



Received: 26-12-2022  
Accepted: 06-02-2023

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

### Counselling Adolescents with Somatic Symptom Disorder in Ghana: The Role of Mindfulness-Based Stress Reduction Therapy

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#### Abstract

The study aimed at exploring the usefulness of Mindfulness-Based Stress Reduction Therapy (MBSRT) in handling adolescents with significant focus on physical symptoms in the Nanumba North Municipality of the Northern Region of Ghana. The study was guided by three research questions and hypotheses each, to help the researcher. They were all tested at a 0.05 level of significance. The pre-test, post-test, control group and experimental design was used for the study. Three thousand, five hundred and sixty-one (3,561) students, which included all students in junior high school Two (JHS 2) from the twenty public junior high schools in the Nanumba north municipality of the northern region made up the population for the study. Thirty-three (33) students (made up of fourteen (14) males and nineteen (19) females reporting somatic symptom disorder) were selected as the sample size for the study. They were selected from two schools, making use of the multi-stage random sampling method. The researcher adopted “Adolescents Somatic Symptom Scale” (ASSS) and modified it for use. The Cronbach Alpha reliability method was used to determine the consistency of the reliability which made use of the test

items. The reliability of the coefficient obtained was 0.70. The instrument was run on the students first, and thirty-three (33) students who showed significant focus on physical symptoms in the two schools were assigned for treatment to experimental group A (Mindfulness-Based Stress Reduction Therapy), and B (Control Group) randomly. The data collected were scrutinized by the use of descriptive statistics of mean and standard deviation, and inferential statistics of paired t-test sample, One Way Analysis of Variance (ANOVA) and Two-Way Analysis of Covariance (ANCOVA). The findings of the study elicited the fact that there is a significant dissimilarity in the pre-test and post-test of somatic symptoms disorder scores of adolescent students exposed to MBSRT. Also, there was no significant communication outcome on treatment by socioeconomic level. Judging from the findings of the study, it is recommended that counsellors should introduce, encourage and promote Mindfulness-Based Stress Reduction Therapy (MBSRT) in all junior high schools as an effective counselling treatment for adolescents.

**Keywords:** Mindfulness, Symptoms, Therapy, Stress, Adolescents and Somatic

#### 1. Introduction

The Diagnostic and Statistical Manual of Mental Disorder (DSM 5) defined Somatic symptom disorder (SSD) as “the presence of one or more physical symptoms which is greatly accompanied by significant functional and emotional distress, in addition to excessive thoughts, feelings and behaviors in response to these symptoms for over six months”, (Kurlansik & Maffei, 2016) [1]. Its frequency rate fluctuates at around 5% to 50% in diverse societies; but it has a high health maintenance cost on the treatment of the disorder because patients regularly visit several clinics and prayer camps and may get a provisional comfort (Kurlansik *et al*, 2016) [1]. Previous research has revealed that around one third of Somatic symptom disorder patients have comorbidity of anxiety, depression, personality and has a higher number of females (male to female 1:10). It is likely to occur largely among children and adolescents before the age of 30 years. The symptoms include pain, severe fatigue, lightheadedness, dizziness, heat, vomiting and crawling feeling, amongst others which disturbs daily functioning of the person (D’Souza & Hooten, 2022) [3]. Somatic symptom disorder is a grave challenge because it threatens the psychological and physical health of the adolescent and that might result in academic failure, social disorder, suicide ideation; and also having incessant effects of physical, mental and behavioral problems in adults.

