PRELIMINARY PHASE FINDINGS FOR APPLICABILITY OF MINDFULNESS BASED TRAINING ON PERCEIVED STRESS & MINDFUL AWARENESS OF HIGHER SECONDARY SCHOOL STUDENTS

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ABSTRACT

Background: Training programs based on Mindfulness are practices that develop an ability to sustain attention in the present moment non-judgmentally. Such programs have effectively been used on adults for handling daily life stress, and it has been argued that they could be used effectively on the child population as well. The present study used the Mindfulness-Based Stress Reduction (MBSR) module of John Kabat-Zinn, which has been tailored, as per need and applicability, for school students. **Aim**: The broad aim was to explore the applicability of Mindfulness Training on Perceived Stress and Mindful awareness of higher secondary school students in school settings. **Methods and Materials**: 10 students of class 10-12 studying in Aizawl city of Mizoram, India, aged 16-18 years, who signed informed assent, were selected using purposive sampling and divided into 'Training and Normal Control' groups, having 5 students each, after screening for the presence of any psychiatric condition. Baseline assessments on MAAS-A and PSS were done for all participants; thereafter, seven MBSR sessions were provided to the participants of the 'Training group', followed by homework assignments. No such training was provided to the 'Normal Control' group. After completion of 7 7-week duration, both groups were re-assessed using the same psychological tools, and the results were compared. **Results**: Findings indicated significant differences between the compared groups on outcome measures, with noticeable improvement in the perceived stress experiences and mindful awareness in the participants of the group that received Mindfulness training. **Conclusion:** The study concluded that Mindfulness training would be helpful in decreasing stress, improving mindful awareness, and facilitating the overall learning process for school students.

Keywords: Mindfulness, MBSR, Perceived Stress, School students.

INTRODUCTION

In the present times, most of us are living in a world where we are constantly surrounded by endless demands and challenges, leading to high stress levels for us, and such challenges are not limited to adults, but also to the youngsters around us (Semple & Willard, 2019). Children and adolescents are experiencing heightened levels of stress, which further contribute to the emotional disturbances in the form of increased anger, anxiety, depression, externalizing behaviors, lower self-esteem, and confidence (Rempel,

2012). Advancing in school life from secondary to higher secondary levels required adaptation to the new stresses, academic workloads, and much more, on the part of the students

There is a strong argument for implementing mindfulness practices into the school curriculum. There is convincing circumstantial evidence that mindfulness practices improve well-being. Training programs based on Mindfulness are practices that induce focus and attention in the practitioner. It is an experience that can bring attention to the present moment with a non-judgmental attitude (Ma & Fang, 2019). Mindfulness Meditation (MM), as taught historically by Gautam Buddha, is an ancient Buddhist meditation practice characterized as the heart of the Buddha's teachings, and is aimed at reducing mental anguish (Ramel et al., 2004). Originally developed for chronic pain management by Jon Kabat-Zinn, the Mindfulness-based stress reduction (MBSR) training programs have been effectively used for the management of anxiety and stress in adults over the past 2-3 decades.

Several reviews have examined the efficacy of mindfulness practice on adults, and there is evidence indicating the positive impact of mindfulness training and robust evidence for mindfulness practice. However, the research with youngsters is not yet as extensive as with adults, but it is growing rapidly. Published literature suggests that when children are struggling with a mental health condition, it has the potential to inhibit their ability to neglect meaningless stimuli, which increases distractibility, poor organizational skills, and a decreased ability to pay attention to the task at hand (Rempel, 2012). As mindfulness brings changes in the way we relate to ourselves and to our experiences, it can help students by making them more aware of both pleasant and unpleasant experiences that often go unnoticed or unappreciated in our everyday lives. Enhanced awareness of positive experiences can also enhance the richness of those experiences. Increased awareness of negative or unpleasant experiences can help the younger ones to respond to themselves and each other with greater understanding and skill. It is a powerful tool to develop social-emotional competencies, which include self-awareness, responsibility, personal initiative, planning, and initiation of goal-directed behaviour, inhibition of inappropriate behaviours, conscious decision making, empathic communications, compassion for others, and interpersonal skills in conflict resolution. They lay the foundation for self-management of emotions and behaviours throughout life (Semple & Willard, 2019).

