

A Seminar proposal paper

On

Health Risks from Mobile Tower Radiation: Awareness in Bangladesh

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Mentor's Authorization

I, hereby recommend and certify that the research work titled "Health Risks from Mobile Tower: Awareness in Bangladesh" has been performed by Bidyut Chandra Aich, **Roll no. 123**, 126th ACAD Course held in Bangladesh Public Administration Training Centre, Savar, Dhaka under my guidance and direct supervision.

I wish him every success in life.

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1.0 Abstract

Using of Mobile Phone has been rapidly spread globally to provide proper networking coverage. In Bangladesh too mobile phone uses has increased over the past few years. At the same time there has been a remarkable increase in the installations of mobile phone tower. It has increased public concern for the possible environmental and health effects associated with exposure to electro-magnetic waves radiating from towers. The increasing use of mobile phones and related network equipment have raised the question of possible implications for nature and public health. In many countries of the world protest has been seen from local inhabitants against the installation of tower in locality. But such no protests have been demonstrated in our country. A very limited or insignificant study was found on it in Bangladesh. So primarily, it is an initiative to know what guideline is there and how the operators are following and to see the awareness among stakeholders and people in large. It is found that no specific guideline exists there in Bangladesh now. Only one clause related to radiation limit is there in Mobile operators' 4G license clause nos 50.03. A Rights organization named Human Rights and Peace for Bangladesh (HRPB) had filed a petition as public-interest-litigation with the High Court on October 29, 2012 following a report in a private Television Channel of Bangladesh. As the case is still running no regulation has been formed yet. Bangladesh Telecom Regulatory Commission has formulated a draft copy of guidelines as a compliance of directives of the court. From the draft guideline it is seen that specification made by International Commission on Non-ionizing Radiation Protection is being followed in the draft guideline. Our neighbor country India is following a customized limit which is far stricter than that of ICNIRP. BTRC can consider the similar guideline of India as we are similar in all respect to India. From the survey among representative from Government Officers, Mobile operators, Regulator and Health concern and government employee it is found that awareness is there among the citizens though no severe protest has been observed except some cases. In Bangladesh, it is also a matter of concern that BTRC is playing the role of both regulator as well as guideline or rules or regulation formulator. It is very hard to have a balance in the system when same party is responsible for regulation formation and regulator. It is time to separate the function of regulator and regulation formulator as we see in different countries including neighboring country India.

2.0 Key words

ICNIRP = International Commission on Non-ionizing Radiation Protection

BTRC= Bangladesh Telecom Regulatory Commission

EMW= Electro-Magnetic Waves

EMR= Electro-Magnetic Radiation

PLMN= Plain Land Mobile Network

BTS= Base Transmitter Stations

3.0 Introduction

Cellular or mobile phone uses has increased rapidly over the past few years in Bangladesh. The total number of mobile phone subscribers has reached 161 million at the end of June 2019 from 26.66 million of May 2007 (BTRC 2019). With this growth in mobile or cellular phone use, there has been unavoidable increase in the number of mobile phone towers those are used as Base Transmitter Stations (BTS). This increase in Tower has increased possible health impacts associated with exposure to electro-magnetic waves (EMW) emanating from BTS (Islam 2014). BTS are radio transmitters facilitate wireless communication between cellular phone and a Plain Land Mobile Network (PLMN) operator's Network. In densely populated areas the base station antennas are mounted on free-standing towers, typically 10 to 30 meter high or on short towers on top of buildings or attached to the side of buildings.

Usually there are three antennas in a tower and each antenna support a 120 degree sector (one third of 360 degree). The antenna is tilted slightly downwards so that it reach ground level at the desired distance from the tower (at least 50 m to 200 m). Signals are fed through optical fiber cables or microwave transmission system to the antennas and then as radio waves into the area or cell of the three segments, around the BTS (Neubauer et al. 2019). For BTS people are exposed to the radio waves at constant level of exposure over the whole body than when they are exposed to a mobile phone (IEG 2000). The strength of the Radio Frequency (RF) field is greatest at the source and reduces quickly with distance (ICNIRP 2009). Near base station signal may exceed international exposure limits. Previous studies have reported that RF exposure might be associated with several complaints of adverse health effects (non-

communicable disease such as headache, cancers in children, neurological changes, loss of memory, increased blood pressure, diabetics and damage to eye cells (Otto et al. 2007, Preece et al. 2005, Blettner et al. 2009, Zwamborn 2003, Elliott et al. 2010). Most of these studies, it is interesting to note that, did not find a direct relation between this kind of radiation exposure and health complaints. Rather it is a concern that RF exposure might be responsible for the reported health effects. In addition, these symptoms are often not independent of each other and the relation is so complicated that it demands further evaluation.

