

A Study to Assess the Effectiveness of Video Assisted Teaching (VAT) on Knowledge on Mobile Reef Gardens for Ocean Conservation and Promoting Job Opportunities among coastal Communities, Puducherry.

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HOW TO CITE: | ABSTRACT:

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Background: Coastal communities depend strongly on marine resources for food, employment and livelihood. Environmental degradation, climate variability and declining marine resources create a need for accessible community education on ocean conservation. Video Assisted Teaching (VAT) Can provide visual and structured learning about Mobile Reef Gardens, marine conservation and related livelihood opportunities.

Aim

To assess the effectiveness of Video Assisted Teaching on Knowledge regarding Mobile Reef Gardens for Ocean Conservation and Promoting Job Opportunities among coastal community participants at M.Pudukuppam, Puducherry.

Methods

A quantitative, pre-experimental one-group pre-test and post –test design was used. Sixty –two coastal community participants were selected by non-probability purposive sampling. Data were collected using a demographic schedule and 20-item structured knowledge questionnaire. A VAT programme covering Mobile Reef Gardens, ocean conservation, artificial reef technology, marine biodiversity, sustainable fisheries ,environmental protection , livelihood opportunities and community participation was administered after the pre-test . A post-test was conducted after seven days.

Descriptive statistics, paired t-test and chi-square test were used.

Results

In the pre-test, 40 (64.5 %) participants had inadequate knowledge, 20 (32.3%) had moderately adequate knowledge and 2 (3.2%) had adequate knowledge. In the post-test, 2 (3.2%) had inadequate knowledge, 18 (29.0 %) had moderately adequate knowledge and 42 (67.8%) had adequate knowledge. The mean knowledge score increased from 8.52 ± 2.41 to 16.91 ± 1.86 , with a mean difference of 8.39. The paired t-test value was 27.84 (df = 61, $p < 0.00$), demonstrating a statistically significant improvement. Educational status ($\chi^2 = 13.284$, $p = 0.039$) and source of previous knowledge ($\chi^2 = 10.842$, $p = 0.004$) were significantly associated with pre-test knowledge.

Conclusion:

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The findings indicate that VAT was highly effective in improving knowledge regarding Mobile Reef Gardens, ocean conservation and related job opportunities among the coastal community participants. Community - based audiovisual education may be useful strengthening awareness and participation in sustainable marine conservation.

Keywords: Video Assisted Teaching; Mobile Reef Gardens; Ocean Conservation; Coastal Communities; Knowledge; Marine Conservation; Job Opportunities; Puducherry.

Introduction

Coastal communities depend on fishing, aquaculture, tourism and other marine activities for their livelihoods. However, pollution, overfishing, climate change and coastal erosion threaten marine ecosystems and the quality of life of these communities.

Healthy oceans support fisheries, biodiversity, coastal protection and climate regulation. Conservation activities such as mangrove restoration, sustainable fishing and marine ecotourism can protect the environment and create alternative job opportunities.

Mobile Reef Gardens are movable artificial reef structures designed to improve marine biodiversity, provide fish habitats and restore coastal ecosystems. Video-assisted teaching (VAT) uses video, illustration and demonstration to make learning easier. Therefore, this study assessed the effectiveness of VAT in improving knowledge about mobile reef gardens, ocean conservation and employment

opportunities among coastal communities in Puducherry.

Need for the study

Coastal Communities depend on marine resources for food and employment, but climate change, ocean pollution, coral reef degradation and declining fish resources threaten their livelihoods. In India, Tamil Nadu and Puducherry, awareness of ocean conservation and reef restoration is essential. Therefore, Video-Assisted Teaching [VAT] may help improve knowledge about Mobile Reef Gardens, ocean conservation and sustainable job opportunities among coastal communities in Puducherry.

Statement of the problems

A Study to Assess the Effectiveness of Video Assisted Teaching (VAT) on Knowledge on Mobile Reef Gardens for Ocean Conservation and Promoting Job Opportunities among Coastal Communities, Puducherry.

Objectives

To assess the level of knowledge on Mobile Reef Gardens for ocean conservation and promoting job opportunities among coastal communities.

- o assess the effectiveness of VAT on knowledge regarding Mobile Reef Gardens for ocean conservation and promoting job opportunities among coastal communities.
- o associate the pre-test level of knowledge on Mobile Reef Gardens for ocean conservation and promoting job opportunities among coastal communities with selected demographic variables.

