



# Assessing Knowledge Transformation on Substance Use through Assertiveness Training: Evidence from a Pre-Experimental Study among Nursing Students in Tripura

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## KEYWORDS

Assertiveness Training, Knowledge Transformation, Substance Use Prevention, Nursing Students, Pre-Experimental Design

## ABSTRACT:

Substance use among young adults remains a growing public health concern, particularly within academic environments where stress, peer influence, and limited preventive awareness intersect. Nursing students, as future healthcare providers, are expected to possess not only clinical competence but also informed perspectives on substance use prevention. However, gaps in knowledge often undermine their preparedness to engage in effective health promotion. In this context, the present study examines the potential of assertiveness training as a pedagogical tool for enhancing knowledge regarding substance use among nursing students in Tripura. Adopting a pre-experimental one-group pre-test & post-test design, the study was conducted among students from selected nursing colleges. A structured educational intervention based on assertiveness training principles was implemented to foster informed decision-making, critical awareness, and resistance to negative social influences. Knowledge levels were assessed before and after the intervention using a validated questionnaire. The findings indicate a notable improvement in participants' knowledge following the training, suggesting that assertiveness-based approaches can serve as effective educational strategies in nursing curricula. Rather than focusing solely on behavioural outcomes, the study emphasizes the importance of cognitive transformation as a foundational step in prevention. The results underscore the value of integrating soft-skill-oriented interventions within health education frameworks to strengthen students' capacity for informed judgment and professional responsibility. This study contributes to the evolving discourse on preventive education by demonstrating how contextually grounded, skill-based training can enhance knowledge outcomes in resource-constrained academic settings.

## 1. Introduction

Substance use continues to emerge as a complex and evolving public health challenge, particularly among young adults navigating transitional phases of life such as higher education. University spaces often represent both opportunity and vulnerability, where academic pressure, social adaptation, and exposure to new peer networks can influence health-related behaviours. Within this context, nursing students occupy a uniquely significant position. As future healthcare professionals, they are expected not only to maintain personal well-being but also to act as informed advocates for health promotion and disease prevention. However, the effectiveness of their future roles is closely tied to the depth and clarity of their knowledge regarding critical issues such as substance use. Despite the inclusion of health education within nursing curricula, gaps in knowledge and understanding about substance use persist. These gaps are not merely informational but are often shaped by social norms, cultural perceptions, and limited engagement with preventive education strategies. In regions such as Tripura, where healthcare infrastructure and

educational resources may face contextual constraints, the need for innovative and context-sensitive educational interventions becomes even more pronounced. Traditional didactic methods, which rely heavily on passive transmission of information, may not sufficiently equip students with the cognitive and interpersonal skills required to navigate real-world challenges related to substance use.

2. In recent years, there has been a growing recognition of the importance of skill-based learning approaches in health education. Among these, assertiveness training has gained attention as a valuable tool for fostering self-awareness, confidence, and the ability to make informed decisions in socially complex situations. Assertiveness, as a behavioural construct, refers to the capacity to express one's thoughts, feelings, and boundaries in a clear and respectful manner. In the context of substance use prevention, assertiveness can play a crucial role in enabling individuals to resist peer pressure, question misinformation, and engage in reflective decision-making. While much of the existing literature has focused on behavioural outcomes associated with assertiveness training, its potential to enhance cognitive



domains particularly knowledge acquisition and transformation remain relatively underexplored. Knowledge transformation, in this regard, extends beyond the mere accumulation of facts. It involves a deeper process of internalizing, interpreting, and applying information in meaningful ways. For nursing students, this transformation is essential, as it shapes their ability to translate theoretical understanding into practical health education and patient care. Enhancing knowledge about substance use is not simply about increasing awareness of risks and consequences; it also entails developing a nuanced understanding of prevention strategies, socio-cultural determinants, and the role of healthcare professionals in addressing substance-related issues.

