

Rethinking Communication Regarding to Electronic Health (E-health)

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Abstract. Necessary information nowadays is easily accessible by electronic communication technologies and internet has a privileged status as the primary information source in the public sphere (Kennedy & Hills, 2009, 169). This essay seeks to provide information on "e-health" and the "communication & e-health"; "computer mediated communication (CMC)", Customer Health Informatics (CHI) and "E-health literacy". Then it will provide information regarding "internet effects on accessing health information regarding the patient's viewpoints" and will determine if in their viewpoints "skills of using internet, motivation for using it, interaction with others by the internet, reliance on the content of internet and social positions of patients" have any effects on gaining health information via internet or not on patient's viewpoints. A total of 270 patients who were volunteer (in access) were given questionnaires from 7 to 11 Jan 2012. The research was conducted in 5 big hospitals of Tehran which were selected according to the highest index of number of active bed. The measurement tool of the research is questionnaire. Collected data were analyzed using SPSS software. The results of this research indicate that on patient's viewpoints, skills of using internet have role on assessing health information, relying on the contents of internet on assessing health information play role on assessing health information and patient's interaction and social condition do not have effect on assessing health information on internet. Through studying communication and health texts the researcher come to understand that communication has key role in making everyday interaction. Conclusions and suggestions are the last part of this essay.

Keywords: CMC: Computer Mediated Communication, E-health, Health Communication, Customer Health Informatics (CHI), E-health literacy

1. Introduction

Mere strengthening of information circulation is not sufficient to access development opportunities that knowledge offers. (Shokrkhah, 2005, 22) Digital technologies by changing current methods and developing different possibilities had enormous effect on traditional media. According to Trend (Trend 2001:1) one of the characteristics of new digital culture is its Mediation Rule". (Kennedy & Hills, 2009, (169-170) equal accessing to education, media, information and communication technologies will be prepared. This will make possible a kind of independent and responsibility-based life in the field of human right, living in democracy and sustainable development. (Motamed-Nejad, 2005, 38) Internet is a virtual public meeting of citizens of the world. A point of general concurrence that millions of people from 155 countries are relating together and it's a huge organization that its order has been considered somehow before. General rules of using information in internet are based on free regulation. In fact we can consider it as an important chapter in the information society. (Mohseni, 2008, 79) Gunther Eysenbach offers the following succinct definition

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on his homepage about e-health: "E-health = Medicine + Communication + Information + Society" [Gunter Eysenbach].

2. e-Health

Potential health inequalities resulting from the 'digital divide', particularly affecting the disabled and the elderly, need to be minimized. The potential roles and influences of different e-health media and settings (e.g. kiosks, workplace) need to be explored. ([www.OpenClinical.com/knowledge management for medical care](http://www.OpenClinical.com/knowledge%20management%20for%20medical%20care))

2.1. communication and e-health

E-health communication can improve behavioural outcomes. (Neuhauser & Kreps, 2003,7) Health behavior models that have shaped health communication strategies are drawn primarily from the fields of communication, psychology, sociology, and medicine. These models are heavily influenced by literatures on relational communication, persuasion and social marketing. (Kreps, Bonagoro, & Query, 1998) E-health includes medical informatics, telehealth, telemedicine, consumer health informatics, public health informatics, among others. E-health communication strategies include, but are not limited to: health information on the Internet; computer assisted learning; online support groups; online collaborative communities; information tailored by computer technologies; computer-controlled in-home telephone counselling; bio-metric assessment and transmission; and patient-provider e-mail contact. Marshall McLuhan (1964, p. 23) asserted, famously, that 'The medium is the message'. E-health communication has the potential to address the five criteria for successful health communication. Psychological factors that mediate change are as follows: Promoting interactivity and participation, providing customized and contextualized information, expanding the mix of media channels, Prospects for leadership and investment in e-health communication, Implications for research, theory and practice. (Neuhauser & Kreps, 2003, 12-18)

2.2. computer mediated communication (CMC):

According to John December (1997), computer mediated communication is a human communication by internet. This is a new kind of relation. Communication never creates in vacuum. (Thurlow & et al, 2004, 31-36)

2.3. Customer Health Informatics (CHI):

CHI is the branch of medical informatics that analyses consumer's needs for information and studies and implements methods of making information accessible to consumers. (www.Wikipedia.com November 2010)