Dhaka, one of the mega city of South Asia Region, is getting bigger and bigger with increased population and urbanization. This capital city is the hub of the country's commercial and political activities. It is also the country's center for educational, cultural and industrial activities. With about 17 million population at this moment is expected to become a resident of 25 million people soon. To cope with population number more and more Cellular phone Towers are being installed to support the growth of the network in different public areas in this city. Radiation is emitted continuously from antennas of Mobile Towers and is more powerful at close quarters. Despite concern from some quarters, peoples at large is not aware of the health affect and apparently it is not clear about effective safety measures taken by authority. There is not much published study on the possible health hazard from mobile towers in the city.

4.0 Literature Review

Installation of Mobile tower issue had stimulated protest in numerous countries in different way. The response to these risk concerns has been dealt different way, and has been marked different magnitudes in different countries (Burgess 2002). The mobile phone tower protest issue was started in Australia by a confrontation in Sydney in 1994, when protestors chained themselves to a fence. Some people showcased the protest with their children and media also covered this as a major headline. The transmitter of the mobile tower was switched off within two weeks of protest. Different Media reports hailed the protest as 'people's power'. An member of the Parliament described the event as showing: 'that battlers, the little people, mums and dads, can win' (Chapman 1998). Similar protest erupted in another suburb soon after, and then elsewhere, that continued till 1996. As a result the Electro Magnetic Radiation Alliance Australia (EMRAA) was formed, and activists began addressing local meetings. Health effects from Mobile towers

were seen as 'hot issue' in Australia throughout 1997 (Microwave News 1997). The issue was reignited in 1999 by the 'catch up' roll out of a mobile infrastructure by a new company. Early in 2000, some 16 action groups were established in Brisbane within few weeks. This issue was generating widespread media exposure.

In Ireland the installation of mobile phone towers was protested by residents heavily following local meetings in response to planning issues. To avoid any unwanted situation many of the towers were erected on police property, others on the land of local farmers. In 1998 to install an antenna it was necessary to employ one hundred riot police at the village of Kerrykeel in Donegal. Due to this situation Ireland was an important focus for mobile tower concern. At this situation the industry of telecom and government felt that it needed to respond to the growing tide of disapproval incidents. So, Irish Telecom released a report declaring that families had nothing to fear from Tower installation. At the state level, three government departments sponsored a conference that was held at Dublin Castle in March 1998. Though the conference was initially designed for local authorities and health boards but the members of the public were also allowed to participate.

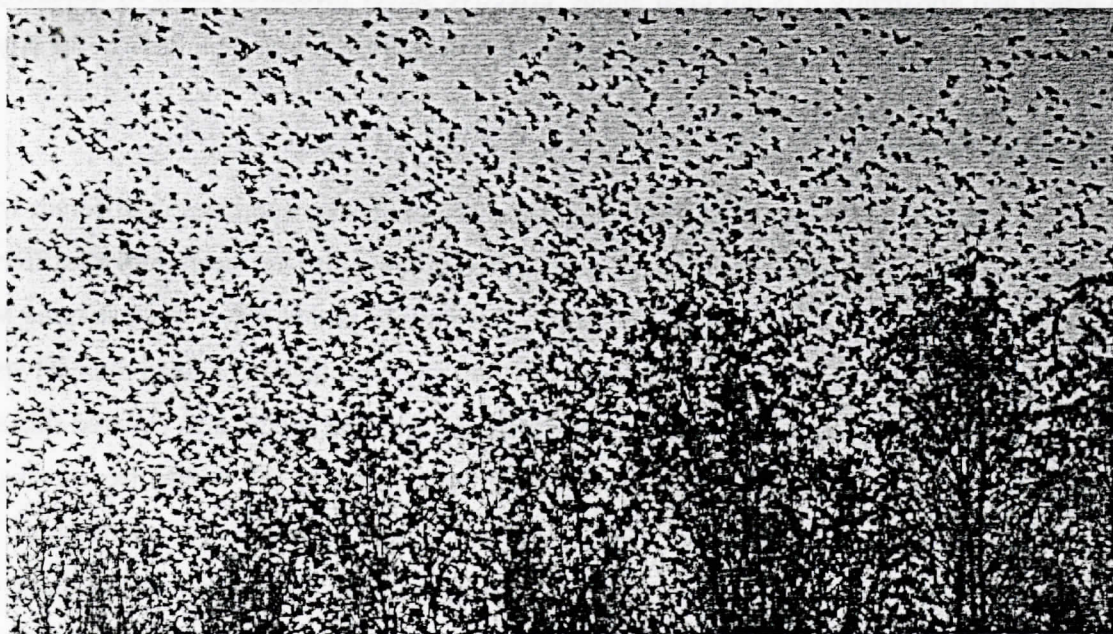


Figure 1: Birds are Dying Near Mobile Towers (Mclachlan, 2018)