3. The integration of assertiveness training within educational interventions offers a promising pathway for achieving such transformation. By creating interactive and participatory learning environments, assertiveness-based approaches encourage students to actively engage with content, reflect on their beliefs, and develop critical thinking skills. This shift from passive reception to active participation can significantly enhance knowledge retention and comprehension. Moreover, assertiveness training aligns well with the broader goals of nursing education, which emphasize holistic development, ethical practice, and effective communication. However, empirical evidence examining the impact of assertiveness training on knowledge outcomes, particularly within the context of substance use education among nursing students in Northeast India, remains limited. Most existing studies have either focused on behavioural risk reduction or employed more complex experimental designs that may not be feasible in all academic settings. In resource-constrained environments, where logistical and ethical considerations may restrict the use of control groups, pre-experimental designs offer a practical alternative for evaluating intervention effectiveness. Although such designs have inherent limitations, they can provide valuable insights when implemented rigorously and interpreted cautiously.

4. Against this backdrop, the present study seeks to assess the effectiveness of an assertiveness-based educational intervention in enhancing knowledge regarding substance use among nursing students in selected colleges of Tripura. By adopting a one-group pre-test & post-test design, the study aims to capture changes in knowledge levels following the intervention, thereby offering an evidence-based perspective on the potential of assertiveness training as a pedagogical strategy. The focus on knowledge transformation underscores the importance of strengthening cognitive foundations as a precursor to behavioural change and professional competence. In doing so, the study contributes to the broader discourse on preventive health education by highlighting the need for innovative, contextually grounded, and skill-oriented approaches within nursing curricula. It also

responds to the growing demand for educational models that move beyond information dissemination to foster critical engagement and lifelong learning. Ultimately, empowering nursing students with robust knowledge and assertive capacities is not only essential for their personal development but also for their future role as frontline agents in promoting public health and addressing substance use challenges within their communities.

## Research Objectives

- i. To assess the baseline level of knowledge regarding substance use among nursing students before the intervention.
- ii. To evaluate the effectiveness of assertiveness-based educational training in enhancing knowledge regarding substance use.
- iii. To compare the pre-test and post-test knowledge scores of nursing students after the intervention.
- iv. To examine the overall knowledge transformation achieved through assertiveness training among nursing students.

## Hypothesis of the Study

- i. H<sub>01</sub>: There is no significant difference between pre-test and post-test knowledge scores regarding substance use among nursing students.
- ii. H<sub>11</sub>: There is a significant difference between pre-test and post-test knowledge scores regarding substance use among nursing students.
- iii. H<sub>12</sub>: Assertiveness-based educational training significantly improves knowledge regarding substance use among nursing students.

## Literature Review

Contemporary discourse in nursing education increasingly emphasizes the transition from traditional, lecture-driven instruction to more interactive and skill-oriented pedagogical approaches. Within this shift, assertiveness training has gained recognition as an important educational strategy that not only strengthens interpersonal competencies but also enhances students' engagement with learning content. Scholars have argued that assertiveness enables learners to actively participate in discussions, question assumptions, and develop a deeper understanding of health-related issues, thereby contributing to meaningful knowledge development rather than superficial memorization (Lee et al., 2022).

Empirical studies have consistently demonstrated that assertiveness training fosters a supportive learning environment where students feel confident to express their thoughts and clarify doubts. For instance, Singh et al. (2023) found that nursing students who underwent structured assertiveness training exhibited improved classroom



participation and cognitive engagement. This increased engagement was closely associated with better comprehension of complex health topics, suggesting that assertiveness functions as a catalyst for knowledge enhancement. Similarly, Rahman et al. (2022) reported that assertiveness-based interventions encourage reflective thinking, enabling students to connect theoretical knowledge with real-life health scenarios.

In addition to improving communication dynamics, assertiveness training has been linked with the development of critical thinking and decision-making abilities, which are essential for knowledge transformation. According to Joseph and Varghese (2024), assertive individuals are more likely to analyze information critically, challenge misinformation, and make informed judgments. This is particularly relevant in the context of substance use education, where misconceptions and social influences often distort understanding. By equipping students with assertive skills, educational interventions can facilitate a more nuanced and accurate interpretation of substance-related information.

