

# The Role of Information Resources on Building Health Awareness-Study Conduct in Amman Jordan

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**Abstract**— Effective health communication is important for informed decision-making since Patient centered care requires an understanding of the sources patients use to obtain different types of health in information. Recognizing and supporting those who provide health care advice may be an effective way to disseminate health messages to broader audiences. This study aimed to identify how today's different sources of information can affect health awareness of the population in Jordan. In order to verify the objectives of the study and test the hypotheses, the research team designed a questionnaire Questions with (29) question distributed over five dimensions with each dimension corresponding to one hypothesis of the research hypotheses. The questionnaire was distributed to (190) individuals with different backgrounds and obtained (153) effective sample valid for statistical analysis. SPSS was used for the descriptive analysis of the data obtained from the questionnaire. The study showed that the source of information that had the highest impact on the health information came from specialists and personal experience, while each of media and reference groups had a lesser impact on building health information.

**Keywords**— Jordan, Information Resources, Health, Awareness.

## I. INTRODUCTION

The provision of timely, accurate, and relevant health information that facilitates lifestyle changes in targeted populations is a public health imperative(1). Health information favorably influences attitudes and knowledge related to the improvement of health on a personal or community basis (2). Effective health communication is important for informed decision-making since Patient centered care requires an understanding of the sources patients use to obtain different types of health in information, such knowledge can inform healthcare professionals and educators to develop effective interventions and strategies to help patients and their family caregivers obtain high quality health information and participate in health care decisions. (3,4) Recognizing and supporting those who provide health care advice may be an effective way to disseminate health messages to broader audiences (5).

Many socio-demographic factors (e.g., age, sex, socioeconomic status, and ethnicity) exert powerful influence over various aspects of health including health information seeking, information processing, and access to health care (6).

Lambert and Loiselle have reported that the socio-demographic characteristics of individuals influence how much information is sought, what sources are used, and how the information is obtained (7).

Level of education was also independently associated with trust of most health information sources.(8)

Physicians are still regarded as the most trusted source of health information compared to the rest popular choices (i.e. internet, TV, family or friends, magazines, newspapers or radio) (9).A study carried out in Switzerland showed that a large majority of men and women (87.8%) would turn to physicians in case they would need information about health issues (10).

Usually, health information is sought out by individuals through interpersonal sources, such as family and friends, and

through the mass media, such as newspapers, magazines, TV, and the internet (3). In the United States, Liccardione et al. (2000) the frequencies of using the different health Information Sources were as follows: newspapers or magazines, 69%; radio, 30%; television, 56%; and the Internet, 32% (11). Another study showed that nearly one-third (32.9%) of participants reported using the relatives as a source of health in information; 28.1%, television and radio, and only 4.2%, the Internet (10).

Health information exchanged between friends or family members can influence decision making, both for routine health questions and for serious health issues. While health care professionals remain the preferred source of information for many technical questions, family and friends offer factual health information and emotional support, drawing on personal experiences, beliefs, and attitudes (12-14).

The environment in which patients consume medical and health information has changed dramatically during the past two decades (8). Traditional offline mechanisms are still successful in reaching large segments of the public. However, they remain ineffective in reaching a large segment of younger users who have moved to heavy engagement in Internet based communication and socialization (15). The rapid growth of the Internet and other new media has given consumers access to a wide variety of sources of health information beyond the doctor (16-18). More recently, social networks (i.e., the web of social relationships that surround an individual) may also be a source of health in information (19,20).

in this study we want to know which source of health information is preferred for the population in Jordan, and which factors that generally affects people to choose a source of information to receive true health in information.

## II. RESEARCH PROBLEM

One of the most important challenges facing the world today is how to handle and manage the huge flood of information in all its forms, including medical in information.

Based on this, it is important to know the most important source of health awareness among citizens and know their attitudes and behavior to inquire about health in information.

From this, the research questions are:

Does the media, specialists and others play an active role in the influence of the information of health awareness among citizens in Jordan. From this hypothesis we derive the following hypothesis

Does media influence the information of health awareness?

Do the reference groups (family, friends, co-workers) influence the information of health awareness

Do the specialists (doctor, pharmacist...etc.) influence information of health awareness

Do the personal experiences influence information of health awareness

### III. RESEARCH QUESTIONS

[1] What is the actual effect of the media (T.V, Magazines, Social media, etc.) on forming the health awareness of the population in Jordan.

[2] Does the reference groups (i.e. Family, friends co-workers) affect the health awareness information in the Jordanian population.

[3] Does professional healthcare providers impact on the information of the health awareness of the Jordanian population.

[4] Does personal experiences impact heavily on the health awareness of the Jordanian population.

