

EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING THE THERAPEUTIC EFFECTS OF NEEM LEAVES IN THE TREATMENT OF CHICKENPOX AMONG NURSING STUDENTS

Mrs. Shweta Ganpati Naik*, Ms. B. Shravani¹, Ms. Bijaya Chettri¹,
Ms. Bindya Rai¹, Ms. Chimi Lhamo¹, Ms. Dena Maria John¹, Ms. Arunima S¹,
Mr. Bimal B¹, Mr. Arunachalam¹ Mr. Bijo Joy¹, Mr. Ayush Kumar Dubey¹,

Mr. Ashwin Thampi¹

¹III Year GNM Nursing Students,
Smt. Nagarathnamma School and College of Nursing,
Bangalore, Karnataka, India

Corresponding Author:

*Mrs. Shweta Ganpati Naik

Assistant Professor, Department of Mental Health Nursing
Smt. Nagarathnamma School and College of Nursing, Bangalore, India
Email: shweta_1140@acharya.ac.in

Abstract

Chickenpox is a common viral illness caused by the varicella-zoster virus and continues to be a public health concern in India, particularly in community and institutional settings. Along with modern medical management, traditional remedies such as neem (*Azadirachta indica*) are widely used for symptomatic relief due to their antiviral, antibacterial, and anti-inflammatory properties. However, scientific knowledge regarding the therapeutic effects of neem leaves among nursing students is often inadequate. As future healthcare professionals, nursing students play a crucial role in providing accurate health education and culturally sensitive care.

The present study aimed to assess the effectiveness of a structured teaching programme (STP) on knowledge regarding the therapeutic effects of neem leaves in the treatment of chickenpox among nursing students. A pre-experimental one-group pre-test post-test design was adopted. The study was conducted among 50 nursing students of Smt. Nagarathnamma School of Nursing, Bangalore, selected using a convenient sampling technique. Data were collected using a structured knowledge questionnaire administered before and after the teaching programme.

The pre-test findings revealed that 72% of participants had average knowledge and 28% had poor knowledge regarding neem therapy in chickenpox. Following the structured teaching programme, post-test results showed significant improvement, with 68% of participants demonstrating good knowledge. Statistical analysis using a paired t-test indicated a highly significant difference between pre-test and post-test knowledge scores ($p < 0.001$).

The study concluded that a structured teaching programme is an effective educational strategy to enhance nursing students' knowledge regarding the therapeutic effects of neem leaves in the treatment of chickenpox.

Keywords: Chickenpox; Neem leaves; Structured teaching programme; Nursing students; Traditional medicine

Date of Submission: 13-12-2025

Date of Acceptance: 23-12-2025

I. Introduction

Chickenpox is an acute, highly contagious viral disease caused by the varicella-zoster virus. It commonly affects children and young adults and is characterized by fever, malaise, and a generalized vesicular rash accompanied by intense itching. Although chickenpox is usually self-limiting, complications such as secondary bacterial infections, pneumonia, and encephalitis may occur, especially among immunocompromised individuals.

In India, traditional and herbal remedies continue to be widely used alongside modern medicine. Neem (*Azadirachta indica*) holds an important place in traditional Indian medicine due to its antiviral, antibacterial,

anti-inflammatory, and immunomodulatory properties. During chickenpox episodes, practices such as neem leaf baths, topical application of neem paste, and placing neem leaves around the patient are commonly followed to relieve itching and prevent secondary infections.

Despite the widespread cultural acceptance of neem therapy, scientific awareness regarding its therapeutic role is limited among nursing students. Nursing students are future healthcare providers and play a key role in educating patients and communities. Lack of accurate knowledge may lead to either dismissal of traditional practices or unsafe recommendations. Therefore, it is essential to strengthen nursing students' understanding of evidence-based traditional remedies through structured educational interventions.

A structured teaching programme provides systematic and scientific knowledge in a planned manner. Hence, the present study was undertaken to evaluate the effectiveness of a structured teaching programme on knowledge regarding the therapeutic effects of neem leaves in the treatment of chickenpox among nursing students.

Objectives

1. To assess the existing knowledge of nursing students regarding the therapeutic effects of neem leaves in the treatment of chickenpox.
2. To evaluate the effectiveness of a structured teaching programme by comparing pre-test and post-test knowledge scores.
3. To find an association between pre-test knowledge scores and selected demographic variables.

