KNOWLEDGE AND ATTITUDE REGARDING TELEMEDICINE AMONG STAFF NURSES AT SELECTED PRIMARY HEALTH CENTRE, PUDUCHERRY IN VIEW TO PREPARE SELF-INSTRUCTIONAL MODULE ON TELEMEDICINE

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ABSTRACT

Innovative technological advancement has caused various changes in every sector. Medical science is not an exception and new technologies have affected both the advancement of the medicine and the way to deliver medical services. This has caused a new area of health centers, financial and medical insurance experts cooperate together in a digital environment in order to improve fairness in distribution of medical services and the quality of these services as well as reducing the cost services. The use of information technologies in the medical and health care fields shows great potential for improving the quality and effectiveness of work done by medical organizations. Allowing the flow of expert medical knowledge from medical, research, and teaching institutions to distant remote locations where knowledge is needed but lacking medical experts, costs, and accessibility issues are the reason why Telemedicine has been identified as possible solution to medical problems evident in underdeveloped countries. Telemedicine is the use of medical information exchanged from one site to another through electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way videos, e-mails, smart phones, wireless tools, and other forms of telecommunications technology. The study was conducted for six weeks to assess the level of Knowledge and Attitude regarding Telemedicine among Staff nurses at selected Primary Health Centre. 60 samples were selected using purposive sampling technique. Structured Interview questionnaire and self-constructed 5 point likert scale was used to collect the data regarding Telemedicine and the results revealed out of 60 staff nurses Majority 37(62%) of them had Moderately Adequate Knowledge, 23(38%) of them had Inadequate knowledge, 0(0%) of them had adequate Knowledge and Majority 49(81.56%) of them had Good attitude, 11(18.44%) of
them had Moderate attitude, 0(0%) of them had poor attitude. I believe that Self-instructional module has improved the knowledge and attitude regarding telemedicine.

Keywords: Telemedicine, Knowledge, attitude, primary health centre.

INTRODUCTION

Innovative technological advancement has caused various changes in every sector. Medical science is not an exception and new technologies have affected both the advancement of the medicine and the way to deliver medical services. This has caused a new area of health centers, financial and medical insurance experts cooperate together in a digital environment in order to improve fairness in distribution of medical services and the quality of these services as well as reducing the cost services. The use of information technologies in the medical and health care fields shows great potential for improving the quality and effectiveness of work done by medical organizations.

Allowing the flow of expert medical knowledge from medical, research, and teaching institutions to distant remote locations where knowledge is needed but lacking medical experts, costs, and accessibility issues are the reason why Telemedicine has been identified as possible solution to medical problems evident in underdeveloped countries.

Telemedicine is the use of medical information exchanged from one site to another through electronic communications to improve a patient's clinical health status. Telemedicine includes a growing variety of applications and services using two-way videos, e-mails, smart phones, wireless tools, and other forms of telecommunications technology.

Tele is a Greek word meaning "distance" and "mederi" is a Latin word meaning to heal. Time magazine called Tele medicine healing by wire. Tele medicine is the use of electronic information to communicate technologies to provide and support health care when the distance separates participants.

In primary care, telemedicine is usually in the form of phone calls, where the patient seeks the doctor’s advice about non-emergency medical problems which do not require the doctor to see the patient.

Telemedicine can help select urgent calls after a doctor’s office is closed. It is of immense value in the follow-up of patients with chronic diseases such as diabetes, high cholesterol, or high blood pressure. In these individuals who are not experiencing any immediate medical problem, but require help with dosage adjustments, lifestyle regimens, prescription refills, or even just access to group support, can benefit from the convenience of telemedicine.
Telemedicine can be used for a wide variety of health services. A Common conditions treated by primary care physicians via telemedicine are Allergies, Arthritis Pain, Asthma, Bronchitis, Colds and Flu, Diarrheal Infections, Insect Bites, Pharyngitis, Conjunctivitis, Rashes, Respiratory Infections, Sinusitis, Skin Inflammations, Cellulites, Sore Throats, Sprains & Strains, Bladder Infections, UTIs, Sports Injuries and Vomiting.

The benefit was the greatest in areas of Tele radiology, Tele mental health, Tele cardiology (echocardiography in particular), Home Tele care, Tele dermatology, Tele Pulmonolgy, Tele Urology, Tele Endocrinology and Tele Hematology/ oncology and Tele OBG/ Gynecology.

