

**QUALITY OF LIFE AMONG SURVIVORS FROM BUILDING  
COLLAPSE: CASE STUDY OF RANA PLAZA, SAVAR,  
DHAKA**



A Dissertation for the Degree of Master in Disaster Management

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## **Abstract**

The study identifies the quality of life among the survivors of the Rana plaza building collapse incident at Savar, Dhaka at 2013. It also finds out the association between demographic factors (age, sex, income, diagnosis) contributing the quality of life (Physical, psychological social and environmental domain) among the survivors. The study was conducted through Cross-sectional study design among 92 Rana Plaza survivors who were selected by purposive comprehensive sampling technique from CRP data based (Savar) by a structured questionnaire with face to face interview. World Health Organization Quality of Life Scale- 100 (WHOQOL-100) was used to conduct the study. In case of, overall quality of life of RANA Plaza survivors, about 42.4% of them have neither poor nor good quality of life; therefore about 19.6% of them have very poor type of quality of life at the period of 10 months incident. There was a significant association with survivors' type of disabilities, diagnosis, current occupation and their quality of life that means the quality of life is quiet better for person with temporary disabilities rather than person with permanent disabilities. Those who are in jobs have good quality of life than unemployed survivors. However, there are no associations with age, sex, educational background, and amount of support with their quality of life. Rehabilitation centre like CRP has bounded the survivors with an integration program, treatments, vocational training etc. It might become the prime mover for survivors to improve their quality of life at ten months period of time but no one have very good quality of life. The government and concerned authorities should come forward to take necessary measures to prevent any type of manmade disasters like- building collapse, fire etc. through an appropriate collaboration from top to bottom as well as should develop a sustainable follow-up system after any disaster.

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## **KEY ABBREVIATIONS**

AFB- Arm Forces Bangladesh  
BGMEA- Bangladesh Garment Manufacturers and Exporters Association  
BGB- Border Guard Bangladesh  
BUET- Bangladesh University of Engineering and Technology  
CDD- Centre for Disability in Development  
CID- Criminal Investigation Department  
CMH- Combined Military Hospital  
CPD- Centre for Policy Dialogue  
CRP- Centre for Rehabilitation of the Paralysed  
EMCH- Enam Medical College and Hospital  
EU- European Union  
GO- Government Organisations  
ILO- International Labour Organization  
IT- Information Technology  
QOL- Quality of Life  
NITOR- National Institute of Traumatology and Orthopaedic Rehabilitation  
NGOs- Non government organizations  
PWDs- Person with Disabilities  
RAB- Rapid Action Battalions  
RAJUK- Rajdhani Unnayan Kartripakkha  
RMG- Readymade Garments  
SAR- Search and Rescue  
SPSS- Statistical Package for Social Science  
UK- United Kingdom  
US- United States  
WHO- World Health Organization  
WHOQOL- World Health Organization Quality of Life  
HRQOL- Health Related Quality of Life

# CHAPTER 1 INTRODUCTION

## 1.1 Background

In Bangladesh the successful export oriented readymade garments (RMG) industry has seen remarkable growth since its beginning in late 1970s. The industry has also provided employment to nearly 2.8 million workers (BGMEA, 2009) most of them are women from the rural areas. The annual compound growth rate of RMG export industries in Indonesia (31.2%), Mauritius (23.8%) & Dominican Republic (21.1%) compares extremely high with that of Bangladesh (81.3%) over the 1980-87 periods of time (Bhuiyan, 2012). Recent reports mentioned about 5,000 garment factories in Bangladesh and 3.6 million garment workers. It is the third-biggest exporter of clothes in the world, after China and Italy (Alam & Hossain, 2013). The readymade garment industry (RMG) has played a pioneering role in the development of the industrial sector of Bangladesh. Over 90 percent of the production workers employed in RMG factories are women.

Bangladesh is a country with 164.7 million people and is listed as the 7th most populated and one of the poorest countries in the region. It is a developing country. Most of the people are still occupied in agriculture sector. However, per capita land is very scant. Most of our farmers are the marginal farmers. Other rural workforce includes day labors. People also migrate to urban areas to engage in industries like handicrafts, garments etc. This gives us some perspectives of the social mobility with the entry of women in the formal labor market and transition from the private to male dominated public sphere (Ullah & Chowdhury, 2010). This opportunity is inspiring them to earn minimum currency to fulfill their daily needs. Absolutely, it makes them employed as a male or female and their livelihood is quite better than rural life.

In addition, there has been a major migration from rural areas to cities, causing a rise in urban poverty. The population is working in high risk urban areas for their livelihood. The poor people are involved with different garments factory for their livelihood and face hazardous accident as regular basis (like fire, collapse, poisoning, accident etc.). Therefore, we come across some tragic and sad incidents due to over population, owner careless attitude, absence of regularity authority and 'risk' taking tendencies of the poor workers as this job is mostly the sole income of the families.

In Bangladesh, people are familiar with building collapse incidents; the building collapsing history is not unknown with the people who are engaging in manufacturing sector. Garments factory related uncertain instants are going to be horrible day by



day. The Tajreen factory fire, Bipail building collapse, Tejgaon building collapse, Sankharibazar building collapse ~~is-are some of the~~ tragedies now.

On 24<sup>th</sup> April 2013, Bangladesh experienced a tragic incidence and it was the most horrific incidence than previous which is called “Rana Plaza Tragedy”. It is one of the worst tragedies of building collapse in the history of the world which took more than one thousand lives.



Figure 1.1: Rana Plaza collapsed on April 24, 2013  
(Source: <http://cpd.org.bd/index.php/cpd-launches-a-transparent-accountable-and-collective-initiative-on-rana-plaza-tragedy/>)

About 1129 people died due to collapse of the building and more than 2000 people are living with or without disabilities in Bangladesh (WHO, 2013).



Figure 1.2: Immediate responses from Armed Forces and fire brigades after Rana plaza collapsed  
(Source: <http://cpd.org.bd/index.php/nine-months-into-rana-plaza-tragedywhere-do-we-stand-khondaker-golam-moazzem-and-adiba-afros/>)

Rana Plaza was a nine-story building in Savar that housed four garment factories with a variety of shops. Although Rana Plaza had a permit to build a five-story building for shops and residential accommodation, the owner made it nine stories.

The Bangladeshi news media reported that inspection teams discovered cracks in the structure of Rana Plaza on Tuesday (the day before collapse). Shops and a bank branch on the lower floors were immediately closed (Malkin, 2014). However, the owners of the garment factories on the upper floors ordered employees to work on Wednesday (the day of collapse), despite the safety risks. Labor activists combed the wreckage on Wednesday afternoon and discovered labels and production records suggesting that the factories were producing garments for major European and American brands (Ahad, 2013). Jahangir (2013) said in an article that after Rana plaza incident, the rescue teams through their extraordinary efforts succeeded to save 2465 lives from the rubbles. It is estimated that roughly 3122 workers were trapped inside. According to WHO report it is found that about 1127 survivors died at the spot and hospital, about 1,885 people were discharged by May 2, 2013 (after one week) with receiving immediate treatments from different hospitals. Centre for the Rehabilitation of the Paralysed (CRP) has admitted some injured (fracture, amputation, spinal cord injury etc.) survivors and accomplished rehabilitation service.