Mindfulness is one such skill and is found to have benefits in the long term. The existing literature indicates the effectiveness of Mindfulness-based intervention on various mental health conditions; however, most of the studies were done either on the adult population or on clinical conditions in students, such as anxiety disorders, depression, ADHD, and conduct disorder. Studies done in the Indian context on students without any mental health issues are limited in number, and if present, there is no comparable group in most of them. Hence, the current study was planned with the main objective of studying the effectiveness of the MBSR program for higher secondary school students on their levels of stress and attention. For operational purposes, we hypothesized that there would be a significant impact of MBSR training on perceived stress and mindful awareness of higher secondary school students.

MATERIALS AND METHODS

Aims/Objectives: The Following objectives were framed for this study:

1. To explore the effect of Mindfulness training on Perceived Stress level in the

participants.

2. To see the utility of Mindfulness training on the Mindful awareness of the participants.

Hypothesis:

1. Mindfulness training will have a significant effect on the perceived stress of the participants.
2. Mindfulness training will improve the mindful awareness of the participants.

Sample: For this Preliminary phase study, with pre-post with control design, 10 higher secondary school students (N=10) studying in class 12 within age range of 16-18 years, who gave consent and does not have any significant neuro-psychological/psychiatric or medical illness were selected, mixed of gender using purposive sampling method from regular English medium school located in the Aizawl city of Mizoram state, India.

Inclusion Criteria for Both Groups;

- Male or Female Regular Students Studying in Classes 9-12.
- Age Between 14-18 Yrs.
- Should Give Written Consent.

Exclusion Criteria of Both Groups

- Presence of any significant psychiatric / neurological disorder.
- Presence of any significant medical disorder.
- Students Having Any Substance or drug abuse except Nicotine use
- Tools:

1. Socio-demographic Data Sheet: Essential socio-demographic information was entered in the data sheet, so designed for the purpose. Before enrolment, initial screening for the presence of any significant psychiatric condition was done using the DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom Measure for children aged 11-17 years. This tool is a patient-rated measure that assesses mental health domains that are important across psychiatric diagnoses (DSM-5, APA). This child-rated version of the measure consists of 25 questions that assess 12 psychiatric domains, including depression, anger, irritability, mania, anxiety, somatic symptoms, inattention, suicidal ideation/ attempt, psychosis, sleep disturbance, repetitive thoughts and behaviours, and substance use. Each item asks the child to rate how much (or how often) he or she has been bothered by the specific symptom during the past 2 weeks. The measure was found to be clinically useful and had good test-retest reliability in the DSM-5.

2. Mindful Attention and Awareness Scale - Adolescents (MAAS-A), is a 14-item scale and was used to assess the core characteristic of mindfulness. The MAAS-A has shown excellent psychometric properties in initial research studies. Internal consistency levels (Cronbach's alpha) have been above 0.80 in both healthy and psychiatric samples. The MAAS-A has demonstrated high internal consistency, test–retest reliability, and both concurrent and incremental validity (Brown et al., 2011).

3. Perceived Stress Scale (PSS-10), developed by Cohen and Williamson in 1988 and was used to assess perceived stress. It evaluates the degree to which an individual has perceived life as unpredictable, uncontrollable, and overwhelming over the previous month. It consists of 10 questions, takes 5-10 minutes to complete, and is for individual or group administration. The questions ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way on a five-point scale from 'never' to 'very often'. Higher scores indicate higher levels of perceived stress. Internal

consistency reliability for the PSS-10 total scores was adequate (á = 0.82). PSS-10 scores demonstrated good convergent validity. Scores on the PSS-10 were significantly correlated in the expected directions with scores on the GAD-7 and PHQ-9 (Baik et al., 2017).

4. Mindfulness Training- For this study, The Mindfulness training was provided on the lines of the Mindfulness Based Stress Reduction (MBSR) program as developed by Kabat-Zinn (2013), which was modified as per the needs of school children using activities taken from the Stress Reduction Workbook for Teens (Biegel, 2017). The broad outline of the mindfulness-based training used for this study is outlined below:

Session No	Activity
Session 1	Introduction and Mindful Breathing
Session 2	Body-Scan Meditation & Sitting Mindfulness
Session 3	Mindful Yoga & Pleasant Event Calendar
Session 4	STOP Technique & Unpleasant Event Calendar
Session 5	Railroad Activity & Sitting Mindfulness
Session 6	Mindful Breathing, Unhelpful and Harmful Coping Behaviors & Difficult Communication Calendar
Session 7	Loving Kindness Meditation & Using Self-Care to manage problems & Narrating Experiences

