Potential Roles of IT Tools in Health Media Literacy: Analyzing the Views of Digital Media Management Experts

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Abstract

Background: In the present era, Digital Media Content has played an effective role in the formation of socio-economic and social behaviors. The aim of this research was to investigate the views of media experts in different levels of this filed on factors that affect user-media relationship in the following domains: non-verbal communication, interaction with media audience, effect of media on various domains, attitudes of the audience toward electronic media, and audience's priorities- economic aspects in Iran.

Methods: A questionnaire was designed and validated by a pilot study and distributed to a sample of 40 experts and users of digital media on July, 2017. The collected data was analyzed using SPSS Version 22; the significance level was set to 5% in hypotheses testing.

Results: The results show that the participants generally agreed on all statements regarding the study domains. However, the level of agreement to all domains was different among different groups of the respondents (mean=14.03 among media strategists as the lowest and mean=35.13 among media managers as the highest levels of agreement, P<0.001) and the domains of the study (mean=28.50 for the higher impact of traditional media and mean=22.50 for the effect of communication technology on increase of interaction between media and audience).

Conclusion: The highest rate of agreement was reported for the domain "Traditional media have a higher impact on their audience than the new media, suggesting the importance of traditional media in public knowledge and behavior. However, there was significant difference in the experts' opinions regarding each domain.

Introduction

Media industry has been going through radical developments due to economic, social and political factors on the one hand, and technological innovations on the other. Media audience refers to the individuals who receive a message through media either directly or indirectly. Such messages may be received through face to face communication, via such media as mail, telephone individually, or via modern media collectively. Thus, media and message are two components of the communication process.

Given the unique potentials of the media, these instruments as communication mechanisms can play

a significant role in the advancement of individual and social behaviors in various domains.[1] It is shown that the media have greatly influenced the domains of social, technological, political and lifestyle of the communities.[2] Generally speaking, the media greatly influence personal attitude, priorities and values. The media also construct beliefs and perceptions, which, in turn, may alter behaviors. Social events represented in the media can change our knowledge and attitude in a considerably short time. In addition to forming beliefs and creating images, the media discourse influences our perception and attitudes toward human concepts through creation of meanings and values.[3] For instance, the view through which people accept social and health information is affected by the way the media sort and provide them. The media may also present a biased view on different social and health issues damaging individuals' own benefits and positive interests. Therefore, it is suggested that the media should be controlled in presenting valid and unbiased information in informative and educational programs and campaigns.[4] As such, strategists and policymakers in social (including health) fields need to address the issues related to images and massages provided to the communities via the mass media and private social networks.[5] Media professionals and practitioners and social activists affirm that social media are powerful tools for changing the views and values of a society. For example, health organizations are able to boost the society's capacities to take and understand health-related messages via effective use of media resources. The media play important roles in the management of health issues even before individuals can make informed decisions about their health. Obviously, whenever individuals are responsible for their own health, they would need health-related information to make proper decisions. Valid and demanded health-related information helps the individuals to fill the gap between what he/she knows and what he/she needs to know to reduce uncertainty and make proper and timely decision on health issues. In that regard, a decision making individual needs personally demanded, valid and timely information targeting his/her social or health issues.

There are two sources of information available to the community, i.e. those who are officially authorized and monitored and those which are open sourced with no or limited supervision. Examples of the former include the media run by government or authorized agencies like ministries of culture and health education. Examples of the latter include information provided by other individuals of the same or other communities which is provided via conventional or new media. According to Hardy, unauthorized sources of information, especially open sourced media, play a significant role in changing and shaping the beliefs and attitudes of a community. Indeed, the media

are considered as the secondary sources of health information in the literature.[6] According to the Global Health Survey, websites are ranked the first followed by media as the main sources of health information. Hence, it is logical to assume that the media is a major source for individuals to meet their needs in health-related information.[7]

Among different types of media, the emergence of the internet and personal blogging changes access to health information dramatically. Health discourses in these new media are radically different from those in the conventional media. This is due to the dynamic and interactive nature of the net. The interactive nature of the internet makes the user more engaged in the personalization of one's interactive access to the required information. Furthermore, the non-synchronicity of the net allows the user to save information and get access to it anywhere or anytime he/she wishes. The internet provides a massive amount of information quickly to general public. In addition, the users can also provide information to others via the possibility of sharing information and views to others.[8] The anonymity of the internet helps the users to ask questions uninhibitedly without having to disclose their identity.[9] The fact that the internet sites often use multimedia capabilities is yet another incentive for those looking for information. For example, they can choose the language through which they wish to send and receive information.[10]