Figure 1.3: Rehabilitation services inside CRP

(Source: <http://lawatthemargins.com/aftermath-of-the-rana-plaza-tragedy-social-and-health-issues-emerge-amid-struggle-for-workers-rights/>)

After this horrific disaster the government and international bodies have given fund for the injured employees of Rana plaza but only a few organizations have worked with them for their rehabilitation and reintegration. We are experienced with the organizational behavior after a disastrous incident. Often organizations are busy with their immediate responses but it is more difficult and challenging to develop reintegration and sustainability. In Bangladesh, there has no statistic about quality of life after supports, especially after medical based support. Prior research findings

indicate that the earthquake related building collapse survivors had significantly lower scores in the psychological and environmental domains of WHOQOL-BREF than the individuals who were not exposed to a disaster (Ceyhan & Aykut, 2007). There has no any statistic about injured person's quality of life after any incidence like building collapse. Therefore, the researcher is interested to find out the wellbeing of the existing survivors who have experiences of that horrific tragedy (Rana plaza), might be affected positively or negatively on their physical, mental, psychosocial quality of life. It determinates the satisfaction over their life in difference aspects.

## **1.2 Significance of the study**

After any catastrophe national and international welfare organizations are ready to provide fund for immediate response or early recovery but a very few number of organizations follow the sustainability development or empowerment of the injured or disabled people. The survivors suffer a lot after any catastrophe especially they suffer with post traumatic stress related disorder as well as job dissatisfaction. In this study the investigator is interested to find out the survivors quality of life after reintegration with the community. The result could be ensured us about survivors' level of satisfaction on their life which has significance to know because they have got different source of supports after this incidence. However, Investigator feels that there have still limitations to search about survivors' quality of life after any uncertain natural or manmade disaster. Investigator is interested to find out survivors day to day lives, wellbeing and satisfaction in their community after any injuries and psychological trauma.

In this case, usually the survivors remain in a state of 'shock' because most of them cannot go back to their job and also get affected by other influences like- jobless, family burden. However, it has to be taken into consideration that the survivors get enough monetary support during this crisis period from foreign agencies and national level. The survivors of Rana plaza disaster are still having mild to severe disabilities, therefore it is essential to investigate their quality of life. It could be making aware for further any hazardous incident (like earthquake) and predicting impact. It could help to take precautionary management for survivors. Still now there is no statistics about their social, physical or economical status after returning to the community. For this reason, the investigator is interested to know about their physical, psychological, social and environmental quality of life separately to find out the status of their life after this terrible incident.

### **1.3 Objectives of the study**

- To find out the quality of life and level of health satisfaction among the survivors of building collapse incident
- To find out the association between demographic factors (age, sex, income, diagnosis), types of disability, donation and quality of life among the survivors

## CHAPTER 2 LITERATURE REVIEW

Buildings are constructed with structural integrity to ensure that catastrophic failure does not occur, which can result in injuries, severe damage, death, or monetary losses. Structural integrity must always be considered in engineering when designing buildings, gears or transmissions, support structures, mechanical components, or any other item that may bear a load (Samuel & Weir, 1999). The entire structure can support its load without failure due to weak links (Toor, 2000). When a weak link breaks, then it can put more stress on other parts of the structure, leading to cascading failure (National Research Council, 1985). After a building collapse, lots of people die and many get severe injury. In China, Wang (2010) mentioned in a study that the injured survivors suffered lot with their quality of life. Especially, they have poor quality of life with psychosocial and environmental aspect. There is a significant relation between building collapsing incidence and its survivor's quality of life due to their sudden physical and psychosocial trauma. Studies mentioned that after these types of catastrophe, huge number of survivors did not engage on their occupation and suffered acute/post traumatic stress disorders.

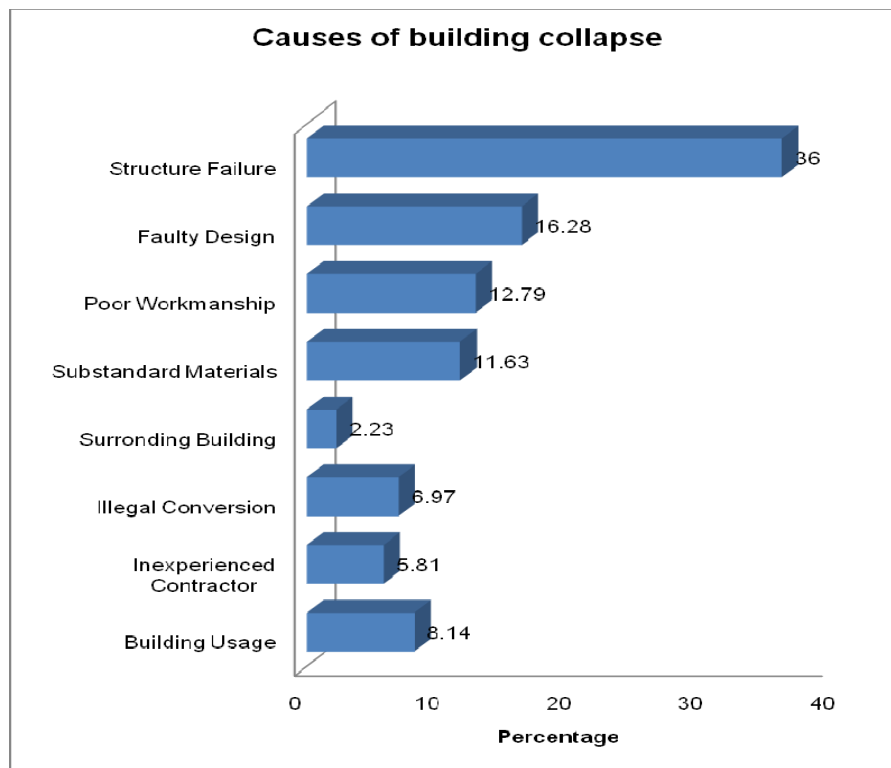


Figure 2.1: Causes of building collapse in Nigeria  
(Source:[http://www.academia.edu/1544041/an\\_examination\\_of\\_the\\_causes\\_and\\_effects\\_of\\_building\\_collapse\\_in\\_nigeria](http://www.academia.edu/1544041/an_examination_of_the_causes_and_effects_of_building_collapse_in_nigeria))

In Nigeria building collapses incidence is very frequent owing to various reasons (Figure 2.1). The frequency of building collapses recently and past has become a major issue in the development of the country. The frequency of their occurrences and the magnitude of the losses being recorded in terms of lives and properties are becoming worrisome and alarming. The spate and frequency of occurrence have become major sources of concern not only for the governments but also for all well meaning Nigerians and most especially the stakeholders in the building industry in the country as the magnitudes of the incidents are becoming unprecedented (Ayedun et al. 2012). Even though the proportion of buildings that collapse is very small compared with the vast majority that are in use, the human and material wastes associated with such building collapses apart from psychological disturbances often impose on both the affected residents of such houses and their owners also constitute huge loss to the nation at large. The psychological trauma has suffered them considerably.

### **2.1 Selected building collapses incidents over the world**

Building collapses are very common over the world particularly due to earthquake or structural failure. Collapses are often blamed on the use of substandard materials and poor workmanship, with buildings going up without adequate supervision or licenses. Over the world most common cause of building collapse is structure failure (Michael & Razak, 2013).