Among the European countries Italy was the most conservative nation in formulating radiation limit. They enforced a decree on exposure in January 1999. This limit was very low compare to other national guidelines and also from international guidelines. For its extreme precautionary position Italy has found itself isolated in the EU. It was the only country to vote against the EU's recommendation at the council meeting of 1999. For protection from 'electromagnetic pollution' a further law was passed in Italy in 2001,

In UK local anti-mobile phone tower campaigners formed a national campaign named "Mast Action UK. It was launched at the House of Commons in December 2001 to campaign for the sensible installation of towers. The scope of protest had increased with the creation of the national campaign. This anti-mobile phone tower was the subject of numerous media reports along with BBC documentary in January 2001 (BBC2 2001). Further governmental concessions, as a result of this campaigned, were announced on mast planning regulations during March 2001.



Figure 2: Mobile phones tower radiation affect Plant life

In USA, anti-mobile phone tower installation opposition began during Reynard case. Local

groups were being reported by 1993 in regional news. At the state level, the issue was mainly focused for the towers installed near educational institute. It was San Francisco, the major city to ban towers from educational institute premises in late 1993. The reason behind this decision was, as reported that time, not to expose children to some possible threat that 'was not yet thoroughly studied' (*Microwave News 1993*). There were about at least 70 community groups across the USA by May 1999.

Let alone any organized movement, any sort of protest was seen campaigned in Bangladesh on installation of cellular tower. Some article was written and some column was published in different newspaper. But no such organized awareness program is observed here. Sheikh Mohammed Shariful Islam, Center for Control of Chronic Disease (CCCD), made a pilot study on "Awareness and Self-Reported Health Hazards of Electromagnetic Waves from Mobile Phone Towers in Dhaka, Bangladesh." But no study was made about present rules and regulations and how they are observed. What step has been taken by regulators and how mobile operators are complying existing rules and regulation. The objective of this study is to determine the present rules and regulations, awareness regarding health hazard from Mobile tower among regulators, concern authority, health concern people and perception of the mass people.

5.0 Problem Statement

Though there was no organized movement or protest, it is not like that there is no health threat from Mobile towers in Bangladesh. It is not like that very strict guideline has been formed and all the operators are following Emission label to the point. In his study Mohammed Shariful Islam found that about half of the respondents (49.1%) experienced problems in sleeping patterns about 41.4% experienced mood change, anxiety, or depression and 47.3% experienced headache. Number of respondents experienced some generalized burning sensation is 11 and number of reported episodes of shaking or fits is 4 . 48 or 21.8% respondents mentioned one or more other health effects. These are buzzing in the head, mood changes/problem, hopelessness, tachycardia, palpitation, heaviness of chest, anorexia, diarrhoea, and skin diseases etc.

There is very limited or insignificant study was found on it in Bangladesh. So primarily, it is an initiative to know what guideline is there in Bangladesh and how the operators are following and to see the awareness among common people.

6.0 Objective of the Research

- i) To study about present rules and regulation of electromagnetic wave radiation and compliances for mobile tower
- ii) To know views of Mobile Operator, and related government officials about existing rules and regulation of electromagnetic wave radiation and compliances for mobile tower
- iii) To identify awareness of common people, health concern people about radiation from Mobile Towers

7.0 Research Question

Reviewing the background and the following research questions are made:

- 1. What existing rules, regulations are there in Bangladesh related to electromagnetic wave radiation for Mobile Tower?
- 2. How existing rules, regulations related to electromagnetic wave radiation for Mobile Tower are observed and viewed by Mobile operator and related government officials ?
- 3. What awareness is there among common people, health concern people about radiation from Mobile Towers?

8.0 Rational of the Study

Goal 3 of SDG is "Ensure healthy lives and promote well-being for all at all ages. With this goal in mind, Ministry of Health & Family Welfare is engaged to create an environment where the people of Bangladesh will have the opportunity to reach and maintain the highest attainable level of people health. Recognizing health as a fundamental human right, it is the need of time to promote health and reduce suffering in the spirit of social justice.

In a study, researchers compared a group of more than 2,600 children with cancer in them to a group of similar children without having any cancer. They found that the children who lived in

urban area and has the probability of exposing them to higher than average Radio Frequency (RF) radiation from towers of cellular phone in the previous five years had a slightly higher risk of cancer (although, it was not possible to be certain about type of cancer like leukemia or brain tumors). Based on the number of towers in their town and how strong the signals were from the towers, this study estimated the children's possible exposure (Cancer Org 1999). To achieve SDG goals, to ensure healthy lives and to promote well-being for all at all ages is one of the reason behind this study has been under taken.

