

Healthcare User's Perception of Ethics While Availing E-Health Services: An Empirical Investigation

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ABSTRACT

Technology has opened the doors for faster and improved delivery of healthcare services which is now widely identified as e-health. However, it has also raised a host of beliefs related to ethical management of such services. Ethics has always been an important aspect for the healthcare provider. To avail suitable e-health services; it is pertinent for the user to be aware of ethical issues regarding healthcare services. For selecting proper e-health services, ethics also plays an important role. This paper tries to find out the elements which are responsible for developing an ethical background in the minds of the user. The study was conducted in private hospitals of Punjab and Chandigarh. Data was evaluated using factor analysis and AMOS 21. Trust, quality of information, service marketing, information privacy, and personal traits are important factors identified regarding ethical beliefs of the user. The analysis suggests that users of e-health should be educated and responsive about the factors which are useful for availing ethical services. Crafting ethical responsiveness amidst the healthcare users is essential for fruitful practice of e-Health.

Keywords: E-Health, ethics, ethical beliefs, e-Health User.

1. INTRODUCTION

Technology has a remarkable impact on all aspects of our life, but its advent has been slow in healthcare services. Though, technology was being used for medical treatments since long, it has now slowly occupied an important place in the lives of the healthcare users. It has the potential to improve the quality and efficiency of the healthcare system (Craig and Patterson, 2005). The government, healthcare providers as well as the healthcare users have realized that further advancement in healthcare is possible only with the advent of information and technology. The combination of Internet and healthcare has been given the name 'e-health' and the people communicating and availing healthcare services are known as 'e-health users'. E-health is now recognized as an essential part of the health policy and several countries promote and implement e-Health as a strategy for health promotion. E-Health provides faster and a better platform for information and communication (Wyatt and Sullivan, 2005) between the various stakeholders and where healthcare services can be delivered in a personalized way as and when required.

The use of Internet in healthcare is increasing in our daily lives. Users have a preference to first conduct an online search for any services they want to avail. Ethics is important in business and if it relates to health, ethics cannot be overlooked. It is vital for the users in selecting the type of e-health services further more; it helps to decide whether to purchase a particular service or product. Apart from several advantages the use of information, communication and technology poses several challenges to the people who use and consume these services. Issues of authenticity of information and authority of information are some key ethical issues which often arise with this. Providing ethical healthcare is not only a social responsibility but also a legal obligation. Health care users are an important stakeholder and the motive of providing ethical healthcare cannot be complete if the ethical aspects of the users are not considered.

2. REVIEW OF LITERATURE

The ethical controversies concerning various marketers and health care providers have been discussed at various platforms, but the ethical beliefs of the users have been discussed by only a few of them. A gap exists in studying the ethical beliefs of the user specially related to healthcare user ethics; we need to study the aspects which users believe to be ethical while availing a service.

Some authors have examined certain areas of user ethics which relate to a particular aspect, while some have focused on identifying guidelines related to ethics (Stampfl, 1979; Schubert, 1979). User's ethical beliefs and judgments depend upon many aspects. The ethical beliefs are also affected by the age of the person. The elderly users are found to be more ethical than newer users while younger generation is more varied in their ethical beliefs (Vitell et al. 1991).

Quality of Information:

The quality of healthcare information available to the users on the internet is highly sensitive. Wrong information can misguide the person or delay treatment leading to serious consequences. If the quality of information is low it decreases the worth of the information. Any information should be properly evaluated, labeled and filtered for its effective use (Eysenbach, 1998). Quality of Information is judged in a different way by the health care provider and the users. Users tend to be more attracted by the look and design of the page, which also helps in developing trust (Stanford et al. 2002). Accuracy, completeness and readability are important norms for arbitrating the quality of Information on health websites. (Eysenbach et al. 2002).