- Bhattacharya (2013) has mentioned in a article paper that at least 11 people were killed and five people injured when two apartments building collapsed in Vadodara, the northwestern state of Gujarat on August 2013. The incidence took place between 4:30 am and 4:45 am, a second building collapsed too within one hour time. The buildings were constructed in 2012. There was a problem with structural error and after this incident; people have suffered a lot with their injured livelihood.
- Shah (2013) said in The Wall of street Journal that about 17 people died in a building collapse on July 2014 in Secunderabad (South India). A garment factory in Bhiwandi (around 20 miles away from Mumbai) collapsed after a week and killing six people. The deadliest case in India this year (2014) occurred in then also near Mumbai, when 74 people, including 18 children, were killed after an illegally constructed residential building collapsed. However, in South Asian aspect, more than 1,100 people died on April 2014, when a factory complex collapsed in neighboring Bangladesh. It was one of the world's worst industrial accidents.

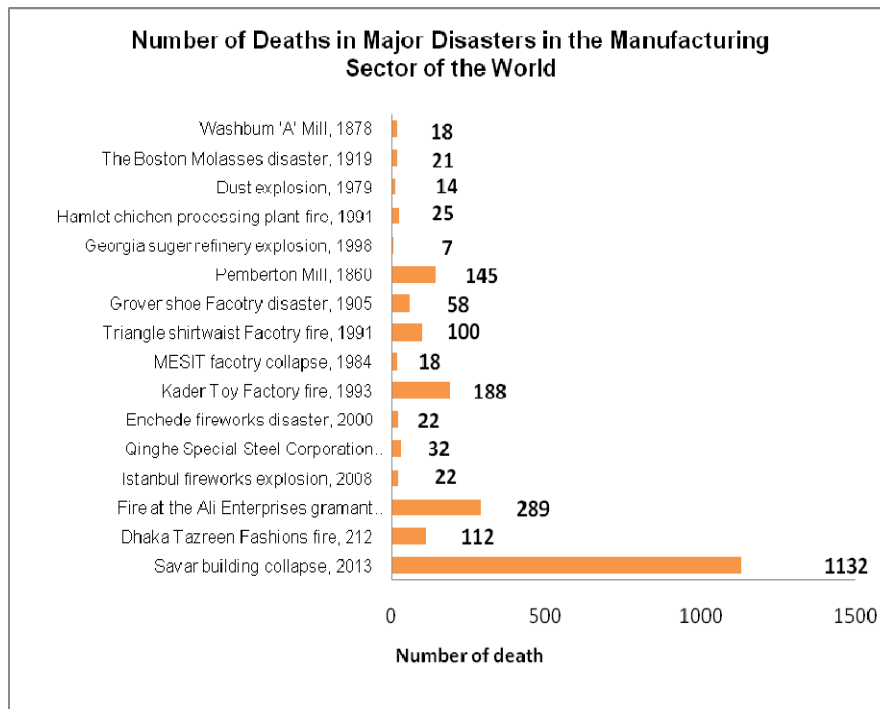


Figure 2.2: Number of deaths in manufacturing sector over the world  
 (Source: [http://en.wikipedia.org/wiki/List\\_of\\_industrial\\_disasters](http://en.wikipedia.org/wiki/List_of_industrial_disasters))

- On 4<sup>th</sup> January 2014, The Times of India (newspaper) has mentioned that about fourteen people were killed when an under-construction five-storey residential building caved in Cancona town near Goa. Personnel of Goa fire and emergency services and Army carried out rescue operations overnight to look for more survivors but as 17 hours passed since the mishap and due to huge pile of debris, the chances of finding anybody alive were getting slimmer with the passage of time.
- CNN reporters (Quinones, 2013) in Colombia have stated that a 22-story residential building collapsed in Colombia's second-largest city, killing one person, injuring two and leaving 10 others unaccounted for, authorities said Sunday (October 13, 2013). The building collapsed on Saturday night in Medellin, according to the office of Claudia Patricia Restrepo, (the temporary mayor). Indeed of the official rescue team evacuated 24 families from the building. At that time, Construction workers were inside to the collapse building among the missing one. After the incident, authorities evacuated residents of nearby buildings as a security measure. At the period of rescue and recovery, police, fire service department, psychologists and the Red Cross society were at the site and involved until full recovery.

- In India, newspaper reporters have added in electronic media that at least one person was killed when a residential building collapsed in New Delhi in 2013. The fire chief had declared that the four-story building in the northern part of the city was more than 50 years old. He had aware the residence people immediately, so far the died list had redacted. He also added that two people were hospitalized with injuries. Authorities said digging on an adjacent plot of land for a new apartment building could have weakened the building's foundation. An inquiry has been ordered to determine the exact cause. This crumbling building is one of many that have caused calamity recently (Sing, 2013).
- Sing, H. R. (2013) has mention in another study that a building collapsed in Mumbai on September 27, 2013, in that time at least 61 people died. In April, scores of people were killed when an illegal multistory building collapsed in Thane, a city in the Mumbai region. In India the 'Housing rights groups' have said that many old buildings in the city are rundown and neglected, while newer ones were often built using substandard materials and have structural problems.
- In Bhopal, India on April 26, 2013 a hospital female ward had collapsed and at least 14 people were injured through this consequence (Sing, H. R., 2013).
- Turkey is an overcrowded country with a population of 12 million. The country is vulnerable to major earthquake. Turkey has a building code, which is as stringent as California's but it is rarely enforced. This cheaply built, illegal housing lies at the heart of the disaster, it has said by engineering experts. It accounts for why so many houses just crumpled like packs of cards and why older or more solid buildings remained intact finally resulting death and injury (Internet geography 2007). In Turkey the rate of urbanization has been very high and unfortunately the control and supervision of the building quality has not been as good as it should be. Turkey's Chamber of Commerce estimates that some 65% of all buildings are constructed without a permit or with scant attention to building regulations. Their situation is like Bangladesh (Internet geography 2007). Therefore, they Turkey people are staying in more risk zone rather than Bangladesh because of their geographical location and economical situation.
- A report on South Korea disclosed that a mall (Sampoong Department Store) in Seoul (South Korea) collapsed with an estimated 1, 500 people inside on June 29, 1995. In less than 20 seconds, a section of the five-story building came crashing down into the basement and estimated that killing over 500 people. The



collapse of the building, which was constructed using steel-reinforcement concrete pillars, was blamed on faulty construction. The building had a number of structural modifications during its lifetime which contributed to the collapse. It was originally designed as an office building with four floors, and was built in 1987. When it was later converted to a departmental store, support columns were cut away to accommodate escalators. The reporters have written that the owner (Lee Joon) carried out these modifications over the objections of the original contractors. A fifth floor was eventually added to house a restaurant. It involved installation of a heavy concrete slab. A heavy air conditioning unit was added to the building's roof, exceeding the design load. Haphazard relocation of the air condition unit damaged the roof structure.



Figure 2.3: Collapse of Sampoong Department Store in June 29, 1995.  
(Source: <http://blogs.wsj.com/korearealtime/2014/02/18/south-koreas-history-of-building-collapses/>)

Prior to its collapse, the building showed cracking due to the overloading produced by the faulty-engineer fifth floor and air-condition unit placement. The incidence had taken lots of lives and 6 had never found, in fact of about 937 had severely injury and taking long period of time for recovery.