9.0 Conceptual Framework

Information and communications technologies (ICTs) are playing strong role in transforming the societies & nations and fueling the growth of the world economy. Using ICTs organizations are enabling themselves to be more productive. Thereby ICTs are spurring economic growth and helping different organizations to be more competitive. ICTs have already yielded very important benefits in different sector like healthcare, education, and environmental preservation. Public-sector's using of ICTs is making service delivery more efficient and has made their decision-making more transparent.

ICTs have virtually penetrated in every sector of society and future projections also suggest the increased rates of its penetration. Though radio, television, and landline telephony are termed as old ICTs and computers and mobile phones are termed as new ICTs but technological convergences are increasingly wipe out such distinct divisions (Sife, et al., 2010). A, single device, mobile phones can now receive, process, store and display text, image and sound together. Mobile phones have the potential to introduce new modes with which information is communicated and it has the potential to ease life and bring speed. It can enable interactive communication flow irrespective of space, volume, medium or time, and hence it is influencing the existing communicative ecologies (Tacchi et al., 2003). The link between mobile phones, poverty and livelihoods is also an echo of older discourses for development communication that expounded on the positive linkage between communications, access to information and development (Butner, 2003). International Telecommunication Union (ITU) data supports the role of Mobile phone in expanding ICT services. According to ITU data there were more fixed-broadband connections in 2018 (1.1 billion) than fixed-telephone connections (942 million). The

numbers of mobile broadband subscriptions have increased to 5.3 billion in 2018 compare to 1.1 billion fixed broad band connection (ITU 2019).

As discussed in introduction part, with the growth in mobile phone subscribers, there has been increase in the number of mobile phone towers across the country those to be used as Base transmitter stations (BTS). This mobile towers impose possible health impacts related with exposure to electromagnetic radiation waves (EMW) emanating from Base Transmission station (Islam 2014). Where people are exposed to the radio waves from BTS, it might be associated with several adverse health effects and complaints such as cancers in children, headache, neurological changes, loss of memory, increased blood pressure, and damage to eye cells and other non-communicable disease (Otto et al. 2007, Preece et al. 2005, Blettner et al. 2009, Zwamborn 2003, Elliott et al. 2010). With the continuous increasing of mobile phone users, more and more Cellular phone Towers are being installed to support the increased demand in different areas in this city. Radiation is emitted continuously from antennas of Mobile Towers and is more powerful at close places. Despite concern from some quarters, peoples at large is not aware of the health affect and apparently it is not clear about effective safety measures taken by authority.

These tower issues have stimulated different kind of protest in number of countries. The responses to health hazard concerns have taken different forms in different countries. This study is to determine the present rules and regulations, awareness regarding health hazard from Mobile tower among regulators, concern authority, health concern people and perception of the mass people.

10.0 Methodology

The study will be mainly based on different sources of related data, both secondary and primary. In this seminar paper, both qualitative and quantitative methods will be applied. The study will be conducted depending on the secondary data of earlier studies, existing rules and regulation. Primary data will be also collected to a limited extent. Semi structured questionnaires will be used to conduct survey as a means of quantitative method. Extensive literature on related research, various articles and reports, different documents specially government policies, publications, circulars, online sources will be reviewed as qualitative method.

In this study, two target groups will be interviewed. Government officials working in the ministry and regulator, representative from mobile operators are one target group. While common people and health concern group will be another target group to interview. Government officials working in the ministry and regulator will be interviewed to know their views and existing rules and regulation. Representative from mobile operators will be interviewed how they comply with existing rules and regulation. Common people will be interviewed to know their perception about health hazard issues related to Mobile tower. Health concern group (doctors) will be interviewed to know what feedback they have from the society. Last but not the least the most important stakeholder is the common people who are facing the health risk to know about their perception and observations.

11.0 Findings and Results

11.1 Present / Existing Guidelines:

At present there is no separate Guidelines for Limiting Exposure to Radiation of Electromagnetic Fields for Mobile operators but a condition in the 4G license. High Court Division directed BTRC to take active and positive steps in the imminent formulation of a final set of regulations/guidelines for limiting radiation from BTS towers. Accordingly BTRC had prepared a draft guideline and sought comments from stakeholders in Feb-2018. The draft guideline has also been submitted to the HC. BTRC has received some comments from HC and subsequently submitted a revised guideline and waiting to get final verdict from the apex court. It is known that on April 25, the High Court (HC) directed the BTRC to submit a report within four months on the radiation impact from mobile phone towers on humans body and the environment. The HC also issued some directives to protect people, trees, and animals from harmful radiation from mobile phone towers.

4G License awarded to Mobile operators has a clause related to limiting radiation from BTS towers. Clause 50.03 states that "The licensee shall have the obligation to stop all types of radiation which are harmful to the environment and public health. The licensee shall follow the existing guidelines produced by the International Commission on Non-ionizing Radiation Protection (ICNIRP) and any other related UN organization for their installed equipment (i.e. BTS, eNodeB, IBS, microwave antennas etc). The licensee shall also comply with the directives / instruction / guidelines/decisions regarding health and environmental hazard issued by the

commission time to time.” ICNIRP is an independent organization under united nation that works to provide scientific advice and guidance on the health and environmental effects of non-ionizing radiation (NIR) to protect common people and the environment from radiation exposure. So this is only existing guidelines regarding controlling radiation from mobile towers.