Materials and Methods

Research Approach and Design

A quantitative research approach and a pre – experimental one- group pre-test and post-test research design were adopted.

Setting and Population

The study was conducted among coastal community people residing at M.Pudukuppam, Puducherry. The target population comprised coastal community people residing in the selected area.

Sample and Sampling

The sample consisted of 62 coastal community participants who fulfilled the selection criteria and were willing to participate. Non-probability purposive sampling was used.

Selection Criteria

Inclusion criteria included participants operating in coastal communities, willing to participate and available during data collection. The source manuscript also lists exclusion criteria concerning physical injuries, musculoskeletal disorders or skin problems, absence during data collection, previous participation in similar educational programmes or studies related to Mobile Reef Gardens.

Research Tool

Selection A contained demographic variables: age, gender, religion, educational status, occupation, type of family, income and source of information. Selection B contained a 20-item multiple –choice structured knowledge questionnaire . Each correct answer received one mark and each incorrect answer received zero; the total possible score was 507-514.

Knowledge was categorized as inadequate (507-514), moderately adequate (507-514) and adequate (507-514).

Validity and Reliability

Content validity was established through expert opinions from Community Health Nursing, Medical –Surgical Nursing and Marine Environmental Sciences. Reliability was established by the test-retest method, with a reported reliability coefficient of $r=0.82$.

Ethical Considerations

The source manuscript reports approval by the Institutional Research Committee and Institutional Ethics Committee. Formal permission was obtained from the concerned authorities. Written informed consent was obtained from participants, and confidentiality, anonymity, privacy and the right to withdraw were assured.

Data Collection Procedure

After permission and informed consent, a pre-test was conducted using the structured knowledge questionnaire. Immediately afterward, VAT was administered. The educational session addressed Mobile Reef Gardens, ocean conservation, artificial reef construction, marine biodiversity, sustainable fishing, environmental conservation, livelihood opportunities and community participation. The session used video presentation followed by discussion and clarification of doubts. After seven days, the same questionnaire was administered as the post-test.

Data Analysis

Frequency and percentage were used for demographic and knowledge –level distribution. Mean and standard deviation were used for knowledge scores. Paired t-test was used to

compare pre –test and post-test scores. Chi-square test was used to assess association between pre-test knowledge and selected demographic variables. The source manuscript states that the data were entered and analyzed using SPSS Version 25 in Chapter V.

