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Article

Survey on the Perception of Sangam Literature-Based Medical and Botanical Knowledge among Higher Education Students

S. Kanagasundari[1], M. Jasmin Uhanitha[2], Alam Jahaan[3], V. Sudha[4], T. Priya[5], A. Rosaline Mary[6]

[1] Aiman College of Arts and Science for Women, Tiruchirappalli – 620021, Tamil Nadu, India.
[2]Department of FSM&D, Aiman College of Arts and Science for Women, Tiruchirappalli – 620021, Tamil Nadu, India.
[3]Department of Computer Application, Aiman College of Arts and Science for Women, Tiruchirappalli – 620021, Tamil Nadu, India.
[4] Aiman College of Arts and Science for Women, Tiruchirappalli – 620021, Tamil Nadu, India.
[5] Aiman College of Arts and Science for Women, Tiruchirappalli – 620021, Tamil Nadu, India.
[6] Kalai Kaviri College of Fine Arts, Tiruchirappalli – 620001, Tamil Nadu, India.

Abstract: This study explores the perception of Sangam literature-based medical and botanical knowledge among higher education students. Sangam literature contains rich references to traditional medicine, herbal practices, and ecological wisdom. The objective of this survey is to understand awareness, interest, and academic relevance of this knowledge among UG and PG students. A total of 850 students were surveyed, including 650 undergraduate and 200 postgraduate students across arts and science disciplines. The study examines awareness, interest, and perception using statistical tools such as percentage analysis, Chi-square test, t-test, and ANOVA. The findings reveal significant differences between UG and PG students, with PG students showing higher levels of awareness, interest, and scientific perception. The findings reveal moderate awareness but high interest in integrating traditional knowledge into modern education. The study highlights the need for curriculum enrichment and interdisciplinary research on indigenous knowledge systems.
Keywords: Sangam, Literature, Medicine, botanical knowledge.

1. Introduction

Sangam literature, one of the oldest Tamil literary traditions, provides extensive references to nature, medicinal plants, food practices, and healing methods. These texts reflect an early understanding of botany and traditional medicine. In the modern educational context, such indigenous knowledge systems are often underrepresented.

Higher education students represent a key group in preserving and re-evaluating traditional knowledge. Understanding their perception helps in integrating cultural heritage with scientific learning. This study focuses on how UG and PG students perceive Sangam literature-based medical and botanical knowledge.

2. Statement of the Problem

Despite the richness of Sangam literature in documenting medicinal and botanical knowledge, there is limited awareness among higher education students regarding its scientific and cultural significance. This study aims to identify the level of perception and interest among students and explore whether such knowledge can be effectively integrated into academic curricula.

3. Objectives of the Study

1. To assess awareness of Sangam literature-based medical and botanical knowledge among students.

2. To analyze interest in traditional knowledge systems.
3. To compare UG and PG students' perception levels.
4. To examine differences based on age groups and disciplines.
5. To suggest ways to integrate indigenous knowledge into higher education.

4. Hypotheses of the Study

Hypothesis 1

- H_{01}: There is no significant difference in awareness between UG and PG students.
- H_{11}: There is a significant difference in awareness between UG and PG students.

Hypothesis 2

- H_{02}: There is no significant difference in interest between UG and PG students.
- H_{12}: There is a significant difference in interest between UG and PG students.

Hypothesis 3

- H_{03}: There is no significant difference in perception of scientific validity between UG and PG students.
- H_{13}: There is a significant difference in perception between UG and PG students.

Hypothesis 4

- H_{04}: There is no significant difference among age groups.
- H_{14}: There is a significant difference among age groups.

Hypothesis 5

- H_{05}: There is no significant difference between Arts and Science students.
- H_{15}: There is a significant difference between Arts and Science students.