## 2.2 Building collapse history of Bangladesh

Bangladesh is located in a tectonically active region close to the plate boundaries. Large earthquakes ( $M \geq 7$ ) have occurred in the past. Dhaka, Chittagong cities may be subjected to high magnitude and intensity (MMI scale) in case of earth shaking. Seismic Risk is high due to lack of earthquake awareness and preparation. Buildings

lack quality of construction and earthquake resistant features. Collapsed buildings are the main reason for damage and casualties in an earthquake. Post-disaster management is critically important for the rescue and recovery of wounded people from the collapsed buildings. Recent collapses of buildings in the capital city of Dhaka have taken place without the occurrence of earthquakes. Such structural failures under gravity loading point out the possibility of inherent weaknesses in many buildings of the city, which may easily collapse in the event of additional loading from an earthquake. Researcher comprises different issues of emergency response from different isolated building collapse events in Dhaka city (Watanabe, 1995).

#### ***Shakhari Bazar building Collapse, 2004***

A six storied building in old city collapsed at 4 am (Shankhari Bazar) on June 9, 2004. Bottom three stories were crushed while upper three stories remained intact. Three stories were added (unauthorized) over an old three-storied building made of bricks and lime mortar and these result 19 deaths and 11 serious injuries. Armed Forces, Fire Service, local volunteers were principally involved in the rescue and clearing operation. Debris removal have completed on June 11, 2004 (Al-Hussaini & Hossain, 2008).



Figure 2.4: Shakhari Bazar building Collapse, 2004 at old Dhaka city  
(Source:<http://www.thefinancialexpress-bd.com/old/index.php?ref=MjBfMTBfMDNfMTJfMV8yXzE0NTYyNg==>)

The owner added three floors to the original three-story building and it was about 200 years old. Some of the floors crumbled and whole building was collapsed at the time of incident. Initially people from the neighbor, then Fire Service and military team conducted the rescue operation. They mainly used hammers and crowbars to dig the debris to rescue the trapped victims. It is a dense populated area at Shakhari Bazar of old town where the space between buildings are very narrow. Heavy equipment

could not reach at the scene because of narrow roads and dense population. Even ambulances could not collect the injured personnel from the accident spot. Rescuers had to depend only on manpower and small tools. All of these reasons delayed the SAR operation and increased the death toll of the trapped victims.

### ***Spectrum Sweater factory collapse at 2005***

Al-Hussaini & Hossain (2008) have revealed on their paper that a totally unauthorized 9 story (each floor area 15000 sft) concrete frame building in the outskirts of Dhaka on April 11, 2005 at 1 am has collapsed. Approximately 61 deaths and 86 injured. Local people started rescue and were quickly followed by arrival of Fire Service, Police, Armed forces and Rapid Action Battalion (RAB).



Figure 2.5: debris of Spectrum Sweater factory

(Source: <http://www.cleanclothes.org/news/2005/04/01/factory-collapsed-bangladeshi-garment-workers-buried-alive>)

Later medical teams from army and non-government organizations provided first aid and hospitalization to the injured. Rescue teams started rescue operation with hand-operated manual and mechanical concrete breaking tools. One day later, heavy equipment arrived from different government and private sources. Within a day, 89 people were rescued. Rescue and clearing operations (under the command of Armed Forces) completed on April 19, 2005. It has found that on daily newspaper that the illegal and faulty construction of the building added with a boiler explosion led to the incident of the collapse. Initially Fire Services and local people then military took over the control of Search and Rescue SAR operation coordination with RAB, APBN, GOs and NGOs. Total operation was carried out in 4 phases.

- a. Phase 1: Establishment of outer cordon and collecting data of death, missing and live recoveries with the emergency response from all agencies.
- b. Phase 2: Total rescue operation started under the command of Army unit with establishing a coordination cell combining all agencies.

c. Phase 3: Slab cutting and removing operation was conducted in this phase. It had 4 stages.

i. Stage 1: Clearing debris.

ii. Stage 2: Breaking the concrete with vibrators.

iii. Stage 3: Cutting the reinforcement with the electric cutter and oxy-acetylene torch.

d. Phase 4: Removing the broken portions of plate/ slab by crane excavator or pulling by recovery cables.

After removing a portion of slab that part was searched thoroughly for any dead body or any survivor. Most of the rescue equipments were not readily available for such kind of operation. There were no access or approach roads available to allow the heavy rescue equipments. Most surprisingly there was no standing government order assigning any organization for the leading responsibility of control and coordination. Therefore, there was no information about the availability of required equipments with different organizations for this kind of operation. It took 9 days for the successful completion of the operation due to all the factors written above (source: The Daily Star, 2005).

### ***Phoenix, Mohakhali***

A three-decade-old 5-stories building of Phoenix Group collapsed in the city's Tejgaon industrial area at about 10.30 am on 25<sup>th</sup> Feb 2006. After this incidence, it has reported that about 22 are total died and 50 are severely injured.



Figure 2.6: The debris Phoenix, Mohakhali  
(Source: <http://archive.thedailystar.net/magazine/2006/03/01/cover.htm>)

The building had a foundation for three story but the owners went for further vertical expansion and in the process imposed more load than the building's foundation could with stand. Unauthorized renovations to convert the upper story of the building into a 500-bed private hospital led to this disaster. Initially Fire Services and local people

then military took over the control of SAR operation coordination with RAB, APBN, GOs and NGOs. Total operation was carried out in 4 phases. After removing a portion of slab that part was searched thoroughly for any dead body or any survivor. A revolving excavator was used for tearing apart the mangled tin, brick pieces from the surface of the heap of debris. Another wheel-run excavator cleared the rubbles of the front part while a huge crane was gearing up to start working on the main road. A hundred army men advanced in line, getting hold of a broken tin or a piece of beam, going back and throwing them in the vacant space on the left side of the building. Grill machines, gas cutters, pneumatic hammers, pickaxes and hammers were used after removing the big roof slabs (source: The Daily Star, 2006).

During Phoenix building collapse beside govt. team some other Govt. organizations joined the rescue effort such as DCC, RAJUK, RHD, and DESA. Traffic was completely halted for five days in a major road. 48 people were rescued from underneath the rubble, 45 on the first day, one four days later. Rescue and clearing operations (under the command of Armed Forces) completed on March 2, 2006.



