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Awareness and Attitude regarding eSanjeevani Programme among Beneficiaries and Health Care Professionals in Kottayam District

Jithin Jose[1], Gayathri P V[2]

Abstract: ***Background**: eSanjeevani, India's national telemedicine service, has expanded access to remote consultation and specialist services, particularly for people living in rural and underserved settings. However, availability of a digital health service does not necessarily ensure adequate awareness, acceptance, or effective utilization. **Objective**: To assess awareness and attitude regarding the eSanjeevani programme among beneficiaries and health care professionals in Kottayam district, determine the correlation between awareness and attitude and examine associations with selected variables. **Methods**: A quantitative, non-experimental descriptive survey design was adopted. The study included 108 beneficiaries from selected sub-centres of Ettumanoor and Athirampuzha Family Health Centres and 108 health care professionals from selected health centres of Ettumanoor and Pampady blocks. Participants were selected using multistage random sampling. Data were collected using socio-personal data sheets, structured awareness questionnaires and attitude rating scales. Descriptive statistics, Spearman rank correlation and chi-square tests were used. **Results**: Among beneficiaries, 36.1% had good, 56.5% average and 7.4% poor awareness. Among health care professionals, 15.7% had good, 74.1% average and 10.2% poor awareness. Unfavourable attitude was observed among 52.8% of beneficiaries, whereas 53.7% of health care professionals had favourable attitude. Awareness and attitude showed a strong positive correlation in both groups. Beneficiary awareness was significantly associated with age, education, occupation, economic status, monthly family income and computer literacy. Health care professionals' awareness was not significantly associated with the selected variables. However, their attitude was significantly associated with selected educational, occupational and computer-literacy variables. Fifty six percent of beneficiaries were not satisfied with the application, while sixty percent of health care professionals were satisfied. **Conclusion**: Awareness of eSanjeevani was predominantly average in both groups. Improving awareness, digital literacy, technical support and service accessibility may strengthen attitudes and promote more effective use of eSanjeevani.*

Keywords: Awareness, Attitude, eSanjeevani programme, Beneficiaries, Health care professionals

1. Introduction

Telemedicine has become an increasingly important component of contemporary health care delivery because it can extend clinical services beyond the physical boundaries of hospitals and conventional outpatient departments. Its value is particularly evident for populations who experience geographical, economic or mobility related barriers to face to face care. In India, the National Telemedicine Service, eSanjeevani, represents an important digital health initiative intended to improve access to doctors and specialists and contribute to universal health coverage.

Although telemedicine existed in India before the COVID-19 pandemic, its routine use was comparatively limited. The pandemic, social distancing requirements and restrictions on movement accelerated the adoption of remote consultations. India's Telemedicine Practice Guidelines, issued on 25 March 2020, provided a regulatory framework addressing important issues such as the physician–patient relationship, consent, continuity of care, medical records, privacy and security. eSanjeevani subsequently became an important mechanism for providing outpatient consultations without requiring patients to travel to health facilities.

eSanjeevani operates through patient to doctor and provider supported teleconsultation models. It can facilitate access to speciality services and electronic prescriptions and is particularly relevant to older adults, patients receiving palliative care, people with chronic conditions and individuals living in remote areas. At the primary care level, community health officers and other frontline workers can support beneficiaries in accessing teleconsultations. This may reduce unnecessary referrals and travel while improving linkage with qualified medical professionals.

The relevance of telemedicine is heightened by the uneven distribution of health care resources between urban and rural communities. People living in remote locations may postpone or avoid consultation because of transport costs, distance, limited specialist availability and other socioeconomic barriers. Evidence from India and other countries indicates that awareness of telemedicine is variable and that positive attitudes may coexist with limited knowledge or actual use. A rural Karnataka study involving 273 participants reported that only 2.2% were aware of teleconsultation, although 56% were willing to use eSanjeevani OPD. Lack of familiarity was the major reported barrier. These findings illustrate the difference between the availability of a digital health service and the community's ability and willingness to use it.

Healthcare professionals are equally important to the successful implementation of telemedicine. Their awareness, technical competence, confidence, clinical judgment and attitude can influence the quality and sustainability of digital consultation services. Indian evidence suggests that health professionals generally recognize the usefulness of telemedicine, but gaps remain in practical skills and familiarity with formal practice guidance. Continuous orientation and training are therefore important components of telemedicine implementation.

Kerala provides a favourable context for digital health because of relatively high levels of literacy, connectivity and adoption of information technology. Nevertheless, digital

health programmes may still encounter barriers at the local level. The study setting in Kottayam district represents a community based primary health care environment in which eSanjeevani is available but beneficiaries may have limited understanding of its features, procedures and potential benefits. The investigator observed a need to strengthen awareness and attitudes among both beneficiaries and health care professionals.

