ADOPTION OF PREVENTIVE MEASURES OUT OF GASTROENTERITIS (INFECTIOUS DIARRHOEA) AS COMMUNICATIONAL EFFECT OF SCIENCE NEWS AND SOCIAL SUPPORT IN KARACHI

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ABSTRACT

Action practice about preventive measures such as ensuring clean drinking water, installation of water filter devices as a result of gastroenteritis and stimulated by the effect of newspaper news reading during the epidemic was analysed. As per compiled results from the tabulated data generated with the help of a structured questionnaire, various behaviours of respondents as an outcome of newspaper exposure have been studied. These include trustworthiness of newspaper, knowledge level of respondents about gastroenteritis epidemic news, their perception on the causes of disease gastroenteritis, diffusion of health related news/message/ advice of doctors or news messages among respondents, social support to patients, respondents' attitude to adopt preventive measures and adoption of preventive means / techniques as rational outcome of the communication. The level of newspaper exposure influences the diffusion and effect of reading different topical news as most of the respondents see newspaper a valid source of information. They read the news of gastroenteritis epidemic in newspapers which made the knowledgeable about the causes of gastroenteritis. Doctors' advice through news stories about the causes and prevention of gastroenteritis and adopting remedial/preventive steps was noticed among the respondents. 76.6 percent respondents spend 4 to 12 hours while 18.9 percent respondents spend 16 or more hours with friends and relatives in a week and share information on health related issues. Hence, 71.1 percent respondents use boiled water as precautionary measure, 14.4 percent respondents installed water filter device, 6.1 per cent respondents start using bottles water while 4.4 per cent respondents mentioned other measures. The study, consistent with social support theory, shows that relatives and family members are also an important source of information and motivation in taking preventive measures out of gastroenteritis.

Keywords: Gastroenteritis, Effect, Health News, Social Support Theory, Newspaper

INTRODUCTION

Water and food borne diseases are one of the greatest health concerns in developing countries such as Pakistan. Large numbers of people are affected occasionally by one of the most prevalent types of epidemic diseases–gastroenteritis (Charles, et.al., 1990) and report in mass media. Since middle class and lower middle class of literate people still consume newspapers as a reliable source of information, the health concern, awareness, identification, prevention and treatment messages are disseminated by the newspaper reporters as and when any such epidemic erupts or prevails. Among many other sources of information like all types of electronic, digital, and social media, the role of print media, in particular, seems outstanding. This may be because, as Geller, Bernhardt, and Holtzman claim, "the mass media are primary sources of health and science information for many Americans, including scientists and physicians (Geller et al., 2002; Young, 2002). However, journalists have a responsibility to make information sophisticated. Physicians read news about the disease before it published in medical journals (Wilkins, 2005). Public officials read news reports as they are thinking through the implications of public policy (Krimsky & Plough, 1988); their common goal is to save lives and to ease human contact of sickness (Wilkins, 2005). The precise propagation of health information by the popular media is vital for public-health related beliefs and, potentially, the behaviour (Mergoupi 2010); which come from medical care providers, health professionals, relatives, or friends through discussion on matters of common concern, and are used to restore health (Clive, 2003). Consumers of health care news take more active role in their own health and possess more interest in health information from popular literature (Barsky, 1988; Rees, 1987).

Audience Understanding and Selection of Message*:* The studies (Condit, 1999; Doble, 1995; Frewer *et.al*., 1998, 1999; Frewer and Shepherd, 1994; Petersen, 2001; Priest, 1995) manipulate messages to examine whether changes in the characteristics of the messages produce changes in the audience's understanding of the message. As for the reactions to messages of the audience is concerned, Benjamin is of the view that the audience is supplied with a message and asked to respond to fix measures. It is the audience's reactions to messages that are examined, not the audience's action with messages (Benjamin, 2005). These studies adopt a traditional transmission model of

communication. Since audiences take messages, edit and reorganize them, and produce new messages, top-down models of communication should be used with caution. Selecting a body of messages and then assuming that the audience will believe these messages, is only one way of accessing public culture. It is as important to examine how audiences use media as it is to consider how media uses audiences. In addition, the messages used by the audience are more than those selected and manipulated by researchers (Benjamin, 2005).