Due to these challenges, recognized psychotherapies like Interpersonal Therapies and Cognitive Analytical Therapy were pretty active for Somatic symptom disorder treatment. However, Mindfulness-Based Stress Reduction Therapy (MBSRT), which is a developing therapy, has similarly expanded support and popularity regarding adolescent Somatic symptom disorder

treatment in the last decade. Dr. Jon Kabat-Zinn (an American psychologist) first introduced MBSRT into Western medicine in 1979 at the Stress Reduction Clinic at Massachusetts University of Medical Center, but coined from Buddhist philosophy. It was initially used as a method for stress lessening but advanced to be successful in treating other psychological sicknesses for the past 10 to 15 years, because it increases well-being and self-care (Faucher, 2016) [5]. This non-drug standard practice of the mind-body therapy, involves meditations, mindfulness, body awareness (scan), breathing techniques, relaxation exercises, and yoga as the four basic skills by which individuals can improve self-regulation and advance inner mindfulness to lessen stress. It was noted that over 200 medical centers worldwide currently offer MBSRT as a substitute treatment choice to patients, as it aids them handle their conditions and ailments in a more operative way Eisendrath *et al.* (2016) [4]. Hernandez *et al.* (2018) also defined mindfulness as the situation of being hyper-aware of the moment by being in the present-day, recognizing what you think and feel, and accepting it without arguing (Lakhan & Schofield, 2013) [12]. The outmoded normal curriculum of MBSRT is a group involvement where approximately 30 persons attend 8 weeks practice times of 2 to 2.5 hours per sitting weekly, in addition to a 6-hour day-long workout, with directives on meditation practice, group discussions and mindfulness skill-building activities weekend class, with 15-40 minutes home-based tasks and 30 minutes mindfulness practice every day for the period being. Throughout the meetings, attention wanders and feelings arise but the practice is to return attention to the planned focus. (Flook *et al.*, 2013) [7]. Somatic symptom disorder could be prejudiced by sex, age, socioeconomic among others. Socioeconomic level which is the cataloging on the basis of educational level, wealth and social status can move the outcome of somatic symptom disorder midst adolescents. A family's low socioeconomic position may lead to Somatic symptom disorder transmitted by parent-child interaction patterns and they get numerous chronic stressful events in their lives owing to the absence of basic needs. Studies have shown that stress is constantly proven as an intermediating variable between socioeconomic status and health and that low parental socioeconomic status is important to occurrence of somatic disorder (Uleanya *et al.* 2018) [15]. Research was equally carried out by Lapido *et al.* (2015) [13] using a total of 2,668 grown-ups and the result showed that financial constraints and low socioeconomic level were meaningfully related to somatic disorder. Families with high socioeconomic status may serve as a defensive feature that advances resiliency in youth. IHEME *et al.* (2014) [9] also carried out a study on effect of somatic disorder on social and workplace functioning among upper socio-economic class adults attending outpatient clinic in national hospital, Abuja in Nigeria. The findings of the study revealed significant results among the upper-class patients presenting with somatic complaints. 119 respondents who attended the general out-patient clinic of the hospital during the period of study participated in the study. Chinawa *et al.* (2016) [2] also studied the relationship between somatic symptom disorder and parental socioeconomic status and found no relationship. Some academics have tried to the usefulness of mindfulness-based stress reduction therapy on adolescents. According to Imafidon (2022) [10], meta-analysis of mindfulness-based therapy in functional gastrointestinal

disorders was conducted by Aucoin and others in 2014. Out of 119 records and much of the studies, had substantial development at the end of the intervention. It resolved that mindfulness-based interventions can increase in functional gastrointestinal disorders: but excessive developments in methodological quality and reporting will be much needed. Fjorback *et al.* (2013) [6] carried out a feasibility and efficacy provisionary of mindfulness therapy for somatization disorder and functional somatic syndromes. 119 patients were also randomly selected to either mindfulness therapy (mindfulness-Based Stress Reduction and some cognitive behavioral therapy elements for *Boycott, Divestment, Sanctions* (BDS) or to augment treatment as normal. Nevertheless, in the mindfulness therapy group, development was gotten at the end of the treatment, and they resolved that, 'MBSRT is a feasible and acceptable treatment compared to enhanced treatment, in improving quality of life and symptom'. Lakhan and Schofield (2013) [12] led a study on Mindfulness-based therapies in the treatment of pain, symptom severity, quality of life, depression, anxiety and somatic complaints executed to prove the potency of MBSRT. This evidence proposes that MBSRT may be active in the treatment of aspects of somatization disorder. Sharma and Rush (2014) [14] led a study on mindfulness-based stress reduction as stress management intervention for healthy individuals. The papers that met the inclusion criteria were one hundred and seventeen (117) in total. Out of the seventeen (17) studies, sixteen (16) discovered positive changes in physiological and psychological outcome related in tandem with anxiety and or stress. Several of the studies assume SSD as flawed, which requires psychological modification of mental behaviors to be improved but contrarily, mindfulness seems efficient in fostering wellbeing emotionally and dropping anguish (Abbasi *et al.* 2007) [1].

