Study of Science News in Pakistani Newspapers: 
_Jang, Nawa-e-Waqt, Express and Ummat_

Sardar Ahmad Nazish*  
Nisar Ahmed Zuberi**

ABSTRACT
A study of science news coverage was undertaken in four Urdu language newspapers published from Karachi along with a case study for contribution to the global efforts of science communication in Pakistan. Higher rates of science coverage have been found in Express, Jang, Nawa-e-Waqt, and Ummat at 6.5%, 7.2%, 9.49% and 12.3% respectively due to an event of gastroenteritis epidemic erupted in a locality of Karachi city. However, not much news of botanical sciences, computer sciences, and geological sciences could be traced. News relating to food safety, environmental sciences, wildlife, energy, metrology, marine biology, nanotechnology, space science, and engineering could be traced only below 1%. The study concludes that Pakistani newspapers lack proper coverage of science based news and their readers may be far behind in finding ways how to use newspapers particularly to inculcate better civic sense among the masses.

Key words: Science News, Newspapers, Gastroenteritis, Pakistan.

INTRODUCTION
News media at all times deals with science and gives it due importance. According to Weigold, newspapers in the nineteenth century published Thomas Huxley, Louis Agassiz, and Asa Gray lectures. Likewise the New York Tribune devoted its one issue to publish the physics lectures of John Tyndall. Science usually hit the headlines and the scope was so extensive that Edwin W. Scripps launched a news agency as ‘Science Service’ during 1920s. Ritter expressed the importance of joint efforts by science and journalism; and strongly recommended to join forces in support of the basic ideas of journalism and science.

A large number of studies on the newspaper science coverage are found throughout printed literature. Many scholars signal and conclude a “problem” in science communication since a large number of American adults were found scientifically “illiterate”, even though Palen reported 38 percent respondents still read science news in a newspaper weekly as compared to 56 percent of regular American viewers of television programs on science, technology, or nature. About 75 percent of those who paid special attention regularly read the paper, but they were disappointed with the science coverage, and only 9 percent rated the newspaper as a good source of science news.

* Principal Information Officer, PCSIR Scientific Information Centre, Karachi, PhD Research Student, Department of Mass Communication, University of Karachi, Karachi, Pakistan. Email: sardarnazish@yahoo.com  
** Dr. Adjunct Professor, Department of Mass Communication, University of Karachi, Karachi, Pakistan. E-mail: nisarazuberi@yahoo.com  
Date of Receipt: 26-12-2013
During the Second World War, coverage of science may have reached its peak. Hence, in the twentieth century the larger news organizations covered science by beat reporters while smaller ones handled science reporting by a general assignment reporter or by wire service. Newspapers that carry regular science sections as compared to those that do not also give greater coverage to science in the news section, particularly to stories about basic research. The scope of large newspapers makes them more energetic and powerful, besides having expanded vision, to accommodate such news stories that small newspapers usually avoid. Thereby, Dennis and McCarteny found that science writer’s at large newspapers preferred stories about environment, medicine, and technology to that of physical and behavioural sciences. Hence, consumers of large newspapers are more exposed to science news, particularly, to health related stories. Ellen did the content analysis of science news coverage in Dutch newspapers; and found the lack of critical approach and statistical data whereas complex information instead of explanation was avoided.

Robert conducted a content analysis of two major newspapers, Los Angeles Times and The Washington Post, in respect of science, medical and environmental news reporting. On the basis of content analysis of two Korean newspapers, Chosun Ilbo and Hankyoreh, Robert found out government officials and physicians as main news sources. However, both newspapers used different sources during public health crisis. Emma Weitkamp confirmed in her study that medicine and health topics were given privilege over science in newspaper reporting. Unlike studies of medical research news, which have found medical journals to be the main source of news stories, this study found that general science and medical news are drawn from a wide range of sources.

Fiona and Deborah conducted the study of the New York Times’ Science Times Section covering twenty years from 1980 to 2000 and found that Science Times Section in 2000 was much larger than computer related advertisements. Earlier, it was believed that computer advertisements had cut the share of science news but the scientific study disproved the notion. Similarly, medicines and health related topics received more coverage.

There is a great deal of science reporting about risk, and this is one area in which public interest seems high. The reasons for this are obvious. Scientific discoveries can help people to avoid health threats, detect threats, or identify threats, the extent and the way in which risk is covered by the press. When risks are identified or labelled as concerns; stakeholders including “experts, policy makers, interest groups, and the general public” become involved in debates about policies that are designed to provide an increased safety. Grunig describes the audiences as ‘active’ that seek for information energetically about the risk.

