

# Effectiveness of Cognitive Analytical Therapy in Managing Adolescents with Somatic Symptom Disorder in Delta State

## Abstract

*This study investigated the effectiveness of Cognitive Analytical Therapy (CAT) in managing adolescents in secondary schools with somatic symptom disorder in Ika North East Local Government Area of Delta State. Three research questions were raised to guide the study and three corresponding hypotheses were formulated, which were all tested at 0.05 level of significance. The pre-test, post-test, control group, experimental design was adopted for the study. The population of the study is three thousand, five hundred and sixty-one (3,561) students, which comprised all Senior Secondary Class Two (SS2) students from the twenty public secondary schools in Ika North East Local Government Area. A sample size of forty-six (46) students, made up of twenty (20) males and twenty-six (26) females reporting somatic symptom disorder were selected from two schools using the multi-stage random sampling technique. The research instrument titled “Adolescents Somatic Symptom Scale” (ASSS) which was developed by Egbigbo in 2016 was adapted and modified for use by the researcher. Three test experts of Measurement and Evaluation revalidated this instrument. The reliability of the instrument was determined using Cronbach Alpha reliability method to test the consistency of the test items and a reliability coefficient of 0.70 was obtained. The instrument was administered to the students as a pre-test and forty-six (46) students who evidenced somatic disorder in the two schools were randomly assigned for treatment to experimental group A (Cognitive Analytical Therapy), and B (Control Group). The data collected were analyzed, using descriptive statistics of mean and standard deviation and inferential statistics of paired and independent sample t-test. The findings of the study revealed that, there is a significant difference in the pre-test and post-test of somatic symptoms disorder mean scores of in-school adolescents exposed to CAT and also, there is no significant interaction effect on treatment by sex. Based on the findings, the study recommends among others, that counselling psychologists should embrace Cognitive Analytical Therapy as an effective counselling therapy for adolescents irrespective of gender.*

**Keywords:** *cognitive analytical therapy, adolescents and secondary school.*

## Introduction

Somatic symptom disorder which was formerly known as somatization disorder, have variously been described in many ways by psychologists. However, they all seem to agree that it is a physical illness with a psychological origin but with no medical explanation. It is prevalent all over the world with an estimated frequency of about 25-50% in the primary healthcare Centre and also about 5% to 7% in the general population (Sadock et al. 2015 & Nwani et al. 2015).

Studies in Nigeria have also shown that about 50% of students who visit the school clinic, often complain of severe physical symptoms like headache, indigestion, fatigue, pains, itching, crawling sensation among others with significant distress and functional disability (Nwokocha et al. 2017). These students frequently visit various clinics, traditional healing homes and even prayer houses to assess health care but may achieve temporary relieve since it has no evidence of organic dysfunction. The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM 5) by the American Psychiatric Association and the eleventh edition of the International Classification of Diseases (ICD, 11) by World Health Organization, included somatic symptom disorder as a group of mental disorder (APA, 2013 & WHO, 2018).

The disorder which is more predominant among adolescents could be influenced by age, sex, parental socioeconomic status, among others but sex is the interest in this study (Audu & Imafidon, 2021). Student's sex which is commonly seen as biological features differentiating females from males may have effect on somatic symptom reporting. Sex difference in adolescents may be due to pubertal maturity which may provoke physiological, psychological and cognitive changes. Most researchers concluded that females are more prone to somatic disorder with a twofold risk that may rise sharply after puberty, compared to males (Okafor et al. 2015; Sadock et al. 2015 & Heimann et al. 2018). They stressed that females are known to willingly report poor physical health more intense, more numerous and more frequent than males. Chinawa et al. (2016) and Nwokocha et al. (2017) studies challenged this assertion and revealed that somatic symptoms occur in both sexes alike. The disproportionate level of distress, students' irregularity at school, class skipping, high health care cost and likely poor academic performances as they seek for solution, could be worrisome to the principals, teachers, and parents who lack the required skills to manage this disorder. Prior research has shown how

adolescents have been assisted to resolve psychological tensions using interventions like Behavioural activation therapy, Cognitive analytical therapy, interpersonal therapy, among others (Nwani et al. 2015).