2.4. E-health literacy:

The concept of e-health literacy is introduced as the ability to seek, find, understand, and appraise health information from electronic sources and apply the knowledge gained to addressing or solving a health problem. E-Health literacy at its heart has six core skills (or illiteracies) which are organized into two central types 1. Analytic (traditional, media, information) 2. Context-specific (computer, scientific, health). **The analytic** component involves skills that are applicable to a broad range of information sources irrespective of the topic or context, while the context-specific component relies on more situation-specific skills. E-health literacy is influenced by a person's presenting health issue, educational background, health status at the time of the e-health encounter, motivation for seeking the information, and the technologies used. **Traditional Literacy** encompasses basic literacy skills such as the ability to read text, understand written passages, and speak and write a language coherently. An information literate person knows what potential resources to consult to find information on a specific topic, can develop appropriate search strategies, and can filter results to extract relevant knowledge. **Media Literacy** is a means of critically thinking about media content and is defined as a process to "develop metacognitive reflective strategies by means of study" about media content and context. The American Medical Association considers a **health literate** person as having "a constellation of skills, including the ability to perform basic reading and numerical tasks required functioning in the health care environment. **Computer Literacy** is the ability to use computers to solve problems. And the ability to adapt new technologies and software. **Scientific Literacy** is broadly conceived as an understanding of the nature, aims, methods, application, limitations, and politics of creating knowledge in a systematic

manner Taken together, these six literacy types combine to form the foundational skills required to fully optimize consumers' experiences with e-health.(Norman& Harvey, 2006)

3. Conclusions & Suggestions

3.1. Conclusions

3-1-1 According to The results the first hypothesis of the research were confirmed. Based on this hypothesis “on patient’s viewpoints, there is a relation between skills of using internet and accessing health information from internet.”Among 248 out of 270 patients who answered the part of questionnaire about skills, 38 patients disagree, 144 patients with in the middle viewpoint and 66 patients agree with the mentioned hypothesis.The chi-square test was used for the analysis is 175.871, Asymp. Sig. is 0.000 so p values \leq 0.05 was considered statistically significant. (Table 1)

Table 1: Descriptive Statistics: skills of using internet

	N	Mean	Std. Deviation	Minimum	Maximum	Chi-Square	df	Asymp. Sig.
skill	248	3.1210	.65624	2.00	5.00	175.871 ^a	3	.000

3-1-2 According to The results the second hypothesis of the research were confirmed too. Based on the second hypothesis “on patient’s viewpoints, there is a relation between motivation of using internet and accessing health information from internet.”Among 252 out of 270 patients who answered the part of questionnaire about motivation, 92 patients have in the middle viewpoint and 160 patients agree with the mentioned hypothesis. The chi-square test was used for the analysis is 104.857a, Asymp. Sig. is 0.000 so p values \leq 0.05 was considered statistically significant. (Table 2)

Table 2: Descriptive Statistics : motivation of using internet

	N	Mean	Std. Deviation	Minimum	Maximum	Chi-Square	df	Asymp. Sig.
motivation	252	3.6905	.57107	3.00	5.00	104.857 ^a	2	.000

3-1-3 Interestingly According to The results, the third hypothesis of the research was also confirmed. Based on the hypothesis “on patient’s viewpoints, there is a relation between reliance on the content of internet and using internet in order to accessing health information.”Among 248 out of 270 patients who answered the part of questionnaire about reliance on the content, 124 patients have in the middle viewpoint .104 patients agree and 20 patients disagree with the mentioned hypothesis. The chi-square test was used for the analysis is 248.774a, Asymp. Sig. is 0.000 so p values \leq 0.05 was considered statistically significant. (Table 3)

Table 3: Descriptive Statistics : content of internet

	N	Mean	Std. Deviation	Minimum	Maximum	Chi-Square	df	Asymp. Sig.
content	248	3.3710	.71386	1.00	5.00	248.774 ^a	4	.000

3-1-4 The results indicates, the forth hypothesis of the research does not confirmed. Based on this hypothesis “on patient’s viewpoints, there is a relation between interaction of patients and their physicians and using internet in order to accessing health information.”Among 254 out of 270 patients who answered the part of questionnaire about interaction of patients and their physicians, 113 patients have in the middle viewpoint, 65 patients agree and 76 patients disagree with the mentioned hypothesis. The chi-square test was used for the analysis is 358.189a, Asymp. Sig. is 0.000 so p values \leq 0.05 was considered statistically significant. (Table 4)