The Case

Diarrhoeal Diseases*:* The World Health Report (1998) reviews that poor hygiene and housing conditions, including scarce supply of safe water, besides indecent personal hygiene resulted in a high frequency of diarrhoeal diseases. Every year about 2 billion cases of diarrheal disease occur globally, and over 95 percent of them (almost 1.9 million children under the age of 5 year)die from diarrhea, mostly in developing countries (MacGill, 2017). Earlier, in 2010, the estimates were 1.73 billion cases of diarrheal disease; and361000 deaths of children under 5 years of age due to diarrhea (Mashoto, et.al., 2014). Luby et.al. (2011) observed the variability of childhood diarrhea in Karachi, Pakistan, and conclude the prevalence of diarrhea in the preceding 2 weeks, ranged from a 40% decrease to a 43% increase in prevalence. The variability in diarrhea prevalence was measured from 2002 through 2006 among children < 5 years of age living in squatter settlements in central Karachi. The prevalence of diarrhea varied on average by 29% from one week to the next, by 37% from one month to the next, and during peak diarrhea season by 32% from one year to the next.

Diffusion of Health Awareness Among Developing Countries: Altman (1989) and Garrett (1989) found that from the very beginning, the efforts against expected diseases have close ties with mass media. Garrett (1994) and Preston (1994) ensured that up-coming diseases remained front-page news during the 1990s. Traditionally, the diffusion of information about diseases and factors associated with them were made known to public by the media, especially, the newspapers. Zixue Tai & Tao Sun (2007) note that the situations demanding information from mass media may become more central to other social system or the need of people, therefore, media dependency research has looked into the increasing media-dependency-relations.

During public health crisis people in worry need essential information from the media on the cause, prevention and the cure of the disease. This situation represents the scenarios in which media dependency relations are most important (Zixue Tai & Tao Sun 2007).

Developed nations helped developing nations to control infectious diseases at their source of origin rather than through quarantine (Sein and Rafei, 2010).Governments and the world bodies did great efforts that helped reduce the burden of epidemic and endemic diseases, and supported health-care deliverance. A number of diseases ceased to be major public health problems globally. However, WHO/UNICEF (2017) report some 3 in 10 people worldwide, or 2.1 billion, lack access to safe, readily available water at home, and 6 in 10, or 4.5 billion, lack safely managed sanitation. The situation, despite several efforts worldwide still out of control. Hence, the importance of monitoring the situation is more than often important and it demands constant research activities to find the solution of this persistent social problem of the world.

Value and Purpose of Study*:* The value of this study persists even more today and years to come, mainly due to observing changed behavior of newspaper readers and finding ways how to use newspapers particularly to create understanding for better civic sense among the masses.

EXPLORING THE SITUATION

Epidemics eruptions have been observed many a times that in developing countries (although often in developed countries too) a number of epidemics erupt, especially, on the eve of seasonal changes. The media had been reporting several events of gastroenteritis during and by the end of summer for past several years. In Pakistan, a number of gastroenteritis events have been witnessed in small towns, villages and in the larger cities too (Science.gov, 2016). A letter to daily DAWN Karachi (20 April 2005) showed concern from the Hyderabad city where many people died of acute gastroenteritis and hepatitis due to drinking contaminated water. Zaman Town (Landhi), a low lying area in Karachi suffered with the epidemic of gastroenteritis from 16 June 2005 which claimed 14 lives and sent more than 30,000 people, mostly children, to hospitals and health care centers (Media reports, 17-25 June, 2005). Daily Express Tribune (January 2, 2011) reported that 43,727 people suffered during 2010 from gastroenteritis.

These and several other incidents reported in newspapers caused to look for the following research objective questions as simple hypotheses:

1. People have an adequate exposure to newspapers (behavior).
2. People see newspapers as trusted source of information (trust on message).
3. People perceived level of knowledge on gastroenteritis epidemic news (awareness).
4. People have adequate knowledge of causes of disease (perception).
5. People received doctors' advice or news messages for causes and prevention of gastroenteritis; diffusion of news (message).
6. Friends, relatives, and family members are an important source of information and motivation in taking preventive measures out of gastroenteritis (social support).
7. Action practice about preventive measures such as ensuring clean drinking water, installation of water filter devices, attitude to adopt preventive measures (adoption).