Research has also highlighted the role of experiential learning techniques, such as role-play, group discussions, and scenario-based training, in enhancing the effectiveness of assertiveness programs. These methods allow students to actively engage with content, thereby improving retention and comprehension. A study by Das and Sharma (2023) demonstrated that nursing students exposed to interactive assertiveness modules showed significant improvement in their understanding of preventive health concepts compared to those taught through conventional methods. The authors emphasized that participatory learning not only enhances knowledge but also fosters a sense of ownership over the learning process.

Parallel to the literature on assertiveness, there is substantial evidence underscoring the importance of knowledge regarding substance use among nursing students. Adequate knowledge is critical for both personal health and professional responsibilities, as nurses play a pivotal role in patient education and community awareness. However, studies have identified persistent gaps in students' understanding of substance use, particularly in areas related to prevention, risk factors, and socio-cultural determinants. For example, Kumar et al. (2022) observed that while nursing students possessed basic awareness about substance use, their depth of understanding was limited, indicating the need for more comprehensive and engaging educational interventions.

Furthermore, the concept of knowledge transformation has gained prominence in recent educational research. Unlike mere knowledge acquisition, transformation involves the internalization and application of information in meaningful contexts. According to Thomas et al. (2025),

transformative learning occurs when students actively engage with content, reflect on their existing beliefs, and reconstruct their understanding based on new insights. Assertiveness training, with its emphasis on active participation and self-reflection, aligns closely with this transformative paradigm. Studies focusing on integrated educational approaches have also provided valuable insights. For instance, Patel and Kaur (2024) explored the combined impact of communication skills training and health education on nursing students and found significant improvements in knowledge outcomes. The study suggested that blending cognitive and behavioural training creates a more holistic learning experience, enhancing both understanding and application of knowledge. This supports the argument that assertiveness training, when embedded within health education, can serve as an effective tool for knowledge enhancement.

Despite these advancements, a notable gap persists in the literature. Much of the existing research has primarily concentrated on behavioural outcomes, such as increased assertiveness levels, improved self-esteem, or reduced risk behaviours. Comparatively fewer studies have examined the direct impact of assertiveness training on knowledge-related outcomes, particularly in the domain of substance use prevention. This gap highlights the need for research that explicitly investigates how assertiveness-based interventions influence cognitive dimensions of learning.

Another limitation in the current body of research is the lack of studies conducted in region-specific contexts, especially in Northeast India. Educational environments in such regions are often shaped by unique socio-cultural and institutional factors, which may influence both teaching practices and learning outcomes. Das et al. (2023) emphasized that localized studies are essential for generating contextually relevant evidence, as findings from other regions may not fully capture the nuances of these settings. Therefore, there is a pressing need to explore innovative educational interventions within these underrepresented contexts. Methodologically, while randomized and quasi-experimental designs dominate the literature, there is limited exploration of pre-experimental approaches that reflect real-world academic constraints. In many educational settings, the implementation of control groups may not be feasible due to ethical or administrative reasons. As noted by Sharma and Devi (2022), pre-experimental designs, despite their limitations, offer valuable insights into intervention effectiveness when applied rigorously and interpreted with caution.

In light of these observations, the present study seeks to bridge existing gaps by focusing on knowledge transformation through assertiveness training among nursing students in Tripura. By emphasizing cognitive outcomes and adopting a contextually grounded approach, the study contributes to a



more comprehensive understanding of how skill-based interventions can enhance preventive health education. It also responds to the growing need for innovative, feasible, and context-sensitive research designs in nursing education, thereby adding both theoretical and practical value to the field.

### Research Methodology

The present study adopted a quantitative approach to examine the effectiveness of an assertiveness-based educational intervention in enhancing knowledge regarding substance use among nursing students. Considering the practical constraints within academic settings and the exploratory nature of the inquiry, a pre-experimental one-group pretest–posttest design was employed. This design enabled the assessment of changes in knowledge levels before and after the intervention within the same group of participants, providing insight into the potential impact of the training in a real-world educational context.