Service Marketing

The present era is of extensive marketing, which, if done strategically may result in higher sales and greater returns on investment. The existing legal boundaries have raised user expectations for a more ethical behavior by the marketers (Smith, 1995). Marketers should do marketing which is socially responsible and ethical (Gaski, 1999). Globally, organizations as well as institutions have developed ethical codes of business to be followed by the people in the industry. Subsequently, it has become difficult for the marketer to ignore ethics in marketing (Laczniak, 1993). But on the other side the user's concern for ethics has not been given the required acknowledgement (Hunt and Vitell, 1986).

For a user to make an efficient decision, it is pertinent to make them completely well-versed about the ethical aspects of marketing. Users tend to have a positive attitude towards those companies having good ethical conduct (Folkes and Kamins, 1999). Also, any contrary information impacts users' more than positive information. But the study done by Carrigan and Attalla (2001) found a lack of awareness regarding unethical behavior among companies and users did not give much importance to ethical consideration in purchase decision making. They emphasized on the need of making the users more informed while making ethical decisions.

Personal Traits

A person's values, beliefs and personality often influence their idea about ethical behavior. Various authors have tried to prove through their theories the effect of personality traits on their ethical decisions making (Hunt and Vitell, 1986, 1993). An individual's personality traits play a significant role in user's ethical beliefs (Rallapalli et al. 1994). Personal values along with other traits are significant to develop ethical competencies (Pohling et al. 2016).

Information Privacy

The extensive use of technology in every aspect of life has raised a host of privacy issues. The information privacy dilemmas of e-health communities are similar to other business (Zhang et al. 2018). Health data consists of sensitive information and if revealed without an individual's consent can lead to ethical complications. Paper based records have now drifted to e-records, thus it is important to understand how users perceive this change (Patel et al. 2015). Users want greater transparency and control over their health data (Dimitropoulos et al. 2011). Patel V & others in their study found that people trusted electronic records, but some adults were concerned about their exchange of information between doctors. Thus, privacy issues can play a fundamental role in determining ethical beliefs of service as well as making e-Health purchase decisions.

Trust

Trust is important for cooperation in society and essential for daily interactions (Zucker, 1986). It is also an important part of ethics, which results from proper decisions and actions and correct decisions and actions are those which are done ethically. (Hosmer, 1995). Users judge the ethical behavior depending upon the situation (Rawwas, 1996). There is a close link between trust and morality and it is essential to have limits of trust otherwise it may result in unethical behavior (Brenkert, 1998). Trust becomes more important when we talk about healthcare. It affects a number of behavior and attitudes, related to healthcare (Hall, 2005). In e-health, users tend to engage with those websites only in which they have trust. Websites having higher visual appeal quality of information available on websites, extent of personalized information and higher perceived expertise attract users (Sillence et al.2006). Insight of integrity, ease of use and threat also impact online trust (Corritore et al 2003).

3. RESEARCH GAP& RESEARCH PROBLEM

Ethics has constantly been a key part of the health care industry; never the less major focus has been laid on the healthcare providers to provide ethical healthcare services. Technology has made the users more accountable for their healthcare facilities. Hence, it is imperative for the user to be conscious about the ethical limitations of health care services. A small number of researchers discussed on the dearth of lawful borders in the extent of e-health. Topics like confidentiality, permission and data safety have been taken up at various platforms. Besides doctors, users should also be aware of the ethical aspects of e-Health. This will offer more control to the healthcare buyer in making their healthcare choices. It is pertinent to study the awareness level of the users, regarding moral and lawful matters predominantly in the areas of technology application. Only then the e-health buyers will be receiving the true services of e-health. With this issue a study was conducted with pre-defined objectives. This study will help us to categorize the major areas which the healthcare user reflects in identifying ethical services.

Objective:

- 1) To classify the factors related with ethical beliefs of the e-healthcare users.
- 2) To identify the relationship of ethical beliefs with various identified factors through model development.

4. RESEARCH METHODOLOGY

This study has been conducted at three levels. In the first level an extensive review of literature was done on ethics. The second level consisted of exploratory factor analysis, to explore various factors responsible for developing an ethical framework in the minds of the e-health user and to develop a conceptual framework. In the last stage confirmatory factor analysis was done to verify the goodness of fit for the research model.