### 1.1 Research Questions

To guide the study the following research questions were raised:

1. Is there any difference to the pre-test and post-test somatic symptom disorder scores of in-school adolescents visible to Mindfulness-Based Stress Reduction Therapy (MBSRT)?
2. Is there any difference in the post-test somatic symptom disorder scores of adolescents visible to Mindfulness-Based Stress Reduction Therapy and Control Group?
3. Is there any interaction effect of treatment on parental socio-economic status in managing adolescents with somatic symptom disorder?

### 1.2 Hypotheses

The following hypotheses were framed and were tested at 0.05 level of significance:

1. There is no significant difference in the pre-test and post-test somatic symptom disorder scores of adolescents exposed to Mindfulness-Based Stress Reduction Therapy treatment
2. There is no significant difference in the post-test somatic symptom disorder scores of adolescents exposed to Mindfulness Based Stress Therapy and Control Group
3. There is no significant interaction effect of treatment by socio-economic status in managing adolescents with somatic symptom disorder.

### 1.3 Objectives of the Study

The purpose of the study is to explore the usefulness of Mindfulness-Based Stress Reduction Therapy among adolescents with somatic symptom disorder in the Northern Region of Ghana.

### 2. Methodology

The research design was a pre-test, post-test, control group, experimental design. The design is thought to be the most suitable as they were randomized and assigned to their groups. The study includes one experimental group (Mindfulness-Based Stress Reduction Therapy) and one control group (no treatment) in place of the independent variable and the dependent variable was adolescents' somatic symptom disorder. The population of this study was three thousand, five hundred and sixty-one (3,561) junior high school form 2 students including 1,360 males and 2201 females in the twenty public junior high schools in the Nanumba north municipality of the northern region as at 2020/2021 academic year (Ghana Education Service). A sample size of thirty-three (33) students who were experiencing somatic symptom disorder, comprising fourteen (14) males and nineteen (19) females, were chosen using the multi-stage random sampling technique. The first stage comprised the collection of two out of the twenty (20) public junior high schools in the Nanumba north municipality of the northern region, by means of the purposive sampling technique. The second stage comprised the selection of sixty (60) students from each of the two (2) schools with the use of random sampling technique (a total of 120 students), including sixty (60) males and sixty (60) females to be pretested with the research instrument (ASSS). A benchmark of 80 points was established, so all students who scored 80 points and above were selected from the two schools. Their medical histories were appraised (from Clinics, Health Centers and the Hospital) with a good consent gotten from the Municipal Health Directorate in Bimbilla. The thirty-three (33) students who went through the diagnostic standard were randomly placed in school A (14) as Experimental group (exposed to treatment) with school B (19) as Control Group (non-attention).

#### 2.1 Instrumentation

The Adolescents Somatic Symptom Scale (ASSS) was adapted from Egbigbo (2016) and modified as the research instrument for this study. The instrument is made up of two

sections, A and B, where Section A comprised demographic information, such as students' sex, class, and age. Section B comprised of forty (40) self-report items that is used to evaluate adolescents' somatic symptoms. It had 1-4 graded response options from 'never' to 'always': never (1), rarely (2), sometimes (3) and always (4). This adapted instrument was re-validated by three experts in the field of Measurement and Evaluation. The Cronbach Alpha Statistical tool was used to regulate the reliability of the instrument and a coefficient value of 0.70 was gotten.