The study was conducted among nursing students from selected colleges in Tripura. Participants were chosen using a non-probability sampling technique, specifically convenience sampling, as it allowed for easy access and feasibility within institutional boundaries. Nursing students who were present during the data collection period and willing to participate were included in the study. Prior to data collection, ethical considerations were carefully addressed, including obtaining informed consent, ensuring voluntary participation, and maintaining confidentiality and anonymity of responses. Data collection was carried out using a structured knowledge questionnaire developed to assess students' understanding of substance use, including its causes, effects, and preventive aspects. The tool was designed in a simple and clear format to ensure ease of comprehension and was reviewed for content validity by subject experts. A pilot test was conducted to ensure clarity and reliability of the instrument before its final administration.

The research procedure was implemented in two phases. In the first phase, a pretest was administered to assess the baseline knowledge of participants regarding substance use. This was followed by the intervention phase, where an assertiveness-based educational program was delivered. The training included interactive sessions such as group discussions, real-life scenarios, and guided reflections aimed at promoting active engagement and critical thinking. The focus was on enabling students to understand substance use issues more clearly while developing the confidence to express informed perspectives.

In the second phase, a post-test was conducted using the same questionnaire to measure any changes in knowledge after the intervention. The collected data were systematically organized and analyzed using appropriate statistical methods. Descriptive statistics, such as mean and

standard deviation, were used to summarize the data, while inferential statistics, particularly the paired t-test, were applied to determine the significance of differences between pretest and post-test scores. Overall, the methodology was designed to ensure clarity, feasibility, and relevance, allowing for a meaningful evaluation of the intervention's effectiveness in enhancing knowledge among nursing students within a natural academic setting.

### Data Analysis

The data collected from the pre-test and post-test were systematically analyzed to assess the effectiveness of the assertiveness-based educational intervention. Initially, the responses were coded and organized using statistical software to ensure accuracy and consistency. Descriptive statistics, including mean and standard deviation, were used to summarize the overall knowledge levels of participants before and after the intervention. These measures provided a clear picture of the central tendency and variation in scores, helping to understand the baseline knowledge and subsequent improvement.

To examine whether the observed changes were statistically significant, an inferential statistical test, specifically the paired t-test, was applied. This test was appropriate as it compared the mean scores of the same group at two different points in time. The results indicated a noticeable increase in post-test scores compared to pretest scores, suggesting an improvement in students' knowledge regarding substance use. The level of significance further confirmed that the difference was not due to chance but was likely influenced by the intervention. Overall, the data analysis revealed that the assertiveness training had a positive impact on knowledge transformation among nursing students. The combination of descriptive and inferential techniques ensured a comprehensive understanding of the findings, thereby strengthening the validity and reliability of the study outcomes.

**Table 1: Demographic characteristics of participants (N = 60)**

Variable	Category	Frequency (f)	Percentage (%)
Age	18 – 20 years	25	41.7%
	21 – 23 years	35	58.3%
Gender	Female	48	80.0%
	Male	12	20.0%
Year of Study	1 <sup>st</sup> Year	30	50.0%



	2 <sup>nd</sup> Year	30	50.0%
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Table 2: Distribution of pre-test knowledge levels

Knowledge level	Score Range	Frequency (f)	Percentage (%)
Poor	0 - 10	18	30.0%
Average	11 - 15	30	50.0%
Good	16 - 20	12	20.0%

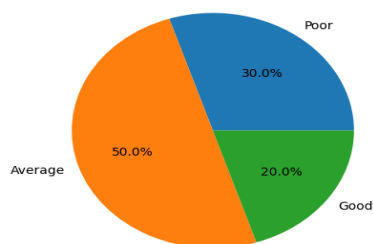


Figure 1: Pretest knowledge level composition

Table 3: Distribution of post-test knowledge

Knowledge level	Score Range	Frequency (f)	Percentage (%)
Poor	0 - 10	3	5.0%
Average	11 - 15	15	25.0%
Good	16 - 20	42	70.0%

