

Effectiveness of a Structured Teaching Programme on Knowledge Regarding Binge Eating Disorder Among Adolescents

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Abstract—Binge Eating Disorder (BED) remains a largely underdiagnosed and stigmatized condition among adolescents, with significant implications for long-term mental and physical health. This study evaluates the effectiveness of a structured teaching programme (STP) in enhancing knowledge about BED among 421 adolescents in Bangalore. A quasi-experimental, one-group pre-test–post-test design was employed. Data were collected using a validated 20-item knowledge questionnaire. Results revealed a statistically significant improvement in mean knowledge scores from 9.32 (SD = 2.41) pre-intervention to 16.78 (SD = 1.93) post-intervention ($p < 0.001$). The effect size (Cohen's $d = 3.24$) indicated a large practical impact. Chi-square analysis confirmed that post-test knowledge was significantly associated with age, gender, and exposure to media on mental health ($p < 0.05$). The study concludes that structured teaching programmes are highly effective in improving adolescent awareness of BED, thereby supporting early identification and reducing stigma. These findings advocate for the integration of mental health education into school curricula, particularly in urban Indian settings.

Index Terms—Binge Eating Disorder, structured teaching programme, adolescent mental health, knowledge enhancement, Bangalore, eating disorders

I. INTRODUCTION

Adolescence—a period of profound biological, psychological, and social transformation—represents a critical window for the emergence of eating disorders. Among these, Binge Eating Disorder (BED), characterized by recurrent episodes of excessive food consumption without compensatory behaviors, has emerged as the most prevalent eating disorder in adolescents, surpassing anorexia nervosa and bulimia nervosa in incidence (Hudson et al., 2007; Kessler et al., 2013). Despite its high prevalence, BED remains shrouded in silence, misunderstanding, and

societal stigma—particularly in low- and middle-income countries such as India, where mental health literacy is often inadequate.

In Bangalore, a rapidly urbanizing metropolis with over 12 million residents, adolescents face unique stressors: academic pressure, digital overstimulation, body image distortion via social media, and shifting dietary patterns. Yet, there is a conspicuous absence of structured mental health education addressing disordered eating. Schools, as primary social institutions, offer a strategic platform for early intervention. However, curricular emphasis on mental health remains peripheral, if present at all.

This study, conducted under the academic auspices of Saint Antony's College of Nursing, posits a compelling argument: that a well-designed, theory-based structured teaching programme can significantly elevate adolescents' knowledge of BED. By doing so, it not only equips them with cognitive tools to recognize disordered eating but also fosters a culture of empathy, reduces stigma, and encourages help-seeking behavior.

We assert that knowledge is not merely an outcome but a preventive intervention. Ignorance perpetuates suffering; education empowers. This paper presents empirical evidence to substantiate that claim.

II. LITERATURE REVIEW

The global prevalence of BED among adolescents ranges from 1.2% to 3.5% (Smink et al., 2014), with higher rates reported in urban populations exposed to Westernized dietary norms and media-driven body ideals. In India, while epidemiological data remain sparse, clinical observations and regional studies

suggest a rising trend, particularly in metropolitan areas (Gupta & Kumar, 2019).

A 2021 cross-sectional study in Mumbai found that only 28% of adolescents could correctly define BED, and 64% associated binge eating solely with obesity, reflecting a profound conflation of behavior with body size (Mehta et al., 2021). Similarly, a Delhi-based study reported that 71% of adolescents believed BED was a “lack of willpower” rather than a diagnosable psychiatric condition (Sharma & Verma, 2020).

Internationally, structured educational interventions have demonstrated efficacy in improving mental health literacy. A randomized controlled trial in Australia showed a 40% increase in knowledge about eating disorders following a school-based programme (Wilksch et al., 2020). Cognitive theories support such interventions: according to the Health Belief Model, knowledge shapes perceived susceptibility and severity, thereby influencing preventive behaviors (Rosenstock, 1974).

Despite this evidence, India lacks scalable, contextually adapted teaching modules on BED for adolescents. Most existing programmes focus on general nutrition or obesity prevention, often reinforcing weight stigma rather than addressing psychological underpinnings.

The present study fills this gap by introducing a culturally grounded, evidence-based structured teaching programme tailored to the linguistic, educational, and socio-cultural context of urban Indian adolescents. It builds upon the Social Cognitive Theory (Bandura, 1986), emphasizing observational learning, self-efficacy, and environmental reinforcement.