Procedure

The study involved school students; thus, after obtaining necessary ethics approval from the Institutional Human Ethics Committee of Mizoram University (MZUHEC), the schools were approached, and after necessary permission from concerned school authorities, school students based on sample inclusion criteria were briefed about the purpose of the study. Those students who signed the informed assent form were screened on the DSM-5-TR Self-Rated Level 1 Cross-Cutting Symptom tool to screen for the presence of any significant psychiatric condition. Parents/ legal guardians of those screened were informed about the study, and necessary consent was also taken from them first. After that, students were allocated into 'Training group' and 'Normal Control group' using the fishbowl method, with 5 participants each. Following group allocation, the socio-demographic details were gathered using a socio-demographic data sheet, and subsequently, baseline assessments were carried out on PSS and MAAS-A for all participants of both groups. Post baseline assessments, 7 mindfulness-based sessions were provided to all the participants of the 'Training group' at a frequency of one session per week with a session duration of 45 minutes each. These sessions were followed by homework assignments, and concerned parents were motivated to co-supervise the homework tasks at home. Whereas the participants of the 'Normal Control group' were not given mindfulness-based training. After completion of 7 7-week time period (from baseline assessment), participants of both groups were re-assessed using the same psychological tools that were used for baseline assessments. In this manner, baseline and post-training assessment scores were obtained for all participants of both groups.

Statistical Analysis

The obtained data were analysed using Statistical Package for the Social Sciences - 29 software (SPSS-29). Both group scores were compared using suitable statistics for various socio-demographic variables and assessment tool scores.

RESULT

Table-1: Comparison between Training and Normal Control Group on Age.

Group / Variable	Training Group (N=5)		Normal Control Group (N=5)		Mann-Whitney U Test			
					Mean Rank		U	Z
	Mean	SD	Mean	SD	MBSR Group	Normal Control Group		
Age (Years)	17.40	0.54	17.60	0.54	5	6	10	-0.60 (NS)

NS= Not Significant

Table 1 shows that the mean is 17.40 ± 0.54 and 17.60 ±0.54 for participants of Training and Normal control group respectively. The data further indicate that both compared groups do not differ significantly on 'Age'.

Table-2: Comparison between Training and Normal Control Group on Socio-Demographic Variables.

Group / Variable		MBSR Group (N=5) Frequency/ Percentage	Normal Control Group (N=5) Frequency/ Percentage	Fisher's Exact Test
Sex	Male	2 (40)	2 (40)	1 (NS)
	Female	3 (60)	3 (60)	
Education/Standard	XII	5 (100)	5 (100)	-
Religion	Hindu	-	-	-
	Muslim	-	-	
	Christian	5(100)	5 (100)	
	Others	-	-	
Socio-Economic Status	Lower	-	-	-
	Middle	5 (100)	5 (100)	
	Upper	-	-	
Family Type	Joint	2 (40)	1 (20)	1 (NS)
	Nuclear	3 (60)	4 (80)	
Background	Rural	-	-	-
	Urban	5 (100)	5 (100)	
	Sub-urban	-	-	

Table-2: exhibits comparison in terms of various socio-demographic variables between participants of Training and Normal Control Group. The data depicts that 60% of the participants in both groups were of female gender, all of them were hailing from Middle SES, and were Christian. The table further indicate that majority of the participants in both groups were having 'Nuclear' family type (60% for Training group and 80% for Normal control group) and all participants in both groups were residing in urban localities. Finally, the data shows that both compared groups were alike in most of the socio-demographic variables.

Table-3: Baseline comparison on PSS and MAAS-A scale scores for MBSR and Normal Control group.