Cognitive analytical therapy which is a time-limited intervention (8-24 sessions), has been verified effective for patients with different psychopathologies hence, this study intends to determine its effect in managing adolescents with somatic symptoms (Hallam et al. 2021). Cognitive Analytical Therapy (CAT) was developed in United Kingdom by Anthony Ryle in 1980 as a cost-effective therapeutic intervention for patients. It is a collaborative and integrative model that employed ideas and insights from other different therapies (psychoanalytical and cognitive), while having a direct focus on maladaptive behaviours and mental malfunctioning derived from patterns (Clarke et al. 2013). CAT believes that human beings are relationally and socially constituted; therefore, it greatly focuses on understanding self-management problems and underlining patterns of interpersonal relationship among individuals and the wider world daily with its developmental origins (Mulder & Chanen, 2013). CAT may resolve these problems by helping adolescents to trace, identify and recognize, as well as assist them to improve, develop newer healthier ways of coping or build exits to move away from these faulty old-learned behaviour patterns (Abbasi et al. 2018). It does this through reformulation, recognition and revision.

Hallam et al. (2021) conducted a systematic review on the effectiveness and durability of Cognitive Analytical Therapy and then assessing its general acceptability among student dropouts. The symptoms were all improved upon, as CAT showed small-moderate, significant post-treatment benefits compared to control group with high dropout rate. A naturalistic study by Heimann et al. (2018) was carried out to evaluate somatic symptoms among adolescents and

assess the effectiveness of CAT. The result reported medium to large improvements in their psychiatric comorbidity, discomfort levels, pain coping strategies. and they concluded that CAT treatment is effective in reducing somatic symptom disorder. Studies already conducted were appraised to be of high quality of Cognitive Analytical Therapy and it showed the necessity of CAT in the treatment of various levels of presenting difficulties (Calvert & Kellett, 2014). The result revealed that more than half were of high quality. They concluded that cognitive analytical therapy is an effective and long-standing therapy for managing somatic symptom disorder.

### **Statement of the Problem**

Literature has revealed that somatic symptom disorder may be one of the most frustrating problems in medical practice for both the patient who is not satisfied with the treatment given by the physician and the physician who also finds the patient difficult to treat. The researcher as a school counsellor has observed that students who frequently visit the school clinic still complain sick. These difficulties faced by some medical personnel in managing the disorder, may be due to lack of skills in exploring psychological tools or non-referral to psychologists (Ndokuba et al. 2015). Moreover, since the adolescents make up a large portion of the Nigerian population, late identification, misdiagnosis, non-intervention, and treatment of this disorder at this stage, might be extremely disabling and may lead to chronic limitation of general function, significant psychological disability, a progressive loss of interest in life or intellectual growth and poor outcome in adulthood. Based on the evidence of some adults with mental health illnesses reporting that their challenges, which started in their early adolescence, now have a serious negative impact on their health; then there is great need to help the adolescents to manage these psychological challenges in secondary schools using Cognitive Analytical Therapy.

## **Research Questions**

The following research questions were raised to guide the study:

1. is there any difference in the pre-test and post-test somatic symptom disorder scores of adolescents exposed to Cognitive Analytical Therapy (CAT)?
2. is there any difference in the post-test somatic symptom disorder scores of adolescents exposed to Cognitive Analytical Therapy and Control Group?
3. is there any interaction effect of treatments by sex in managing adolescents with somatic symptom disorder?

## **Hypotheses**

The following hypotheses were formulated 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 in-school adolescents exposed to Cognitive Analytical Therapy treatment
2. there is no significant difference in the pre-test and post-test somatic symptom disorder mean scores of in-school adolescents exposed to Cognitive Analytical Therapy and Control Group
3. there is no significant interaction effect of treatment by sex in managing in-school adolescents with somatic symptom disorder.

## **Purpose of the Study**

The purpose of the study is to investigate the effectiveness of Cognitive Analytical Therapy in managing in-school adolescents with somatic symptom disorder in Delta State.