11.2 Opinion of the Respondents Regarding the guide lines:

Rights organizations, Television Channel, common people raised their voices against the affect from Mobile Tower. A special report was broadcast in Ekushey Television on 18.10.2012 at 9.30 pm on effect of Electro Magnetic Radiation (EMR). The report informed that due to the setup of hundreds of mobile towers in different places of the country the health of citizens are at risk. It was also stated in the report that some kind of radiation comes out from mobile tower which is one of the cause of cancer and it had found that around the tower the birds and trees has lost their normal existence. Some experts also opined in the interview that by way of setting up mobile tower without any guideline threat has been created to the health of citizen. In the report it was also mentioned that the mobile companies are setting their tower in the locality and roof of the houses causing serious threat to the health of citizen.

On October 29, 2012 after the published of the report in Ekushey Television, a rights organization named Human Rights and Peace for Bangladesh (HRPB) filed a Writ Petition # 14258/2012 as public-interest-litigation with the High Court Division. On October 30, 2012, in response to the petition, the concern bench of High Court ordered the government to measure the level of emission from the towers of mobile-phone. It also directed to assess Mobile Phone tower effect on health and environment. HC directed to submit two separate reports. It also issued a rule to explain why the concerned government officials should not be directed to take necessary action to stop radiation emission from mobile-phone towers set up across the country. During a hearing on the petition, in response to earlier rule, the health ministry submitted an expert committee’s report to the High Court mentioning that radiation from a mobile phone tower was found over the limit set by a World Health Organization (WHO) guideline on March 22, 2017. The expert committee also recommended that the BTRC should take steps to reduce the radiation from the mobile phone tower set up by the six mobile phone operators across the country. There are about 35,000 telecom towers in Bangladesh and they are used by mobile phone operators.

Then BTRC conducted tests on 10 mobile towers in Mymensingh region and found the radiation level within 0.5–0.7 watt per sq km. The radiation standard set by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) is 4.5 watt per sq km.

On April 25, the High Court (HC) directed the BTRC to submit a report on the impact of radiation from mobile phone towers on humans and the environment within four months. The HC also issued some directives to protect people, trees, and animals from harmful radiation from mobile phone towers.

In another case Jahan Sanchari Flat Owner Samity of House no.15/B, Road#18, Block-B, Banani, Dhaka-1213 served a notice to Posts & Telecommunications Division, Bangladesh Telecom Regulatory Commission & Banglalink Digital Communications Limited seeking Demand of Justice to remove a Cell Phone Tower from the top floor of adjacent House No. 43, Road#23, Block-B, Banani. They informed that few years ago Banglalink Digital Communications Limited had installed a Cell Phone Tower in top floor of the Building, House No. 43, Road#23, Block-B, which is owned by Astha Flat Owner Samity. After installation of the tower, inhabitants of Jahan Sanchari Flat are suffering from lot of disease. Physician informed to some of the inhabitants that the cause of their disease are due to radiation of that tower. Through repeated letter they requested Flat Owner Samity, Bangla link and BTRC to remove/relocate the tower. They termed the action of not removing/relocating the tower as breach of Bangladesh Telecommunication Act, 2001. So they threaten to take legal action to move the High Court Division in its Writ Jurisdiction for appropriate relief. This letter was served on 16.07.2019. It is not known what happened after that.

In another incident a Cautious Notice was served by an advocate of Supreme Court Bangladesh, on behalf of Union Parishad Member of ward No. 9 of the 1 no. Kolkolia Union Parishad, Upazila- Jagannathpur, Dist- Sunamganj not to install a Tower at the top of adjacent building. This notice was served with the reference to writ petition no.14258/2012 where it is mentioned that the Rule was made absolute on 25.04.2019 with 11 directions including the direction to shift the mobile tower placed in the building of residential houses, school-college building etc.

As a part of this study officer from BTRC was contacted. He informed that they are waiting for certified copy of verdict of Writ petition #14258/2012. One they have the copy they will follow accordingly and guideline for Limiting Exposure to Radiation of Electromagnetic Fields will be finalized. He informed that BTRC will follow ICNIRP advised limit. It may be noted that India follows a more conservative guideline where radiation limit is much less than ICNIRP. In this context he informed that WHO and ITU has consent over ICNIRP guideline and there is no need to go beyond that limit as this is already far below than safety limit. When he was asked whether it is possible to remove/relocate the tower installed at residential building, schools, collage and hospital, he informed that if radiation is within limit, then no need to remove/relocate those towers.