#### 2.2 Treatment Procedure

The investigator began the treatment by adopting three stages; the pre-treatment, the treatment and the post-treatment stages. The first stage was the pre-testing of participants in the two schools the on day one. The second stage was the treatment of the experimental group by means of counselling therapy (Mindfulness-Based Stress Reduction Therapy) and the control group (no treatment) for six weeks (12 sessions/per hour each). The third stage was the post-testing of subjects in the experimental and control groups after the treatment sessions on the last day. The instrument (ASSS) was used for both the pre-test and post-test while recording the results.

#### 2.3 Method of Data Analysis

The positive worded items in the instrument were scored 4,3,2,1 on the scale whereas the negative worded items were also scored 1,2,3,4 respectively. It was scored over 160 (4 x 40), and respondents were put into category by the researcher in the following order: 0 – 40 = no somatic symptom disorder, 40 – 80 = mild somatic symptom disorder, 80 - 120 = moderate somatic symptom disorder and 120+ = severe somatic symptom disorder. The data produced was scrutinized using mean, standard deviation, paired sample and One-Way analysis of variance (ANOVA).

#### 2.4 Hypotheses Testing

1. There is no significant difference in the Pre-Test and Post-Test Somatic Symptom Disorder Scores of Adolescents exposed to Mindfulness-Based Stress Reduction Therapy (MBSRT).

### 3. Result

**Table 1:** Paired-Sample t-test of Difference between the Pre-test and Post-test Mean of Somatic Symptom Disorder Scores of Adolescents visible to Mindfulness-Based Stress Reduction Therapy (MBSRT)

Variable	N	Mean	Std. Dev.	Paired Difference		df	T	p-value (S 2-tailed)
				(Mean)	(Standard Deviation)			
Pre-test	12	103.83	14.21	53.33	13.30	11	14.41	.0001
Post-test	12	48.50	12.89					

**Table 2:** Descriptive Statistics of Groups Post-test and Pre-test (Somatic Symptom Disorder Scores of Adolescents exposed to Mindfulness-Based Stress Reduction Therapy and Control Group)

Group	Post-test			Pre-test		
	N	Mean	Standard. Deviation	N	Mean	Standard Deviation
MBSRT	12	48.50	12.89	12	103.83	14.21
Control	21	81.95	11.20	21	98.81	10.41

Table 1 discovered that the total number of participants in the Mindfulness-Based Stress Reduction Therapy (MBSRT) Experimental Group that is used in the analysis (N) = 12, at Pre-test (Mean =103.83 and Standard deviation = 14.21), whereas at Post-test (Mean =48.50 and Standard Deviation = 12.89), the Mean and Standard Deviation differences are 53.33 and 13.30 correspondingly. The *t-value* = 14.41, significant at *p-value* =.0001, the *p-value* is less than the alpha level of .05 (.0001< .05). Consequently, the null hypothesis that states that “There is no significant difference in the Pre-Test and Post-Test Somatic Symptom Disorder scores of Adolescents exposed to Mindfulness-Based Stress Reduction Therapy (MBSRT)”, is rejected. This suggests that, there is a substantial difference between the Pre-Test and Post-Test mean scores of participants in the Mindfulness-Based Stress Reduction Therapy (MBSRT) Experimental Group, in favor of the Post-Test Mean Score; there was a decrease in the symptoms at Posttest. This shows that MBSRT treatment is active in managing somatic symptoms disorder.

2. There is no significant difference in the Post-Test Somatic Symptom Disorder Scores of in-school Adolescents that are visible to Mindfulness-Based Stress Reduction Therapy and Control Group.