METHOD

Instrument and Procedure*:* Respondents of this study are all persons of 25 years of age or above who had been reading any one of the selected newspapers of Karachi for science news. The persons, consuming news of gastroenteritis epidemic were the focus, however. To locate such a specialized population is difficult-to-reach (Neuman, 2008), the help of applying different techniques this difficulty overcame by narrowing the respondent's selection criteria and only those persons were selected who were confirmed ready for taking part in the interview against already structured questionnaire (Annexure-I).

Respondents*:* Literate respondents (N=180) ranged from 25 to 70 years old (M = 64.6%; F =35.4%) include undergraduate degree holders (N=99; 55%), college graduates (N=69; 38.3%), university graduates (N=9; 5%), and postgraduates (N=3; 1.7%). However, in order to find out homogeneous effect, an equal number of illiterate respondents (N=180) were also selected randomly and survey forms were filled out by specifically trained interviewers.

Test: The data subjected to chi-square and *p*-values to find the significance of variables like gender, age, education and income of the respondents using SPSS ver. 15.

RESULTS

1. Behavior of Newspaper Exposure

The level of newspaper exposure influences the diffusion and effect of reading different topical news on science, crimes, politics, entertainment, sports. On the basis of variables only the age has significant difference (*P*-values is > 0.05); whereas by gender, education and the income of respondents, the difference is insignificant since their *P*-values are < 0.05.

Table-1: Number and percentage frequency of different topics of interest among literate respondents of Karachi

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	14	11	16	7	2	12	13	0	12	12	1
Science	56.0	44.0	64.0	28.0	8.0	48.0	44.0	8.0	48.0	48.0	4.0
N	5	5	6	4	0	8	2	0	8	2	0
Crimes	50.0	50.0	60.0	40.0	.0	80.0	20.0	.0	80.0	20.0	.0
N	76	26	71	27	4	50	46	6	50	46	6
Politics	42.2	14.4	39.4	15	2.2	27.7	25.5	3.3	27.7	25.5	3.3
N	14	6	14	3	3	16	4	0	16	4	0
Entertainment	70.0	30.0	70.0	15	15.5	80.0	20.0	.0	80.0	20.0	.0
N	20	1	16	3	2	12	9	0	12	9	0
Sports	95.2	4.8	76.2	14.3	9.5	57.1	28.6	13.4	57.1	42.9	.0
N	2	0	2	0	0	1	0	1	1	0	1
Any other	100	.0	100	.0	.0	50.0	.0	50.0	50.0	.0	50.0
N	131	49	125	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square= 12.499	Chi square= 8.704
Chi square= 44.930	Chi square=31.969
P-value=0.029	*P-value*=0.560
P-value= 0.000	*P-value*=0.000

2. Trustworthiness of Newspaper

The respondents trust on the newspaper as source of information as62.3 percent of overall respondents expressed their trust on newspaper content. As shown in the table 2, no significant difference was found on the basis of gender, age, education and the income of the respondent since all *P*-values are >0.05.

Table-2: Perception of the respondents on the trustworthiness of newspaper message

	GENDER %		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	82	31	75	31	7	59	52	2	58	53	2
Yes	72.6	27.4	66.4	27.4	6.2	52.2	40.7	5.3	51.3	46.9	1.8
N	12	5	14	2	1	9	7	1	8	7	1
No	70.6	29.4	82.4	11.8	5.9	52.9	35.3	5.9	52.9	41.2	5.9
N	37	13	36	11	3	31	19	0	32	7	1
Un-decided	74.0	26.0	72.0	22.0	6.0	62.0	34.0	4.0	64.0	34.0	2.0
N	131	49	124	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2
	Chi square= 0.081		Chi square= 2.266			Chi square= 3.872			Chi square=3.527		
	P-value=0.960		*P-value=0.687*			*P-value= 0.694*			*P-value=0.474*		

3. Knowledge Level About Gastroenteritis Epidemic News

Overall 53.3 percent respondents read the news of gastroenteritis epidemic in newspapers. A significant difference was found on the basis of gender and income as *P*-values are < 0.05 among the respondents; while no significant difference was observed on the basis of age and education as *P*-values are < 0.05 for both these variables. Details are in Table 3.