Scale development: A structured questionnaire based on the review of literature was designed which consisted of 34 items. The items included were revised by three experts in the area of health care management. The respondents had to rate the items according to their choice on a 5 point Likert scale (1-strongly disagree and 5-strongly agree). Before the final survey was conducted, pretesting of the questionnaire was done. The final survey was done on the respondents of various private hospitals selected in Punjab and Chandigarh. The universe of the study comprised of hospitals providing e-health facilities, owned by private sector hospitals in Punjab and the Union Territory of Chandigarh. The final questionnaire was distributed to 315 respondents in various hospitals of UT and Punjab. The final sample comprised of 296 respondents, with all individuals (patients) belonging to different gender, age, income categories and professions who are availing e-Health services since at least last six months and can form an ethical viewpoint towards issues in e-Health. In the first phase healthcare centers were identified on probability basis. The second phase included adoption of Non-Probabilistic convenience sampling technique to ascertain various respondents from the Out Patient Department zones of various hospitals.

Data analysis/Findings of the study:

SPSS soft ware was used for the exploratory factor analysis. The data reliability is checked by the value of Cronbach salpha, which is a prevalent technique for determining reliability. The Cronbach alpha value was found to be 0.896. According to Nunnally (1978), a reliability score of 0.60 and above is sufficient for factor analysis. Out of 34 items, 31 items were found to be relevant in the questionnaire. The correlation was primarily studied to determine how appropriate it is for factor analysis. The Kaiser Meyer Olkin value was 0.866. The data was found to be approximately normal. Out of 31 variables five factors were extracted showing 83.38% variance.

Table 1

Scale	No. of Items	Cronbach α (reliability)	Eigen value	% variance	Cumulative variance%
Quality of Information(F1)	9	0.979	8.63	24.93	24.93
Service marketing(F2)	8	0.954	6.58	19.84	44.77
Personal Traits (F3)	5	0.955	4.14	13.77	58.55
Information Security(F4)	5	0.947	3.72	13.76	72.32
Trust(F4)	4	0.819	2.75	11.06	83.38

The extracted five factors were named as F1 (Quality of Information), F2 (Service marketing), F3 (Personal traits), F4 (Information Privacy) and F5 (Trust). Each factor had minimum 4 items based on the factor loadings and Eigen values larger than 2. i.e Quality of Information (9 items), Service marketing (8 items), Personal traits(5 items), Information privacy (5 items) and Trust (4 items). Based on these five factors a conceptual model was developed to check the relationship of all factors with ethical beliefs of the user. The following hypotheses were framed:

H1-Quality of Information has a positive relation with ethical beliefs of the e-health user.

H2-ServiceMarketing has a positive relation with ethical beliefs of the e-health user.

H3-Personal Traits has a positive relation with ethical beliefs of the e-health user

H4-Information Privacy has a positive relation with ethical beliefs of the e-health user.

