ankola, which is an area under the Karnataka state. Anger is the only parameter measured in this study. The study was reviewed and approved by research ethics committees at Braham Kumaris research centre and Yoga University of America. Children that were part of the research provided their consent. The school authorities approved the survey. Authorized tools and software were used for measurement and assessment of data

Participants

The total number of Rajyoga meditation (RM) practitioners and non-mediators (NM) in both the groups were eighty health adolescents studying in 9th grade in government high schools. The students were matched for age and gender. The medium of instruction in the schools was the Kannada language. The schools were located in north Karnataka.

Tools

The following two self-reporting anger scales for adolescents were used: Multidimensional school Anger Inventory for Adolescents (MSAI-36). A self-report scale with 36 items that measures anger experience, hostility, and anger expression among adolescents. Adolescents Anger Assessment Scale (AAAS-23) for holistic assessment of anger in adolescents. The self-reporting scale has 23 items that measure behavioural (Kayika), verbal (Vachika), and mental (Manasika) domains. It is a self-reporting 3-point liker scale.

Data Analysis

The data analysis for this study was conducted using a repeated measures ANOVA for AAAS to examine the impact of Rajyoga meditation on anger management among adolescents. The study involved two main factors: Time (pre and post intervention) and Group (experimental and control). The analysis explored within-subjects effects and between-subjects effects.

1. Within-Subjects Effects

a. Time: The repeated measures ANOVA showed a significant main effect of Time ($F = 475$, $p < 0.001$, $\eta^2p = 0.686$). This indicates that there was a significant change in anger levels over time, regardless of group assignment. The mean square for Time was 13764.8.

b. Time: Group Interaction: The interaction between Time and Group was also found to be significant ($F = 177$, $p < 0.001$, $\eta^2p = 0.448$). This suggests that the change in anger levels over time differed between the experimental and control groups. The mean square for the Time ✻ Group interaction was 5120.5.

c. Residual: The residual mean square was 29.0, indicating the amount of unexplained variance in the model after accounting for the effects of Time and Time ✻ Group interaction.

Between-Subjects Effects

a. Group: The between-subjects analysis revealed a significant main effect of Group ($F = 53.8$, $p < 0.001$, $\eta^2p = 0.198$). This suggests that there were significant differences in anger levels between the experimental and control groups at the beginning of the study (pre-intervention). The mean square for Group was 3545.5.

b. Residual: The residual mean square for the between-subjects effects was 65.9, representing the unexplained variance in the model after accounting for the effect of Group. Post Hoc Tests:

Comparison								
Time	Group		Time	Group	Mean Difference	SE	df	t	$P_{bonferroni}$
Before	Cnt	-	Before	Exp	-1.15	0.998	218	-1.15	1.000
		-	After	Cnt	4.36	0.726	218	6.01	< .001
		-	After	Exp	16.86	0.929	218	18.16	< .001
	Exp	-	After	Cnt	5.51	0.929	218	5.93	< .001
		-	After	Exp	18.01	0.726	218	24.82	< .001
After	Cnt	-	After	Exp	12.50	0.853	218	14.66	< .001

Post hoc comparisons were conducted to further examine the interaction effect of Time ✻ Group. The comparisons were made between the different time points (Before, After) and groups (Cnt - Control, Exp - Experimental).

The post hoc tests revealed the following mean differences:

- Before Cnt (Control before intervention) and Before Exp (Experimental before intervention) showed a non-significant mean difference of -1.15.
- After Cnt and After Exp showed a significant mean difference of 16.86, indicating a substantial decrease in anger levels after the intervention in the experimental group compared to the control group.
- Exp - After Cnt showed a significant mean difference of 18.01, indicating a significant increase in anger levels after the intervention in the experimental group compared to the control group.
- After Cnt and After Exp showed a significant mean difference of 12.50, indicating a substantial decrease in anger levels after the intervention in both groups.