II. Materials And Methods

A pre-experimental one-group pre-test post-test research design was adopted to evaluate the effectiveness of a structured teaching programme. The study was conducted at Smt. Nagarathnamma School of Nursing, Bangalore, Karnataka. The target population consisted of nursing students, and a sample of 50 students aged 18–22 years was selected using a non-probability convenient sampling technique.

Nursing students who were present during data collection, able to read and write English, and willing to participate were included in the study. Students who were absent or unwilling to participate were excluded.

Data were collected using a structured knowledge questionnaire comprising two sections: demographic variables and 30 multiple-choice questions related to chickenpox and the therapeutic effects of neem leaves. A structured teaching programme developed through literature review and expert consultation was administered.

After obtaining formal permission and informed consent, a pre-test was conducted, followed by administration of the structured teaching programme on the same day. A post-test was conducted after seven days using the same questionnaire. Data were analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation) and inferential statistics (paired *t*-test and chi-square test).

III. Results

The effectiveness of the structured teaching programme on knowledge regarding the therapeutic effects of neem leaves in the treatment of chickenpox was assessed through comparison of pre-test and post-test scores among 50 nursing students.

Pre-test Knowledge Level

Analysis of pre-test data revealed that a majority of the participants had inadequate baseline knowledge. Out of 50 students, 36 (72%) demonstrated average knowledge, while 14 (28%) exhibited poor knowledge regarding the therapeutic effects of neem leaves in the management of chickenpox. None of the participants attained a good knowledge score in the pre-test. These findings indicate that although neem is commonly used as a traditional remedy, scientific understanding of its therapeutic role was limited among nursing students prior to the intervention.

Post-test Knowledge Level

Following the administration of the structured teaching programme, a substantial improvement in knowledge levels was observed. In the post-test, 34 students (68%) achieved good knowledge scores, 15 students (30%) had average knowledge, and only 1 student (2%) remained in the poor knowledge category. The shift from predominantly average and poor knowledge levels in the pre-test to good knowledge levels in the post-test clearly demonstrates the positive impact of the educational intervention.

Table 1: Distribution of Pre-test and Post-test Knowledge Levels (N = 50)

Knowledge Level	Pre-test f (%)	Post-test f (%)
Poor	14 (28%)	1 (2%)

Average	36 (72%)	15 (30%)
Good	0 (0%)	34 (68%)
Total	50 (100%)	50 (100%)

Table 2: Comparison of Mean Pre-test and Post-test Knowledge Scores (N = 50)

Test	Mean \pm SD	Mean Difference	t-value	p-value
Pre-test	11.52 \pm 3.72	-	-	-
Post-test	20.80 \pm 5.81	9.28	9.269	<0.001*

Comparison of Pre-test and Post-test Knowledge Scores

The mean pre-test knowledge score was 11.52 ± 3.72 , whereas the mean post-test knowledge score increased to 20.80 ± 5.81 . The mean difference of 9.28 indicates a considerable gain in knowledge following the structured teaching programme. Statistical analysis using a paired *t*-test revealed that this difference was highly significant ($p < 0.001$), confirming the effectiveness of the structured teaching programme in improving knowledge regarding neem therapy in chickenpox.

Association between Knowledge and Demographic Variables

The association between pre-test knowledge scores and selected demographic variables was analyzed using the chi-square test. The findings showed no statistically significant association between knowledge scores and variables such as age, gender, religion, place of residence, type of family, family income, or parental education and occupation ($p > 0.05$). However, a significant association was observed between pre-test knowledge scores and previous exposure to information about neem leaves ($p = 0.01$), indicating that prior academic or informational exposure contributed to better baseline knowledge.

Discussion

The present study was conducted to assess the effectiveness of a structured teaching programme on knowledge regarding the therapeutic effects of neem leaves in the treatment of chickenpox among nursing students. The findings clearly indicate that the educational intervention was successful in significantly improving students' knowledge levels.