Table 2 shows the Descriptive Statistics of Post-test and pre-test of Somatic Symptom Disorder scores of in-School Adolescents that are visible to Mindfulness-Based Stress Reduction Therapy and the Control Group. From the table, it can be seen that at Post-Test, MBSRT Group (N=12, Mean=48.50, Standard deviation=12.89) and the Control Group (N=21, Mean=81.95, Standard deviation=11.20); while at Pre-Test from the table, MBSRT Group (N=12,

Mean=103.83, Standard deviation=14.21) and Control Group (N=21, Mean=98.81, Standard deviation =10.41). This calls for the use of ‘One-Way’ Analysis of Covariance (ANCOVA) to test the hypothesis at post-test.

3. There is no significant interaction effect of treatments by Parents’ Socioeconomic Status in managing Adolescents with Somatic Symptom Disorder in the Secondary Schools.

**Table 3:** Descriptive Statistics in Mean and Standard Deviation of Somatic Symptom Disorder Mean Scores at Posttest by Group and SES

Group	SES	Mean	Std. Deviation	N
MBSRT	Low	68.00	--	1
	Middle	47.88	13.59	8
	High	43.67	6.35	3
	Total	48.50	12.89	12
Control	Low	--	--	--
	Middle	86.00	8.59	12
	High	76.56	12.45	9
	Total	81.95	11.21	21

Table 3 comprises the descriptive statistics of Mean and Standard Deviation of Somatic Symptom Disorder Mean Scores at Posttest by Group and SES. For the MBSRT: Low SES (N = 01, mean = 68.00 and Standard Deviation = NIL). Middle SES (N = 08, mean = 47.88 and Standard Deviation =13.59) and High SES (N = 03, mean = 43.67 and Standard Deviation = 6.35). While the Control Group, Low SES (N = NIL), Middle SES (N =12, mean = 86.00 and Standard Deviation = 8.59) and High SES (N = 09, mean = 76.56 and Standard Deviation =12.45).

**Table 4:** Two Way ANCOVA Result of Difference in Treatments Effect in Managing Adolescents with Somatic Symptom Disorder by SES

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	14215.691 <sup>a</sup>	8	1776.961	22.765	.000
Intercept	724.327	1	724.327	9.280	.004
Pretest	576.721	1	576.721	7.389	.009
Group	11149.408	2	5574.704	71.419	.000
Socioecon	673.107	2	336.554	4.312	.019
Group * Socioecon	316.595	3	105.532	1.352	.268
Error	3824.740	49	78.056		
Total	244353.000	58			
Corrected Total	18040.431	57			

a. R Squared = .788 (Adjusted R Squared = .753)

Table 4 displays the *F-value* value of 1.352 for the Treatments by SES interaction. The *F-value* is not significant (*p* > 0.05). Therefore, the null hypothesis is herewith reserved and this indicates that regardless of the SES of the parents of the participants, the treatment had an affect on them in the same way in MBSRT Experimental Group.

**4. Discussion of Findings**

The results gotten in this study were discussed based on the tested hypotheses. The findings, as listed in hypothesis one discovered that there is a significant difference in the pre-test and post-test somatic symptom disorder scores of adolescents visible to Mindfulness-Based Stress Reduction Therapy (MBSRT). Essentially, MBSRT is operative in managing somatic symptom disorder midst adolescents in school. Imafidon (2022) [10] and Lakhani and Schofield (2013) [12] all support this result as they stated that

adolescents showed greater somatic symptoms reduction after MBSRT treatment. Perhaps this is because the inner experience forced symptoms to be expressed in a voluntary and measured way, and this comprises focusing on somatic sensations, impulses, bodily sensations, emotions and thoughts which leads to acceptance of these experiences. This finding of this study substantiates the study carried out by Fjorback *et al.* (2013) [6] that Mindfulness-Based Stress Reduction Therapy led to important condensed symptoms of somatic disorder and their severity amongst adolescents; thus, MBSRT was considered efficacious in managing somatic symptom disorder amongst adolescents. The study revealed that MBSRT engages biological factors (such as, yoga, breathing techniques), psychological factors (such as, acceptance of pains, body scan, mindfulness meditation) and social factors (such as, group discussions) as a method of treatment, to get the essential tools desirable to stay in the present, remain focused, decrease distracting



stressors and negative thoughts while in due course, reducing symptoms.