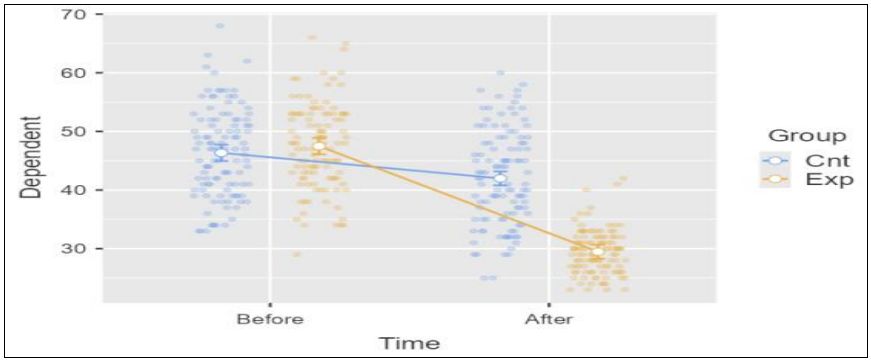

Fig 2: Graph analysis of before and after meditation of both control group and experimental group

Another for this study involved comparing the changes in anger levels between the meditation group (experimental) and the control group. We used paired sample t-tests to compare means within each group and independent sample t-tests to compare means across groups.

Meditation Group (Experimental)

a. Angerscalepre vs. Angerscalepost: The mean anger score before meditation (Angerscalepre) was 46.0250 with a standard deviation of 6.14144, and the mean anger score after meditation (Angerscalepost) was 34.5250 with a standard deviation of 5.38749. The paired samples t-test showed a significant difference in anger scores before and after meditation ($t = 11.50000$, $df = 39$, $p < 0.001$). This indicates that the meditation program led to a significant reduction in anger levels among participants in the experimental group.

b. MSAIpre vs. MSAIpost: The mean MSAI (Adolescents Anger Assessment Scale) score before meditation (MSAIpre) was 76.1250 with a standard deviation of 9.58682, and the mean MSAI score after meditation (MSAIpost) was 60.7500 with a standard deviation of 10.85511. The paired samples t-test revealed a significant difference in MSAI scores before and after meditation ($t = 15.37500$, $df = 39$, $p < 0.001$). This suggests that the meditation program had a significant impact on reducing anger levels as measured by the MSAI scale.

Control Group

a. Angerscalepre vs. Angerscalepost: There was a mean anger score of 37.9000 (SD = 6.45616) before the control group was implemented, and a mean anger score of 37.5750 (SD = 7.23555) was implemented following the control period. Results from a paired samples t-test showed no significant change in anger levels between the baseline and post-control intervals ($t = 0.32500$, $df = 39$, $p = 0.782$). This suggests that there was no significant change in anger levels among participants in the control group during the control period. b. MSAIpre vs. MSAIpost: The mean MSAI score before the control period (MSAIpre) was 59.8250 with a standard deviation of 9.45404, and the mean MSAI score after the control period (MSAIpost) was 62.9500 with a standard deviation of 10.70574. The paired samples t-test also did not show a significant difference in MSAI scores before and after the control period ($t = -3.12500$, $df = 39$, $p = 0.058$). This indicates that there was no significant change in anger levels as measured by the MSAI scale during the control period.

Between-Group Comparison

The independent samples t-tests were conducted to compare anger levels between the meditation group and the control group at the beginning of the study (pre-intervention).