Figure 2.7: The collapsed building in Mohakhali, 2006  
(Source: <http://archive.thedailystar.net/2006/03/04/d603041501115.htm>)

### 2.3 Injured Workers of Rana Plaza

According to the information from the Enam Medical College and Hospital (EMCH), a total of 1,800 workers have taken primary treatment there, of which 1,000 workers were released within a week. Among the rest, another 700 were released within one to two months. A total of 34 injured workers who needed special treatment were shifted to Centre for Rehabilitation of the Paralysed (CRP), Savar Combined Military Hospital (CMH) and Orthopaedic Hospital, Dhaka. A total of 339 workers were severely injured and had to undergo major operation(s) and long-term treatment. Most of these workers were admitted in different medical institutes including Orthopaedic Hospital, Savar CMH, Dhaka Medical College, EMCH, CRP, and Dip

Clinic in Savar. According to the information from the monitoring team, severely injured workers have eight types of wounds which include hand injury, leg injury, traumatized, severe backbone injury, head injury, pelvic fracture, crush injury and compartmental syndrome and others. The extent of severity of the injuries can be perceived from the number of cases in which people lost hands or legs or incurred severe backbone injuries. Male workers experienced most of these wounds proportionately, while injuries of the female workers can be categorized under specific types such as in legs and hands. Over 50 per cent female workers ended up with almost disabled hands and legs. In other words, these workers seem to have lost their earning ability by working in the industrial sector (CPD, 2013). However, rehabilitation centers worked with those survivors to rehabilitate and reintegrate on their mainstream livelihood. Rehabilitation process includes the physiotherapy and occupational therapy treatments, vocational training and community reintegration. The survivors have completed all these process. In vocational training centre, they have taken training in shop-keeping, tailoring, computers and mechanical training. The training subject depended upon educational background of survivors. After finishing the training, survivors have reintegrated to their community with their job priority. After all, it has become possible for only those have temporary disabilities. However, some of the amputee survivors are in treatments also.



Figure 2.8: The injured survivors are taking vocational training for successful reintegration  
(Source: <http://www.thedailystar.net/rana-plaza>)

## 2.4 Quality of Life

In general, quality of life (QoL or QOL) is the perceived quality of an individual's daily life that is an assessment of their well-being or lack thereof. This includes all emotional, social and physical aspects of the individual's life. Health-related quality of life (HRQoL) is an assessment of how the individual's well-being may be affected over time by a disease, disability or disorder.

Quality of life is a model of integrated objective and subjective indicators. It is a broad range of life domains, and individual values. It takes account of concerns that externally derived norms should not be applied without reference to individual differences. Factors that play a role in quality of life vary according to personal preferences, but they often include financial security, job satisfaction, family life, health and safety (WHO, 2013).

The Quality of life healthcare (WHO 2012) it is noted that the concept of health-related quality of life acknowledges that subjects (like people, patient and survivors) put their actual situation in relation to their personal expectation. The latter can vary over time, and react to external influences such as length and severity of illness, family support, etc. As with any situation involving multiple perspectives, patients' and data collectors' rating of the same objective situation have been found to differ significantly. Consequently, health-related quality of life is now usually assessed using patient questionnaires. These are often multidimensional and cover physical, social, emotional, cognitive, work- or role-related, and possibly spiritual aspects as well as a wide variety of disease related symptoms, therapy induced side effects, and even the financial impact of medical conditions in any trouble situation. Although often used interchangeably with the measurement of health status, both health-related quality of life and health status measure different concepts (CDC, 2011).

**Table 2.1: Overall Quality of Life and General Health**

1. Physical health	Energy and fatigue Pain and discomfort Sleep and rest
2. Psychological	Bodily image and appearance Negative feelings Positive feelings Self-esteem Thinking, learning, memory and concentration
3. Level of Independence	Mobility Activities of daily living Dependence on medicinal substances and Medical aid Work Capacity
4. Social relationships	Personal relationships Social support

	Sexual activity
5. Environment	Financial resources Freedom, physical safety and security Health and social care: accessibility and quality Home environment Opportunities for acquiring new information and skills Participation in and opportunities for recreation/leisure Physical environment (pollution/noise/traffic/climate) Transport
6. Spirituality/Religion/Personal beliefs	Religion /Spirituality/Personal beliefs

### **World Health Organization Quality of Life (WHOQOL-100)**

The world health organization Quality of Life (WHOQOL) project was initiated in 1991. It assesses the individual's perceptions in the context of their culture and value systems and their personal goals, standards and concerns. The WHOQOL instruments were developed collaboratively in a number of centres worldwide and have been widely field-tested. The scale is using rapidly in health sector. The WHOQOL-BREF instrument comprises 26 items, which measure the following broad domains: physical health, psychological health, social relationships, and environment. The WHOQOL-BREF is a shorter version of the original instrument that may be more convenient for use in large research studies or clinical trials. The WHOQOL-100 is a rating scale where survivors ensured the quality from 0 to 100. Better score defined better quality of life.

WHO (2014) mentioned that the WHOQOL assessments has value where disease prognosis is likely to involve only partial recovery or remission, admin which treatment may be more palliative than curative. Therefore, the WHOQOL assessments will allow detailed quality of life data to be gathered on a particular population, facilitating the understanding of diseases, and the development of treatment methods. The international epidemiological studies that would be enabled by instruments such as the WHOQOL-100 and the WHOQOL-BREF will make it possible to carry out multi-centre quality of life research, and to compare results obtained in different centers. Such research has important benefits, permitting



questions to be addressed which would not be possible in single site studies (WHO-Geneva, 1995).

The WHOQOL-BREF enabled health professionals to assess changes in quality of life over the course of treatment and rehabilitation. It could be follow up in a longitudinal way. It is anticipated that in the future the WHOQOL-100 and the WHOQOL-BREF will prove useful in health policy research and will make up an important aspect of the routine auditing of health and social services. The survivors of Rana Plaza disaster are still having mild to severe disabilities, therefore it is essential to investigate their quality of life after completion of rehabilitation services.

## **2.5 Quality of life among survivors after building collapse**

Quality of life (QOL) is defined by the World Health Organization (WHO) as 'individuals' perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns'. It is a broad-ranging concept incorporating in a complex way a person's physical health, psychological state, level of independence, social relationships, personal beliefs and relationships to salient features of the environment. This definition of QOL and the derived instruments (WHOQOL and its brief version) enable us to investigate post-disaster effects on individuals and communities from a multiple dimension approach and at a range of levels. It is also possible to draw attention to some issues usually neglected by health workers trained within the medical, nursing and rehabilitation areas. In addition, the unique globalization of the WHOQOL development process and the availability of standardized versions in over 10 languages is an invaluable prerequisite for successive international collaboration and multicultural comparison, which might be of vital importance in the field of post-disaster mental health research and intervention.

This study has introduced a multidimensional but brief version of the WHOQOL (WHOQOL-BREF) into a community sample affected by an building collapse related horrific event with the aim, first, of observing longitudinal change of QOL and psychological well-being in the aftermath of an natural or manmade disasters and second, to examine the relationship between QOL and disaster exposures demography, post disaster support (like rescue, recovery and rehabilitation) and other related variables.

China is the most vulnerable country with earthquake and it's very frequent incidence for them. In China, after earthquake related building collapse, finding said that the survivors had a great impact on their quality of life (physical, psychological and environmental domain) after 10 months of the collapse. This indicated that relief and

welfare aid is important but could not substitute for mental health intervention. It also reminds us that the effects of traumatic experience should not be simply equated to loss of assets or any specific personal belongings. On the other hand, social relationship domain has no significant change among the survivors. Psychosocial aspects of disasters have received increasing attention in the past decades. However, while obvious tendencies have emerged in the literature, disparities and even contradictions are still predominant in the reported results (Wang et al. 2000). Another study found that the survivors of earthquake with building collapse experienced with severe post traumatic stress disorder and it kept an impact on their quality of life. In a Marama study, it is said that the earthquake effect had contributed in survivors' life badly with financial difficulties even six years after disaster (Ceyhan & Aykut, 2007).