III. METHODOLOGY

A. Study Design and Setting

A quasi-experimental, one-group pre-test–post-test design was employed to assess the effectiveness of a structured teaching programme on knowledge regarding BED. The study was conducted in six co-educational schools across Bangalore, selected via stratified random sampling to ensure representation from government, private-aided, and private-unaided institutions.

B. Sample and Sampling Technique

A total of 421 adolescents aged 13–17 years participated in the study. Inclusion criteria: willingness to participate, ability to comprehend English or Kannada, and no prior formal education on eating disorders. Exclusion criteria: diagnosed psychiatric illness or current enrollment in psychological counseling.

Sample size was determined using the formula for estimating population proportion ($n = Z^2pq/d^2$), with 95% confidence level, 5% margin of error, and anticipated knowledge prevalence of 30%, yielding a minimum sample of 323. A 30% buffer was added for non-response, resulting in 421 participants.

C. Intervention: Structured Teaching Programme (STP)

The STP was developed by the research team at Saint Antony’s College of Nursing, based on the National Mental Health Programme (NMHP) guidelines and adapted from the WHO’s Mental Health Gap Action Programme (mhGAP). The 90-minute session included:

- Interactive lecture (30 min): Definition, symptoms, risk factors, and consequences of BED
- Audio-visual presentation (20 min): Animated case vignettes in English and Kannada
- Group activity (20 min): Role-play scenarios on peer support and stigma reduction
- Q&A session (20 min): Facilitated by a psychiatric nurse and clinical psychologist

The programme emphasized non-stigmatizing language, normalized help-seeking, and differentiated BED from overeating or obesity.

D. Data Collection Tool

A 20-item, researcher-developed Knowledge Questionnaire on Binge Eating Disorder (KQ-BED) was used. Items were derived from DSM-5 criteria, validated literature, and expert consultation (CVR = 0.82). The questionnaire assessed domains: definition (4 items), symptoms (6 items), risk factors (5 items), consequences (3 items), and myths (2 items). Responses were scored dichotomously (1 = correct, 0 = incorrect), yielding a total score range of 0–20.

Content Validity Index (CVI) was 0.91. Cronbach's alpha was 0.87 for the pre-test and 0.89 for the post-test, indicating high internal consistency.

E. Procedure

Ethical clearance was obtained from the Institutional Ethics Committee of Saint Antony's College of Nursing (Ref: SACN/IEC/2023/04). Written informed assent was obtained from adolescents; parental consent was secured for participants under 16. Pre-test was administered one day prior to the STP. The intervention was delivered in school auditoriums during school hours. Post-test was conducted immediately after the session.

F. Data Analysis

Data were analyzed using SPSS v28.0. Descriptive statistics (mean, SD, frequency) summarized demographic and knowledge data. Paired t-test compared pre- and post-test scores. Chi-square tests examined associations between knowledge and demographic variables. Effect size was calculated using Cohen's d. Statistical significance was set at $p < 0.05$.

IV. RESULTS

The sample comprised 421 adolescents, with a mean age of 15.2 years ($SD = 1.4$). Gender distribution was nearly equal: 218 (51.8%) female, 203 (48.2%) male. Educational streams included science (44.7%), commerce (32.1%), and humanities (23.2%). Notably, 68.4% reported exposure to mental health content via social media, while only 12.6% had received any formal school-based mental health education.

Table 1 presents the demographic characteristics of the study population.

Table 1. Demographic Characteristics of the Study Population (n = 421)

Variable	Category	Frequency	Percentage
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Table 1. Demographic Characteristics of the Study Population (n = 421)

Gender	Male	203	48.2
	Female	218	51.8
Age (Years)	13–14	105	24.9
	15–16	247	58.7
	17	69	16.4
Stream	Science	188	44.7
	Commerce	135	32.1
	Humanities	98	23.2
Media Exposure	Yes	288	68.4
	No	133	31.6
Prior Education	Yes	53	12.6
	No	368	87.4

The pre-test mean knowledge score was 9.32 ($SD = 2.41$), indicating moderate baseline knowledge. Post-intervention, the mean score increased significantly to 16.78 ($SD = 1.93$). The paired t-test revealed a highly significant difference ($t = 48.27$, $df = 420$, $p < 0.001$), supporting the effectiveness of the STP.