H5-Trust has a positive relation with ethical beliefs of the e-health use

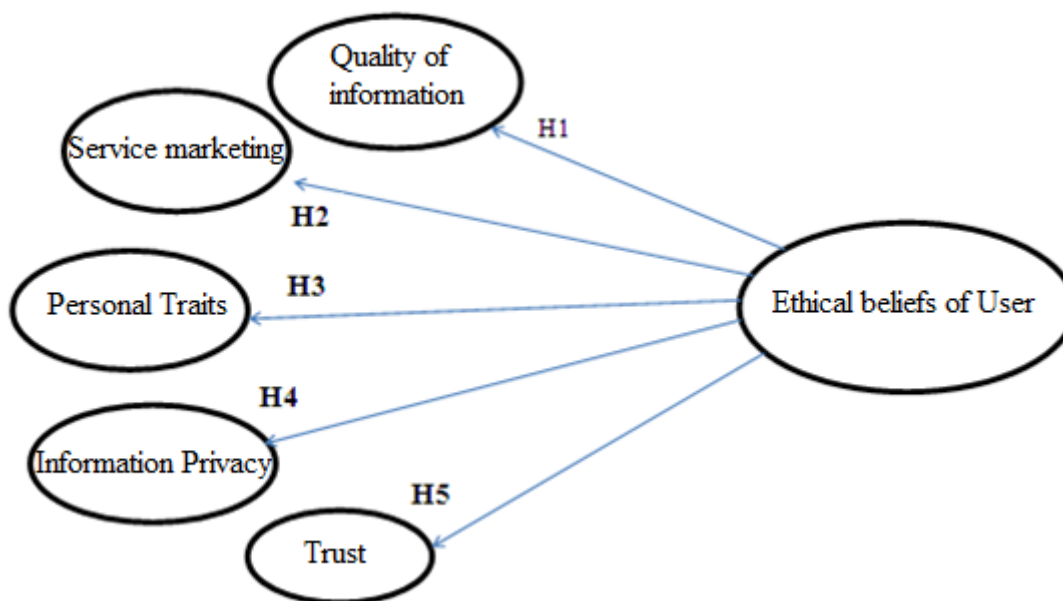


Figure 1: Conceptual Framework

Table 2

Rotated Component Matrix					
	Factor	Component			
	1	2	3	4	5
P14_ website is upgraded regularly.	.978				
P17_Patients judge the quality of hospital with the website	.943				
P9_website mentions exact fee for different treatments	.938				

P21_ difficult to distinguish between fake and actual website.	.937				
P6_ healthcare websites clearly mentions the available services.	.926				
P15_ websites have misleading content	.908				
P10_ Extra charges mentioned on the website.	.903				
P7_ website has name & specialty of their doctors.	.894				
P8_ healthcare websites take feedback	.855				
P4_ websites adhere to a code of ethical conduct.		.916			
P3_ healthcare websites follow ethical practices.		.892			
P23_ Wrong practices prevalent in e-Healthcare.		.888			
P18_ Marketing of e-Health services is a wrong practice.		.887			
P11_ Online health information is like an advertisement.		.839			
P24_ hospitals providing online services ignore ethical practices.		.836			
P5_ Hospitals take patient's consent for personal information		.824			
P20_ The internet is an easy way to commit fraud		.806			
P16_ difference between stated and the actual services			.946		
P22_ E-Healthcare results into unnecessary checkups.			.922		
P19_ too many junk mails are annoying			.916		
P13_ quick response from hospital			.897		
P12_ promised services are provided			.867		
P33_ People hesitate to use e-Health.				.935	
P28_ misuse of personal information				.906	
P32_ Current laws are sufficient				.905	
P31_ Indian laws protect privacy issues				.889	
P2s30_ awareness regarding risks				.884	
P29_ ehealth is responsible					.923
P2_ Patients feel better informed					.913
P1_ Patients trust online services.					.912
P25_ ehealth is dependable					.864

Demographic Analysis:

Out of 296 respondents, majority 71% (n=210) are males and 29% (n=86) are females as usually the ratio of male patients/attendants in the OPD areas of the hospital is usually more than the females. Analysis of the region to which they resided shows that 47.8% (n=142) belonged to Punjab, 24.6% (n=73) belonged to Chandigarh and 27.6% (n=81) belonged to other states. Analyzing the age of the respondents it was found that maximum respondents (55.6%) were in the range of 20-30 years as this group was more aware and using e-Health. 27.9% belonged to the group 31-40 years of age. Very few respondents belonged to the age group of 51 years and above as the people of this age mostly denied to be aware of e-Health. Out of the total respondents 41.1% (n=122) were doing job, 22.9% (n=68) business and 28.3% (n=84) were students.

Confirmatory Factor Analysis:

The precision regarding conceptual model is verified by Structure Equation Modeling (SEM) using AMOS 21. As suggested in the literature, the model fit is assessed by indices like Comparative Fit Index (CFI). The goodness of the fit Index (GFI) - The GFI calculates the fit of the model equated to other models, Normed Fit Index (NFI) -measures the value of the model by which it has improved in terms of the fit, Root Mean Square error of Approximation (RMSEA) -It gives information regarding inconsistency for the degrees of freedom for the model. The accepted fits for GFI, NFI, RFI and CFI are 0.90. The model's Chi - square value was 768.202 with 424degrees of freedom, which are signifying a good fit model. As the Chi-square value is quite sensitive to sample size, indices like GFI, NFI, RFI and REMSEA were further tested. The model fit indices of the default model have been shown in Table 3. The final model is shown in Figure 2.

