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AN EXPLORATORY STUDY FOR ASSESSING TECHNOLOGY ACCEPTANCE AMONG AYUSH PHYSICIANS

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ABSTRACT

Introduction: AYUSH is the acroym of medical system that are beign practiced by India,such as Ayurveda, Yoga and Naturopathy , Unani , Siddha and Homeopathy. These system have all the potential to preserve the health of people, life prolongation and improvement of quality of life, disease prevention and treatment[1]. With the help of telemedicine it will be able to aid both the urban as well as rural population. Information systems have been identified as possible solution that can be used to alleviate disparity between rural and urban healthcare services and bridge the digital divide[2]. Literature has suggested that one of the barriers for successful implementation of health information system is the user acceptance by health care personnel.**Objectives:1)** To assess computer literacy of AYUSH physicians.2). To assess users acceptance of telemedicine using UTAUT[#] model. # Unified Theory of Acceptance and Use of Technology. **Method:** This is a cross-sectional study, using mixed methods to obtain data from a sample of 143 research participants during November to December 2017.**Results:** In general the AYUSH physicians were aware of the benefit of tele-medicine to improve effectiveness and efficiency of the health care system. The barriers to the effective implementation of tele-medicine include lack of knowledge and lack of awareness regarding use and usage of the tele-medicine system.**Conclusion:** AYUSH physicians do acknowledge that tele-medicine can help to increase the effectiveness of the healthcare system. In general the acceptance of tele-medicine among healthcare personnel is positive. However in order to integrate it into standard work practices, specific training and capacity building for tele services is essential among AYUSH health care personnel

Keywords: Telemedicine, UTAUT model, User Perception, AYUSH physician.

INTRODUCTION

World Health Organization adapts the definition of telemedicine medicine as the delivery of Healthcare services where distance is a critical factor by Healthcare professionals using Information and Communication Technologies for the exchange of valid information for diagnosis treatment and prevention of disease and injuries research and evaluation and for continuing education of Healthcare providers on in the interest of advancing the help of individuals and their communities[3].

India is a geographically divided and diversified populated country. Therefore to provide equal and better medical care to every citizen of India is a major challenging task

Telemedicine is a modern, growing concept in both developed, and developing countries. Information and communication technology (ICT) is playing an important role to improve health care for both individuals and community levels[4]. AYUSH system has all the potential to preserve the health of people, life prolongation and improvement of quality of life, disease prevention and treatment. With the help of telemedicine it will be able to aid both the urban as well as rural population. Health information systems have been identified as a possible solution that can be used to alleviate the disparity between rural and urban health care services. Information systems have been identified as possible solution that can be used to alleviate disparity between rural and urban healthcare services and bridge the digital divide. Literature has suggested that one of the barriers for successful implementation of health information system is the user acceptance by health care. The present study examined the computer literacy, perception and attitude of health care personnel using Unified theory of acceptance and use of technology (UTAUT) model[5].

Objectives

1. To assess computer literacy of AYUSH physicians.
2. To assess users acceptance of telemedicine using UTAUT# model

Unified Theory of Acceptance and Use Of Technology.[5]

Method

This study was conducted from November to December 2017, at Bijapur district as a Cross-Sectional Study. Requisite ethics clearances and administrative permissions and consent from participants were obtained. The major components of assessment included computer literacy and perception of AYUSH medical fraternity on technology in general and telemedicine in specific. Data was collected using semi-structured questionnaire adopted from UTAUT[5] model & qualitative data was collected through In-depth interview. The study population comprised of the AYUSH physicians willing to participate in the study. A Pre-tested semi-structured questionnaire was used for obtaining information and In-Depth interview with Key informant was also conducted who completed questionnaires. The first part of questionnaire was regarding Demographic details; Second part had 9 questions regarding Computer literacy; Third part which was developed using "UTAUT" model had 32 questions under 8 domains. Data generated from the questionnaire were coded and analyzed using Statistical Package for Social Science (SPSS) version 20. Data was analyzed in terms of frequency/ percentages and measures of central tendency-mean, median and variance through standard deviation