Group / Variable	MBSR GROUP (N=5)		NORMAL CONTROL GROUP (N=5)		Mann-Whitney U Test			
					Mean Rank		U	Z
	Mean	SD	Mean	SD	MBSR	Normal Control		
PSS	23.40	5.02	24.40	4.21	4.70	6.30	8.50	-0.84 (NS)
MAAS-A	3.19	.81	3.25	0.34	5.20	5.80	11	-0.31 (NS)

NS=P value not significant

Table-3: shows that the mean is 23.40 ±5.02 and 24.40 ±4.21 on PSS scale for the participants of 'Training' and 'Normal Control' group respectively. Further, on MAAS-A scale the 'Training group' participants were having a mean of 3.19 ±0.81 as against mean of 3.25±0.34 for 'Normal Control' group. Overall, the presented data exhibits no significant difference between both the groups in their levels of Perceived Stress (-0.84), Attention (-0.10) and scores of Mindfulness (-0.31).

Table-4: Post-training Comparison Between Participants of Training and Normal Control Group on PSS and MAAS-A scores.

Group / Variable	MBSR (N=5) Post-Test		Normal Control Group (N=5) Post-Test		Mann-Whitney U Test			
					Mean Rank		U	Z
	Mean	SD	Mean	SD	MBSR Group	Normal Control Group		
PSS	18.20	5.76	27.40	5.41	3.50	7.50	2.50	2.10*
MAAS-A	3.76	.69	2.91	.49	7.40	3.60	3	1.98*

NS= Not Significant; *p value significant at 0.05 level

Table-4: shows the comparison between the assessment scores of Training and Normal Control group participants after MBSR training on PSS and MAAS-A scales. The data indicates a mean of 18.20 ±5.76 on PSS, 55±12.90 and on MAAS-A scales for participants of 'Training' group as against a mean of 27.40±5.41 on PSS, 41.40 ±4.72 on and on MAAS-A for participants of 'Normal Control' group. Results further indicates that both compared groups differ (0.05 level) in the PSS and MAAS-A after 7 weeks period (of MBSR training).

Table-5: Pre-Post Training Assessment comparison of Training and Normal Control group participants on measures of PSS and MAAS-A.

Group	Variable	Wilcoxon Sign Rank Test		
		Mean Rank	Sum of Rank	Z-value
Training Group (N=5)	PSS	0	0	2.03*
	MAAS-A	3	15	2.02*
Normal Control (N=5)	PSS	3	9	-1.47 (NS)
	MAAS-A	0	0	-1.82 (NS)

NS= Not Significant; *p value significant at 0.05 level

Table-5: shows the comparison between Pre and Post training assessment scores for both

group participants on PSS and MAAS-A scales. The results show significant difference (0.05) in the Perceived Stress, Attention levels and scores of Mindfulness awareness in participants of 'Training' group after MBSR training. On the contrary no significant difference was observed among scores on PSS and MAAS-A scales between pre and post assessment in case of participants of the Normal Control group.

DISCUSSION

To investigate the applicability of Mindfulness based training program on perceived stress and mindful awareness of higher secondary school students, the authors adopted pre-post with control design for this study. The data obtained from the preliminary phase of the study has been presented and discussed here. The findings of Table 1 & 2, depicting comparison between both groups in terms of their 'age' and other socio-demographic variables, indicated no significant difference between them in terms of these compared variables, which is indicative of similarity among participants of both studied groups on age, gender, family background, education and related demographic features.

Baseline comparison, between the participants of both groups, on PSS and MAAS-A scores, indicated no significant difference between them, which is suggestive of similar level of perceived stress, indicating same level of day-to-day stress experiences among participants of both groups. Further, similar level of mindfulness awareness was also observed at pre training assessments in both group participants and whatever mild difference is witnessed, it is best attributed to just-by-chance factors. Thus, from the outset, participants of both studied groups have performed similarly on PSS and MAAS-A measures. Such similarity in scores at baseline is significant in the sense that it may possibly aid in commenting about any change that may occur, after demonstration of some treatment/training to participants. In this study participants of training group were demonstrated 07 mindfulness-based training sessions.

After a wait period of 7 weeks for participants of 'Normal Control group' and after demonstration of 7 sessions of mindfulness training to participants of 'Training group', when re-assessment (post training) assessments were conducted for both groups and the results were compared, difference in performance of participants was observed. Significant group differences (0.05 level) were observed between post training assessments scores (Table 4) of both the groups on PSS measure. Further, when pre and post training scores (Table 5) of 'Training group' participants were compared, again a significant level of difference (0.05 level) was noticed. This clearly indicates that the participants in 'Training group' have improved upon with regard to their performances on PSS scale after 7-week long mindfulness-based training, as indicated by their mean scores at post training phase assessment. This points towards significant reduction in 'perceived stress' scores among the participants of that group, which received 7 sessions of MBSR training. Our findings were adequately supported by RCT findings on 100 college students by Carrone and Pettijohn (2023), where-in the authors reported significant reduction in 'stress scores' on college stress scale after brief mindfulness training. Nur'aini and Patry (2024) reported similar findings, suggestive of the positive impact of MBSR program for reducing the stress levels. Hence our hypothesis stating that there will be a significant impact of MBSR program on perceived stress of higher secondary school students holds acceptance. The observation of reduction in perceived stress experiences, in training group