Chou (2010) revealed in article that the most horrific building collapses are common with major earthquakes. The earthquake survivors had a higher percentage of psychiatric disorders. The risk factors that affected quality of life in survivors were age, female sex, financial loss, social network change, and mental impairment among Taiwanese Village Population. There has no doubt to say that there has an significance co-relations with trauma like building collapse with the injured quality of life.

Finally, it could be said that building collapse incidences are common over the world specially related with earthquake. However, it is very uncommon in history that thousand of worker died in a single incidence. In fact, building collapse, be it for natural reasons like an earthquake or for human errors, results survivors' trauma. The survivors suffer psychological and environmental trauma due to post stress disorders. In Bangladesh context, there is limitation of knowledge about the survivors' QOL after receiving different sorts of support.

## CHAPTER 3 METHODOLOGY

In this chapter the methodology of the study is discussed under the following aspects: study design, setting, participants and sampling, measuring instruments, data collection procedure, field test of CIQ, ethical issues, reliability and validity. In case of Epistemology, it is a field of philosophy concerned with the possibility, nature, sources and limits of human knowledge. . It is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we ensure that they are both adequate and legitimate. It is the method conventionally important because it is fundamental to how we think. There are three types of epistemological view, they are- objectivism, constructionism and subjectivism (Klein, 2005). The method of study follows objectivism. As an object of that kind, it carries the intrinsic and actual meaning of study. Its goal is explanation and looking truth subjectivity.

### 3.1 Study design

The study has customized with **Cross - sectional Study**. This is a non experimental study design. The studies are carried out at one time point or over a short period. Levin (2006) said that-

'A cross-sectional study design is used when the purpose of the study is descriptive, often in the form of a survey. Usually there is no hypothesis as such, but the aim is to describe a population or a subgroup within the population with respect to an outcome and a set of risk factors'

Cross-sectional surveys are studies aimed at determining the frequency (or level) of a particular attribute, such as a specific exposure, disease or any other health-related event, in a defined population at a particular point in time. Data can also be collected on individual characteristics, alongside information about outcome (Olsen & Marie, 2004). A cross-sectional study design is used where the purpose of the study is descriptive, often in the form of a survey. In this study, there is no hypothesis as such, but the aim is to describe a population or subgroup within the population accordingly to the physical, social and economical quality of life. Data can also be collected on individual characteristics, alongside information about outcome. In this way cross-sectional studies provide a 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time. The objectives of the study has demanded the association between demographic factors and quality of life,

for this reason cross sectional study is the best way to find out the relation between those.

### **3.2 Participant selection procedure**

The Centre for the Rehabilitation of the Paralyzed, commonly known as CRP, was founded in 1979 by a small group of Bangladeshis and a British physiotherapist, Valerie Taylor. Miss Taylor came to Bangladesh (then known as East Pakistan) in 1969. CRP is the only organization of its kind in Bangladesh, a country with a population of 150 million. The World Health Organization (WHO) estimates that 10% of the population in Bangladesh is disabled. CRP is a reliable place for found out disabled opinions. Most of the Rana plaza survivors have registered in CRP and the area reliable for their opinion. The hospital at CRP-Savar is the only hospital in Bangladesh that specializes in case of treatment and rehabilitation of spinal cord injuries. The holistic nature of CRP's work is mirrored in the fact that its work covers several areas of development including human rights, poverty alleviation, health care condition and education. It is being worked for persons with disabilities to reintegrate them at their community life. After the collapse of the building, survivors had admitted to CRP for their rehabilitation and training needs. The team members have worked with them for their community reintegration for a successful, meaningful and well participating life. The organization has reintegrated the survivors within their community through treatment and job training. Therefore, organizational aim is to develop sustainably in community through new job and a meaningful life, there is an ongoing process of organizational activities such as training, empowerment, logistic support. In CRP there has no specific finding about existing survivors' quality of life after receiving treatments and economical supports. For these reason the investigator had chosen the Rehabilitation unit of the Centre for the rehabilitation of the Paralised (CRP) as a study area for collecting data. Researcher has called the participants by mobile phoning and meet with them inside CRP, Savar local areas.

Physically disabled persons (Rana plaza survivors) who took rehabilitation services from Centre for the Rehabilitation of the Paralysed (CRP) are the participants of this study. Researcher selected participants who have admitted in CRP for treatment and training. Participants had different type of physical disabilities such as spinal cord injury, amputation, fracture. All the people with physical disabilities were selected for this study and that fulfilled the inclusion criteria. Researcher explained every participant about the research aim and objectives. Researcher had taken sampling from those who willingly participated in this research. The number of study population

was approximately 400 according to CRP data-base (survivors with physical disabilities).

### **3.2.1 Sampling technique**

After taking permission from the ethical body of CRP, the investigator had collected a list of people of Rana plaza survivors. Researcher also observed the persons with disabilities who had survived after the collapse. Those participants had fulfilled inclusion criteria as they are the participants of the study. Investigator had selected them through 'purposive convenient sampling' who are available in between the days of data collection. Only 92 numbers of participants have found physically and collected data through face to face interview. When population under study is not available at a time or unreachable with all population then purposive comprehensive sampling can be used (Hair & Bush 2003 p. 212-214).

According to Fraenkel & Wallen (2000, p. 112) Purposive sampling is that a researcher do not simply study whoever is available, but use his/her judgment to select a sample that he/she believes based on prior information, will provide the data need. In this type of sampling the sample is statistically representative. It is mostly used in qualitative research but can be used in quantitative study with small populations. Hence, the investigator has taken 92 data from organizational database and selected the survivors who have already reintegrated in their own community by purposeful comprehensive sampling. Researcher collected data through mobile calling due to their periphery settlement. The small number of participant will provide a 'representative picture'. Therefore, those Rana plaza survivors who fulfill the inclusion criteria, they are the sample of the study and 92 survivors with permanent or temporary disabilities had selected to participate in the study. Researcher also contacted with staffs of vocational training institute who were responsible for training of those survivors and was taking help to identify the current physical and mental status.

### **3.2.2 Inclusion Criteria**

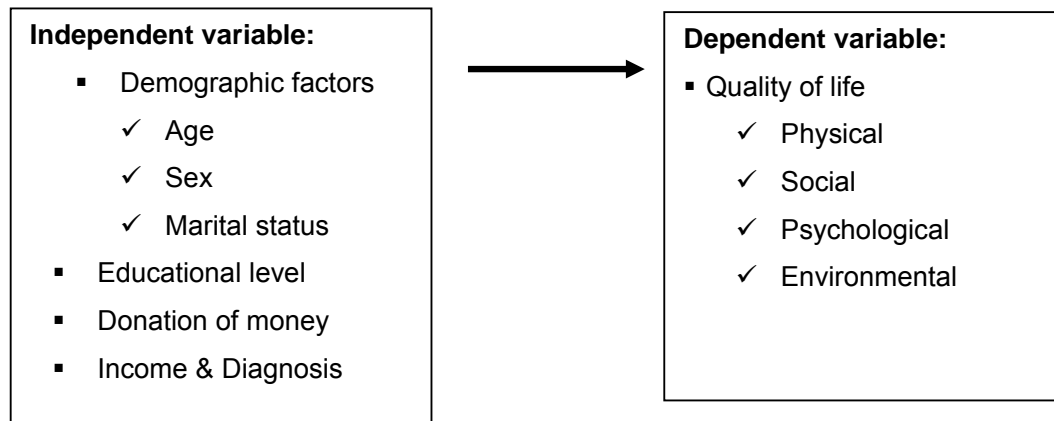
- Rana plaza (building collapse) survivors/ exposure (male and female person with disabilities)
- Person with physical disabilities (permanent and temporary) are the participants of the study who are suffering from severe or mild disabilities and age is more than 17. Bangladeshi government has a strong restriction with child labor below 16 years of age. Therefore, researcher selected the age range up to 16 years for maintaining ethical issue.