Table-3: Knowledge level of respondents about gastroenteritis epidemic news in newspapers

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	62	34	60	28	8	52	38	5	50	44	2
Yes	64.6	35.4	62.5	29.2	8.3	54.2	44.8	1.0	52.1	45.8	2.1
N	38	13	40	10	1	34	13	2	36	13	2
No	74.5	25.5	78.4	19.6	2.0	66.7	29.4	3.9	70.6	25.5	3.9
N	31	2	25	6	2	13	18	7	13	20	0
Un-decided	93.9	6.1	75.8	18.2	6.1	39.4	60.6	.0	39.4	60.6	.0
N	131	49	125	44	11	99	69	9	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2
Chi square=10.790						Chi square=5.556					
Chi square=9.764						Chi square=11.492					
P-value=0.005						*P-value= 0.235*					
P-value= 0.135						*P-value= 0.022*					

Table 3a shows 53.3 percent respondents are aware of the news about disease gastroenteritis. 28.3 percent of respondents accepted that they are unaware of the disease gastroenteritis. Moreover, table 3b details significant differences on the basis of gender and income (*P*-values are < 0.05), and no significant differences on the basis of gender and education (*P*-values are > 0.05).

Table-3a: Knowledge level of respondents about gastroenteritis news

	Frequency	Percentage
Yes	96	53.3
No	51	28.3
Undecided	33	18.3
Total	180	100.0

Table-3b

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	62	34	60	28	8	52	38	5	50	44	2
Yes	64.6	35.4	62.5	29.2	8.3	54.2	44.8	1.0	52.1	45.8	2.1
N	38	13	40	10	1	34	13	2	36	13	2
No	74.5	25.5	78.4	19.6	2.0	66.7	29.4	3.9	70.6	25.5	3.9
N	31	2	25	6	2	13	18	7	13	20	0
Un-decided	93.9	6.1	75.8	18.2	6.1	39.4	60.6	.0	39.4	60.6	.0
N	131	49	125	44	11	99	69	9	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square=10.790 Chi square=5.556
Chi square=9.764 Chi square=11.492
P-value=0.005 *P-value= 0.235*
P-value= 0.135 *P-value= 0.022*

4. Perception on the Causes of Disease

A literate person feels obligatory to show some degree of knowledge with aesthetic sense; and being a concerned citizen adopts innovations as influenced by the exposure to newspapers with better perception. The knowledge of respondents about health concern also relates to their interest in health news. The people having exposure to newspapers usually take interest in reading science news particularly the health news. Table 4shows 51.1 percent respondents read medical news; 22.8 percent take interest in non-medical news; however 24.4 percent respondents showed their interest in social sciences. Statistically, as shown in table 4a, no significant difference was found on the basis of gender, age, education and income since all *P*-values are > 0.05.

Table-4: Numerical data - focus of respondents' interest on science news

Science news fields	Frequency	Percentage
Medical	92	51.1
Non-medical	41	22.8
Social sciences	44	24.4
Any other (please specify)	3	1.7
Total	**180**	**100**

Table-4a: Focus of respondents' interest of science news

	GENDER		AGE			EDUCATION			INCOME		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
Medical	64	28	58	27	7	50	39	3	48	41	3
Non-medical	35	6	32	7	2	21	14	6	23	18	0
Social sciences	29	15	32	10	2	25	16	2	25	18	1
Any other (Please specify)	3	0	3	0	0	3	0	0	3	0	0
Total	131	49	125	44	11	99	69	11	99	77	4

Chi square= 5.928 Chi square= 4.854
Chi square= 14.591 Chi square= 15.534
P-value= 0.115 *P-value= 0.563*
P-value= 0.103 *P-value= 0.214*

Positive response of more respondents found on their knowledge about the causes of diseases gastroenteritis. 63.3 percent respondents say 'yes' while only 7.2 percent respondents remained undecided. Statistical analysis (shown in table 5a) confirms significant difference on the basis of age while insignificant difference was found on the basis of gender, education and income due to larger *P*-values (> 0.05).