In spite of all the merits of the net, the internet users suffer from serious demerits as well. First, categorizing the information searched in the internet is a very difficult and specialized task which makes the search process and the information obtained out of control.[11] As suggested, many internet users are unfamiliar with appropriate search methods. Third, there are both reliable and unreliable information provided to the users via the net. As a matter of fact, recent research suggested that more than half of the health information in the internet is unreliable. Health experts warn that such misinformation might have serious consequences for those relying on them. However, more than 90 percent of the internet users are satisfied with the information they receive from the net.[12]

In recent decades, health professionals have increasingly recognized that the media have a significant influence on the health and have used many strategies to address the effects of media on health.[13] Health information is an important piece of information, and ways to improve its indices for everyone is very important. Media literacy is required for this information and the transfer of information in the media. This requires a level of knowledge that is referred to as health literacy.[14] The relationship between poor literacy skills and health status is now

well recognized and better understood. Interest in this relationship has led to the emergence of the concept of health literacy.[15] Health literacy involves knowing ways to spread and prevent common diseases, practice sickness care, and implement appropriate and timely physician orders, medication, and ultimately the ability to read and apply materials using insurance and rehabilitation services,[16] not necessarily referring to general reading abilities.[17]

Social media include websites and other online tools (called social networks) that enable people and organizations to get, create, and share the content by interacting with others about topics of common interest. Examples of social networks include Facebook, Twitter, Instagram, LinkedIn, YouTube, and more.

Social media are a powerful mode of communication because they enable the adults and adolescents to align around interpersonal relationships and common interests. Social networks also make it easier for the users to remain in touch through the sharing of content and updates. Social media quickly mobilize people about issues that matter to them, and help to keep them informed. In fact, almost one-in-three Americans now get their news online, often through social media.

Social media and health literacy are interconnected, especially in the field of health promotion. A meta-analysis from O'Mara suggests that broad, generic health promotion programs and campaigns often fail to engage diverse communities because their health communication strategies overlook the unique culture and language of segmented populations as well as health literacy principles.[18]

The degree to which the Iranian audience has been influenced by digital media content in health subject and how much the users' behavior is affected by the media reveals the differences among peoples' personal attitudes, behavior and knowledge based on their health media literacy. This study addresses the domains of interactions, effectiveness, acceptability, non-verbal communication, cost as facets of the relationship between the media and audience from the prospective of media experts working at different levels of Iranian medical industry, i.e. media strategists, media specialized university lecturers and scholars, and media managers in Iran. This is done to understand the views and opinions of stakeholders in the media industry in the Iranian society.

Methods

To investigate the role of the new media platforms in the formation of knowledge attitude and practice of the users, we administered an electronic survey employing a closed-ended questionnaire to a group of well-known experts from three levels of media management as follows: media strategists (level 1), university lecturers and scholars in the media sciences (level 2) and media managers (level 3). The participants' opinions were sought in five general domains: interactions, effectiveness, acceptability, non-verbal communication, and cost. A total of 40 participants completed the questionnaire. The reliability of the research instrument was determined via split half approach (Cronbach' Alfa=0.73). The formal content and construct validity of the scale was confirmed by opinions of an expert committee.

Research Domains and Hypotheses

There are five types of new media platforms as follows: electronic media, digital media, cyber media, and web-based media. To investigate the expertise views on the relationship between the new media and their audience in Iran, we defined five research domains, each representing a crucial aspect of the media-audience interaction. The research domains and their corresponding questions are shown in Table 1.

The Structure of the Research Questionnaire

Each of five research domains was measured by six statements representing the five facets of the nature of interaction between the audience and digital media. As such, the questionnaire contains thirty Likert scaled statements. The respondents choose one of the following representing the degree of their agreement to the statements: strongly agree, agree, no opinion, disagree, and strongly disagree. The appendix provides each research domain and the related statements in the research questionnaire.

Statistical Procedures

Descriptive and inferential statistics were used to analyze the data. In the first step, the agreements given to each statement were counted as the percentage of agreement (strongly agreed or agreed). A comparison was made between different levels of respondents with regard to the level of agreement in each domain. Total scores (based on Likert scales) for all domains were calculated and used for comparing the general views of the respondents from different levels of involvement. To compare the groups with regard to general views, we applied ANOVA. To do the analysis, we used SPSS, version 22.