Table1: Showing Base line characteristics of study participants

Characteristic	Number(percentage)
Gender	
Female	53(37.1%)
Male	90(62.9%)
Age	
26-36yrs	92(64.3%)
37-46yrs	36(25.2%)
47-56yrs	15(10.5%)
Degree	
Graduate	71(49.7%)
Post-graduate	68(47%)
PhD	04(2.8%)
Total experience	
0-5 years	96(61.1%)
6-10 yrs	42(29.4%)
More than 10yrs	05(3.5%)

Section: A

Study participants Profile:

Among the total Participants (N=143) 90(62.9%) were Male, 64.3% with the average age in between 26-26 years. 49.7% were under-graduate, 47 %were Post-graduate and 3.5% were PhDs. around 61.1% were having a practice Experience of 0-5 years.

Among 143 participants Ayurvedic doctors were 122, yoga 01 Unani 10 Homoepathy 10.

Table no 2: Computer literacy of the study participants

Question	Number (Percentage)
Knew to type letters	133(93%)
Knew to draw graphs	126(88%)
Knew to make PPts	82(57%)
Had a formal training for Computer	06(4.2%)
Knew wha t is database	58(48%)
Knew what is statistical package	68(47%)
Using Smart phones	131(91.6%)

Section: B

Computer literacy of study Participants: Around 93% knew to type letters in computers 88% to draw graphs only 57% were knowing to prepare PPts. and 4.2% had Formal training in Computer. 48% knew about Database and 47% were aware of Statistical packages. Maximum number of study participants (91.6%) was using Smart Mobile phones.

Section: C

Construct from UTAUT.

Figure no 1

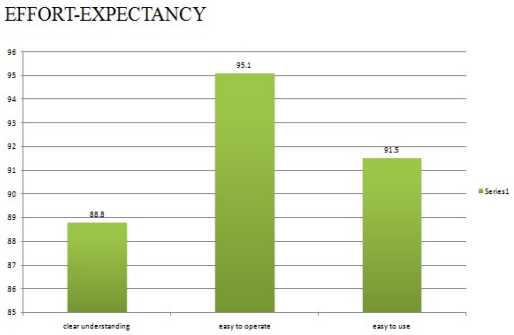

Figure no 2

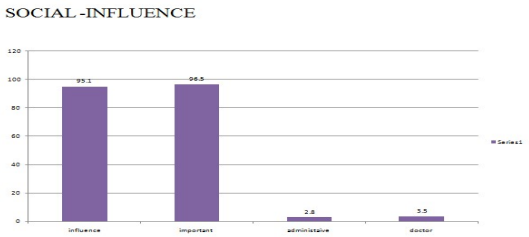

Figure no 3

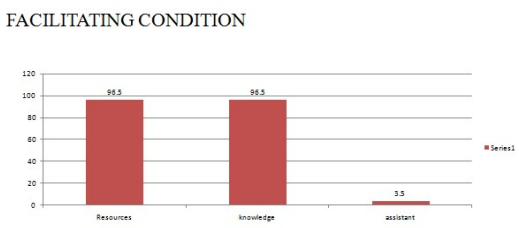

Figure no 4

The **unified theory of acceptance and use of technology** (**UTAUT**) is a technology acceptance model formulated by Venkatesh and others[6]. The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior. The theory holds that there are four key constructs: 1) performance expectancy, 2) effort expectancy, 3) social influence, and 4) facilitating conditions. The first three are direct determinants of usage intention and behavior, and the fourth is a direct determinant of user behavior. Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behavior. The theory was developed through a review and consolidation of the constructs of eight models that earlier research had employed to explain information systems usage behaviour (theory of reasoned action, technology acceptance model, motivational model, theory of planned behavior, a combined theory of planned behavior/technology acceptance model, model of personal computer use, diffusion of innovations theory, and social cognitive theory)

Performance expectancy

Performance expectancy represents the degree to which an individual believes that using system will assist them in attaining their goals in job performancy [7].