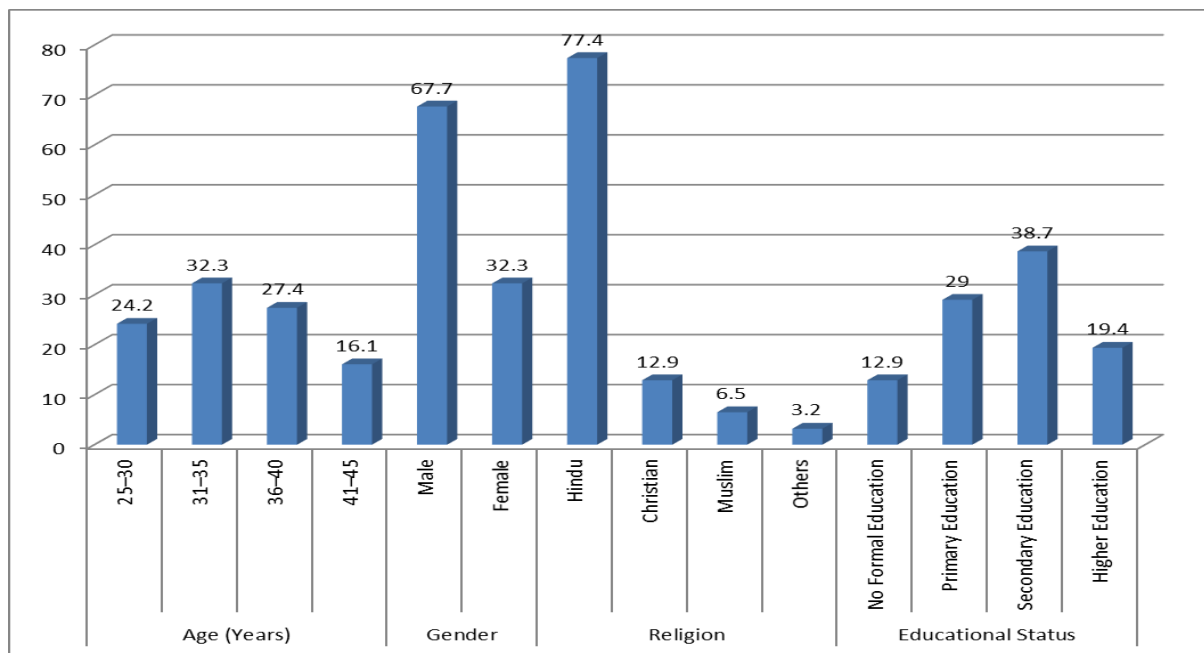
Results

Demographic characteristics

Characteristics

Variable	Category	n	%
Age	25–30 years	15	24.2
	31–35 years	20	32.3
	36–40 years	17	27.4
	41–45 years	10	16.1
Gender	Male	42	67.7
	Female	20	32.3
Religion	Hindu	48	77.4
	Christian	8	12.9
	Muslim	4	6.5
	Others	2	3.2
Education	No formal education	8	12.9
	Primary	18	29.0
	Secondary	24	38.7
	Higher	12	19.4
Occupation	Deep sea fisherman	14	22.6
	Capture fisherman	16	25.8
	Coastal fisherman	24	38.7
	Inland fisherman	8	12.9
Family	Nuclear	36	58.1
	Joint	20	32.3
	Extended	6	9.7
Monthly income	Below ₹40,000	20	32.3
	₹40,000–50,000	18	29.0
	₹50,000–60,000	16	25.8
	₹60,000–70,000	8	12.9
Previous source of knowledge	Yes	22	35.5

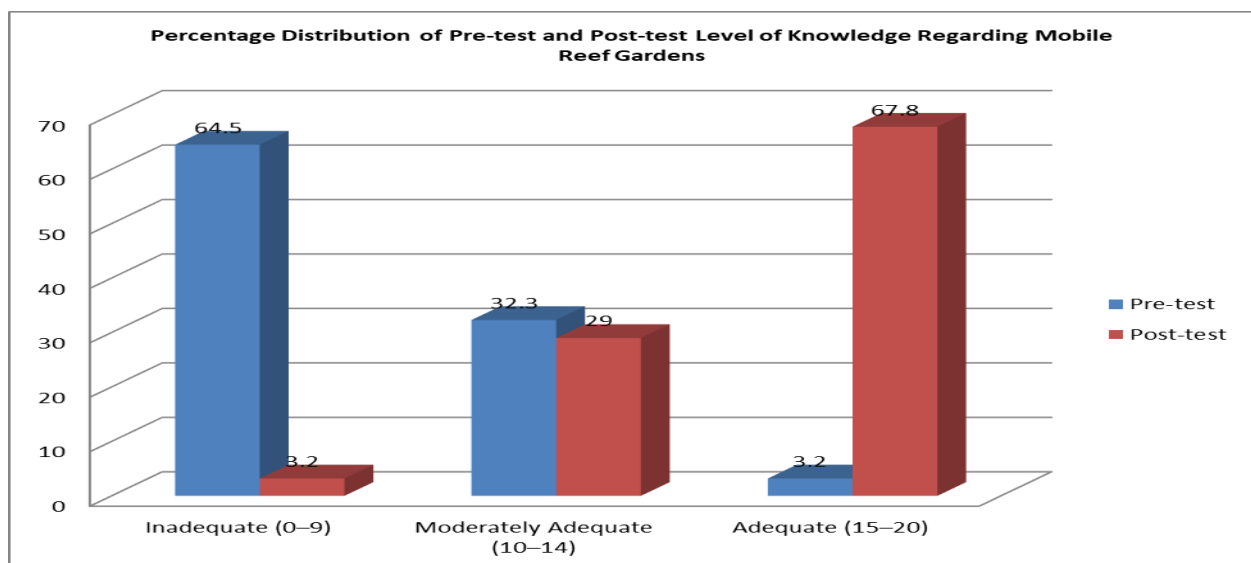
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Pre-test and post –test knowledge

Knowledge level	Pre-test n	Pre-test %	Post-test n	Post-test %
Inadequate (0–9)	40	64.5	2	3.2
Moderately adequate (10–14)	20	32.3	18	29.0
Adequate (15–20)	2	3.2	42	67.8
Total	62	100	62	100

The pre-test showed predominantly inadequate knowledge ,whereas the post-test showed a marked shift toward adequate knowledge.