Results

The participants who were selected in this study were all well-known experts in the media industry. They were identified through searching news agencies websites and contacting media managers and governmental organizations responsible for media industry. A letter or email (if was available) was sent to the identified most

Table 1: Research domains and corresponding questions

	Domain	Research question
1	Interaction in new media	Information and communication technology tools increase interactive relationship between the media and their audience in Iran
2	Cost in new media	New Information and communication technologies decrease costs of receiving massages and interacting communication between new media and audience in Iran
3	Non-verbal communication in new media	Employing information technologies, new media are more efficient in terms of their non -verbal communication with their audience
4	Acceptability to audience in new media	Unlike the new media, the popularity and acceptability of print media are decreasing
5	Influence on audience in new media	Traditional media have a higher impact on their audience than new media

Table 2: Scores of agreement of the study participants to the study domains

	Level1 (n=12)	Level 2 (n=7)	Level3 (n=21)	Total (n=40)	P value*
Hypotheses	mean±SD	mean±SD	mean±SD	mean±SD	
Information and communication technology tools increase interactive relationship between the media and their audience in Iran	22.67±4.68	12.17±2.4	22.83±4.83	22.56±3.25	<0.001
New Information and communication technologies decrease costs of communication among new media audience in Iran	22.5±4.76	14.50±4.23	32.17±4.36	23.39±3.40	<0.001
Employing information technology, new media are more efficient in tem of their non -verbal communication with their audience	25.33±3.88	13.17±4.26	30.83±5.81	23.11±4.40	<0.001
The popularity and acceptability of print media are decreasing as compared with new media	22.33±4.55	15.50±4.64	35.17±4.88	24.33±3.35	<0.001
Traditional media have a higher impact on their audience than new media	26.0±4.34	14.83±3.55	44.67±6.89	28.50±4.23	<0.001
Domains average	23.97±4.39	14.03±3.83	35.13±3.14	73.13±12.33	<0.001

Based on ANOVA, comparing the score of respondents' agreements to the statements according to the participants level of activity

rewarded experts (n=95) among whom 40 responded willingly to participate. The educational status of the participants suggested that 53% of the participants had a B.Sc. degree, 40% had M.Sc., and 7% had a doctoral degree. The mean age of the participants was 41 years. As presented in Table 2, the majority of the respondents believed (strongly agreed or agreed) that "Information and communication technology tools increase interactive relationship between the media and their audience in Iran". The results suggested that scholars did not completely agree to the statements compared to the other groups of experts (P<0.05). Similarly, the majority of the respondents believed (strongly agreed or agreed) that "New Information and communication technologies decrease the costs of communication among the new media audience in Iran". Again, the results suggested that the scholars had a lower level of agreement as to the corresponding statements compared to the other groups of experts (P=0.002). In addition, the majority of the respondents believed (strongly agreed or agreed) that "Employing information technology, new media are more efficient in terms of their non-verbal communication with their audience". The results also suggested that the scholars agreed less to the corresponding statements compared to the other groups of experts (P=0.003). The majority of the respondents (87.91 %) believed (strongly agreed or agreed) that "Employing information technology, new media are more efficient in terms of their non-verbal

communication with their audience". As before, the results suggested that scholars did not completely agree to the corresponding statements compared to the other groups of experts (P=0.015). The majority of the respondents believed (strongly agreed or agreed) that "The popularity and acceptability of print media are decreasing as compared with new media". As before, the results suggested that scholars were less complacent about the corresponding statements compared to the other groups of experts (P=0.005). In addition, the majority of the respondents (87.91%) believed (strongly agreed or agreed) that "Traditional media have a higher impact on their audience than the new media". Results suggested that scholars had a lower level of agreement to the corresponding statements compared to the other groups of experts (P=0.002). With regard to the total agreement with all statements, the results suggested that in general the majority of the participants agreed to the statements regarding all aspects of the domains. "

Discussion

This is a cross-sectional study conducted to determine the personal opinions of the experts involved in different levels of media activities, from strategists and scholars to managers of classic media. The researchers made an attempt to define the potentials of the new media in changing knowledge, attitude and practice of the audience with regard to different social cultural and

health aspects. The results suggested that the experts from different aspects of the media business believe that the new media can greatly influence each person's KAP via more interactive, cheaper and easily accessed sources of new information compared to the conventional media. Other studies on this subject also suggested the effectiveness of the new media on the socio-economic and health issues of targeted communities. Different researches have been done so far on the role of different types of digital media on the health literacy from different points of view; for example, in one research the focus was on the relationship between the social media and health literacy, discussing a mid-sized health literacy non-profit organizations' social media philosophy and tactics during the past 10 years since both social media and health literacy strategies evolved continuously.[19] In another study, the researcher has tried to clarify the relevance of health literacy to mobile health based on digital device. They show it is incumbent upon m-Health developers to design and utilize the message systems. Strategies for designing and implementing m-Health applications to meet the health literacy levels of different audience are described in their research.[20] In one more research, again it is discussed that the modern health care system is being irrevocably changed by the development and introduction of new health information technologies (such as health information systems, decision-support tools, specialized websites, and innovative communication devices and digital media). This research examined the demand for evaluating the health information technologies and suggested several strategies for conducting rigorous and relevant evaluation research.[21] The novelty of this article in comparison with the previous researches is studying the media-audience relationship in five domains; namely, interactions, effectiveness, acceptability, non-verbal communication, cost from the experts' prospective ' suggested that the participants working at different levels of the media industry agreed to the potentials of the new media. However, it was revealed that scholars are less positive about the potentials of the new media. It seems that a well-defined socially and culturally adjusted strategy can help to improve the health literacy and, therefore, knowledge, attitude and practice of the Iranian population in much effective approaches than the methods used so far to attack social, behavioral and health issues.