It is natural that there is arise in number of problems in populated cities. People, civil society, media and healthcare professionals keep on trying to make people
safe from epidemics. But, they still remain in the small-scale-grip of various epidemics like bird flu, dengue fever, and gastroenteritis. Similar is the case with highly populated city of Karachi. The year 2005 is marked as horrible one for the city. An epidemic broke out in the thickly populated locality of ‘Landhi’ town in September 2005 that was identified as gastroenteritis. The epidemic spread very quickly throughout the locality. Some 25,000 persons, most of them children, got affected by the gastroenteritis and as many as 14 persons, despite the efforts of health providers, expired.

Mass media tried to play its role to inform people about the cycle of the epidemic and its causes. The media persons contacted health experts and asked them to advice people how they could keep themselves safe from gastroenteritis. Hence, such information was widely publicized through media, and reached people to make them aware, and subsequently preventive measures were taken. As it might become unmanageable to take all kinds of media simultaneously into account, to narrow the scope of the study only one form of print media i.e. newspaper had been selected. The study of science reporting on the risk of the epidemic was conducted to find the role of newspaper coverage. It is also studied that how the risk of epidemic covered by newspapers involved various stakeholders, including experts, policy makers, interest groups, and the general public, in debates about policies to provide an increased safety to the people.

**METHODOLOGY**

**Selection of Newspapers**

Newspaper was one of the most popular and dependable means of detailed information during the twentieth century; and even in the 21st century, newspapers are considered important for content analysis in order to understand any specific topic or subject of interest. Most of the scientists selected newspapers for studying their topics of interest18 (Toby A. Ten Eyck and Melissa Williment, 2003; Ellen Hijmans, 2003). Their research was narrowed to scientific news that appeared in newspapers. Becker19 state, “the daily newspaper is the main source of news on scientific research and technological developments for the general public”. This kind of news can be found on separate service pages and increasingly in regular news pages20; especially science related topics like environmental pollution and biotechnology are found more often21.

Therefore, in view of popularity, reasonability, impartiality, coverage, circulation and interest in the society, following four Urdu language newspapers, published from Karachi were selected for this study: daily *Express*, daily *Jang*, daily *Nawa-e-Waqt* and daily *Ummat*. Since the spread of the epidemic under focus was mainly in illiterate, semi-literate and lower middle class people, only Urdu language newspapers were selected for study. To have a control over population of these newspapers, sample for this study was taken for 14 days starting from 17th September, 2005 to 30th September, 2005. The reason for selecting this specific period is that 17th September 2005 was the date when the first news
about gastroenteritis epidemic hit the headlines of newspapers. The 14 issues of a newspaper are considered as authentic to find out something required.

**Collection of Newspapers:** Daily *Jang* and *Nawa-e-Waqt* were obtained from Dr. Mahmud Hussain Library, University of Karachi. The copies of daily ‘*Ummat*’ were purchased from its office and used accordingly. However, the management of daily ‘*Express*’ was much gracious to provide copies from their office record on gratis. All newspapers were examined carefully. Science news were searched, located and measured with the help of a graduated scale in column centimeters. Photocopies of all such news were prepared, pasted on separate sheets of papers and maintained properly for record. The data was compiled, summarized and tabulated. Newspapers spread out information about *gastroenteritis* through science news but individual consumers of newspapers went through contents, absorbed information, judged the trustworthiness of the news and acted upon or rejected the advice of health facility providers in order to keep themselves safe from epidemic.

**Studies of Science News**

The news that contains content of scientific information or that is based on scientific findings has been an active field of learning. Science stories or science-based stories were collected from newspapers over a period of 14 days. The selection of the date range was based on the knowledge that September 17, 2005 was the day the epidemic of gastroenteritis hit the news headlines. For the study, a definition of a science story was developed as one which included a significant explicit scientific content, namely a reference or references to scientific findings, scientific research, and scientific procedure, science as intellectual activity or scientists working in their professional capacity. In this range of science stories, social science research stories were included on social issues. It was also determined that medical stories should be included if they contain element of explanation of a scientific process, or the effects of a disease. The matters of personal health and lifestyle, or health care policy and administration, and the articles containing these references did not merit the inclusion in this sample.