- People who are registered from Centre for the Rehabilitation of the Paralysed (CRP).

### 3.2.3 Exclusion Criteria

- People with physical disabilities who have Mental illness (Psychosis)
- People with Speech problem prior to building collapse
- Person who were not interested to attend the program at the time of data collection

### 3.2.4 Variables



### 3.3. Data collection Methods

Before collecting data, the study aims, objectives and study procedures were explained to participants. They were given the opportunity to ask questions and once they were satisfied they were asked to sign the written consent form. Once they signed the consent form, the researcher completed the WHOQOL- 100 along with the demographic data. Researcher collected data from March 22, 2014 to April 30, 2014. Researcher went to every participant’s house, workplace and training institute for collecting data. In this stage researcher has taken help from in-charge of training institute and persons who were participants in this research. On the other hand researcher has used database of CRP and has selected the participants by purposive convenient sampling (would be male/ female/ both). Then data collector collected their mobile numbers and called to ask the study questionnaires. In certain instances, the individual being assessed may not be able to complete the questionnaire (e, g, due to expressive or receptive language deficits, memory impairment, post traumatic distress etc.). In these instances, a person who is familiar with the individual being assessed could complete the form, provided that the individual being assessed is present when the form is completed.

### **3.4 Data collection tools**

- WHO-QOL Questionnaire [Appendix 6 & 7]
- Questionnaire set 2 - self prepared socio demographic questionnaire

Demographic information of the respondents was collected by using self-demonstrated demographic questionnaires (appendix 3 & 4). Demographic information included age, sex, educational level, marital status, previous occupation, new job. The survivors have got support from CRP and other donor agency but they demanded more and more from organizations or other sources. Therefore, researcher has added some points in demographic questionnaire like- type of supports, amount of money, satisfaction with money, further expectations. According to the in-charge of training institute, the survivors still now expect a lot and believe that they are in a disadvantaged situation but some amputee survivors are really in challenge. Thus, some more information like type of disabilities and diagnosis has put in demographic questionnaire.

### **3.5 Field test**

To make this questionnaire feasible (WHO-QOL 100), the main questionnaire was translated into Bengali by WHOQOL author body and shared readymade Bangla version. Then the pilot study was performed with the two survivors who experienced tragedy and survived with disabilities. It was conducted to check the appropriateness of wording as well as to test the understanding of the questionnaire. It also checked that, the translated questionnaire was suitable for the survey and data collection.

### **3.6 Consent form**

Permission was taken from every participant by using the consent form (appendix 1 & 2). At the beginning of the data collection the researcher informed every participant about the ethical and confidential issues. It was also informed that, participants have the right to refuse to answer any questions and also have the right to withdraw from any part of the research. They were informed that data was used only for the research purpose and it will be protected.

### **3.7 Ethical issues**

The researcher gained permission from the ethical committee of Centre for the Rehabilitation of the Paralysed (CRP) (appendix 8). Researcher also gained permission from author bodies of WHOQOL for using their scale and by some terms and conditions researcher had got license to use it for one year (appendix 5). The permission has given from Geneva, Switzerland. A written consent form was signed

by each participant after the study had been explained to them and any questions that they had were answered to their satisfaction. The researcher assured them that their personal identity would be kept confidential and all the documents were kept in a safe place where only the researcher could have access and was strictly maintained. The research gave them assurance that Participation in the study was entirely voluntary and participants knew that they could refuse to participate or stop participating at any time without that decision. Where data will be made public, as in publications, it will be presented in such a way that no individual will be identifiable.

### **3.8 Reliability and validity**

- The World Health Organization Quality of Life (WHO-QOL 100) questionnaire is a reliable and valid instrument and other different authors have used it in their study.
- The researcher was not involved with the RANA PLAZA survivors' treatments, rehabilitation and training services of any of the 60 participants.
- The WHO-QOL 100 was individually discussed with each participant and for questionnaire enough time was given to them for completing form.
- There was 10-15 minutes time limitation in filling out the WHO-QOL 100 and socio-demographic questioners.
- WHO-QOL questionnaire was not translated manually, the authority has shared readymade translated bangla version.
- WHO-QOL questionnaire is a perfect selection for assessing person with physical disabilities who are suffering problem related health and quality of life (e.g. fracture, spinal cord injury, brain injury, amputation etc). (WHO, 2010).



### **4.1 Data Analysis**

Data was entered into Statistical Package for Social Science (SPSS) software Version 17.0 and excel spread sheet. Data also analyzed by SPSS software. WHO-QoL100 and Demographic questionnaire was analyzed and discussed about the demographic factors such as age, gender, occupation marital status etc. WHO-OOL 100 questionnaire was also discussed about physical, psychological, social relation and environmental health of quality of life. In WHOQOL- 100, there are 26 questions and grossly it has defined as domain 1: physical (Question no. 3, 4, 10, 15, 16, 17, 18); domain 2: psychological (Question no. 5, 6, 7, 11, 19, 26); domain 3: social relation (Question no. 20, 21, 22) and domain 4: environment (Question no. 8, 9, 12, 13, 14, 23, 24, 25). The scale grade has distributed into 1-5 (Very poor- very good) with overall quality of life and level of health satisfaction. The domains have graded with very poor, poor and fair. According WHO guideline, there are converter page from raw score to transformed score. All transformed scores were assessed as good when it above the mean and greater than one standard deviation, scores were regarded as poor when below the mean and less than one standard deviation, while scores that fall between them were assessed to be fair. In Nigeria, similar method was used by Olusina and Ohaeri (2003) to assess the QOL of people with schizophrenia (Nuhu et al. 2013). Researcher has divided educational level into four parts such as no formal education, primary completed, HSC level and above HSC level. It has also divided that the type of support and amount of support received by survivors.

Researcher has taken information about types of disabilities and amount of funds raised by them. Beside, researcher finds out the results by SPSS software that analyzed in excel and showed in pie chart, bar chart and column. Results were discussed and presented through figures and tables as applicable.

### **4.2 Socio demographic characteristic of the survivors of Rana Plaza tragedy**

Demographic data of survivors after building collapse are listed in table 1. Table shows that among 92 participants, most of the participants were female (66.3%) rather than male (33.7%). In case of their marital status about 17.4% were unmarried, 80.4% were married and only one survivor was divorced and another was separated (Table 1).