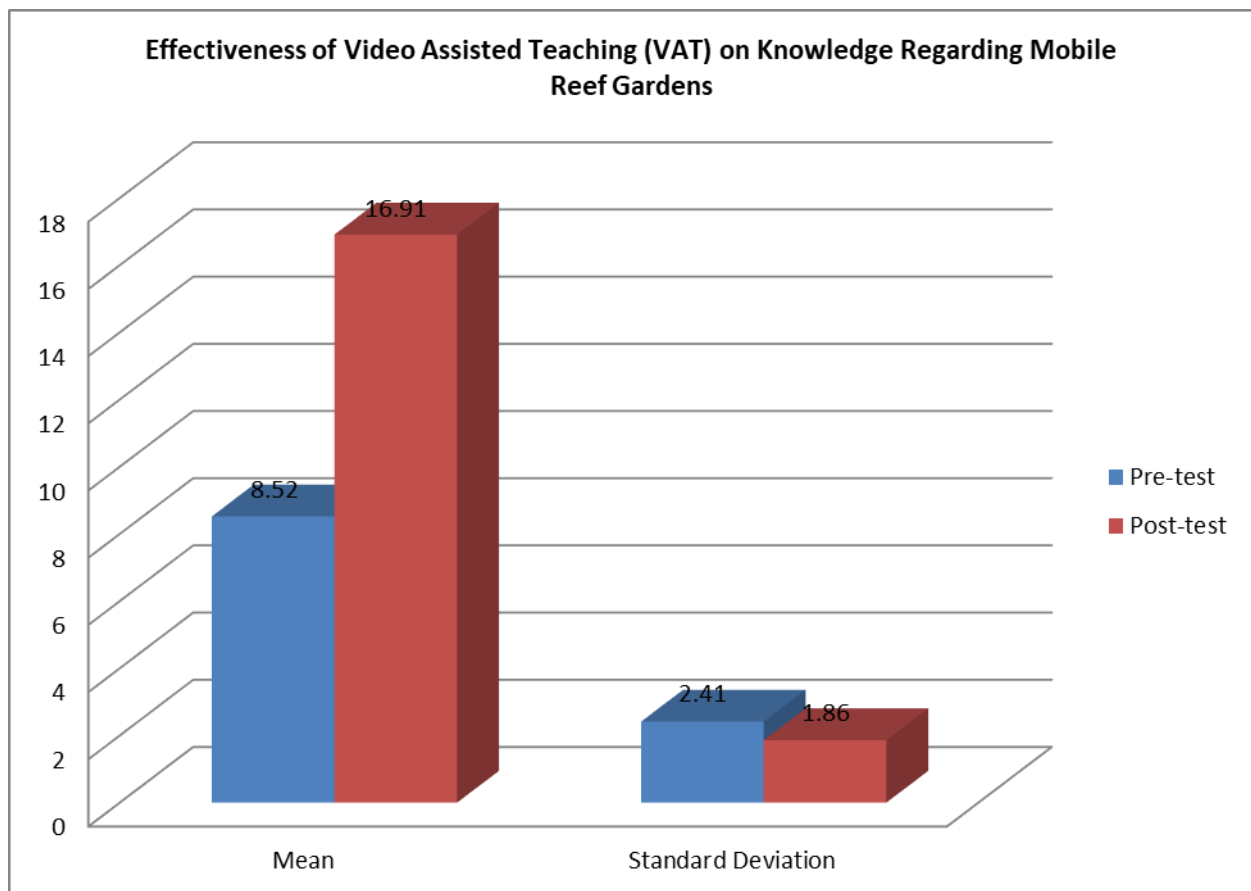


Mean Knowledge Scores

Assessment	Mean	SD
Pre-test	8.52	2.41
Post-test	16.91	1.86

Effectiveness of VAT

Assessment	Mean	SD	Mean difference	t	p
Pre-test vs Post-test	8.52 vs 16.91	2.41 vs 1.86	8.39	27.84	<0.001

**Association with Selected Demographic Variables**

Variable	χ^2	df	p-value / interpretation
Age	2.631	6	0.854, NS
Gender	1.752	2	0.416, NS
Religion	2.408	6	0.878, NS
Educational status	13.284	6	0.039, Significant
Occupation	4.785	6	0.571, NS
Type of family	0.748	4	0.945, NS

Monthly income	12.416	6	0.053, NS
Source of knowledge	10.842	2	0.004, Significant

Educational status and source of previous knowledge were significantly associated with pre-test knowledge. Age, gender, religion, occupation, type of family and monthly income were not statistically significant.