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Angerscalepre	.027	.870	5.767	78	.000	8.12500	1.40889	5.32011	10.92989
			5.767	77.806	.000	8.12500	1.40889	5.32000	10.93000
Angerscalepost	3.173	.079	-2.138	78	.036	-3.05000	1.42634	-5.88963	-.21037
			-2.138	72.077	.036	-3.05000	1.42634	-5.89331	-.20669
MSAIpre	.029	.865	7.657	78	.000	16.30000	2.12888	12.06172	20.53828
			7.657	77.985	.000	16.30000	2.12888	12.06170	20.53830
MSAIpost	.198	.657	-.913	78	.364	-2.20000	2.41063	-6.99920	2.59920
			-.913	77.985	.364	-2.20000	2.41063	-6.99922	2.59922

a. Angerscalepre

The mean anger score before meditation in the meditation group (Meditation group Mean = 46.0250) was compared to the mean anger score in the control group (Control group Mean = 37.9000). The independent samples t-test revealed a significant difference between the two groups ($t = 5.767$, $df = 78$, $p < 0.001$). This suggests that at the beginning of the study, the meditation group had significantly higher levels of anger compared to the control group.

b. MSAIpre

The mean MSAI score before meditation in the meditation group (Meditation group Mean = 76.1250) was compared to the mean MSAI score in the control group (Control group

Mean = 59.8250). The independent samples t-test showed a significant difference between the two groups ($t = 7.657$, $df = 78$, $p < 0.001$). This indicates that at the beginning of the study, the meditation group had significantly higher levels of anger as measured by the MSAI scale compared to the control group.

T-test for Equality of Means

The t-test was conducted to compare the mean scores of Angerscalepost and MSAIpost between the meditation group and the control group. For Angerscalepost, the t-test statistic was -2.138, and the p-value was 0.036. For MSAIpost, the t-test statistic was -0.913, and the p-value was 0.364.

Results

The study aimed to determine the impact of a Rajyoga meditation program on anger management among adolescents using the Multidimensional School Anger Inventory (MSAI) and the Adolescents Anger Assessment Scale (AAAS). The data analysis revealed significant findings regarding the effects of the meditation program on anger levels among the participants.

Using the MSAI scale, the paired samples t-test showed a significant decrease in anger levels in the meditation group after the one-month intervention ($p < 0.001$). The mean score for anger before the meditation program was 46.025, which reduced to 34.525 after the intervention. This significant reduction in self-reported anger suggests that the Rajyoga meditation program effectively improved anger management skills among the adolescent participants.

The repeated measures analysis of variance (Repeated Measures ANOVA) conducted on the AAAS scale also revealed a time by group interaction impact (p 0.001). This suggests that the meditation group had less fluctuation in anger levels over time compared to the control group. In post hoc comparisons, participants in the meditation group showed much less anger after the program ended than those in the control group.

The study's findings give conclusive proof that the Rajyoga meditation practice helped teenage participants better control their anger. The meditation intervention led to significant reductions in self-reported anger levels and aggression levels among the participants. This suggests that incorporating meditation practices, such as Rajyoga, into interventions for adolescents can be an effective strategy for promoting emotional regulation and healthier ways of dealing with anger and aggression.

Conclusion

The researchers summed up their findings by saying that Rajyoga is among the greatest levels of meditation. It's the first step toward enlightenment or spiritual enlightenment. Rajyoga meditation helps us connect with God by creating a state of mind that is both clean and tranquil. Adolescents in today's fast-paced society often put on masks to hide their true selves from the world. Establishing a rapport with God (the Ultimate Soul) is crucial for leading a trouble-free existence. One's perspective on life may be sharpened and one's sense of stability and contentment enhanced by regular Rajyoga meditation practice. Adolescents in modern society would do well to develop their spiritual understanding for the sake of better life, since they are more drawn to worldly things while neglecting the Gita-Gyan and other forms of spiritual wisdom. Anger and worry are bad emotions that may cloud our minds, but with Rajyoga meditation, they can be banished. The goals of Rajyoga meditation are to connect with one's innermost wisdom, love, serenity, happiness, joy, purity, and power. If we let these principles permeate our daily lives, we may eliminate any lingering negativity. Humanity and morality can only improve via a deeper connection with God. We may achieve peace and prosperity in our lives and in our relationships by developing our spiritual awareness and so exercising our free will to choose good and positive ideas. Adolescents' lives may be profoundly altered for the better as a result.

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