Hypothesis two also exhibited that there is a significant difference between somatic symptom disorder scores of adolescents visible to Mindfulness-Based Stress Reduction Therapy and Control group; thus, showing that the treatment was effective in helping to manage adolescents with somatic symptom disorder. This finding is in tandem with a number of studies that applies to MBSRT with adolescents (Abbasi *et al.* 2007 & Sharma and Rush, 2014) <sup>[1, 14]</sup>. They stated that MBSRT was found to be active as evidence-based therapy for somatic disorder, with substantial decline in somatic symptoms in the group. The important effect of the treatment group could be due to adolescents' introduction to six weeks of treatment in the MBSRT programme, whereas the control was not. The study adopted MBSRT with its exclusive techniques for use on the adolescents, leading to meaningfully reduced symptoms and pain.

The outcome of the study in third hypothesis discovered that there is no significant interaction consequence on treatment by parental socio-economic factor of adolescents with somatic symptom disorder. This indicates that adolescents received treatment alike, and treatment was active at all stages regardless of their parents' socio-economic status. This study is in tandem with the finding of Chinawa *et al.* (2016) <sup>[2]</sup> who studied the relationship between somatic symptom disorder and parental socioeconomic status and found no relationship. The outcome of the study indicates that a good number of students, have parents of high and middle socio-economic status who perhaps do not sufficiently meet their needs; or are not appropriately emotionally close to their children. Nevertheless, outcome from the study of IHEME *et al.* (2014) <sup>[9]</sup>, showed that higher income parents are linked with an increased possibility for somatic symptom disorder. This opposes the study of Lapido *et al.* (2015) <sup>[13]</sup>, which discovered that people with lower socioeconomic status, tend to be extra prone to somatic symptom disorder. Consequently, parental socio-economic status did not meaningfully affect the result of the treatment, for a great number of the participants are from the middle socio-economic status, and all adolescents received equivalent attention during the treatment process.

## 5. Conclusion

According to the findings of this study, Mindfulness-Based Stress Reduction Therapy (MBSRT) is active in dealing with adolescents with somatic symptom disorder regardless of parental socio-economic standing in the Nansumba north municipality of the northern region. As a result, MBSRT had a great development on self-care, coping stages, somatic symptoms, and value of life, even as students continue to work with the stressors restricting them. Subsequently, MBSRT can be used as a complimentary treatment for somatic symptom disorder.

## 5.1 Counselling Implications

Just like any other treatment, the benefits one experience from Mindfulness-Based Stress Reduction Therapy (MBSRT) sessions depends on your exceptional position. This study has revealed that Mindfulness-Based Stress Reduction Therapy (MBSRT) has had some positive results for those coping with stress and a range of other health conditions. Mindfulness-Based Stress Reduction Therapy (MBSRT) helps lessen pain and progress psychological

well-being in people dealing with chronic pain conditions. (MBSRT) helps improve the quality of life for people who have lower back pain.

Mindfulness-Based Stress Reduction Therapy (MBSRT) also helps people stressed with migraines or headaches experience an enhanced quality of life and lessen pain-catastrophizing.

Mindfulness is able to improve the skewed experience of pain. In other words, people who believe in mindfulness may practice a high pain tolerance and feel additionally prepared to deal with the mental health effects of pain as compared to people who do not practice mindfulness. Also, People coping with situations like rheumatoid arthritis could profit from MBSRT. This is because the mindfulness element of treatment can help improve immune function in the body.

## 5.2 Recommendation

1. Counsellors should adopt MBSRT as an active counseling technique, in managing adolescents with somatic symptom disorder in all senior high schools in the northern region.
2. Counseling and therapeutic interventions should be established and promoted; and also encouraged in all senior high schools in the northern region.
3. Government through the Ghana Education Service should employ professional counsellors in all senior high schools in the northern region to attend to cases of somatic symptom disorder.

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