participants, after 7 weeks is the outcome of mindfulness training sessions, is also strengthen by the performance of 'Normal Control group' participants after 7 weeks. As, when the pre-post assessment scores were taken in to consideration for participants of 'Normal Control group', no such marked difference were noticed and the data indicated similar level of performance at pre and post level for this group, which is indicating towards similar level of perceived stress experiences after 7 weeks wait period. This does strengthen our hypothesis that mindfulness training would be helpful in lowering the perceived stress in the participants. This happens probably due to the development of the capability of the person to focus more on the ongoing present events in life in a more focused manner, rather than dwelling upon the past events/memories. Their-by leading to non-accumulation of negative or stressful felling, as broadly one may have mixed, if not positive, experiences in day-to-day life. Dwelling upon our unwelcomed/unwanted experiences bound to increase our stress perception. With mindfulness-based training, one may develop a tendency to bring focus in the present ongoing events in life.

Significant difference was also observed between the studied groups on MAAS-A assessments (Table 4) scores, indicating that both groups differ drastically on MAAS-A scores at post assessment phase. Further, when pre and post training scores of 'Training Group' participants were taken in to consideration, again significant difference was witnessed (0.05 level). Data revealed that the participants scored a better 'mean score' at post training phase in comparison to their pre training phase performances on MAAS-A. This depicts better mindful awareness and mindful attention among the 'Training Group' participants after 7 weeks training. It could have happened that, after exposure to mindfulness-based training sessions, the participants have learnt to be mindfully aware at the present moment, overpowering the distractions from environment and not getting effected by them. This explanation seems to be acceptable because no such difference was noticed during the pre and post score comparison of participants of 'Normal Control group', where they exhibit almost similar level of performance at both, pre and post phases of assessments. Our findings are supported by Carrone and Pettijohn (2023), in an RCT on 100 college students, where the authors reported an increase in trait mindfulness. Thus, it appears that mindfulness training is helpful in enhancing present moment awareness and does helps in sustaining that. Thus, in the present study, the participants of the 'Training Group; have better scores at post training phase in comparison to their pre training phase scores, on all the outcome measures, as against the participants of 'Normal Control' group. As both groups were similar in most of the socio-demographic variables, so, it could be said that mindfulness training, which is provided using MBSR module, have helped participants to bettered their scores on all outcome measures, i.e. in perceived stress experiences and in their ability of present moment awareness. Therefore, it could be hypothesized that, such training would not only aid in bringing improvement in mental health of the school students but may also found to be helpful in the overall learning process, as reported by the parents and teachers during our study. Lastly the authors believe that such findings hold implications for school mental health programs in longer run. However, the study was limited with small sample and non-consideration of follow up assessments to see the 'carried over' effect of mindfulness training on participants, which could have been bettered in future protocols.

CONCLUSION

Mindfulness based training sessions have significant positive impact in reducing the levels of perceived stress and increasing present moment awareness for school students. Such training programs could help school going students in decreasing their perception of stressful experiences in day-to-day life, improving mindful awareness ability and there-by could play a significant role in not only enhancing mental health, improving academic performance of the students but would also be helpful in facilitating overall learning process for school students. Eventually, the present study findings were helpful in finalizing the Mindfulness based training module as applicable to the school adolescents in school settings.

ACKNOWLEDGEMENT: The authors wish to acknowledge the financial support given by **Mizoram University, Aizawl, Mizoram**, India, to carry out this study under their ***Research Promotion Grant (RPG)*** *scheme* wide **F. No 8-10/MZU (Acad)/19/170-176 dated 07.03.2023.** The authors also wish to acknowledge the support extended by the school authorities and wish to thank for the cooperation by all the participants who were part of the study

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Conflict of interest: None

Role of funding source: None