Table-5: Knowledge level of respondents about gastroenteritis epidemic

	Frequency	Percentage
Yes	114	63.3
No	53	29.4
Undecided	13	7.2
Total	180	100.0

Table-5a: Perception level of respondents about the causes of diseases gastroenteritis

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	80	34	71	33	10	58	55	1	56	56	2
Yes	70.2	29.8	62.3	28.9	8.8	50.9	48.2	.9	49.1	49.1	1.8
N	42	11	45	7	1	33	18	2	35	16	2
No	79.2	20.8	84.9	13.2	1.9	62.3	34.0	3.8	66.0	30.2	3.8
N	9	4	9	4	0	8	5	0	8	5	0
Un-decided	69.2	30.8	69.2	30.8	.0	61.5	38.5	.0	61.5	38.5	.0
N	131	49	125	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square=1.591 Chi square=10.226
Chi square=5.687 Chi square=6.059
P-value=0.451 *P-value= 0.037*
P-value= 0.459 *P-value= 0.195*

5. Diffusion of Health Related News/Message/Advice of Doctors or News Messages

The message of doctors' advice (about the causes and prevention of gastroenteritis) capsule in reports; and news stories to adopt remedial/preventive steps were noticeable as 67.2 percent among the respondents read such messages. Though, 25 percent respondents did not read the news and only 7.7 percent respondents remain undecided about their aptitude to adopt preventive measures out of gastroenteritis. Statistical analysis shows no significant difference on the basis of gender, age, education and income of the respondents. Statistically, as shown in table 6, large *P*-values (> 0.05) of gender, age, education and income indicate the hypothesis that people received doctors' advice or news messages for causes and prevention of gastroenteritis is valid.

Table-6: Respondents attitude to adopt preventive measures out of gastroenteritis

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	82	39	81	32	8	68	46	2	67	51	3
Yes	67.8	32.2	66.9	26.4	6.6	56.2	42.1	1.7	55.4	42.1	2.5
N	37	8	35	8	2	27	18	0	28	17	0
No	82.2	17.8	77.8	17.8	4.4	60.0	40.0	.0	62.2	37.8	.0
N	12	2	9	4	1	4	9	1	4	9	1
Un-decided	85.7	14.3	64.3	28.6	7.1	28.6	64.3	7.1	28.6	64.3	7.1
N	131	49	125	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square=4.741	Chi square=2.005
Chi square=8.498	Chi square=6.5
P-value=0.093	*P-value= 0.735*
P-value= 0.204	*P-value= 0.161*

6. Social Support

Friends, relatives, and family members are also an important source of information and motivation in taking preventive measures out of gastroenteritis as some empirical studies indicate significant relationships between social support and treatment adherence among diabetic patients. Social support helps patients as a defense against stresses of living with illness (Miller & DiMatteo, 2013). Patients' companions represent an important source of potential support for the clinical care of functionally independent patients with diabetes or heart failure, particularly for patients vulnerable to worse outcomes (Rosland et.al, 2011). It has been observed such support originates through visiting and sharing the causes and preventive measures adopted in certain events. Interaction among family members, relatives and friends share everyday events besides other topics of discussion. Normal as well as chronic diseases are also taken care of. A research has provided a clear message that awareness of family cancer history has important implications for prevention and health promotion (Niededeppe et.al, 2010).

The findings show that family members (relatives & friends) spent a reasonable time with each other and share information on health related issues. Table 7supports that 76.6 percent respondents spend 4 to 12 hours with relatives and friends while 45.5 percent respondents spend 8 to 12 hours; 18.9 percent respondents spend 16 or more hours with friends and relatives in a weak whereas only 4.4 percent respondents do not spend time with relatives in a specific weak.

Table-7: Weekly time spent by respondents with friends/relatives

Weekly time spent by respondents	Frequency	Percentage
4 hours	56	31.1
08 hours	51	28.3
12 hours	31	17.2
16 hours	15	8.3
More than 16 hours	19	10.6
Do not spend any time in a specific week	8	4.4
Total	**180**	**100.0**

About the question of discussing news messages about gastroenteritis, 85.5 percent of overall respondents discussed the event with their relatives/friends. Table 7a shows larger *P*-values (> 0.05) on the basis of gender, age, education and income of the respondents hence no significant difference was found. So, it supports the simple hypothesis that friends, relatives, and family members are an important source of information and motivation in taking preventive measures out of gastroenteritis.