2. Problem Statement

Awareness and attitude regarding eSanjeevani programme among beneficiaries and health care professionals in Kottayam district.

Aim

The study aimed to assess awareness and attitude regarding the eSanjeevani programme among beneficiaries and health care professionals and to identify factors associated with awareness and attitude.

Objectives

- To assess the awareness regarding eSanjeevani programme among beneficiaries and health care professionals
- To determine attitude regarding eSanjeevani programme among beneficiaries and health care professionals
- To find out the correlation between awareness and attitude regarding eSanjeevani programme among beneficiaries and health care professionals
- To find out the associations of awareness and attitude regarding eSanjeevani programme among beneficiaries and health care professionals with selected variables.

Research Hypothesis

H_1: There is a significant correlation between awareness and attitude regarding the eSanjeevani programme among beneficiaries and health care professionals

H_2: There is a significant association between awareness regarding the eSanjeevani programme among beneficiaries and health care professionals with selected variables

H_3: There is significant association between attitude regarding eSanjeevani programme among beneficiaries and health care professionals with selected variables

3. Methodology

3.1 Research design and setting

A quantitative research approach and non- experimental descriptive survey design were used. The study was conducted among eSanjeevani beneficiaries residing in Ettumanoor municipality and Athirampuzha panchayat and among health care professionals providing eSanjeevani services in selected health centres of Kottayam district. Beneficiary data were collected through six selected sub-centres associated with Ettumanoor and Athirampuzha Family Health Centres. Health care professionals were recruited from selected health centres under Ettumanoor and Pampady blocks.

3.2 Population and Sample

The population comprised beneficiaries of eSanjeevani programme residing in the selected community areas and registered health care professionals providing eSanjeevani services. The final sample consisted of 216 participants: 108 beneficiaries and 108 health care professionals. Multistage random sampling was used. Kottayam taluk and Ettumanoor block were selected by lottery method for the beneficiary component, followed by selection of Family Health Centres and sub centres. Health care professionals were selected from Ettumanoor and Pampady blocks.

Eligibility criteria

Beneficiaries were adults aged 18 years and above who could comprehend Malayalam. Individuals with visual or hearing deficits and those with major mental illness were excluded. Health care professionals were registered professionals who had provided health services through eSanjeevani programme for at least one month.

Sample size

Sample size was calculated using the standard deviation and mean from a previous telemedicine study, with the allowable error taken as 10% of the mean. The calculated sample size was 108 in each group, giving a total sample of 216.

Ethical and administrative considerations

Administrative permissions were obtained from the District Medical Officer, National Health Mission authorities and the medical officers of the selected health centres. Participants were informed about the purpose of the study, confidentiality and voluntary participation. Informed consent was obtained before data collection.

Data collection instruments

Three categories of instruments were used.

Tool 1 consisted of socio personal data.

Tool 2 was a structured awareness questionnaire containing 23 items covering general information, technical information and services. Each correct answer received one mark. Awareness was categorized as good (15–23), average (7–14) or poor (0–6).

Tool 3 was a 13-item attitude rating scale using four response options scored from 1 to 4. Scores of 32–52 were classified as favourable and 13–31 as unfavourable.

Data collection

Data were collected after informed consent and assurance of privacy and confidentiality. Beneficiaries completed the socio personal sheet, awareness questionnaire and attitude scale. An information booklet on eSanjeevani programme was provided after data collection. Health care professionals completed the self- administered questionnaires through electronic forms.

Statistical analysis

Frequency and percentage were used to describe socio personal characteristics and levels of awareness and attitude. Spearman rank correlation was used to determine the

relationship between awareness and attitude. Chi square tests were used to examine associations between awareness/ attitude and selected variables. Statistical significance was interpreted at the 0.05 level.