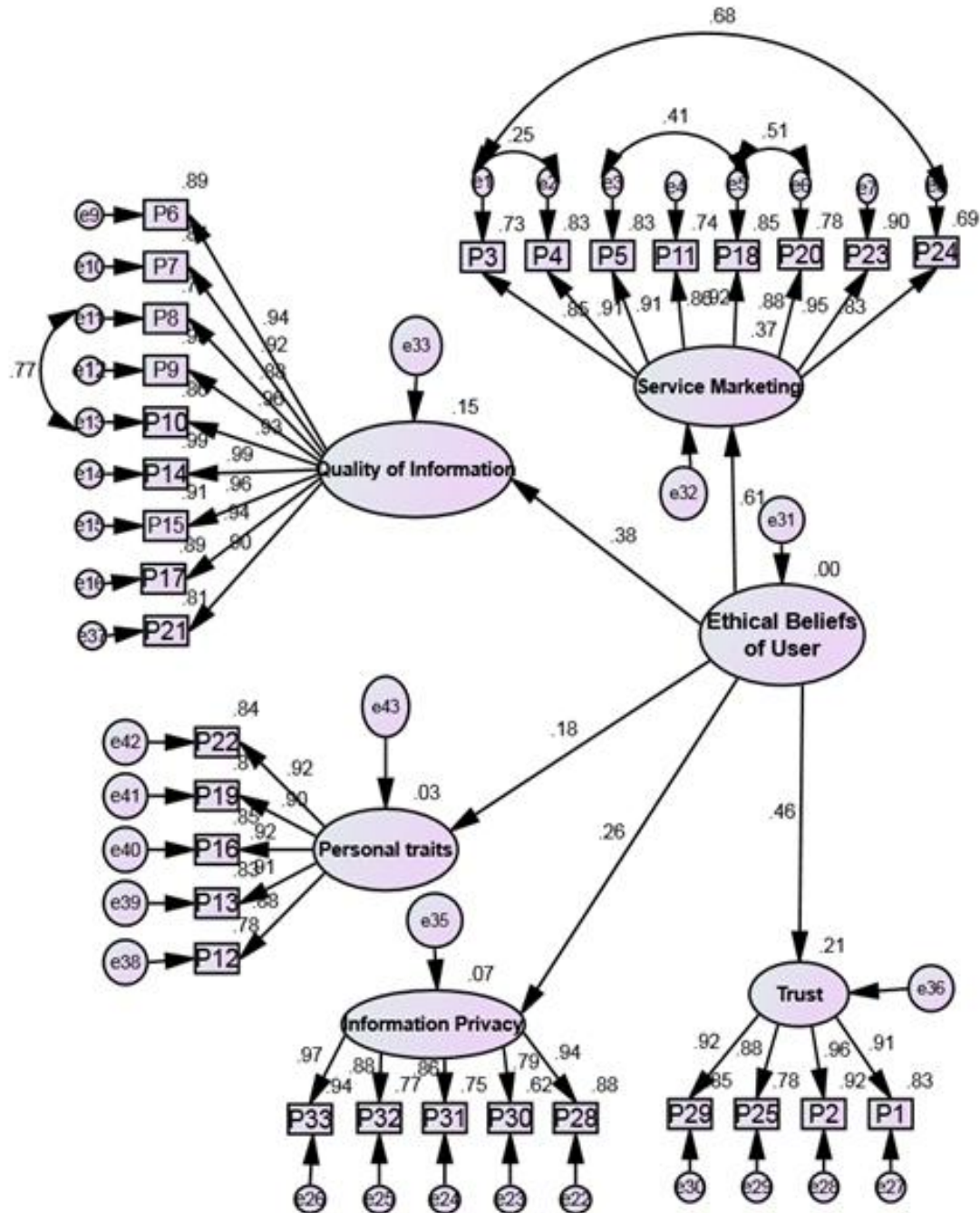


Figure 2: Final Model with Standardized Regression Weights.