### IV. RESEARCH OBJECTIVES

The most important objectives of the research are summarized as follows:

[1] Identify the "impact of different Information Sources on the information of health awareness in Jordan". H1

[2] Identify if the media in general can affect the health awareness of the Jordanian population. H2

[3] Identify if the references groups (i.e. Family, friends) can affect the health awareness of the Jordanian population. H3

[4] Identify the extent of the professional healthcare providers to impact the health awareness of the Jordanian population. H4

[5] To identify the most influential source on citizens and residents in Jordan. H5

### V. LITERATURE REVIEW

By reviewing what was published about the sources of information affecting public's health awareness in Jordan we were not able to find such studies. However, we found a study conducted on a group of students at Al – Balqa Applied University. Nevertheless, we were able to find several studies in other regions that investigate the impact and trust of different health Information Sources.

In Al-Arjan's (al-Arjan et al., 2013) study, knowing health awareness level and sources of health information of Students at Al – Balqa Applied University, the sample consisted of (1916) students. The results indicated that the general health awareness level is high, with (85.27%) of responses, that (90.55%) of the students have high level and (90.44%) of

them have medium health awareness level. The analysis also, indicated that health awareness differs according to the variables (Gender and level of Education), where the results showed statistically significant differences in the level of health awareness according to the two variables in favor of females and the fourth-year students. The results also indicated that most of the health Information Sources are the information media (21).

On the other hand, Somers (2016) Comparative Analysis of Health Information Trends and Needs between Guam and the U.S. focused on three key factors: socio-demographic factors, information source preference, and trust in Information Sources. The most common source was the Internet for both Guam and national participants. However, the Guam sample turned to print media next (13.7%), followed by a healthcare provider (11.3%). In contrast, HINTS respondents said that the second source of health information they would turn to after the Internet would be a healthcare provider, 13.6%, followed by printed materials, 9.8%. However, for both the Guam and the HINTS samples, the most trusted information source for health and medical topics were health care providers (M = 3.60, SD = 1.06 and M = 3.64, SD = 1.04, respectively) (22).

On another level the study of Brown-Johnson CG's (2018), Trust in Health Information Sources: Survey Analysis of Variation by Socio-demo-graphic and Tobacco Use Status in Oklahoma: The trust in health providers did not vary by subpopulation, but Socio-demo-graphic variables such as gender, income, and education. Women were on the whole more trusting than men, trust in media decreased with income, and trust in friends and family decreased with education. Oklahomans showed the highest trust in interpersonal sources: 81% (808/994) reported providers were trustworthy, 55% (550/999) for friends and family, and 48% (485/998) for health insurers. For media sources, 24% of participants (232/989) rated the internet as trustworthy, followed by 21% of participants for television (225/998), 18% for radio (199/988), and only 11% for social media (110/991) (23).

Interestingly in the study of K. Chen (2015), Public Awareness and Information Sources of Health Publicity for Three Major Infectious Diseases in rural Zhejiang Province, subjects who were aware of knowledge for three infectious diseases tended to choose 'television', 'posters or billboards', 'free publicity materials or handbills', 'newspapers or magazines', and 'internet', but not 'relatives or friends' and 'broadcasts'(24).

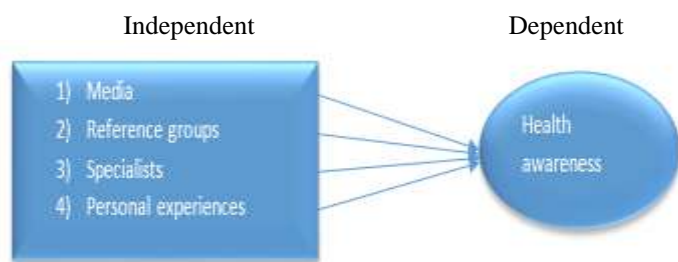
Mertens et al., 2017, studied the Information sources, awareness and preventive health behaviors in a population at risk of Arsenic exposure and found both men and women use interpersonal communication as an information source at a higher frequency than any mass communication channel. Interpersonal communication is considered to be a reliable source by over 90% of the respondents, making it the most trusted information source on As, by far surpassing mass media (25). He also mentioned that trust is associated with perceived characteristics of relatives, co-workers or friends, such as helpfulness and concern. These characteristics

may contribute to enhancing the level of confidence in the messages communicated through social ties, compared to those conveyed by mass media sources (25,26,27,28).

However, Moretti (2012) in his paper on Access to health information on the internet results concluded that the internet is proving to be a major source of health information for the population, and that website certification is a strategy to be contemplated to improve the quality of information and to promote public health (29).