**RESULTS AND DISCUSSION**

An average American spends about 7.5 hours each day consuming media products; 28.8 minutes reading a daily newspaper while rest of the time is spent on magazines, Internet, radio and television. Benjamin finds that news media plays an influential role in shaping the understanding of the public so much so that it was the news media that revealed the dangers of genetics and medical research. The people read and put messages together with earlier media messages to create new ideas. Therefore, to understand message content, to examine how public use that content, and how public respond to those messages, and what messages public choose as important one are the main inquiry questions.
Awareness in Pakistani Society
Currently, there are about 85 channels on-air in Pakistan in private sector\(^{26}\). Besides in the national language Urdu, channels in regional/local languages such as Sindhi, Bloachi, Siraiki, Pushto and Punjabi are also gaining momentum. Official Pakistan Television Corporation owns 6 channels in public sector with 49 re-broadcasting stations\(^{27}\). Similarly, there are about 410 periodicals\(^{28}\) enlisted with the All Pakistan Newspapers Society that are being published from different parts of the country. Of those over 335 are daily newspapers while others are weekly, monthly and fortnightly\(^{29}\). However, a few of them are as old as the country or even older as they are being published since before the creation of Pakistan. Some of these like Jang Group of Publications and Nawa-e-Waqt Publications are regarded as most popular by way of credibility and trust. After the year 2000, some newspapers began their publications from various number of large cities simultaneously. Some newspapers publish their editions from as many as 11 or more cities.

In Pakistan, “70 per cent of the population has no access to primary and emergency care, 1.2 million people die of water-borne diseases annually, a child dies of some disease every minute, and 70 women die of pregnancy-related complications every day.”\(^{30}\) Hence, the media is expected to provide information on all issues and events. The essential need of potable water is one of the most serious issues and often various diseases erupt because of water contamination that results in medical emergency. Newspapers, besides political issues, also report prevalence of epidemics like bird flu, polio, dengue fever, malaria, gastroenteritis, naegleria (brain eating amoeba) and other medical emergencies. Hence a common man tends towards newspapers for obtaining information and for confirming any news. This role of a newspaper has made it a source of accurate, speedy and complete information about daily events.

Science News Coverage in Pakistani Newspapers
With regard to science news in Pakistani newspapers, the case for this study relates to the city of Karachi. On the basis of status, four Urdu language newspapers were selected. The science news data extracted from these newspapers show a different pattern of science topics. However, one must see what topics constitute the science news coverage in a newspaper. Various media organizations have categorized science news in different manners.

The newspapers under study are regarded media opinion leaders not only in Karachi but also all over Pakistan having considerable influence on the public opinion as well as on the formation and reflection of national attitudes. Main functions of newspapers under study are found similar to all latest mass media, providing a field for public discussion\(^{31}\).

The Canadian Press\(^{32}\) includes health news as one of the top categories along with business, sports and entertainment news. In the special interest category, it
includes agriculture, automotive, consumer technology, environment, food, health, lifestyle, oil and gas, science, technology, and weather. However, the NEWS provides a very brief list of sections as U.S., world, politics, investigative, health, entertainment, money, technology, travel, recipes.

On the basis of local needs and sequence of events, the journalists coin their own sort of news. The events are reported as and when they occur with a slight touch of background information and futuristic approach. Scenario of science news coverage is mostly dependent on the health and environmental situations. Since water supply, sewerage systems and cleanliness conditions themselves speak of poor state of affairs, most news items relate to the poor water quality, seepage of water supply and sewerage lines.

Table shows medical news find the highest percentage (36.9 percent) in aggregate. Medical infrastructure in Karachi like any other metropolitan city of a developing country is in pathetic form. Paucity of basic facilities, non-availability of medicines, failure of emergency cares, poor hygienic conditions are regular features of Urdu language newspapers. Data shows that dailies, Jang (4.1%) provided an ample coverage to medical news whereas daily Nawa-e-Waqt made higher (5.9%) coverage to the medical news; daily Ummat took lead in this regard providing 9.3% coverage, almost double than other newspapers, but daily Express made only 3.8% coverage to medical sciences related news.

Table: Categories and measure of science news (in % of space) covered by four Urdu language newspapers