Telemedicine can be used to avoid unnecessary transportation, reduce waiting times, expand access to high-quality medical diagnosis and treatment as well as its lower cost as compared to most other medical consultations. In addition, the ready availability of patient records online has the potential to make patient prescriptions more reliable and accurate. By providing second opinions more easily and faster, telemedicine can also make the patient and physician experience better. Finally, it produces improved health outcomes, which should be the primary goal of all health services.

Tele nursing refers to the use of information technology in the provision of nursing services whenever physical distance exists between patient and nurse, or between any numbers of nurses. As a field, it is a part of Telemedicine and has many points of contacts with other medical and non-medical applications, such as Tele diagnosis, Tele consultation, and Tele monitoring.

The establishment of Tele nursing has enhanced the management of chronic diseases. The introduction of Tele nursing has enabled the nurses to manage numerous chronic conditions concurrently. For instance, nurses can handle patients suffering from hypertension, chronic lung disease, and heart failure without having to hospitalize them. Today, a single nurse can serve at least 12 patients per day. Previously, a single nurse could only serve a maximum of seven patients per day. Tele nursing has resulted in a reduction in health cost for the patients. On the other hand, it enables the nurses to discover possible exacerbation of a health condition and respond to it in advance. Indeed, the cases of hospitalization continue to go down due to the application of Tele nursing.

Tele nursing guarantees the safety of patients. In many cases, patients lack adequate skills to cope with their health conditions after leaving the hospital. For instance, postoperative patients do not know how to tell if they are in the recovery course after surgery. Hence, they may develop complications and fail to get urgent medical attention. Tele nursing enables the postoperative patients to communicate with nurses on a regular basis and to update them on their progress. As a result, the nurses can detect when the patients are experiencing problems and respond before the problem gets severe.
Aim of the study

The aim of the study was to assess the level of Knowledge and Attitude regarding Telemedicine among Staff nurses at selected Primary Health Centre, Puducherry.

Objective of the study

- To assess the level of Knowledge and Attitude regarding Telemedicine among Staff nurses at selected Primary Health Centre, Puducherry.
- To correlate the relationship between level of Knowledge and Attitude regarding Telemedicine among Staff nurses at selected Primary Health Centre, Puducherry.
- To associate the level of Knowledge and Attitude regarding Telemedicine among Staff Nurses with their selected demographic variables.

Assumptions:

- Staff nurses may have some knowledge & attitude regarding Telemedicine.
- Self instructional Module may improve knowledge and attitude regarding Telemedicine among staff nurses.

II. Materials and Methods

In this study, Descriptive research design was used to assess the level of Knowledge and Attitude regarding Telemedicine among Staff nurses. The study was conducted in selected community area in Puducherry. The target population for the study was Staff nurses.

Based on the sample, total of 60 participants were selected by using purposive sampling technique. Ethical consent obtained following approval by Institutional Ethics Committee of Sri Manakula Vinayagar Medical College &Hospital, Puducherry.

Data collection Tools:

Section A: this section consists of demographic information from staff nurses such as age, gender, religion, educational qualifications, total year of experience, marital status, working area of primary health centre, awareness about telemedicine, sources of information's, previous knowledge about computer applications.

Section B: This section consists of Structured Interview questionnaire used to assess the knowledge of staff nurses regarding Telemedicine. It contains 50 items and each correct answer will award one mark. Highest mark is (1) and lowest mark is (0).

Section C: This section consists of self-constructed 5 point likert scale used to assess the Attitude of Staff nurses regarding Telemedicine. It contain 20 items (1-10) 10 Positive items
with 5 response, the score and response is Strongly agree – 5, Agree - 4, Neutral- 3, Disagree – 2, Strongly disagree – 1 and (11-20). 10 Negative items with 5 response which is reversely scored and response is Strongly disagree – 5, Disagree – 4, Neutral – 3, Agree – 2, Strongly agree – 1. [Maximum score is 5 and Minimum score is 1].