11.3 Opinion of the Civil Society members

When different person from ministries and division were contacted it is found that most of them are very aware about the health hazard issue. He informed that High Court has ordered The HC on July 27, 2005, declared the project Modhumoti Model Town unauthorized, illegal and against public interest. After that 14 years have passed and The Supreme Court has upheld this verdict, still it is there and public has not yet shown any protest. So it is not unlikely that though people are aware of this health hazard issue, no protest has been made.

When asked how he is aware of health hazard issue, one high official from ministry informed about a story he came to long ago from a newspaper. One girl was experiencing miscarriage several times. Doctor found that she used to wear jeans with a cellular phone in her pocket. So she was advised not to wear jeans and carry a cellular phone in her pocket. When he followed doctor's advice next time miscarriage did not happened to her.

Another officer informed his frustration about the delay to have a guideline. He thinks that BTRC being responsible for guideline making and regulating the same issue may not yield good result. That's why we do not have a guideline yet. Probably ours is the only country in the world where no separate guideline is there. Like other countries we should not separate authority for formations of rules and regulation and for regulatory affairs. He informed that DoT (Department of Telecommunication is formed and we need to strengthen it.

One physician informed that according to a recent study NCDs account for an estimated 59% of total deaths in Bangladesh – 886,000 deaths a year. The reason behind NCDs is smoking, radiation, pollution etc. So there is no direct proof but there is no doubt about risk arising from Mobile Tower radiation. He added that usually patients are advised about this affect and requested to be at safe distance.

A Survey on Perception about electromagnetic radiation effect was made among 21 officers of Deputy Security of Different ministries and equivalent officers of Army & Navy with written questionnaires. The first question was to know about their mobile phone usages. Respondent were asked about the duration of their daily total talk time over the cell phone. The talk time range is between 10 minutes to 90 minutes. The daily total talk time pattern can be shown as below.

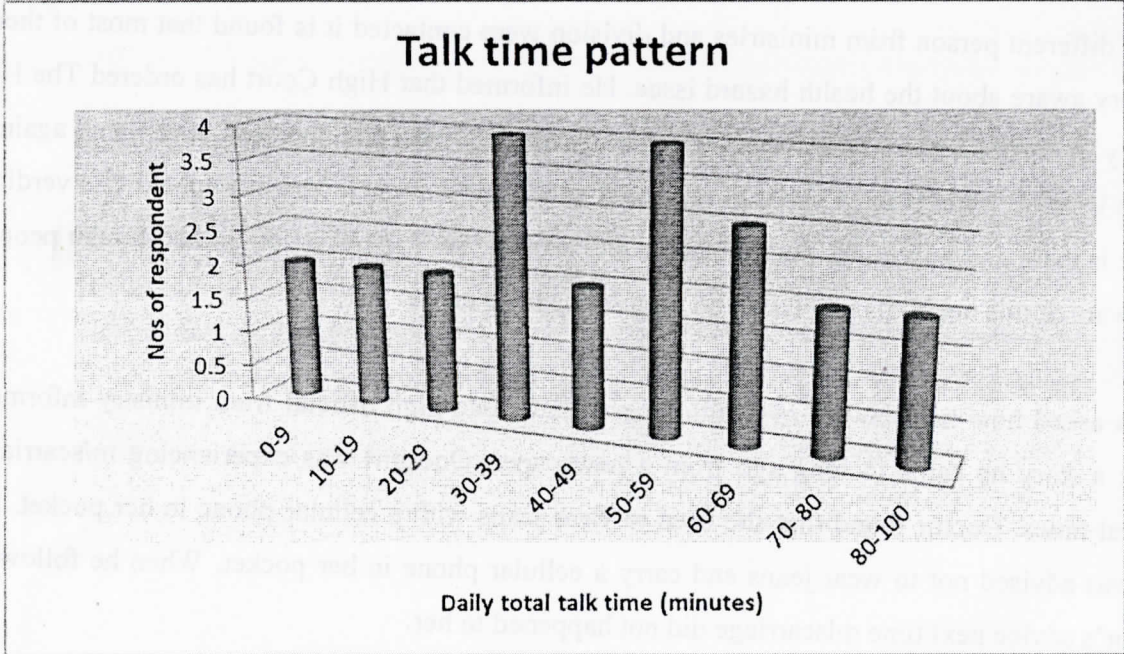


Figure 3: Daily Total Talking time pattern

In response to the question whether the interviewee feels any problem after a long duration call, Eleven of the respondent answered in positive and eight of them said that they do not experience any problem. One interviewee did not answered and one replied “not mentionable”. We have different answer from the persons, who feels problem, when asked to inform the reason behind

experiencing problem. The answers are because of radiation, heat generation, excitement of brain etc.