Among the participants(N=143) 95.8% answered that TM could help to improve the care that they provide to patient 95.8% and 96.5% replied that TM will help to Increase efficacy and make their job easier respectively 96.5.% consider TM will help improve their job area

96.5% say it will increase their productivity in job.

AYUSH physician in rural areas found telemedicine to be more useful than those working in district proper ie in urban areas.

Effort expectancy

Effort expectancy is defined as the degree of ease associated with the use of the system[7].

Among the participants (N=143) 93.6% consider computer training is must for use of TM, 95.7% consider TM can be learnt to operate, 91.5% consider it is easy to use & 88.8% have clear understanding about TM.

Social Influence

Social influence is defined as the extent to which an individual allows the opinions of others to influence their decision to use the system[7].In this, a positive correlation was found for perceived knowledge of telemedicine.

Among the participants (N=143) 95.1.% and 96.5% consider people who influences them and are important consider that TM should be used by these people respectively.2.8% and 5.5% answered that they get support from administrative officer or doctor respectively.

Facilitating Condition

Facilitating Condition includes resource availability such as technical assistance, knowledge of the system and compatibility with other system already in use [7].

Among the participants (N=143) 96.5% answered that they have physical, mental abilities and sufficient knowledge about TM.3.5% were of opinion that they will get support if required during use of TM.

In general the majority of AYUSH physician in the study believed that telemedicine would improve their productivity in workplace, useful during their daily activities. The advantages of telemedicine cited by AYUSH physician includes less time being spent, shorter waiting time, less travel by patients, reducing Out of Pocket expenditure.

On synthesis of the discussion notes from AYUSH doctors these following thing were noted, there is lack of adequate training about communication, hardware and software, they were concern about the legal issues .and network problem faced during usage, informed consent, privacy of patients. Incentive for referring cases needs to be considered. Medico-legal issues need to be sorted out, telemedicine equipments are not accessible to doctors, feedback from patients needs to be taken.

DISCUSSION

Telemedicine in India began comparatively later than most of countries. Despite the successful pilot phase in public sector, the system has been largely under-utilized and has failed to deliver promise in operational phase. This is one of the studies exploring to understand behavioral intention of healthcare personnel by employing unified theory of acceptance and use of technology (UTAUT) as the theoretical foundation. In the study done by Irfanahemad et.al 2018 it was found that the health care personnel in tertiary care pediatrics center found telemedicine to increase their productivity, quality and efficiency of work, same as that what we found in this study[8]. In the similar study “Awareness, attitude and readiness of clinical staff towards telemedicine “by Abbas Sheikh taheri et al. It was found that Clinical staff had little knowledge about telemedicine services [9], however they had a positive perception. The same is the ours finding

In general the acceptance of tele-medicine among AYUSH physician was positive. physicians do acknowledge that tele-medicine can

help to increase the effectiveness of the healthcare system. The barriers to the effective implementation of tele-medicine include lack of knowledge and lack of awareness regarding use and usage of the tele-medicine system

However in order to integrate it into standard work practices, specific training and capacity building for tele-services is essential among AYUSH health care personnel.

CONCLUSION

The AYUSH physician found telemedicine to increase their productivity, quality and efficiency of work. Most of health care personnel found system easy to use. Maximum physician though not technically trained in computer can operate computer easily. Social influence and facilitating conditions were also found to influence acceptance of health care personnel of telemedicine. However in order to integrate it into standard work practices, specific training and capacity building for tele-services is essential among health care personnel. Most of respondents agreed about the role of telemedicine in improving quality of health care. The need of proper awareness and training program is identified to make them aware about telemedicine and its application in patient care, education and research. Acceptance of new technology will not only support in health information management but will also take practices to a greater height.

LIMITATIONS

A significant limitation of this study was small sample size of healthcare personnel.

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