VI. STUDY MODEL

The study model design was based on study issues, goals, and similar previous literatures (31, 32)



VII. METHODOLOGY

Data Source

Data collection through the development and design of questionnaire include (29) question distributed over five dimensions, (47) questionnaires were distributed as electronic copy and (143) as hard copy. (15) individuals did not answer the questionnaire and (22) of the answered questionnaires did not meet the criteria to be included in the analysis. This reduced the effective sample to (153).

The sample was random.56 (36.6%) male and 97 (63.4%) female, aged mainly from 18 to 28 years (66%).

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Male	56	36.6	36.6	36.6
Female	97	63.4	63.4	100.0
Total	153	100.0	100.0	

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid <18	6	3.9	3.9	3.9
18-20	101	66.0	66.0	69.9
29-39	25	16.3	16.3	86.3
40-50	11	7.2	7.2	93.5
51 or more	10	6.5	6.5	100.0
Total	153	100.0	100.0	

VIII. THE SCALE AND DIMENSIONS

The quintet (Likert) scale was chosen for the current study. Therefore, all the focal constructs of the current study were

measured on quintet (Likert) scale ranging from “Strongly agree, Agree, Neutral, Disagree, to strongly disagree”.

This current study was divided into five dimensions relating to the different constructs of the Study model:

- Dimension (1) Media
- Dimension (2) Reference groups
- Dimension (3) Specialists
- Dimension (4) Personal Experiences
- Dimension (5) Health awareness

IX. ANALYZING METHOD

Several statistical techniques were used including Cronbach's alpha one sample test, descriptive analysis and frequency analysis. The tests analysis was used to accept/reject the hypotheses through testing the average mean of single sample, based on the value of scale midpoint, the higher the value the more favorable the attitude, and vice versa. A midpoint equal to (3) was chosen by adding the lower coded value of the Likert scale (1) and the upper coded value (5) of the Likert scale. Pearson's correlation coefficient was also used for testing the hypotheses.

X. RESULTS

A. Test of Reliability

A reliability coefficient of (Cronbach's Alpha) 70% or higher is considered "acceptable in most social science research. The result of this test in the current study is 79.93% as table (1)

Table (1).

Number of cases	Cronbach's Alpha	Number of items
153	0.799	29

B. Testing Hypothesis

1. The first category

Test results of the three hypotheses of the study are shown in Table (3), statistical analysis of this table illustrates the overall mean score of respondent which measures the dimensions (D1, D2, D3, and D4) that correspond to the hypothesis.

The mean values of these are (H1=2.8340, H2=3.1590, H3=3.8965, H4=3.8214) values are above the scale midpoint (3) with the standard deviation showing small dispersion this mean moreover.

These results were further validated by one –sample t-test which revealed that the overall mean difference for these dimensions as whole was statistic significant (N=0.000) at (Ns=0.05) with height T. Value, (H1=60.0464, H2=56.6148, H3=72.5647, H4=60.1045), these scores of the hypothesis (H1, H2, H3, and H4) are bigger than tabular (t=2.3719) and sig were (0.000). As a result of, we reject the null hypothesis (that none of the information resources have a significant impact on the health awareness of the Jordanian population) and accepted the alternative hypothesis according to results shown in the Table (3).

Table (2).

	Hypothesis	Mean	Std. Dev.	T value	Sig.
H1	H1	2.83	.58	60.04	.000
H2	H2	3.15	.69	56.61	.000
H3	H3	3.89	.66	72.56	.000
H4	H4	3.82	.78	60.10	.000

Table 2 shown that most of health information come from Specialists and Personal experience with mean of (3.8965 and 3.8214) respectively. while each of media and reference groups had a lower impact on building health information.

2. The Second Category

It tests the construct of the study model. In order to test the relationship between the constructs of the study model, Pearson correlation was adopted and hypothesis (H5) was developed. There is a relationship between the constructs of study model ( mass media , reference groups, Specialists, Personal experience), the third dimension H3 (Specialists) had the highest impact on the health awareness with an average of (H3=3.8965), and the first dimension H1 had the lowest impact with an average of (H1=2.8340) , results of the analysis of Pearson correlation coefficient are shown in the table (4).

Table (3). Pearson correlation

Pearson Correlation				
	H1	H2	H3	H4
H5	0.2643	0.2845	0.3497	0.2672

Table (3) shows that There were positive Pearson's correlations between dimensions of the study with exception of D1, D2, which have inverse relationship.