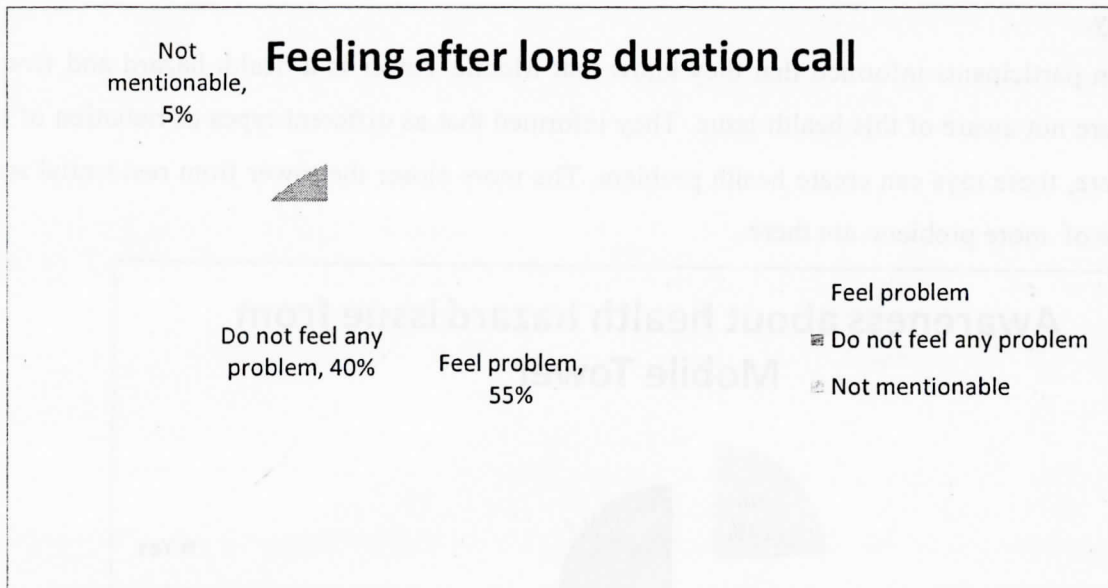


Figure 4: Feeling after a long duration call

When asked to the interviewee whether they are aware of the fact that Mobile BTS Towers are constantly emitting Electro Magnetic Radiation (EMR). We have positive answer from twenty person and negative answer from only one person.

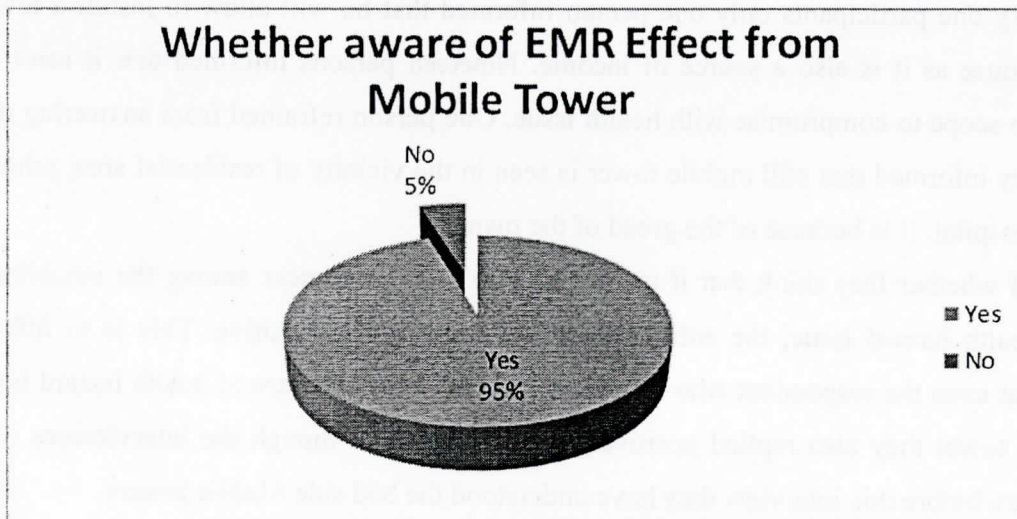


Figure 5: Awareness about EMR effect of Mobile Tower

They informed that they came to know about the issue from Newspaper, TV news, Social Media, Journal, Article etc. One of them informed that the respondent is aware of this issue from past experience where the respondent found problem in coconut and coconut tree near a tower in the locality.

Sixteen participants informed that they know that Mobile Tower is a health hazard and five of them are not aware of this health issue. They informed that as different types of radiation of ray are there, these rays can create health problem. The more closer the tower from residential area, chance of more problem are there.