5. Methodology

- **Research Design:** Descriptive survey method
- **Population:** Higher education students
- **Sample Size:** 850 students
    - Undergraduate (UG): 650
    - Postgraduate (PG): 200
- **Age Groups:**
    - 17–20 years
    - 20–22 years
    - 23–30 years
- **Disciplines:** Arts and Science
- **Sampling Technique:** Stratified random sampling
- **Tool Used:** Structured questionnaire
- **Data Analysis:** Percentage method and comparative analysis

6. Data Analysis

Table 1: Category wise Distribution

Category	Number of Students
UG Students	650
PG Students	200
Total	850

Table 2: Age-wise Distribution

Age Group	UG	PG	Total
17–20	420	20	440
20–22	200	90	290
23–30	30	90	120

Table 3: Discipline-wise Distribution

Discipline	UG	PG	Total
Arts	350	110	460
Science	300	90	390

7. Data Analysis and Interpretation

Table 4: Awareness of Sangam Medical Knowledge

Group	N	Mean	Std. Deviation
UG Students	650	2.22	0.72
PG Students	200	2.55	0.68

Interpretation: PG students show higher awareness than UG students, indicating academic exposure increases familiarity with traditional knowledge.

The mean score of PG students (2.55) is higher than UG students (2.22), indicating that PG students have greater awareness of Sangam-based medical knowledge. The standard deviation values show moderate variability among both groups.

Table 5 Interest in Learning Sangam Botanical Knowledge

Group	N	Mean	Std. Deviation	Interest Level	UG (%)	PG (%)
UG Students	650	2.40	0.75	High Interest	55%	68%
PG Students	200	2.58	0.70	Moderate	30%	22%
				Low	15%	10%

Interpretation: Most students expressed strong interest, especially PG students, showing potential for curriculum inclusion. PG students show slightly higher interest compared to UG students. The results indicate that interest in traditional botanical knowledge increases with higher education level.

Table 6: Perception of Scientific Validity

Group	N	Mean	Std. Deviation	Opinion	UG (%)	PG (%)

UG Students	650	2.31	0.78	Scientifically Relevant	48%	62%
PG Students	200	2.49	0.73	Partially Relevant	35%	25%
				Not Relevant	17%	13%

Interpretation: A majority consider Sangam knowledge scientifically relevant or partially relevant, indicating acceptance of indigenous science. Both UG and PG students perceive Sangam knowledge as scientifically relevant, but PG students show stronger agreement.

Table 7: Usefulness in Modern Education

Response	Percentage
Very Useful	52%
Useful	33%
Not Useful	15%

Table 8: Chi-Square Test: Awareness vs Level of Study (UG/PG)

Value	df	Asymp. Sig. (p-value)
37.75	2	0.000

Interpretation: Since $p < 0.05$, there is a **statistically significant association** between level of study and awareness. PG students have significantly higher awareness than UG students.

Table 9: Chi-Square Test: Interest vs Level of Study

Value	df	Asymp. Sig. (p-value)
10.57	2	0.005

Interpretation: There is a **significant relationship** between level of study and interest in Sangam botanical knowledge. PG students show higher interest.

Table 10: Chi-Square Test: Perception vs Level of Study

Value	df	Asymp. Sig. (p-value)
12.06	2	0.002

Interpretation: The perception of scientific validity significantly differs between UG and PG students. PG students are more likely to consider Sangam knowledge scientifically valid.

7.1 Independent Sample t-Test

Hypothesis 1: Awareness Difference between UG and PG Students

- **Null Hypothesis (H_0):** There is no significant difference in awareness between UG and PG students.
- **Alternative Hypothesis (H_1):** There is a significant difference in awareness between UG and PG students.

Table 11: Group Statistics

Group	N	Mean	Std. Deviation
UG	650	2.22	0.72
PG	200	2.55	0.68

Table 12:t-Test Results

t-value	df	Sig. (2-tailed)
5.87	848	0.000

Interpretation: Since $p < 0.05$, the null hypothesis is rejected. There is a **significant difference** between UG and PG students in awareness. PG students have higher awareness.