4. Results

Participant Characteristics

Sample characteristics	Category	Beneficiaries		Health care professionals	
		f	%	f	%
Age in years	18–39 / 18–32	48	44.5	18	16.7
	40–59 / 33–45	43	39.8	75	69.4
	≥60 / 46–60	17	15.7	15	13.9
Gender	Male	33	30.6	12	11.1
	Female	75	69.4	96	88.9
Type of family	Nuclear	97	89.8	—	—
	Joint	11	10.2	—	—
Religion	Hindu	56	51.9	—	—
	Christian	41	38.0	—	—
	Muslim	11	10.1	—	—
Education / Professional education	Primary education	14	13.0	—	—
	High school	17	15.7	—	—
	Higher secondary	13	12.0	—	—
	Degree or above	49	45.4	—	—
	Professional/technical	15	13.9	—	—
	Diploma in Nursing	—	—	53	49.1
	B.Sc. Nursing	—	—	34	31.5
	MBBS	—	—	10	9.2
	Post Graduation (MS/MD)	—	—	11	10.2
Occupation / Professional category	Government job	12	11.1	—	—
	Private job	41	38.0	—	—
	Coolie/Daily wages	18	16.7	—	—
	Homemaker	21	19.4	—	—
	Unemployed	16	14.8	—	—
	MLHP	—	—	45	41.7
	Staff Nurse	—	—	42	38.9
	Doctors	—	—	21	19.4
Economic status	BPL	28	25.9	—	—
	APL	80	74.1	—	—
Monthly family income (₹)	≤10,000	23	21.3	—	—
	10,001–20,000	22	20.4	—	—
	20,001–30,000	38	35.2	—	—
	>30,000	25	23.1	—	—
Source of information	Newspaper	2	1.9	—	—
	Health personnel	101	93.5	—	—
	Social media	5	4.6	—	—
Type of employment	Permanent	—	—	49	45.4
	Temporary	—	—	59	54.6
Professional experience (years)	≤10	—	—	56	51.9
	11–20	—	—	42	38.9
	21–30	—	—	10	9.2
Computer literacy	Beginner	34	31.5	34	31.5
	Mediocre	67	62.0	60	55.5
	Advanced learner	7	6.5	14	13.0

Among beneficiaries, 44.5% were aged 18–39 years and 39.8% were aged 40–59 years; 69.4% were female. Most belonged to nuclear families (89.8%), and 45.4% had degree-level education or above. Health personnel were the principal source of eSanjeevani information for 93.5% of beneficiaries. Among health care professionals, 69.4% were aged 33–45 years and 88.9% were female. Mid-level health providers constituted 41.7% and staff nurses 38.9%.

Awareness

Group	Mean ± SD	Good n (%)	Average n (%)	Poor n (%)
Beneficiaries	12.35 ± 4.41	39 (36.1)	61 (56.5)	8 (7.4)
Health care professionals	11.44 ± 3.39	17 (15.7)	80 (74.1)	11 (10.2)

Attitude

Group	Mean ± SD	Favourable	Unfavourable
Beneficiaries	31.53 ± 5.38	51 (47.2%)	57 (52.8%)
Health care professionals	32.23 ± 5.38	58 (53.7%)	50 (46.3%)

Correlation between Awareness and Attitude

Group	Spearman rho (ρ)	Significance	Interpretation
Beneficiaries	0.84	p=0.01	Strong positive correlation
Health care professionals	Significant strong positive correlation	p<0.01 level	Awareness increased with attitude

Association between awareness regarding eSanjeevani programme

- Beneficiary awareness was significantly associated with age, education, occupation, economic status, monthly family income and computer literacy.
- Beneficiary attitude was significantly associated with age, education, occupation, monthly family income and computer literacy, economic status and source of information were not significant.
- Health care professional awareness was not significantly associated with the selected variables, including age, gender, professional education, category, employment type, experience and computer literacy.
- Health care professional attitude was significantly associated with professional education, type of employment and computer literacy.

Satisfaction and Perceived Barriers

Fifty six percent of beneficiaries reported that they were not satisfied with the eSanjeevani application, while sixty percent of health care professionals were satisfied. Beneficiary concerns included technical difficulties, inadequate technical knowledge, poor internet connectivity, abrupt disconnection and perceived limitations compared with face to face consultation. Professionals identified technical difficulties, poor connectivity, potential diagnostic error, limitations in emergencies and fewer perceived benefits than face to face care. Positive features included free consultation, reduced hospital-visit burden, access to specialists, cost effectiveness, time saving and usefulness for home based patients.

5. Discussion

The present study demonstrates that awareness of eSanjeevani prigramme was predominantly at an average level among both beneficiaries and health care professionals. Among beneficiaries, 56.5% had average awareness and 36.1% had good awareness. This pattern differs substantially from a rural Karnataka study in which only 2.2% of participants were aware of teleconsultation. The difference may partly reflect the present study's recruitment of people

already linked with eSanjeevani services and the important role of health personnel in providing information.

Among health care professionals, 74.1% had average awareness and only 15.7% had good awareness. The finding is broadly comparable with Indian evidence showing that telemedicine awareness among health professionals may be moderate despite favourable views about its usefulness. The relatively low proportion with good awareness suggests that exposure to a digital platform does not necessarily translate into comprehensive knowledge of its technical features, service pathways and scope.

Domain wise results provide an important practical insight. Health care professionals had the greatest gap in awareness of available services: 61.1% had poor awareness in this domain. Beneficiaries also showed only moderate awareness of technical information and services. Therefore, educational interventions should go beyond explaining what eSanjeevani is; they should demonstrate how to access consultations, what specialties are available, how prescriptions are received, when teleconsultation is appropriate, and what limitations require face to face assessment.