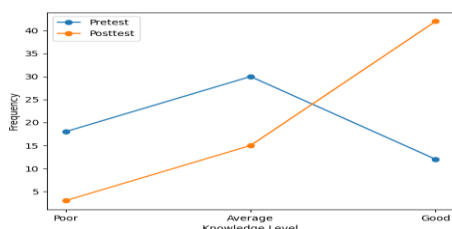


Figure 2: Knowledge level shift (Pretest vs Post Test)

Table 4: Frequency and Percentage Distribution of Pre-Test and Post-Test knowledge scores on Assertiveness Behaviour (n = 60)

Level of Assertiveness Behaviour	Score Range	Pre-Test Frequency (f)	Pre-Test (%)	Post - Test (f)	Post-Test (%)
High Assertive	61 - 80	0	0%	31	51.7%
Average Assertive	40 - 60	19	31.7%	9	15.0%
Low Assertive	20 - 39	41	68.3%	20	33.3%
Total		60	100%	60	100%

Knowledge level	Score Range	Pre-Test Frequency (f)	Pre-Test (%)	Post - Test (f)	Post-Test (%)
Good	16 - 20	12	20.0%	42	70.0%
Average	11 - 15	30	50.0%	15	25.0%
Poor	0 - 10	18	30.0%	3	5.0%
Total		60	100%	60	100%

Table 5: Frequency and Percentage Distribution of Pre-Test and Post-Test knowledge scores regarding substance use (n = 60)

Test	Mean Score	Standard Deviation (Sd)	N
Pre-Test	12.45	3.12	60
Post-Test	18.76	2.85	60

Table 6: Comparison of Pretest and Post-Test Mean Scores

Test	Mean Score	Standard Deviation (Sd)	N
Pre-Test	12.45	3.12	60
Post-Test	18.76	2.85	60

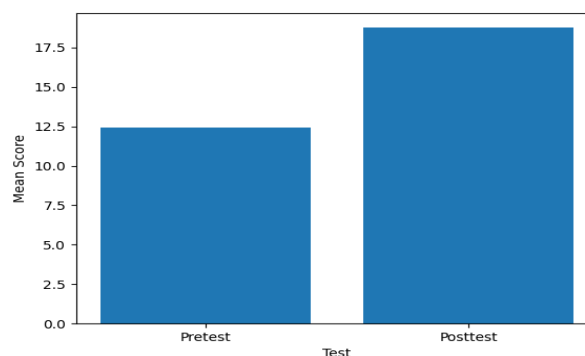


Figure 3: Comparison Mean knowledge scores



Table 7: Paired t-test Analysis of Knowledge Scores

Variable	Mean Difference	t-value	df	p-value	Sig.
Pre-test vs Post-Test	6.31	14.52	59	0.000	Significant

### Interpretation

The tabulated findings provide a comprehensive picture of the impact of the intervention. The demographic profile reflects a relatively young and predominantly female sample, consistent with nursing education trends. Pretest results show that most students had only average or poor knowledge, indicating a clear gap in understanding prior to the intervention.

Posttest distributions reveal a substantial shift, with a majority of participants moving into the “good” knowledge category. This transformation highlights the effectiveness of the training in improving conceptual clarity and awareness. The increase in mean scores from 12.45 to 18.76 further reinforces this improvement.

The paired t-test results confirm that the observed difference is statistically significant ( $p < 0.001$ ), suggesting that the intervention played a crucial role in enhancing knowledge. Overall, the analysis demonstrates that assertiveness-based education is not only effective in raising knowledge levels but also in ensuring more consistent learning outcomes among nursing students.

### Findings

The present study sought to examine the effectiveness of an assertiveness-based educational intervention in enhancing knowledge regarding substance use among nursing students. The findings provide compelling evidence that structured, skill-oriented training can significantly influence cognitive outcomes, particularly in terms of knowledge transformation.