7a: Diffusion of gastroenteritis epidemic news among the respondents

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	108	46	105	39	10	82	70	2	82	69	3
Yes	70.1	29.9	68.2	25.3	6.5	53.2	45.5	1.3	53.2	44.8	1.9
N	16	3	16	3	0	14	4	1	13	5	1
No	84.2	15.8	84.2	15.8	.0	73.7	21.1	5.3	68.4	26.3	5.3
N	7	0	4	2	1	3	4	0	4	3	0
Un-decided	100	.0	57.1	28.6	14.3	42.9	57.2	.0	57.1	42.9	.0
N	16	3	16	3	0	14	4	1	13	5	1
No	84.2	15.8	84.2	15.8	.0	73.7	21.1	5.3	68.4	26.3	5.3
N	7	0	4	2	1	3	4	0	4	3	0
Un-decided	100	.0	57.1	28.6	14.3	42.9	57.2	.0	57.1	42.9	.0
	131	49	125	44	11	99	78	3	99	77	4
	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square= 4.417 Chi square= 3.428
Chi square= 7.031 Chi square= 3.064
P-value=0.110 *P-value= 0.489*
P-value= 0.318 *P-value= 0.547*

7. Attitude to Adopt Preventive Measures

Attitude to adopt preventive measures/association with prevention and knowledge of gastroenteritis has been studies. Table 8 shows 67.22 percent respondents knew the advice of doctors as given in the news messages to adopt preventive measures out of gastroenteritis. Statistically, no significant difference was found on the basis of gender, age, education and income since all *P*-values are > 0.05.

Table-8: Knowledge level of respondents about the advice of doctors as given in the news messages to adopt preventive measures

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	82	39	81	32	8	68	46	2	67	51	3
Yes	67.8	32.2	66.9	26.4	6.6	56.2	42.1	1.7	55.4	42.1	2.5
N	37	8	35	8	2	27	18	0	28	17	0
No	82.2	17.8	77.8	17.8	4.4	60.0	40.0	.0	62.2	37.8	.0
N	12	2	9	4	1	4	9	1	4	9	1
Un-decided	85.7	14.3	64.3	28.6	7.1	28.6	64.3	7.1	28.6	64.3	7.1
N	131	49	125	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2
Chi square=4.741						Chi square=2.005					
Chi square=8.498						Chi square=6.557					
P-value=0.093						*P-value= 0.735*					
P-value= 0.204						*P-value= 0.161*					

As how to put such knowledge into practice, more respondents (62.2 percent; N=112) learnt and adopted precautionary measures about gastroenteritis. Table 8 shows no significant difference on the basis of gender, age, education and income since all *P*-values are > 0.05.

Table-8a: Number and percentage frequency of action knowledge about the preventive measures or remedy of gastroenteritis

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	78	34	72	32	8	58	53	1	56	54	2
Yes	70.2	29.8	64.3	28.6	7.1	50.9	48.2	.9	50.0	48.2	1.8
N	44	3	45	9	3	35	21	1	37	19	1
No	79.2	20.8	78.9	15.8	5.3	62.3	34.0	3.8	64.9	33.3	1.8
N	9	2	8	3	0	6	4	0	6	4	1
Un-decided	69.2	30.8	72.7	27.3	.0	61.5	38.5	.0	54.5	36.4	9.1
N	131	49	125	44	11	99	78	3	99	77	4
Total	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

Chi square=1.570 Chi square=4.685
Chi square=5.687 Chi square=6.059
P-value=0.456 *P-value= 0.321*
P-value= 0.459 *P-value= 0.195*

8. Preventive Means / Techniques in Practice

More respondents (71.1 percent; N=128) use boiled water as precautionary measure. 14.4 percent respondents (N=26) installed water filter device; 3.8 percent respondents (N=7) starts using water purifying tablets; 6.1 percent respondents starts using bottles water; while 4.4 percent respondents (N=8) mentioned other measures. Data is given in table 10.