The attitude findings reveal a difference between beneficiaries and professionals. More than half of beneficiaries (52.8%) had an unfavourable attitude, whereas 53.7% of professionals had a favourable attitude. This may reflect differences in exposure, responsibility and familiarity with the system. Professionals may perceive advantages such as reduced crowding, time saving and improved access for home based patients, while beneficiaries may be more affected by connectivity problems, unfamiliarity with digital procedures and preference for physical consultation.

The strong positive correlation between awareness and attitude is particularly important. A correlation coefficient of 0.84 among beneficiaries indicates a strong relationship between knowledge and attitude. The same direction was observed among health care professionals. These findings suggest that strengthening knowledge may be one pathway to improving acceptance, although causality cannot be inferred from a descriptive cross sectional design.

The association between beneficiary awareness and age, education, occupation, economic status, monthly income and computer literacy suggests that digital health adoption is influenced by both socioeconomic and technological factors. This is consistent with findings from other telemedicine studies in which computer proficiency, educational status and economic resources have influenced awareness or willingness to use digital services.

Computer literacy was also associated with beneficiary attitude and professional attitude. This finding is important because telemedicine is not only a health care intervention but also a digital health behaviour. Individuals with greater confidence in using digital technology may experience fewer perceived barriers and may be more willing to engage with remote consultation. Conversely, people with limited digital skills may require guided assistance from health workers.

Health care professional awareness was not significantly associated with the selected demographic and professional variables. This suggests that simply having greater professional experience, a particular professional category or higher computer literacy may not ensure comprehensive eSanjeevani knowledge. Structured training and standard operating guidance may therefore be more useful than relying on informal exposure.

The satisfaction findings further illustrate the implementation gap. Beneficiaries valued free consultation, reduced difficulty of hospital visits and access to specialists, but dissatisfaction was linked to technical problems, poor connectivity and interruption of consultations. Professionals appreciated cost effectiveness, reduced OPD congestion, time saving and usefulness for home based patients, but expressed concern about diagnostic limitations and emergency situations. These findings indicate that technical infrastructure and clinical work flow need to develop together.

The findings are also consistent with the broader literature. The rural Karnataka study reported very low awareness but substantial willingness to use eSanjeevani app when people understood its potential. An Indian health care professional survey reported generally favourable awareness and attitudes but highlighted gaps in practical telemedicine skills and knowledge of practice guidelines. Thus, the current study reinforces the need for continuing education, technical support and community level promotion.

6. Implications

1) Implications for nursing service

Community health nurses and frontline health workers can function as change agents by providing structured health education on eSanjeevani programme. They can demonstrate registration and consultation procedures, explain available services, assist beneficiaries with technical problems and identify situations in which in person care is required. The information booklet developed in the study may be adapted as a community education resource.

2) Implications for nursing education

eSanjeevani programme and basic telemedicine competencies should be incorporated into community health nursing education and clinical practice. Students should receive opportunities to understand teleconsultation workflow, digital communication, privacy, documentation, patient education and referral decisions. In service education can help practicing nurses maintain competency as digital-health systems evolve.

3) Implications for nursing administration

Nursing administrators and community health nursing supervisors can organize periodic orientation programmes, monitor utilization barriers and coordinate with health authorities to improve connectivity and technical support. Training should be tailored to professionals with different levels of digital literacy.

4) Implications for health policy and primary Care

The findings support the need for community level awareness programmes, especially for people with lower education or limited digital literacy. Health systems should strengthen network reliability, provide clear user instructions, improve availability of specialist services, and establish mechanisms for continuity and follow up. Digital inclusion should be considered alongside technology deployment so that vulnerable populations are not excluded.

5) Implications for research

Future studies should use larger and more diverse samples, include tribal and remote populations, and examine the effectiveness of educational or training interventions. Qualitative research could explore barriers and experiences in greater depth. Hospital based studies and implementation evaluations could examine service quality, clinical outcomes, cost effectiveness and user experience.

7. Conclusion

The present study found that awareness of eSanjeevani programme was predominantly average among beneficiaries and health care professionals. Beneficiaries were more likely to report an unfavourable attitude, whereas health care professionals demonstrated a slightly more favourable attitude. Awareness and attitude were strongly and positively correlated in both groups. Important associations were observed with demographic, socioeconomic, educational and computer literacy variables. The findings suggest that increasing awareness alone is not sufficient; users also need practical digital support, reliable connectivity and confidence in the service. Strengthening the role of frontline health workers and integrating eSanjeevani education into routine primary health care may improve utilization and contribute to equitable digital healthcare delivery.

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