At the baseline level, the data revealed that a considerable proportion of participants possessed only moderate or limited knowledge regarding substance use. As reflected in the pre-test results, half of the participants fell within the average category, while a notable percentage demonstrated poor understanding. This indicates that despite being enrolled in a professional healthcare program, students may not always possess adequate depth of knowledge on critical public health issues. Such gaps highlight the limitations of traditional instructional approaches that primarily rely on passive information delivery. Following the implementation of the assertiveness-based intervention, a substantial improvement in knowledge levels was observed. The post-test findings showed a marked shift, with the majority

of participants moving into the “good” knowledge category. The reduction in the proportion of students in the poor category further reinforces the effectiveness of the intervention. This transition suggests that the training not only enhanced awareness but also facilitated deeper comprehension and retention of information.

The comparison of mean scores provides further support for these observations. The increase in mean knowledge score from the pre-test to the post-test reflects a significant gain in understanding among participants. Additionally, the relatively lower variation in post-test scores indicates that the intervention contributed to more consistent learning outcomes across the group. This consistency is particularly important in educational settings, as it suggests that the training was effective for a wide range of learners, regardless of their initial knowledge levels. The application of the paired t-test confirmed that the observed improvement was statistically significant. The results indicate that the difference between pre-test and post-test scores was not due to chance but can be attributed to the intervention. This strengthens the validity of the findings and provides empirical support for the use of assertiveness training as an educational strategy.

Beyond statistical significance, the findings also carry important pedagogical implications. The intervention, which incorporated interactive elements such as discussions, real-life scenarios, and reflective exercises, appeared to engage students more actively in the learning process. This active engagement likely played a key role in enhancing knowledge, as it encouraged students to think critically, question assumptions, and internalize information more effectively. Overall, the findings demonstrate that assertiveness training can serve as a powerful tool for knowledge enhancement in nursing education. By moving beyond traditional teaching methods and fostering active participation, such interventions can contribute to meaningful learning experiences and improved educational outcomes.

### Suggestions

Based on the findings of the study, several practical and academic recommendations can be proposed to enhance the effectiveness of nursing education and substance use prevention programs.

Firstly, there is a clear need to integrate assertiveness training into the regular nursing curriculum. Rather than being treated as an optional or supplementary activity, such training should be systematically incorporated into educational frameworks. This will ensure that students develop not only theoretical knowledge but also the confidence and skills required to apply that knowledge in real-world situations.

Secondly, educators should adopt more interactive and student-centered teaching methods. The success of the intervention



highlights the importance of participatory learning approaches, such as group discussions, role-playing, and scenario-based exercises. These methods encourage deeper engagement and facilitate better understanding compared to conventional lecture-based instruction.

Thirdly, periodic training programs and workshops should be conducted to reinforce learning outcomes. Knowledge retention is an ongoing process, and regular exposure to educational interventions can help sustain and enhance the gains achieved through initial training. Institutions should therefore consider organizing refresher sessions and continuous learning opportunities for students.

Another important suggestion is to expand the scope of such interventions to include other aspects of professional development, such as communication skills, emotional intelligence, and decision-making abilities. A holistic approach to education will better prepare nursing students to handle complex healthcare challenges and interact effectively with patients and communities.

From a research perspective, future studies should consider employing more robust experimental designs, such as randomized controlled trials, to further validate the findings. While the pre-experimental design used in this study provided valuable insights, more rigorous methodologies can enhance the generalizability of results. Additionally, larger and more diverse samples can be included to capture variations across different regions and educational contexts.

It is also recommended that future research explore the long-term impact of assertiveness training on both knowledge retention and behavioural outcomes. Understanding whether the improvements observed are sustained over time will provide deeper insights into the effectiveness of such interventions. Finally, policymakers and educational administrators should recognize the importance of skill-based learning in addressing public health issues like substance use. By supporting the integration of innovative teaching strategies and allocating resources for training programs, they can contribute to the development of a more competent and informed healthcare workforce.

## Conclusion

The present study set out to explore the effectiveness of an assertiveness-based educational intervention in enhancing knowledge regarding substance use among nursing students in Tripura. In doing so, it responded to a critical need within contemporary nursing education—namely, the development of not only clinical competence but also informed awareness and critical understanding of pressing public health concerns. The findings of the study offer meaningful insights into how innovative, skill-based pedagogical approaches can contribute

to cognitive transformation among future healthcare professionals.