## **Methodology**

The research design was a pre-test, post-test, control group, experimental design. The design is considered most appropriate as they were randomized and assigned to their groups. The

study consists of one experimental group (Cognitive Analytical Therapy) and one control group (no treatment) as the independent variable; one intervening variable (sex) of two levels (male and females) and the dependent variable was (adolescents' somatic symptom disorder). The population of this study is three thousand, fifty hundred and sixty-one (3,561) Senior Secondary School Class 11 (SS2) Students comprising 1,360 males and 2201 females in the twenty public secondary schools in Ika North East Local Government Area of Delta State as at 2020/2021 session (Source; State Ministry of Education). A sample size of forty-six (46) students experiencing somatic symptom disorder, comprising twenty-six (21) males and thirty-two (25) females, were selected using the multi-stage random sampling technique. The first stage involved the selection of two out of the twenty (20) public secondary schools in Ika North East Local Government Area of Delta State, using the purposive sampling technique (two modern secondary schools with functional clinics were selected). The second stage involved the selection of sixty (60) students from each of the two (2) schools using the random sampling technique (a total of 120 students), comprising of sixty (60) males and sixty (60) females to be pretested with the research instrument (ASSS). A benchmark of 80 points was established, hence, all students who scored 80 points and above were selected from the two schools. Their medical histories were assessed (School Clinic/Central Hospital) with an ethical authorization obtained from the Hospital Management Board Central Hospital, Agbor. The forty-six (4) students who met the diagnostic criteria were randomly placed in school A (21) as Experimental group (exposed to treatment) while school B (37) as Control Group (non-attention).

### **Instrument**

The research instrument for this study was the Adolescents Somatic Symptom Scale (ASSS) adapted from Egbigbo (2016) but modified for use in this study. The instrument is made

up of two sections, A and B, where Section A is made up of demographic information, such as students' class, sex and age. Section B consists of forty (40) self-report items 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 modified instrument was re-validated by three experts from the field of Measurement and Evaluation. The Cronbach Alpha Statistical tool was used to determine the consistency of the instrument and a coefficient value of 0.70 was obtained.

### **Treatment Procedure**

The researcher began the treatment by adopting three phases; the pre-treatment, treatment and post-treatment phases. The first phase was the pre-testing of participants in the two schools the first day. The second phase was the treatment of the experimental group using the counselling therapy (Cognitive Analytical Therapy) and the control group (no treatment) for six weeks (12 sessions/per hour each). The third phase 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 the results were recorded. This CAT's twelve weeks treatment of the experimental group was basically done in three segments; Reformulation (five sessions), Recognition (four sessions) and Revision (three sessions).

### **Method of Data Analysis**

The positive worded items in the instrument were scored 4,3,2,1 on the scale while the negative worded items were also scored 1,2,3,4 respectively. It was scored over 160 (4 x 40), and respondents were categorized by the researcher as follows; 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 generated were analyzed using mean, standard deviation, paired sample and One-Way analysis of variance (ANOVA).

### Hypotheses Testing

1. There is no significant difference in the Pre-Test and Post-Test Somatic Symptom Disorder Scores of In-School Adolescents exposed to Cognitive Analytic Therapy (CAT).

**Hypothesis one:** There is no significant difference in the Pre-Test and Post-Test Somatic Symptom Disorder Scores of In-School Adolescents exposed to Cognitive Analytic Therapy (CAT).

**Table 1: Paired-Sample t-test of Difference between the Pre-test and Post-test Mean Somatic Symptom Disorder Scores of In-School Adolescents exposed to Cognitive Analytic Therapy**

	N	Mean	Std. Deviation	Mean	Std. Deviation	Df	t	Sig. (2-tailed)
Pre-test	25	100.6400	13.52430	47.32000	14.42429	24	16.403	.000
Post-test	25	53.3200	14.49345					

Table 1 revealed that the total number of participants in the Cognitive Analytic Therapy (CAT) Experimental Group A used in the analysis (N) = 25, at Pre-test (Mean =100.64 and Standard deviation = 13.52), while at Post-test (Mean =53.32 and Standard deviation = 14.49), the Mean and Standard Deviation difference are 47.32 and 14.42 respectively. The *t-value* = 16.40, significant at *p-value* =.0000, the *p-value* is less than the alpha level of .05 (.000< .05). Therefore, the null hypothesis is rejected implying that there is a significant difference between the Pre-Test and Post-test mean scores of participants in the Experimental Group A in favour of the Post-test Mean Score which had reduction. This indicates that CAT treatment is effective in managing somatic symptom disorder.