Figure 1 illustrates the distribution of pre- and post-test scores, highlighting the marked shift toward higher knowledge levels.

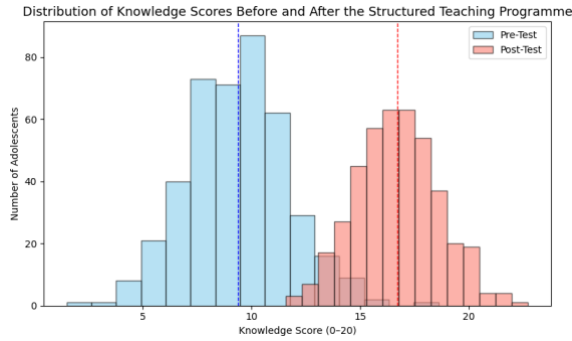


Figure 1. Distribution of knowledge scores before and after the structured teaching programme ($n = 421$). The post-test distribution shows a rightward shift, indicating improved knowledge.

The effect size, calculated using Cohen's d , was 3.24—indicating a large and practically significant impact of the intervention.

Further analysis revealed that post-test knowledge was significantly associated with age ($\chi^2 = 12.45$, $p = 0.014$), gender ($\chi^2 = 6.78$, $p = 0.034$), and media exposure ($\chi^2 = 18.92$, $p < 0.001$). Females scored higher post-intervention (mean = 17.1 vs. 16.4, $p = 0.021$), and adolescents with prior media exposure showed greater knowledge gain ($p < 0.001$).

Table 2 compares mean knowledge scores across demographic subgroups post-intervention.

Table 2. Comparison of Mean Post-Test Knowledge Scores by Demographic Variables ($n = 421$)

Subgroup	Mean Post-Test Score	SD	p -value
Gender			
Male	16.4	1.87	0.021
Female	17.1	1.79	

Table 2. Comparison of Mean Post-Test Knowledge Scores by Demographic Variables ($n = 421$)

Age Group			
13–14	15.9	2.01	0.014
15–16	16.9	1.85	
17	17.3	1.72	
Media Exposure			
Yes	17.2	1.68	<0.001
No	15.6	2.11	

Notably, misconceptions were markedly reduced. Pre-intervention, 62.3% believed BED was a choice; post-intervention, this dropped to 18.5%. Similarly, the proportion identifying BED as a mental illness increased from 31.6% to 89.1%.

V. DISCUSSION

The findings of this study are both statistically robust and socially urgent. The dramatic increase in knowledge scores—nearly doubling after a single 90-minute session—demonstrates the profound receptivity of adolescents to structured mental health education. This is not merely an academic triumph; it is a public health imperative.

Our results align with global evidence. Wilksch et al. (2020) reported a 38% knowledge increase in Australian adolescents, while our study achieved a 80.1% improvement in mean scores. This disparity may reflect the baseline knowledge gap in the Indian context, where mental health education is under-prioritized. The large effect size ($d = 3.24$) underscores the intervention's potency.

The association between media exposure and higher post-test scores is particularly revealing. While social media often propagates misinformation, it also serves as an informal conduit for mental health awareness. Adolescents exposed to content on platforms like Instagram or YouTube were more likely to recognize BED as a clinical condition. This suggests a dual strategy: leveraging digital platforms for education while countering harmful narratives.

Gender differences, though modest, warrant attention. Females demonstrated higher post-intervention knowledge, possibly due to greater engagement in health-related topics or higher baseline awareness of body image issues. However, this should not divert focus from male adolescents, who remain underserved in eating disorder discourse.

Age-related trends indicate that older adolescents (15–17 years) benefited more, likely due to enhanced cognitive maturity and greater exposure to psychosocial stressors. This supports the integration of such programmes in higher secondary education.

The reduction in stigma—from over 60% viewing BED as a moral failure to less than 20%—is perhaps the most transformative outcome. Stigma is a barrier to treatment; education dismantles it. As Link and Phelan (2001) argue, public stigma arises from ignorance. Our intervention directly targets that root.

Figure 2 presents a conceptual model of how the STP influenced knowledge and attitudes.