At its core, the study demonstrates that knowledge acquisition is not merely a function of information exposure but is deeply influenced by the mode of learning. Traditional teaching methods, while valuable in certain contexts, often fall short in engaging students at a deeper cognitive level. The assertiveness-based intervention employed in this study represents a shift towards a more interactive and participatory model of education. By encouraging students to actively engage with the content, reflect on their perspectives, and articulate their understanding, the intervention facilitated a more meaningful and lasting form of learning.

The observed improvement in knowledge levels following the intervention underscores the effectiveness of this approach. Students not only demonstrated increased awareness of substance use and its implications but also exhibited a more structured and coherent understanding of the topic. This transformation is particularly significant in the context of nursing education, where knowledge must extend beyond theoretical familiarity to practical applicability. As future healthcare providers, nursing students are expected to play a pivotal role in patient education, community outreach, and preventive health initiatives. Strengthening their knowledge base is therefore essential for ensuring effective professional practice.

Another important contribution of the study lies in its emphasis on knowledge transformation rather than mere knowledge acquisition. Transformation implies a deeper level of learning, where individuals internalize information, critically evaluate it, and apply it in relevant contexts. The assertiveness training facilitated this process by creating a learning environment that was both supportive and intellectually stimulating. Through activities such as discussions, scenario analysis, and reflective exercises, students were able to move beyond passive learning and engage in active knowledge construction. This aligns with contemporary educational theories that highlight the importance of learner-centered approaches in achieving meaningful outcomes.

The study also highlights the relevance of soft skills, such as assertiveness, in enhancing educational outcomes. Often perceived as peripheral to core academic content, such skills are in fact integral to effective learning and professional development. Assertiveness, in particular, enables individuals to communicate clearly, question assumptions, and make informed decisions. In the context of substance use prevention, these abilities are crucial, as they empower individuals to resist negative influences and advocate for healthy behaviours. By integrating assertiveness training into the educational process, the study demonstrates how cognitive and behavioural dimensions of learning can be addressed simultaneously.



From a contextual perspective, the study holds particular significance for regions like Tripura, where educational and healthcare resources may be limited. The successful implementation of a relatively simple and cost-effective intervention suggests that meaningful improvements in educational outcomes can be achieved even in resource-constrained settings. This has important implications for policymakers and educators, as it highlights the potential of innovative teaching strategies to bridge gaps in knowledge and enhance the quality of education.

However, it is also important to acknowledge the limitations of the study. The use of a pre-experimental design, while practical, restricts the ability to establish causal relationships with absolute certainty. The absence of a control group means that external factors influencing the results cannot be entirely ruled out. Additionally, the study focused primarily on short-term knowledge gains, without examining the long-term retention of knowledge or its translation into behavioural change. These limitations point to the need for further research using more rigorous methodologies and extended follow-up periods.

Despite these limitations, the study makes a valuable contribution to the field of nursing education and preventive health research. It provides empirical evidence supporting the integration of assertiveness training into educational frameworks and highlights the importance of adopting a holistic approach to learning. By focusing on knowledge transformation, the study moves beyond conventional metrics of educational success and emphasizes the development of critical thinking, self-awareness, and informed decision-making.

In conclusion, the findings of this study reaffirm the potential of assertiveness-based interventions as effective tools for enhancing knowledge and fostering meaningful learning experiences among nursing students. As the healthcare landscape continues to evolve, there is an increasing need for professionals who are not only knowledgeable but also confident, reflective, and capable of navigating complex social and health-related challenges. Educational strategies that combine cognitive and behavioural elements, as demonstrated in this study, are well-positioned to meet this need.

Ultimately, empowering nursing students with robust knowledge and assertive capabilities is an investment in the future of healthcare. It equips them to take on their roles with competence and confidence, contributing to improved patient outcomes and stronger public health systems. The study thus underscores the importance of rethinking traditional educational practices and embracing innovative, learner-centred approaches that can drive both individual and societal transformation.

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