Data collection procedure:

The data collection was done after getting permission from Directorate of Health and Family Welfare Services, Puducherry. 60 Staff nurses were selected based on inclusion criteria through purposive sampling technique and after introducing and explaining the purpose of study. Oral consent obtained. The tool was consisting demographic variables, Structured Interview questionnaire and self- constructed 5 point likert scale was administered to respondents and data was collected. On the same day, Self- Instructional Module (Booklet) was given to staff nurses

Statistical analysis:

The data was analyzed using both descriptive and inferential statistics. Frequency, percentage distribution were used for the analysis of demographic data. Mean and standard deviation was used to assess the level of Knowledge and attitude regarding TM. Chi square test was used to associate the selected demographic variables with the level of Knowledge and attitude regarding TM. A”p” value of 0.05 was considered to be statistically significant for the interpretation of results. The analysis and graphs were carried out in accordance with the above data for easy comprehension.(Statistical software services).

III. RESULTS AND DISCUSSION

Socio demographic variables: Out of 60 staff nurses, majority 32(53%) was in the group above 36-45 years. Most of them 56(93%) were females. Majority belonged to Hindu 54(90%). Most of them 36(60%) were GNM. Majority 45(75%) belonged to >10 years of Experience. Most of them were married 56(93%). Majority 45(75%) belonged to Rural. Majority 58(96%) were aware of Telemedicine system. Majority 41(68%) were dependent on Internet for source of information. Majority 47(78%) did not have previous knowledge about the computer application.

Table 1: Frequency and percentage wise distribution of level of knowledge regarding Telemedicine among staff nurses at selected primary health centre.

<table>
<thead>
<tr>
<th>SCORING INTERPRETATION</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
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(N=60)
Table 1: Frequency and percentage wise distribution of level of knowledge regarding Telemedicine among staff nurses shows that out of 60 Staff nurses majority 37(62%) of them had Moderately Adequate knowledge, 23(38%) of them had Inadequate knowledge, and 0(0%) of them had adequate Knowledge.

Table 2: Frequency and percentage wise distribution of level of attitude regarding Telemedicine among staff nurses at selected primary health centre.

(N=60)
Table 2: Frequency and percentage wise distribution of level of attitude regarding Telemedicine among staff nurses shows that out of 60 Staff nurses majority 49(81.56%) of them had Good Attitude, 11(18.44%) of them had Moderate Attitude, and 0(0%) of them had poor Attitude.

![Bar Chart showing the distribution of attitude among staff nurses]

Table 1&2: Percentage wise distribution of level of knowledge & attitude regarding Telemedicine among staff nurses at selected primary health centre.

Table3: Mean and standard deviation of regarding level of Knowledge and Attitude regarding Telemedicine among staff nurses at selected primary health centre, Puducherry. 

(N=60)
<table>
<thead>
<tr>
<th></th>
<th>MEAN</th>
<th>STANDARD DEVIATION</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>27.45</td>
<td>3.09</td>
</tr>
<tr>
<td>Attitude</td>
<td>68.85</td>
<td>3.990</td>
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</tbody>
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Table 3:

- Shows that the mean score of level of Knowledge regarding Telemedicine among staff nurses was 27.45 ± 3.09.
- Shows that the mean score of level of Attitude regarding Telemedicine among staff nurses at selected primary health centre was 68.85 ± 3.990.
Mean and standard deviation of regarding level of Knowledge and Attitude regarding Telemedicine among staff nurses at selected primary health centre, Puducherry.

Table 4: Correlation between the knowledge and attitude regarding Telemedicine among staff nurses at selected primary health centre. (N=60)

<table>
<thead>
<tr>
<th></th>
<th>Knowledge score</th>
<th>Attitude score</th>
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<tbody>
<tr>
<td><strong>Knowledge score</strong></td>
<td>Pearson Correlation (r)</td>
<td>1</td>
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<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>60</td>
</tr>
<tr>
<td><strong>Attitude score</strong></td>
<td>Pearson Correlation (r)</td>
<td>0.069</td>
</tr>
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Table 4: Represent that level of Knowledge and attitude regarding Telemedicine is positively correlated. The score is r= 0.069. The present study demographic variable shows sources of information had shown statistically significant association with the level of knowledge regarding Telemedicine among staff nurses at selected primary health centre and variable working area of primary health centre had shown statistically significant association with the level of Attitude regarding Telemedicine among staff nurses at selected primary health centre.

CONCLUSION:

This study implies that self instructional module help to improve the level of knowledge and attitude regarding Telemedicine and also to develop good attitude towards telemedicine. On the basis of result, it can be conclude that the level of Knowledge was mostly Moderately adequate with Good attitude regarding Telemedicine among staff nurses.

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