**Hypothesis Two:** There is no significant difference in the post-test somatic symptom disorder scores of in-school adolescents exposed to Cognitive Analytic Therapy and Control Group.

**Table 2: Independent Sample T-test of Groups Post-test and Pre-test (Somatic Symptom Disorder Scores of In-School Adolescents exposed to Cognitive Analytic Therapy and Control Group)**

	Group	N	Mean	Std. Deviation	t	df	Sig. (2-tailed)
Pre-test	CAT	25	100.6400	13.52430	.507	44	.615
	Control	21	98.8095	10.40970	.518	43.704	.607
Post test	CAT	25	53.3200	14.49345	-8.673	44	.000
	Control	21	86.4762	10.71736	<b>8.902</b>	43.365	<b>.000</b>

Table 2 shows the Independent Sample T-test of Groups Post-test and Pre-test (Somatic Symptom Disorder Scores of In-School Adolescents exposed to Cognitive Analytic Therapy and Control Group. From the table, at Pre-test CAT Group (N=25, Mean=100.64, Standard Deviation=13.52), and Control Group (N=21, Mean=98.80, Standard deviation=10.41), while at Post-test from the table, CAT Group (N=25, Mean = 53.32, Standard deviation=14.49), and Control Group (N=21, Mean = 86.47, Standard deviation =10.71). The CAT pre-test *t-value* = .51, significant at *p-value* =.615, Control pre-test *t-value* = .52, significant at *p-value* =.607 while CAT post-test *t-value* =-8.67, significant at *p-value* =.000, control group post-test *t-value* = 8.90, significant at *p-value* =.000. The *p-value* at post is less than the alpha level of .05 (.000< .05). Therefore, the null hypothesis is rejected implying that there is a significant difference between the Pre-Test and Post=Test mean scores of participants in the Experimental Group A and Control Group B in favour of the Post-Test Mean Score which had reduction. This reveals that the CAT was more effective than that of the Control Group.

**Hypothesis three:** There is no significant interaction effect of treatment by sex in managing in-school adolescents with somatic symptom disorder.

**Table 3: Independent Sample T-test of interaction effect of treatment by sex in managing in-school adolescents with somatic symptom disorder**

		Sex	N	Mean	Std. Deviation	df	t	Sig. (2-tailed)
CAT	Pre-test	Male	13	98.3077	15.58517	23	.894	.381
		Female	12	103.1667	10.98622	21.576	.906	.375
	Post-test	Male	13	53.5385	12.25164	23	<b>.077</b>	<b>.939</b>
		Female	12	53.0833	17.15946	19.774	<b>.076</b>	<b>.940</b>

Table 3 contains the Independent Sample T-test analysis of interaction effect of treatment by sex in managing in-school adolescents with somatic symptom disorder. From the table, at Pre-test Male (N=13, Mean=98.31, Standard Deviation=15.59), and Female (N=12, Mean=103.17, Standard deviation=10.99), while at Post-test from the table, Male (N=13, Mean=53.53, Standard deviation=12.25), and Female (N=12, Mean=53.08, Standard deviation =17.15). The male pre-test *t-value* = .894, significant at *p-value* =.381, female pre-test *t-value* = .906, significant at *p-value* =.375, while the post-test male *t-value* = .077, significant at *p-value* =.939, female post-test *t-value* = .076, significant at *p-value* =.940. The *p-value* at post is greater than the alpha level of .05 (.07 > .05). Hence, the null hypothesis “There is no significant interaction effect of treatment by sex in managing Somatic Symptom Disorder in In-School Adolescents”, is hereby retained. This implies that irrespective of the sex of the participants, the treatments affected them in the same way.