Table 3: Indices of Fit with Comments for Model Analysis

Name of Indices	Default model	Data fitting of the model
Chi square/degree of freedom	768.202/424=1.812	Good Fit(value should be less than 3)
RMR(root mean square)	0.040	Good Fit, should be less than 0.08
GFI(goodness of fit)	0.862	Not a Good Fit(should be greater than 0.90)
AGFI	0.838	Not a Good Fit(should be greater than 0.90)
NFI	0.943	Good Fit(should be greater than 0.90)
RFI(relative fit Index)	0.938	Good Fit(should be greater than 0.90)
IFI(Incremental Fit Index)	0.974	Good Fit(should be greater than 0.90)
CFI(Comparative fit Index)	0.974	Good Fit(should be greater than 0.90)
TLI	0.971	Good Fit(should be greater than 0.90)
RMSEA(Root mean square Error Approximation)	0.05	Good Fit(should be less than 0.08)

Hypothesis Path Testing

After the analysis, the entire hypothesis discussed earlier in the conceptual model, have shown a positive association with ethics with significant values of H1, H2, H3, H4, H5 $p < 0.05$. Thus, the analysis supports the entire hypothesis. Table 4 shows the values of the results obtained. In the default model, the regression weight for service marketing is maximum (0.61) which suggests that the manner in which the e-Health is promoted has the maximum impact for making an ethical framework in the observances of the people. Other important factors are trust (regression wt. 0.46), followed by quality of information (0.38), Information Privacy (0.26). Least regression weight is for personal traits (0.18) which suggests that personal traits does not play much role for the users in making an ethical framework in the minds of the users regarding e-health.

Table 4: Testing the Hypothesis

Hypothesis		Estimate	Standard Error	P Value
H1 Quality of Information ← ethical beliefs	Accepted	0.868	0.251	***
H2 Service Promotion ← ethical beliefs	Accepted	1.212	0.363	***
H3 Personal traits ← ethical beliefs	Accepted	0.381	0.193	0.048
H4 Information Privacy ← ethical beliefs	Accepted	0.661	0.247	0.007
H5 Trust ← ethical beliefs	Accepted	1.000	0.000	0.000

5. DISCUSSION

The research shows that most of the e-health users (71%) in the private sector hospitals are males while only 29% are females. This could be because it is mostly the male members of the family who accompany the patient in the hospitals. The analysis also reveals that it is mainly the young generation in the age category of 20-30 years who are willing to use e-Health service; it suggests that online health platforms are more popular in the younger generation as compared to the older ones. People in the higher age groups are still hesitant to use e-health platforms. Further analysis shows that service marketing affects the users most regarding ethical beliefs of the users. They feel promotion of healthcare services should not be done like services of other commodities. After service marketing user's give value to trust which recommends that if any health service is trusted by the users they also believe that they adopt ethical practices. Quality of information also has an important role to play followed by Information security. The personal traits of a user seem to have the least influence on the ethical beliefs of the users.

6. IMPLICATIONS OF THE STUDY

This paper emphasizes that ethical beliefs of the users are also important while availing ethical e-health services. It shows the factors, responsible for creating ethical frameworks in the mind of the e-health users. The healthcare users should be made aware and educated about the factors which are useful for availing ethical services. It is essential to formulate ethical guidelines for the health professionals but along with this crafting awareness amongst the healthcare users is also suggested for fruitful execution of technology in health. This will ensure higher authority and will be supportive in enhancing the

health care user's trust and better relationships between healthcare providers and the users. Quality of Information, service marketing and trust play a significant part in crafting an ethical view point for e-health users. However this research has certain limitations also, the results may be vary with a larger sample size and on a different field of survey. This study was conducted on the private sector hospitals; Perceptions of the respondents might be different with public sector hospitals, thus the results might be different. This study opens the prospects for further research regarding user's in the area of e-health services.

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