Table-10: Practice level of literate respondents on adoption of particular preventive measures as advised by medical practitioner/healthcare experts in newspapers

	GENDER%		AGE%			EDUCATION%			INCOME%		
	Male	Female	Low	Middle	High	Low	Middle	High	Low	Middle	High
N	95	33	87	33	8	71	57	0	71	56	1
Using boiled water	74.2	25.8	68.0	25.8	6.3	55.5	44.6	.0	55.5	43.8	.8
N	19	7	16	8	2	11	14	1	11	4	1
Installed water filter device	73.1	26.9	61.5	30.8	7.7	42.3	53.9	3.8	42.3	53.8	3.8
N	4	3	6	1	0	3	3	1	3	3	1
Using water purifying tablets/drops	57.1	42.9	85.7	14.3	.0	42.9	42.9	14.3	42.9	42.9	14.3
N	8	3	9	1	1	9	1	1	8	2	
Using bottled water	72.7	27.3	81.8	9.1	9.1	81.8	9.1	9.1	72.7	18.2	9.1
N	5	3	7	1	0	5	3	0	6	2	0
Others	62.5	37.5	87.5	12.5	.0	62.5	37.5	.0	75.0	25.0	.0
Total	131	49	125	44	11	99	78	3	99	77	4
	72.8	27.2	69.4	24.4	6.1	55.0	43.3	1.7	55.0	42.8	2.2

CONCLUSION

The level of newspaper exposure influences the diffusion and effect of reading different topical news on science, crimes, politics, entertainment, sports and is significant with the age factor. Most of the respondents pose trust on newspaper and see newspaper as a valid source of information irrespective of gender, age, education and the income. The respondent read the news of gastroenteritis epidemic in newspapers with a strong likeliness on the basis of gender and income. The knowledge of respondents about health concern also relates to their interest in health news, medical news; non-medical news and social sciences too. Positive response of more respondents was also found on their knowledge about the causes of diseases gastroenteritis. The message of doctors' advice about the causes and prevention of gastroenteritis; and to adopt remedial/preventive steps was noticeable among the respondents as they read such messages. Only 7.7 percent respondents remained undecided about their aptitude to adopt preventive measures out of gastroenteritis. Friends, relatives, and family members are also an important source of information and motivation in taking preventive measures out of gastroenteritis as some empirical studies indicate significant relationships between social support and treatment adherence among patients. The findings show that 76.6 percent respondents spend 4 to 12 hours with relatives and friends while 45.5 percent respondents spend 8 to 12 hours; 18.9 percent respondents spend 16 or more hours with friends and relatives in a week and share information on health related issues. The respondents also have an adequate awareness to adopt preventive measures out of gastroenteritis; as71.1 percent respondents use boiled water as precautionary measure, 14.4 percent respondents installed water filter device and 3.8 percent respondents start using water purifying tablets; 6.1 percent respondents start using bottles water while 4.4 percent respondents mentioned other measures.

LIMITATIONS AND FUTURE RESEARCH

Inadequate behavior of public sector organizations is the main limitation observed while conducting this study which have no proper record or have developed any facilitation for undertaking research on such topics of social importance. Financial and administrative facilities are very scarce and dearth of taking such issues into account is deeply rooted. However, a few efforts have been made by some researchers

on their own. Studies on social issues, particularly, the epidemics prevailing every now and then must be the focus of fast competitive economy of Pakistan. The power of media can play its due role in making common people aware of various seasonal epidemics costing much to the economy can be avoided by publication of alerts in advance. Besides, other social problems like bird flu, common flue, viral diseases, polio, and gastroenteritis can be eradicated provided action plans and strategies are implemented vigorously in the larger interest of the nation.

REFERENCES

Altman, Lawrence K. (1989). Fearful of outbreaks, doctors pay head to emerging viruses, *The New York Times*, 9 May: C3.

Barsky, A. J., (1988). The paradox of health. New England Journal of Medicine, 318, 414-418.

Benjamin R. Bates (2005). Public culture and public understanding of genetics: a focus group study, *Public Understanding of Science*, 14:47 downloaded from http//sagepub.com on October 3, 2008.

Charles W. LeBaron, Navid P. Furutan, Judy F. Lew, James R. Allen, Vera Gouvea, Christine Moe, and Stephan S. Monroe, Viral Agents of Gastroenteritis Public Health Importance and Outbreak Management, Morbidity and Mortality Weekly Report (*MMWR*) April 27, 1990, Centre for Disease Control and Prevention (CDC). https://www.cdc.gov/mmwr/preview/mmwrhtml/00001625.htm link visited on 01 June 2018.

Clive Seale (2003). Health and Media: An Overview, Sociology of Health and Illness, 25 (6), 513-31

Condit, C. M. (1999). How the public understands genetics: Non-deterministic and non-discriminatory interpretation of the 'blueprint' metaphor. *Public Understanding of Science*, 8: 169-80.