### Result and Discussion of Findings

The findings, as stated in hypothesis one revealed that there is a significant difference in the pre-test and post-test somatic symptom disorder scores of in-school adolescents exposed to Cognitive Analytical Therapy (CAT) as treatment in managing somatic symptom disorder. This

means that Cognitive Analytical Therapy is effective in managing somatic symptom disorder of adolescents in secondary schools. It showed significant reduction in the somatic symptom scores after treatment which indicates literarily, that its symptoms greatly reduced. This study in accordance with previous researches used to control symptoms with higher therapeutic response and recovery rates, better adherence, decreased symptom severity rapidly and improved psychosocial function in clients (Clarke et al. 2013; Mulder and Chanen, 2013 & Abbasi et al. 2018). The finding further confirmed that the influence the independent variable exerts on the dependent variable is significant as in agreement with the study carried out by Calvert and Kellett (2014), which showed large reductions in somatic symptoms between baseline and programme completion of all clients. This finding also agrees with the study carried out by Eisen et al. (2013) who established the efficacy of CAT and support the need for Cognitive Analytical Therapy to be used to enhance the strategies available for managing adolescents with somatic symptom disorder. Hypothesis two also showed that there is a significant difference between the pretest and posttest somatic symptom disorder scores of adolescents exposed to Cognitive Analytical Therapy and Control group. The result also, indicated that CAT treatment was effective in helping to reduce somatic symptom disorder among adolescents. The reason for this effectiveness of the experimental group could be as a result of the six weeks exposure to CAT treatment while the control was not. This finding agrees with a number of studies that applied Cognitive Analytical and reported that Cognitive Analytical (CAT) was found to be effective as evidence-based therapy for somatic disorder, with significant decreases in somatic symptoms in the group (Heimann et al. 2018 & Hallam et al. 2021). The study employed Cognitive Analytical Therapy (CAT) with its unique techniques for use on the adolescents which enabled them to

detach from dysfunctional cognitive patterns hence, leading to significantly reduced symptoms and distress.

Hypothesis three showed that there is no significant interaction effect in treatment in relation to sex of adolescents. Therefore, the treatment is effective, regardless of whether the adolescents were male or female. This indicates that sex has no differential influence over the emotions, social and health status of the student. Prior research shows changing pattern in sex distribution of mental health problems, somatic disorder inclusive. This study disagrees with the findings of Okafor et al. (2015), Sadock (2015) and Barsky (2016) who reported significantly high increase in prevalence of female secondary school students. They posited that female tend to experience symptoms more than males and these differences could be as a result of parenting styles, cultural differences and effective contribution of the treatment. It therefore agrees with Chinawa et al. (2016) and Nwokocha et al. (2017) studies that expunged sex differences and reported that irrespective of sex, somatic symptom disorder is experienced alike. Thus, there was no difference in the rates of somatic symptom disorder between boys and girls.

### **Conclusion**

In line with the findings of this study, Cognitive Analytical Therapy is effective in managing in-school adolescents with somatic symptom disorder irrespective of the sex in Ika North East Local Government Area of Delta State. This, therefore suggests that psychological therapies can also be effective in treating somatic symptom disorder, by reducing symptoms, improving physical functioning and reducing patients overuse of medical services.

### **Recommendation**

- i. Counsellors and psychologists should be encouraged to embrace CAT as an effective counselling therapy, in managing adolescents with somatic symptom disorder in all secondary schools in Delta State
- ii. Teachers, nurses and parents, should be exposed to intervention strategies to equip them effectively in managing somatized students at home and school early.
- iii. An effective and functional Counselling Unit should be established in all secondary schools in Delta State, where cases of somatic symptom disorder could be referred to.