Table (4). Model Summary

R	Change Statistics		
	R Square Change	F Change	Sig.F Change
.490a	.23	11.6	.000

Table (4) shown we concluded that multiple linear regression have been proven to be valid, the result was supported by value of (f) which was calculated to be (11.665), which is greater than the F table which was (2.3719), the value of the statistical significant (Sig.) which was calculated (0.000) is lower than the significant level of (alpha = 0.05), so we reject the null hypothesis (that none of the information resources have a significant impact on the health awareness of the Jordanian population) and accept the alternative hypothesis. Additionally, determent Coefficient (R Square) which was calculated as (0.240) shown the elements within the model in general and explained (23.97%) of the changes in the model also, there is regression which shown a positive correlation with R (0.490).

C. Socio-demographic factors

Results divided into two parts between different education groups. personal experiences have the most impact on health awareness of Diploma and bachelor's degree holders, and specialists mostly affect health awareness of secondary school and postgraduate degree holders.

Table (5). Socio-demographic education factor

		Statistics					
Education		H1	H2	H3	H4	H5	
Secondary	N	Valid	25	25	25	25	25
		Missing	0	0	0	0	0
	Mean		2.7160	2.7533	3.8667	3.3733	3.5700
Diploma	N	Valid	21	21	21	21	21
		Missing	0	0	0	0	0
	Mean		2.9381	3.0476	3.7143	3.8889	3.7500
Bachelor's	N	Valid	96	96	96	96	96
		Missing	0	0	0	0	0
	Mean		2.8250	3.2604	3.9566	3.9653	3.8229
postgraduate	N	Valid	11	11	11	11	11
		Missing	0	0	0	0	0
	Mean		2.9818	3.4081	3.7879	3.4545	3.6818

Table (6). Socio-demographic gender factor

		Statistics					
Gender		H1	H2	H3	H4	H5	
Male	N	Valid	56	56	56	56	56
		Missing	0	0	0	0	0
	Mean		2.7321	3.0595	3.8095	3.7500	3.6027
Female	N	Valid	97	97	97	97	97
		Missing	0	0	0	0	0
	Mean		2.8928	3.2165	3.9467	3.8625	3.8531

No effect of gender on results where both Females and males' health awareness affected mostly by the specialists.

Table (7). Socio-demographic age factor

		Statistics					
Age		H1	H2	H3	H4	H5	
<18	N	Valid	6	6	6	6	6
		Missing	0	0	0	0	0
	Mean		2.9167	2.3333	3.4167	3.1111	3.3333
18-20	N	Valid	101	101	101	101	101
		Missing	0	0	0	0	0
	Mean		2.7703	3.1865	3.9389	3.8647	3.7723
29-39	N	Valid	25	25	25	25	25
		Missing	0	0	0	0	0
	Mean		2.9640	3.3267	3.8467	3.8533	3.8600
40-50	N	Valid	11	11	11	11	11
		Missing	0	0	0	0	0
	Mean		3.0000	3.0758	3.6667	3.9384	3.5227
51 or more	N	Valid	10	10	10	10	10
		Missing	0	0	0	0	0
	Mean		2.9200	3.0500	4.1333	3.6000	3.9250

Results were the same between different Age groups (specialists have the most impact on building of health awareness) except for 29-39 and 40-50 years individuals where personal experiences affect their health awareness the most.

## XI. DISCUSSIONS AND CONCLUSIONS

This study seeks to measure the impact of the sources of information on the subjects' health awareness. For this purpose has been developed a model of study, that includes many sources which have been divided into four dimensions; Mass media, Reference groups, Specialists and Personal experience. Four hypotheses have been developed and each hypothesis corresponding to the axis of the axes of the study and variables of study model.

As for the hypotheses of the study, the first hypothesis (There is an impact of the media information sources on the awareness about of health information among Jordanian people) was accepted with a value of one sample T-test analysis of ( $t$  value=60.0464) which exceeded ( $t=2.3719$ ). However the mean was the least of the others (not exceeding mid-point= 3.00) indicating that the general public find mass media in general less trustworthy among other sources. On the other hand the TV has been found to be the most used and trusted source for in information. Thus we suggest that the TV could be utilized for disseminating health related information for the general public as long as it is considered to be relatively cheap.

As for the second, third and fourth hypotheses all had positive responses exceeding the midpoint. Yet the third hypothesis (There is no impact of reference groups information sources on the awareness about of health information among Jordanian people) has the highest mean (3.8965) proving that specialists are most trusted and used for obtaining health related in information. However most of the participants agreed on getting information from doctors and pharmacist with percentages of 92.8% (133/153) and 72.5% (111/153) respectively. Thus we strongly recommend to focus more on specialists to increase significantly health awareness significantly in Jordan.

We are concluded that most of health information came from specialists and personal experience with mean of (3.8965 and 3.8214) respectively. While each of media and reference groups had a lesser impact on building health information.

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