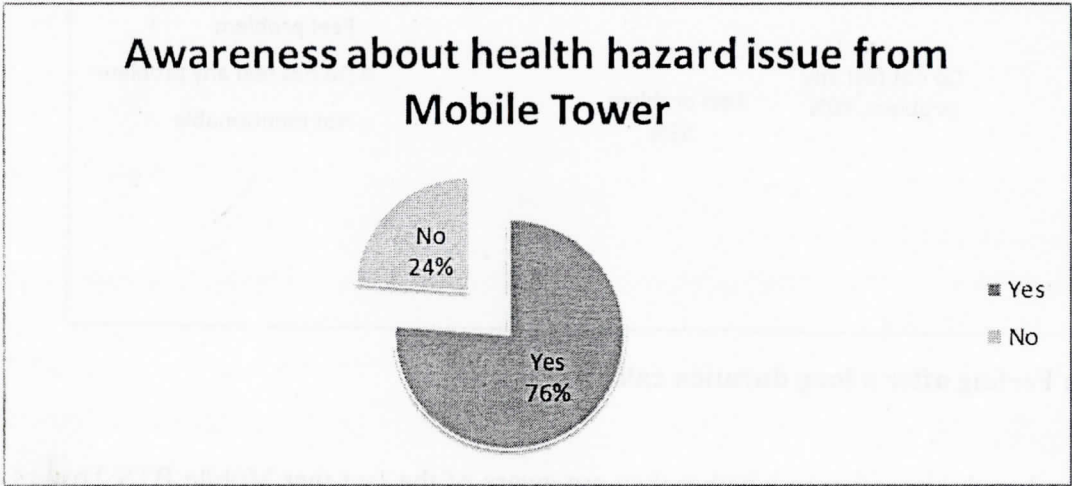


Figure 6: Awareness about health hazard issue from Mobile Tower

Out of Twenty one participants only one person informed that he will allow to install a tower near to the house as it is also a source of income. Nineteen persons informed that it can't be allowed as no scope to compromise with health issue. One person refrained from answering this question. They informed that still mobile tower is seen in the vicinity of residential area, school, college and hospital. It is because of the greed of the owner.

When asked whether they think that it is necessary to raise awareness among the inhabitants about this health hazard issue, the entire respondent answered in positive. This is to inform separately that even the respondent who informed that they are not aware of health hazard issue from Mobile tower they also replied positively. So it seems that though the interviewees who were not aware before this interview they have understood the bad side Mobile towers.

12.0 Implications and Recommendation

From this study we see that there is no specific guideline for setting up a Mobile Tower. Only guideline presents is 4G licenses Clause 50.03 which generally says to follow the existing guidelines produced by the International Commission on Non-ionizing Radiation Protection (ICNIRP) and any other related UN organization for their installed equipment. Nothing is mentioned about the place where the Mobile Tower can be installed. The site selection for a Mobile tower is a big issue. From the study of awareness at different countries it is seen that main protest has come on location of Mobile tower issue. The local people are the first to raise their voice against Mobile Towers. Bangladesh has failed to have a direction on site selection.

From the guidelines of our neighbor country it is seen that specific criteria have been fixed where and what circumstance and how a Mobile Tower can be installed. For example the preference of location for setting up Mobile Tower shall be in the following order:

- i. As far as possible TSP/IP should try to avoid residential areas.
- ii. Where it is not possible to avoid the location of this tower in a residential area, possibility should be explored to locate there towers in open spaces subject to the condition that the maximum area of such installation of such Mobile Towers is not more than 10% area of such open space or on community buildings in the areas.
- iii. Where it is not possible to find suitable space as above, the tower should be permitted to be located on the roof top of community building subject to the no objection from the building owner
- iv. Erection of tower in heritage building shall not be allowed
- v. Installation of Mobile tower shall not be permissible within the premises of school, colleges and hospital.

Another important thing that can be noted from India's guideline that India is following a far below range than the ICNIRP mentioned range. As it is obvious that radiation from tower is hazardous the lower limit we set, is good for health and all citizen will welcome that. But it seems that BTRC is in favor of maintaining ICNIRP range.

13.0 Conclusion:

Mobile Tower is there in our country from late eighties of last century but we are very unlucky to think that we do not have a guideline yet in thirty years. We are looking forward that we will have a direction from Honorable High Court very soon and which will meet the expectation of common people.

From this study it is also found that people are aware of the health hazard issue of Mobile tower. We may have not experienced any severe protest from people but we can't say that there was no protest. Different cases, TV programs, Newspaper articles were published also. We have seen that the panic arose from Mobile Phone Tower in UK, ultimately did not took the shape of serious issue like the reaction of "mad cow disease" and many other critical issues. So we do not any reason to be frustrated. In our country, BTRC is playing the role of regulator as well as guideline or rules or regulation formulator. It is very hard to have a balance in the system when same party is responsible for regulation formation and regulator. Respondent has expressed concern that it is time to separate the function of regulator and regulation formulator as we see in different countries including neighboring country India.

14.0 References

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