Table 4: Descriptive Statistics : interaction

	N	Mean	Std. Deviation	Minimum	Maximum	Chi-Square	df	Asymp. Sig.
interaction	254	3.4567	.75187	1.00	6.00	358.189 ^a	5	.000

3-1-5 According to the results, the fifth hypothesis of the research does not confirmed, too. Based on this hypothesis “on patient’s viewpoints, there is a relation between social position of patients and using internet in order to accessing health information.”Among 258 out of 270 patients who answered the part of questionnaire about social position, 118 patients have in the middle viewpoint, 134 patients agree and 6

patients disagree with the mentioned hypothesis. The chi-square test was used for the analysis is 236.574a, Asymp. Sig. is 0.000 so p values ≤ 0.05 was considered statistically significant. (Table 5)

Table 5: Descriptive Statistics: social position of patients and using internet

	N	Mean	Std. Deviation	Minimum	Maximum	Chi-Square	df	Asymp. Sig.
social position	258	3.4884	.57329	1.00	4.00	236.574 ^a	3	.000

3.2. Suggestions

- It is necessary for the health organizations to monitor the accuracy of the provided information on cyber space.
- Preparation of basic training on healthcare methods from early years of education in order to develop public's Health literacy is necessary specially on accessing to internet.
- Women are necessary member of society and need more support than others on using internet for accessing health information.
- Communicating through internet for self helping and social support in health treatments fields should be considered.
- The World Health Organization should pay attention to the countries' differences like Health infrastructures, life expectancy, health expenditures, ICT development index, internet users (per 100 populations) and while writing the operational global plans about Global Observatory for e-health should not forget close attention on "**E-health Communication and E-health literacy**". Access to technology in all parts of the country should be possible; Extensive e-Health **infrastructures** are now viewed as central to the future provision of safe, efficient, high quality, citizen-centered health care so high-speed internet connection should be establish in all region .
- According to Everett Rogers, decision for innovation is a "**mental process**" and E-health was defined as "**the use of information and communication technologies (ICT) for health**", "**state-of-mind**" and "**a way of thinking**" which is also a kind of innovation in healthcare. E-health is the single-most important revolution in healthcare since the advent of modern medicine, vaccines, or even public health measures like sanitation and clean water. Self-based helping is an important factor for changing life style, so one should also consider 5 stages of this mental process, which are "Awareness, Persuasion, Decision, Implementation and Stabilization. According to 5 mentioned stages and definition of "diffusion of innovation", in case media supports innovation, it will have good effects. According to Rogers, every innovation creates a kind of uncertainty. Communication and healthcare organizations should foresight necessary implementations for encouraging public for using internet in order to access health information.
- Health Information on the Internet can help reforming of life style and reducing disease meanwhile physicians and patients should be highlighted in this section.
- Consumer informatics stands at the crossroads of other disciplines, such as nursing informatics, public health, health promotion, health education, library science, and **communication science**, and is the most challenging field in medical informatics; CHI is a sub-specialty of medical informatics which studies from a patient/consumer perspective the use of electronic. Health communication is more effective when it reaches people on an emotional as well as rational level, when it relates to peoples social or life contexts. A combination of the effectiveness of personal communication and the reach of mass media communication is needed to change population behavior. Tailored (customized) communication is more effective than generic messages. (Improvement communication approaches with diverse audiences and finally Interactive communication is more effective than one-way communication.
- Establishing a 'Comprehensive website for Health' a highly professional site to guide users to carefully select health information and interactive tools is necessary. So by integration, users can rely on the provided health information and this could provide the public with easy-to-use, credible,

interactive, relevant, private and secure information that could theoretically be expected to improve health.

- There is a gap between the electronic health resources available and consumers' skills for using them. Consumer e-health requires basic reading and writing skills, working knowledge of computers, a basic understanding of science, and an appreciation of the social context that mediates how online health information is produced, transmitted, and received or what can be called e-Health literacy. So this subject should be considered and educational plans must be conducted in this regard.

4. Acknowledgements

The authors gratefully acknowledge Dr.Ali Geranmaye- Pour for his helpful comments during this research.

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