## References

- Abbasi, F., Shariati, K. & Tajikzadeh, F. (2007). Comparison of the cognitive behavioural therapy (CBT) and mindfulness-based stress reduction (MBSR): Reducing anxiety symptoms. *Women Health Bull*, 5(4): e60585. Doi: 10.5812/whb.60585.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders*. Fifth Edition (DSM-5) APA.
- Audu, V.E.I. & Imafidon, I.F. (2021). Prevalence of somatic symptom disorder among adolescents in secondary schools in Delta state. *Journal of Educational Evaluation and Counselling Psychology*. (JEECP)5(1).
- Calvert, R. & Kellett, S. (2014). Cognitive analytical therapy: A review of the outcome evidence base for treatment. *Psychology and Psychotherapy: Theory, Research and Practice*/ 87(3) 253-277 <https://doi.org/10.1111/papt.12020>.
- Chinawa, J.M., Nwokocho, A.R., Manyike, P.C., Chinawa, A.T., Aniwada, E.C., & Nduka, A.C. (2016). Psychosomatic problems among medical students: A myth or reality? *International Journal of Mental Health Syst*. Doi:10.1186/s13033-0105-3. PMID:27933098; PMCID: PMC5123430.
- Clarke, S., Thomas, P. & James, K. (2013). Cognitive analytic therapy for personality disorder: Randomized controlled trial. *British Journal of Psychiatry*, 202, 129-134. Doi: 10.1192/bjp.bp.112.108670.
- Diagnostic Statistical Manual (2013). American psychiatric association. *Original Article*, 29(6), 603-612, June 01, 2005.

- Egbigbo, P.O., Nweze F.C., Elekwachi C.L., Eze J.E. & Innocent C.U. (2016). New Data on the Enugu Sommatization Scale, Taking Frequency and Intensity of Somatic Experiences of Nigeria into Consideration. *Acta Psychopathol.* 2; 15. Doi:10.4172/2469-6676.100041
- Nwani, B.E., Ekwo, J.C., Eze, O.E., Emenike, A., Udechukwu, C.D., Okoli, O.H., Ofoke, S.M. & Ernest, I.O., (2015). Relationship between heat in the head and goal frustration. *International journal of Humanities and Social Sciences Invention* ISSN: 23197722, ISSN 23197714 www.ijhssi.org.
- Hallam, C., Simmonds-Buckley, M., Kellett, S., Greenhill, B. & Jone, A. (2021). The acceptability, effectiveness, and durability of cognitive analytical therapy and metaanalysis. *Psychology and Psychotherapy: Theory, Research and Practice*, 94 (Suppl 1), 8-35. <https://doi.org/10.1111/papt.12286>.
- Heimann, P., Herpertz-dahlmann, B., Buning, J., Stollbrink-Peschgens, C., Wagner, N., Dempfle, A. & Von Polier, G.G. (2018). Somatic symptom and related disorders in children and adolescents: evaluation of a naturalistic inpatient multidisciplinary treatments. *Child Adolescent Psychiatry Mental Health* 12, 34. <https://doi.org/10.1186/s13034-018-0239-y>.
- International Classification of Diseases (2018). World Health Organization.
- Mulder, R.T. & Chanen, A.M. (2013). Effectiveness of cognitive analytic therapy (CAT) for personality disorders. *British Journal of Psychiatry*, 202, 89-90.
- Nwokocha, A.R.C., Chinawa, J.M., Onukwuli, V., Ubesie, A., Ndukuba, A., Chinawa, A.T., Aniwada E. & Uwaezuoke, S. (2017). Somatization disorder among adolescents in southeast Nigeria: a neglected issue. *International Journal of Mental Health System*, 11(57). <https://doi.org/10.1186/s13033-017-0161-3>.
- Ndukuba, A.C., Ibekwe, R.C., Odinka, P.C., Muomah, R.C., Nwoha, S.O. & Eze, C. (2015). Knowledge of conversion disorder in children by pediatricians in a developing country. *Nigerian Journal of Clinical Practice*, 18(4), 534-537.
- Okafor, C.J., Udofia, O. & Ekpe, E.E. (2017). Preliminary study of somatic complaints as psychiatric symptoms based on cluster analysis of symptoms in modified Enugu somatization scale. *British Journal of Medicine and Medical Research*, 20 (11), 1- 14. doi:10.9734/BJMMR/2017/32088.
- Sadock, B.J., Kaplan E.P. & Sadock, V.A., Ruiz P. (2015). *Kaplan and Sadock's synopsis of psychiatry: behavioral sciences/clinical psychiatry. 11th Edition*. Philadelphia: Lippincott Williams & Wilkins.