Discussion

The Study demonstrated a significant improvement in participants knowledge after Video-Assisted Teaching [VAT]. Before the intervention, 64.5% had inadequate knowledge, while only 3.2% had adequate knowledge. After the intervention, 68.8% achieved adequate knowledge, and the mean score increased from 8.52 to 16.91. The paired t-test showed a significant difference [$t=27.84$, $p<0.001$], confirming the effectiveness of VAT. Visual demonstration, illustrations and simple explanations may have helped improve understanding and knowledge retention. Educational status and previous sources of knowledge were significantly associated with pre-test knowledge, while other demographic variables showed no significant association.

Summary

The study was undertaken to assess the effectiveness of VAT on knowledge regarding Mobile Reef Gardens for Ocean Conservation

and Promoting Job Opportunities among coastal communities at M.Pudukuppam, Puducherry . A quantitative pre-experimental one-group pre-test and post-test design was used with 62 participants selected by purposive sampling. A20 –item structured knowledge questionnaire was administered before and seven days after the VAT programme

The principal findings was a substantial improvement in knowledge. The mean score increased from 8.52 $\pm$ 2.41 in the pre-test to 16.91 $\pm$ 1.86 in the post test. The paired t-test demonstrated a highly significant difference ($t=27.84$, $df=61$, $p<0.001$). Educational status and source of previous knowledge were significantly associated with baseline knowledge.

Conclusion

Within the conditions of this study, Video Assisted Teaching was highly effective in improving knowledge regarding Mobile Reef Gardens, ocean conservation and related job opportunities among coastal community participants. The findings support the use of structured audiovisual community education as a practical strategy for strengthening awareness of sustainable marine conservation and livelihood opportunities.

References

- Ahmed N, Thompson S, Glaser M. Community participation in coastal resource management: A review of sustainable livelihood approaches. *Marine Policy*.2023;150:105497.
- Food and Agriculture Organization. The State of World Fisheries and Aquaculture 2022: Towards Blue Transformation. FAO; 2022.
- Gyrney GG, Cinner JE, Ban NC, Pressey RL, Polnac R, Campbell SJ, et al. Poverty and protected areas: An evaluation of a marine integrated conservation and development project. *Global Environmental Change*. 2021;67:102222.
- Hilborn R, Amoroso RO, Anderson CM, Baum JK, Branch TA, Costello C, et al. Effective fisheries management instrumental in improving fish stock status. *Proceedings of the National Academy of Sciences*. 2020;117(4):507-514.
- .Intergovernmental Oceanographic Commission of UNESCO. The United Nations Decade of Ocean Science for Sustainable Development (507-514).
- .International Union for Conservation of Nature. Nature-based solutions for coastal resilience. IUCN; 2022.

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- Kumar R, Singh A. Effectiveness of video-assisted teaching on environmental conservation among coastal communities. *International Journal of Community Health Nursing*. 2023;11(2):507-514.
- Lal P, Lim-Applegate H, Scoccimarro M. Sustainable coastal livelihood through community participation in marine conservation. *Ocean & Coastal Management*. 2021;208:105640.
- Marine Conservation Society. Marine conservation and sustainable fisheries. 2023.
- Ministry of Earth Sciences, Government of India. Blue economy and coastal resource management in India. 2023.
- National Oceanic and Atmospheric Administration. Artificial reefs. 2023.
- Prakash S, Joseph M, Rajan R. Knowledge regarding artificial reef technology among fishermen in coastal Tamil Nadu. *International Journal of Fisheries and Aquatic Studies*. 2024;12(1):507-514.
- Rao P, Menon K. Community awareness on marine biodiversity conservation among coastal populations. *Indian Journal of Public Health Research & Development*. 2022;13(4):507-514.
- Sharma V, Gupat P, Kaur R. Educational intervention on environmental conservation among coastal residents: A quasi-experimental Study. *Journal of Environmental Education*. 2023;54(3):507-514.
- United Nations Environment Programme. Making peace with nature. UNEP; 2021.
- UNESCO. Ocean literacy for all: Toolkit. UNESCO; 2022.
- United Nations. Sustainable Development Goal 14: Life below water. 2023.
- World Bank. Blue economy for resilient coastal communities. World Bank; 2022.
- World Wildlife Fund. Protecting marine ecosystems and coastal biodiversity. 2023.
- Yadav S, Kumar P, Thomas J. Effectiveness of Video-assisted teaching on knowledge regarding marine ecosystem restoration among coastal communities. *Asian Journal of Nursing Education and Research*. 2024;14(1):507-514.