Conclusion

The results suggested that the experts participating in the study generally agreed on all statements regarding the above mentioned domains. The highest rate of agreement was reported for the higher impact of traditional media on their audience, suggesting the importance of traditional media in public knowledge and behavior. The scholars on average agreed less to the advantages of new media with regard to the previously mentioned domains. The majority of highly involved experts in the media industry believe that the new media bring great potentials to social and health authorities to positively affect the related issues in the Iranian population. However, the uncontrolled and openness of the uncontrolled interactive sources of information can also put the community at the risk of being exposed to misleading information. As the result, improving health literacy and providing valid and reliable and demanded sources of information is a key to the benefits of the potentials of the new era of the media industry.

The study sample was selected among the experts at different levels of media industry. The views are affected by their personal experience and their positions.

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Appendix

Statements in Interaction in new media domain

Hypotheses	Row	Statements in Interaction in new media domain
Information and communication technology tools increase interactive relationship between the media and their audience in Iran.	1	Information Technology tools speed up the process of production, distribution and delivery of content.
	2	Information technology tools make non-synchronous communication possible.
	3	Information technology tools make online access to high quality audio and image possible.
	4	Information technology tools empower the users with such characteristics as control, choice, high speed.
	5	Information technology tools make it possible to take care of the audience's expectations, requests, and needs.
	6	Information technology tools facilitate customer relationship management.

Statements in the domain of audience cost

Hypotheses	Row	Statements in the domain of audience cost
New information technology tools have reduced health related- expenses by Iranian media audience.	1	New technologies have made it possible to peruse multiple purposes simultaneously and to address a larger group of audience.
	2	New Information technology tools explicitly address the needs of their audience, reducing costs due to direct calls.
	3	New information Technologies make inexpensive and unlimited worldwide publication possible
	4	A web-based system with multimedia capacities (live video) is less expensive than traditional media.
	5	Electronic commerce has reduced much of social expenditure by reducing bureaucracy by omitting the middlemen in electronic transactions.
	6	Near-field communication (NFC) is a reasonable mechanism to reduce costs and speed up transactions.

Statements related to the domain of non-verbal communication with audience

Questions	Row	Statement related to the domain of non-verbal communication with audience
Digital media facilitate non-verbal communication by employing IT tools.	1	Digital media convey information through photos, pictures, films, etc, easily when such information is difficult to convey through words.
	2	The popularity of social media among the users especially the young with such innovative features as stickers facilitates non-verbal communication.
	3	Non-verbal communication in digital media is assisted by hypertext (voice, music, and picture) in addition to text.
	4	Non-verbal communication in digital media is assisted by a meaningful relationship between the media and the audience as well as
	5	New technologies help to shift a major portion of interpersonal communication from the verbal type to non-verbal type.
	6	New technologies make it possible to replace conventional types of human-computer interactions with body language.

Statements related to the domain of popularity and acceptability of new media

Hypotheses	row	Statements related to the domain of popularity and acceptability of new media
Unlike new media, conventional media are losing their popularity in Iran.	1	Since digital media audience members are free to choose from among the messages, they can readily establish interactions with them.
	2	It is easier to have access, edit, distribute and retrieve messages in digital media than conventional media.
	3	Contrary to print media, digital media make it possible to revise and edit message at any stage.
	4	At times, hypertexts are more effective than several pages of textual content.
	5	Unlike digital media, print media are subject to serious limitations in circulation, number of pages and accessibility.
	6	Unlike unofficial information sources such as twitter, facebook, Viber, the print media are losing popularity.

Statements related to the domain of new media and their influence on audience

Hypotheses	Row	Statements related to the domain of new media and their influence on audience
Print media influence their audience more than digital media do.	1	Media audience trust print texts more than audio and pictorial messages as print text are more durable.
	2	It is possible to distribute print media in specific geographical area for specific audience.
	3	Digital media require by far more expensive equipment than digital media do.
	4	Print media are accessible to the poor and the rich alike, yet digital media are accessible mostly to the middle and upper classes.
	5	It is harder to control digital media as they are not bound to any geographic borders.
	6	Little training is needed for using print media.