The pre-test results revealed that the majority of nursing students possessed only average or poor knowledge regarding neem therapy, despite neem being widely used in traditional Indian households. This finding reflects a persistent gap between cultural health practices and formal scientific education. Similar observations were reported by Biswas et al. (2002), who noted that although neem is extensively used in traditional medicine, systematic scientific awareness among healthcare learners remains limited. This lack of formal knowledge may lead to uncertainty or inappropriate guidance when students encounter patients who rely on traditional remedies.

Following the structured teaching programme, a substantial improvement in post-test knowledge scores was observed, with most participants achieving good knowledge levels. This finding is consistent with the results of Girish and Shankara Bhat (2008), who emphasized that targeted educational interventions significantly enhance understanding of herbal and traditional medicines among healthcare students. The statistically significant improvement ($p < 0.001$) observed in the present study reinforces the effectiveness of structured and planned teaching strategies in strengthening knowledge.

Furthermore, Subapriya and Nagini (2005) highlighted that neem possesses antimicrobial, anti-inflammatory, and wound-healing properties, which support its traditional use in managing skin conditions. However, they also emphasized the importance of disseminating evidence-based information to prevent misconceptions. The present study aligns with this perspective, demonstrating that structured education can transform informal or anecdotal knowledge into scientifically informed understanding.

The absence of a significant association between most demographic variables and knowledge scores suggests that the effectiveness of the structured teaching programme was independent of age, gender, residence, or socioeconomic background. This finding indicates that well-designed educational interventions can be universally effective across diverse student populations. The significant association observed between pre-test knowledge and prior exposure to neem-related information further highlights the role of formal academic exposure in shaping baseline knowledge, as also noted in earlier educational studies on complementary and alternative medicine.

Overall, the findings of this study support the integration of evidence-based traditional medicine content into nursing education. By enhancing students' understanding of commonly used remedies such as neem, nursing curricula can promote culturally competent, holistic, and safe patient care. The study underscores the importance of structured teaching programmes as an effective strategy for bridging the gap between traditional practices and modern scientific knowledge.

References

- [1]. Badam, L., Joshi, S. P., & Bedekar, S. S. (1999). In Vitro Antiviral Activity of Neem (*Azadirachta Indica*) Leaf Extract Against Group B Coxsackieviruses. *Journal Of Communicable Diseases*, 31(2), 79–90.
- [2]. Biswas, K., Chattopadhyay, I., Banerjee, R. K., & Bandyopadhyay, U. (2002). Biological Activities and Medicinal Properties of Neem (*Azadirachta Indica*). *Current Science*, 82(11), 1336–1345.
- [3]. Dash, A. P., Bhatia, R., Sunyoto, T., & Mourya, D. T. (2013). Emerging And Re-Emerging Arboviral Diseases in Southeast Asia. *Journal Of Vector Borne Diseases*, 50(2), 77–84.
- [4]. Girish, K., & Shankara Bhat, S. (2008). Neem – A Green Treasure. *Electronic Journal of Biology*, 4(3), 102–111.
- [5]. Subapriya, R., & Nagini, S. (2005). Medicinal Properties of Neem Leaves: A Review. *Current Medicinal Chemistry – Anti-Cancer Agents*, 5(2), 149–156.
- [6]. Anonymous. (2023). Medicinals – Neem. In *Medicinal Plants: Biology, Biotechnology and Industrial Applications*. National Center for Biotechnology Information.
- [7]. Beulah, V. K., & Kadir, V. (2019). Effectiveness of structured teaching programme on knowledge and practice of basic life support among nursing students. *International Journal of Nursing Education and Research*, 7(2), 186–188.
- [8]. Parida, M. M. (2002). Inhibitory potential of neem (*Azadirachta indica*) against viral infections. *Journal of Virological Methods*.
- [9]. Patole, L. N. (2023). A review article of chickenpox management via Ayurveda. *Journal of Pediatric Dermatology and Therapeutics*.
- [10]. Srivastava, S., & Singh, S. (2023). A review on antiviral potential of neem against different viruses. *World Journal of Advance Healthcare Research*.
- [11]. Vijaya Kumar, S., & Thoudam, K. D. (2018). Effectiveness of structured teaching programme on knowledge regarding evidence-based practice among undergraduate nursing students. *Journal of Education Technology in Health Sciences*, 5(2), 107–109.
- [12]. Guleria, K. (2021). Effectiveness of structured teaching program on knowledge regarding [topic]. *International Journal of Nursing Education and Research*.