7.2 Hypothesis 2: Interest in Sangam Botanical Knowledge

Table 13: Group Statistics

Group	N	Mean	Std. Deviation
UG	650	2.40	0.75
PG	200	2.58	0.70

Table 14: t-Test Results

t-value	df	Sig. (2-tailed)
3.21	848	0.001

Interpretation: Since $p < 0.05$, there is a **significant difference** in interest levels. PG students show greater interest than UG students.

7.3 Hypothesis 3: Perception of Scientific Validity

Table 15: Group Statistics

Group	N	Mean	Std. Deviation
UG	650	2.31	0.78
PG	200	2.49	0.73

Table 16: t-Test Results

t-value	df	Sig. (2-tailed)
2.98	848	0.003

Interpretation: There is a **significant difference** in perception. PG students are more likely to consider Sangam knowledge scientifically valid.

7.4 One-Way ANOVA (Age Group Analysis)

Hypothesis 4: Difference Based on Age Groups

- **H_0:** No significant difference among age groups
- **H_1:** Significant difference exists

Table 17: ANOVA Table (Awareness vs Age Group)

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.84	2	6.42	4.15	0.016
Within Groups	1312.50	847	1.55		
Total	1325.34	849			

Interpretation: Since $p < 0.05$, there is a **significant difference among age groups**. Older students (23–30) tend to have higher awareness.

7.5 ANOVA (Discipline-wise Comparison)

Hypothesis 5: Arts vs Science Students

Table 18: ANOVA Table

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	8.26	1	8.26	3.92	0.048
Within Groups	1785.40	848	2.10		
Total	1793.66	849			

Interpretation: Since $p < 0.05$, there is a **significant difference between Arts and Science students**. Arts students show slightly higher perception towards Sangam knowledge.

8. Overall Interpretation of Inferential Analysis

The overall inferential statistical analysis using t-tests and ANOVA reveals significant differences between undergraduate (UG) and postgraduate (PG) students in terms of awareness, interest, and perception of Sangam literature-based medical and botanical knowledge. Across all variables, PG students consistently demonstrate higher mean scores, indicating a deeper level of understanding and stronger acceptance of traditional knowledge systems. The ANOVA results further indicate that age and academic discipline significantly influence perception, with older students showing greater awareness and Arts students displaying slightly higher inclination toward indigenous knowledge. The low p-values ($p < 0.05$) across all tests confirm that these differences are statistically significant and not due to chance. Overall, the findings highlight that educational level, age, and academic background play a crucial role in shaping students' perceptions, emphasizing that higher education and academic exposure positively influence the understanding and appreciation of indigenous knowledge systems.

9. Findings

1. PG students have higher awareness than UG students.
2. Arts students show slightly more interest than science students in cultural knowledge.
3. Majority of students support integrating Sangam knowledge into education.
4. Awareness is moderate overall, indicating scope for improvement.
5. Students recognize the ecological and medicinal relevance of traditional knowledge.

10. Limitations of the Study

1. Study limited to 850 students only.
2. Restricted to selected age groups and disciplines.
3. Responses may include subjective bias.
4. Limited geographical coverage.
5. Time constraints restricted deeper qualitative analysis.

11. Conclusion

The study concludes that although awareness of Sangam literature-based medical and botanical knowledge is moderate among higher education students, interest and acceptance are high. Postgraduate (PG) students demonstrate a better understanding compared to undergraduate (UG) students. The findings strongly suggest the need to integrate traditional ecological and medicinal knowledge into modern curricula. Such integration can preserve cultural heritage while enriching scientific learning and promoting sustainable knowledge systems.

The study also confirms that educational level significantly influences students' perception of Sangam literature-based knowledge. There is strong support for integrating traditional medical and botanical knowledge into modern academic curricula to promote sustainable and culturally rooted education.

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