<table>
<thead>
<tr>
<th>Discipline</th>
<th>DE</th>
<th>DJ</th>
<th>DNw</th>
<th>DU</th>
<th>Total %/Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical sciences</td>
<td>3.8</td>
<td>4.1</td>
<td>5.9</td>
<td>9.3</td>
<td>23.1/5.7</td>
</tr>
<tr>
<td>Water matters</td>
<td>1.8</td>
<td>2.4</td>
<td>2.6</td>
<td>2.9</td>
<td>9.7/2.4</td>
</tr>
<tr>
<td>Food safety</td>
<td>0.01</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.01/0.01</td>
</tr>
<tr>
<td>Botanical sciences</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Agricultural sciences</td>
<td>-</td>
<td>0.1</td>
<td>0.2</td>
<td>-</td>
<td>0.3/0.075</td>
</tr>
<tr>
<td>Research &amp; development</td>
<td>0.3</td>
<td>-</td>
<td>0.08</td>
<td>-</td>
<td>0.38/0.09</td>
</tr>
<tr>
<td>Environmental sciences</td>
<td>0.4</td>
<td>0.2</td>
<td>0.2</td>
<td>0.1</td>
<td>0.9/0.22</td>
</tr>
<tr>
<td>Natural sciences/ wild life</td>
<td>0.05</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.05/0.012</td>
</tr>
<tr>
<td>Energy</td>
<td>0.04</td>
<td>0.07</td>
<td>-</td>
<td>-</td>
<td>0.11/0.027</td>
</tr>
<tr>
<td>Computer sciences</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The reason for this extraordinary coverage by the daily *Ummat* may be due to unique style of this newspaper on investigating and colour reporting pattern. The reporters of daily *Ummat* provided detailed background information on gastroenteritis epidemic besides the interviews of the affected patients, and published large size colour pictures from the site of epidemic; and the conditions of water supply and sewerage system in the affected areas. The extraordinary coverage, however, had nothing to do with the overall scenario since the situation became normal within 10 days or so. This matches the medical phenomenon that gastroenteritis fades with one to two weeks’ time. The actual figure in medical news discipline may be even lower if the number of news about the gastroenteritis and its causes are eliminated.

Other medical news includes- the news about polio, free medical camps, and eye diseases etc. However, the number and quantity of such news are even below one percent.

The third highest number of news (1.9%) relate to ‘environmental sciences.’ Release of obnoxious gases into the atmosphere, climate changes, increasing loads of hazardous matters, insanitation, and increased vehicular exhausts are some topics of media interest. Therefore, media performs its duty to keep on informing about environmental conditions. However, the coverage is lower than expected. No newspaper paid due attention to this important discipline. Results show lower percentages of coverage i.e. daily *Jang* and *Nawa-e-Waqt* (0.2% each), daily *Express* (0.4%), and daily *Ummat* (0.1%). This data itself speaks of the grave negligence of media in Karachi in providing coverage to the environmental sciences even when much of the material is available from concerned agencies and NGOs working in this sector for public benefits.
Since the gastroenteritis epidemic erupted through contaminated water, only the news relating to prevalence or that posed fear for disease out of contaminated water have been treated as medical news. All news about the water supply situation, fear for water contamination, general testing of water for any pathogens or routine water check-up have not been regarded as medical news since these types of news fall within the adequate water supply system. Hence, a separate category under “water matters” has been coined for this purpose. Data confirms that second highest (12.9 percent) number of news relate to the ‘water matters’.

However, agricultural sciences and computer sciences were provided one percent coverage. Other disciplines that received mentionable coverage are: geology (0.84%), metrology (0.70%), research and development (0.58%), and energy (51%). Disciplines like food safety, botanical sciences, natural sciences, marine biology, nanotechnology, space sciences, engineering and advance sciences received very less coverage.

CONCLUSION
The epidemic of gastroenteritis did not occur in that locality of Karachi again, which may be an outcome of due media coverage as people may have adopted certain measures. However, the value of this study persists even more today and years to come, mainly with respect to observing the changed behaviour of newspaper readers and to finding ways how newspapers can be used to inculcate better civic sense among the masses.

A short account of former studies on the science communication through newspapers gives an idea about the extent of research in this discipline. However, the data in this study shows a picture of how science news are treated and covered by the newspapers in a society like Pakistan. Since there are a number of epidemiological issues throughout the country, the study might be a starting point in initiating similar kind of studies for the welfare of society. Karachi being the largest city deserves to be a focus for these studies because mixed population is reachable and the people of different socioeconomic backgrounds inhabit the city.

Moreover, this might be a humble effort from a developing country like Pakistan to share its responsibility in the domain of diffusion studies and the effect paradigm in society with emphasis on health related science news. The initiation of such a different viewpoint might invoke interest among the mass communication researchers towards other similar studies for the benefit of society at large. Not only Pakistan but also other developing countries have been facing the problems of various outbreaks, hence purposeful studies may lead towards the evolution of strategies for the control of epidemiological diseases.

The study concludes on a note of caution. Pakistani newspapers lack proper coverage of science based news and their readers may be lagging far behind in understanding the debates about the policies to provide an increased safety to the people.
REFERENCES

25. Ibid
29. Ibid
30. Daily Nation, April 8, 2013 Preventable diseases on rise in Pakistan