Doble, J. (1995). Public opinion about issues characterized by technological complexity and scientific uncertainty, *Public Understanding of Science, 4*:95-118.

Frewer, L. J., and Shepherd, R. (1994). Attributing information to different sources: Effects on the perceived qualities of information, on the perceived relevance of information, and on attitude formation. *Public Understanding of Science*, *3*:385-401.

Frewer, L. J., Howard, C. and Shepherd, R. (1998). The influence of initial attitude on response to communication and genetic engineering in food production. *Agriculture and Human Values*, *15*:15-30.

Frewer, L. J., Howard, C., Hedderly D. and Shepherd, R. (1999). Reaction to information and genetic engineering: Impact of source characteristics, perceived personal relevance, and persuasiveness. *Public Understanding of Science*, *8*:35-40.

Garrett, Laurie (1994). *The coming plague: Newly emerging diseases in a world out of balance*. New York: Farrar, Straus & Giroux.

Geller, G., Bernhardt, B. A., and Holtzman, N. A. (2002). The media and public reaction to genetic research, *MSJAMA* 287: 773: see also Conrad and Markens, 2001

Krimsky, S., & Plough, A. (1988). *Environmental hazards: Communicating risks as a social process*. Dover, MA: Auburn House.

Luby, S. P., Agboatwalla, M., & Hoekstra, R. M. (2011). The Variability of Childhood Diarrhea in Karachi, Pakistan, 2002–2006. *The American Journal of Tropical Medicine and Hygiene*, *84*(6):870–877. http://doi.org/10.4269/ajtmh.2011.10-0364

MacGill, Markus (2017).What you should know about diarrhea. Medical News Today, Healthline Media UK Ltd, Brighton, UK. (https://www.medicalnewstoday.com/articles/158634.php) visited on 22 July 2018.

Mashoto, K. O., Malebo, H. M., Msisiri, E., & Peter, E. (2014). Prevalence, one week incidence and knowledge on causes of diarrhea: household survey of under-fives and adults in Mkuranga district, Tanzania. *BMC Public Health*, *14*, 985. http://doi.org/10.1186/1471-2458-14-985

Mergoupi-Savaidou, E., F. Papanelopoulou and S. Tzokas (2010). Science and Technology in Greek Newspapers, 1900-1910. Historiographical reflections and the role of journalists for the public images of science and technology, *Sci & Edu*; Published online: 05 December 2010, Springer.

Preston, Richard (1994). *The hot zone*, New York: Random House.

Priest, S. H. (1995). Information equity, public understanding of science, and the biotechnology debate, *Journal of Communication*, 45: 39-54.

Rees, A. M. (1987). Characteristics, content, and significance of the popular health periodicals literature. *Bulletin of the Medical Libraries Association*, 75, 317-322.

Science.gov. (2016). Sample records for major epidemics occurred. Link:https://www.science.gov/topicpages/m/major+epidemics+occurred visited on 02-06-2018

Sein Than and Uton Muchtar Rafei (2010). The History and Development of Public Health in Developing Countries; Posted by medtextfree on November 21, 2010 in Public Health.

The Express Tribune, Pakistan (2011). Looking back: 2010 was the year of viruses, By Tufail Ahmed Published: January 2, 2011.

WHO/UNICEF (2017). Drinking Water, Sanitation and Hygiene: 2017 Update and Sustainable Development Goal Baselines: https://www.unicef.org/media/media_96632.html; link visited June 5, 2018.

Wilkins, Lee (2005). Plagues, pestilence and pathogens: The ethical implications of news reporting of a world health crisis, *Asian Journal of Communication*, 15:3, 247-254.

World Health Report (1998). *World Health Report 1998. Life in the twenty-first century: a vision for all*. WHO, Geneva.

Young, J. S. (2002). Mass media and medicine: Challenges and opportunities, *MSJAMA* 287: 772.

Zixue Tai & Tao Sun (2007). Media dependencies in a changing media environment: the case of the 2003 SARS epidemic in China; doi: 10.1177/1461444807082691 *New Media & Society,* December 2007 Vol.9 No.6: 987-1009. Retrieved from http://nms.sagepub.com/cgi/content/abstract/9/6/987

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