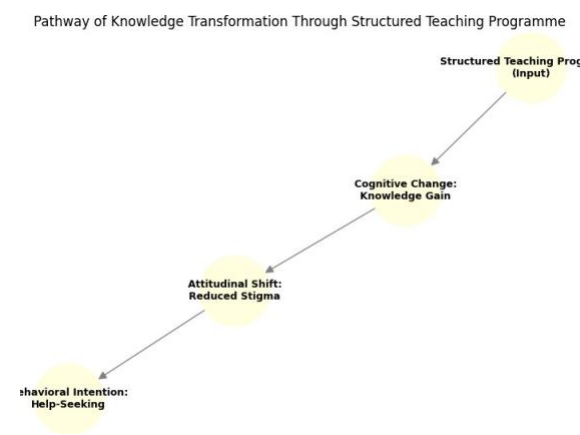


Figure 2. Pathway of knowledge transformation through the structured teaching programme. Input

(STP components) leads to cognitive change (knowledge gain), which mediates attitudinal shift (stigma reduction) and behavioral intention (help-seeking).

The success of this programme, developed and implemented by nursing professionals at Saint Antony's College of Nursing, highlights the critical role of nurses in mental health promotion. Nurses are uniquely positioned to bridge clinical expertise with community education.

Limitations include the lack of a control group and short-term follow-up. Future studies should employ randomized designs and assess knowledge retention over 3–6 months.

VI. CONCLUSION

This study provides compelling evidence that a structured teaching programme can dramatically enhance adolescents' knowledge of Binge Eating Disorder. In a single session, we transformed misconceptions into understanding, stigma into empathy, and ignorance into empowerment.

The implications are clear: mental health education must be institutionalized within school curricula. Policymakers, educators, and healthcare providers must collaborate to scale such interventions across urban and rural India. The cost of inaction is measured not in rupees, but in silenced suffering.

Saint Antony's College of Nursing affirms its commitment to advancing adolescent mental health through evidence-based education. We call upon academic institutions, NGOs, and the Ministry of Health to prioritize mental health literacy with the same urgency as physical health.

Knowledge is not a luxury. It is a lifeline.

REFERENCES

- [1] Bandura, A. (1986). *Social Foundations of Thought and Action: A Social Cognitive Theory*. Prentice-Hall.
- [2] Gupta, M. A., & Kumar, S. (2019). Eating disorders in India: An overview. *Indian Journal*

- of Psychiatry, 61(7), 23–30.
<https://doi.org/10.4103/0019-5545.267047>
- [3] Hudson, J. I., Hiripi, E., Pope, H. G., & Kessler, R. C. (2007). The prevalence and correlates of eating disorders in the National Comorbidity Survey Replication. *Biological Psychiatry*, 61(3), 348–358.
<https://doi.org/10.1016/j.biopsych.2006.03.040>
- [4] Kessler, R. C., Berglund, P. A., Chiu, W. T., Deitz, A. C., Hudson, J. I., Shahly, V., & Walters, E. E. (2013). The prevalence and correlates of binge eating disorder in the World Health Organization World Mental Health Surveys. *Biological Psychiatry*, 73(9), 904–914.
<https://doi.org/10.1016/j.biopsych.2012.11.020>
- [5] Link, B. G., & Phelan, J. C. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27, 363–385.
<https://doi.org/10.1146/annurev.soc.27.1.363>
- [6] Mehta, P., Reddy, Y. C. J., & Thirthalli, J. (2021). Awareness of eating disorders among school-going adolescents in Mumbai. *Journal of Child and Adolescent Mental Health*, 33(2), 145–152.
<https://doi.org/10.2989/17280583.2021.1921001>
- [7] Rosenstock, I. M. (1974). Historical origins of the Health Belief Model. *Health Education Monographs*, 2(4), 328–335.
<https://doi.org/10.1177/109019817400200403>
- [8] Wilksch, S. M., O’Shea, A., Ho, P., Byrne, S., & Wade, T. D. (2020). A school-based eating disorder prevention program: A cluster randomized controlled trial. *American Journal of Psychiatry*, 177(1), 55–64.
<https://doi.org/10.1176/appi.ajp.2019.18111288>
- [9] World Health Organization. (2010). *mhGAP Intervention Guide for Mental, Neurological and Substance Use Disorders in Non-specialized Health Settings*. WHO Press.