The survivors mean age (Standard deviation/SD) is 25 (25 ± 6.1) where most of the cases, the survivors' age range distributed between 19 to 31 years. In between 21-25 years of age about 35.5% (n=31) of survivors and about 27.8% (n=24) of survivors are between 26-30 years of age range (Table 1). In between 31-35 years of age range the survivors are 14.5% (n=11). Among all of survivors about 17.4% (n=16) participants have never attended on any formal education. About 34.9% (n=32) of the participants have completed primary education where only 8.8% (n=8) of the participants have finished their higher education (Table 1). After one year of the incident the survivors have set up their plan for job. About 78.2% (n=72) has already planned for self-employment. On the other hand about 8.7% (n=8) have already planned to engage with non-government job and another 5.3% (n=5) will involve with homemaking activities. Very few participants will remain unemployed where about 1.1% of them are able to work and 2.1% are unable to work (Table 1). Among all of the participants (n=92), at present 54.4% (n=50) of participants are trainee and they are taking vocational training for returning to their mainstream society with employment. About 23.9% (n=22) of participants are already engaged with non-government office jobs. Beside, about 7.6% (n=7) participants are remaining unemployed and 6.3% (n=6) have refused to give the answer due to their severity of physical condition. In case of their nature of job, currently 56.5% (n=52) participants are working with their physical efforts.

Table 4.1: Socio demographic characteristic of Rana Plaza survivors in CRP, Savar, Dhaka.

<b>Age</b>	<b>N= 92</b>	<b>%</b>
Mean age (SD*)	25.85 (6.14)	
<b>Sex of participant</b>		
Male	31	33.70
Female	61	66.30
<b>Marital status</b>		
Never married	16	17.39
Married	74	80.43
Separated	1	1.087
Divorced	1	1.087
<b>Educational qualification</b>		
No formal schooling	16	17.39
Less than primary education	18	19.57
Primary education completed	32	34.78
	<b>N= 92</b>	<b>%</b>
Secondary education completed	18	19.57
High education completed	8	8.696
<b>Job planning</b>		

Non-government employee	8	8.696
Self-employed	72	78.26
Student	1	1.09
Homemaker	5	5.43
Unemployed (able to work)	1	1.087
Unemployed (unable to work)	2	2.17
Refused	3	3.26
<b>Current Jobs</b>		
Government job	1	1.09
Non Gov. Office job	22	23.91
Trainee	50	54.35
Unemployment	7	7.60
Housewife	4	4.35
Student	1	1.1
Refused	6	6.53
<b>Nature of Job</b>		
Mostly involved in physical effort	52	56.52
Mostly involved in mental effort	28	30.04
Refused	12	13.04
<b>Diagnosis</b>		
Amputation of Upper limb	3	3.26
Amputation of Lower limb	6	6.52
Fracture	17	18.48
Spinal cord injury	9	9.78
Musculoskeletal dysfunction	50	54.35
Multiple disability	6	6.52
upper and lower limb amputee	1	1.087

According to the participants medical report, it has been diagnosed that among all of the participants (n=92), 54.4% (n=50) of them have diagnosed with musculoskeletal disorders 18.5% of participants are surviving with post fracture complications. About 6.5% participants have amputee in their lower extremity after that catastrophe and about 3% of them have lost their upper extremity. Very few numbers (about 9%) of participants are diagnosed with lifelong disability (spinal cord injury).

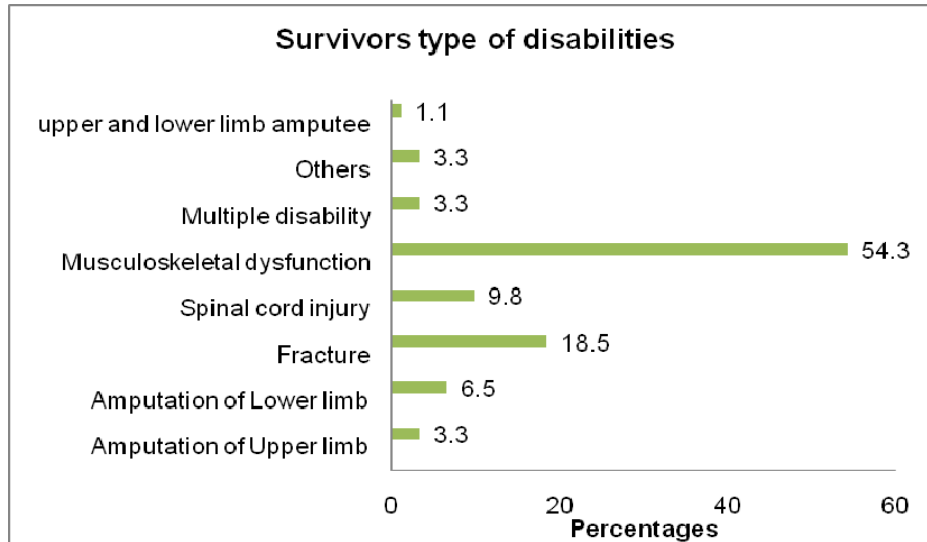


Figure 4.1: Diagnosis of RANA Plaza survivors

Among all of Rana Plaza survivors (n=92), most of the participants were workers and the number was 48.9% (n=45), about 19.6% (n=18) were operators, 10.9% were supervisors, 4.3% were unit in-charges and only 2% were officers.

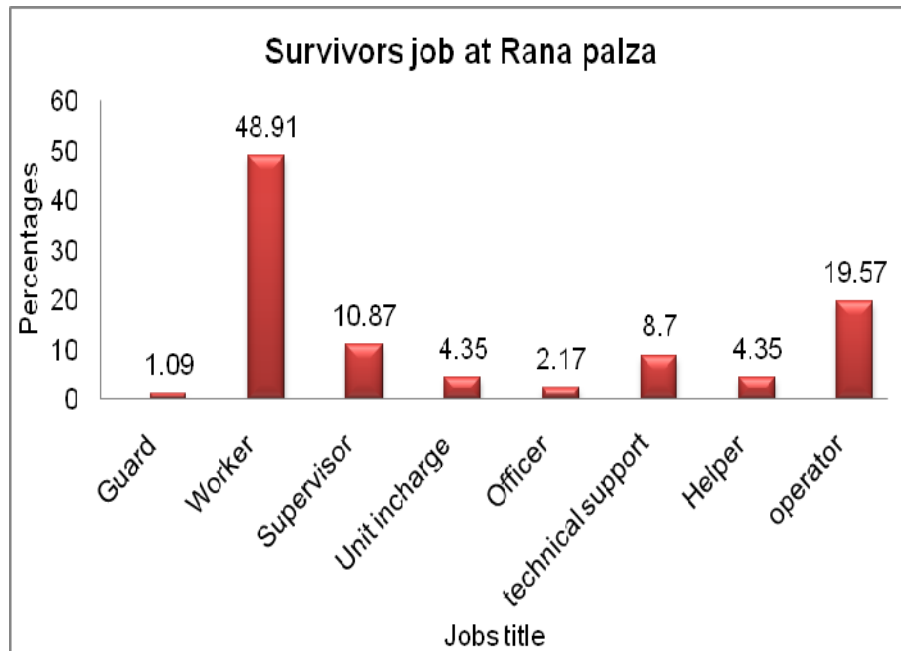


Figure 4.2: Survivors previous RANA Plaza job

In case of survivors (n=92) types of disability, most of the participants, about 79% (n=73) are recovering from temporary injury and about 20.7% (n=19) participants are having permanent types of disability.

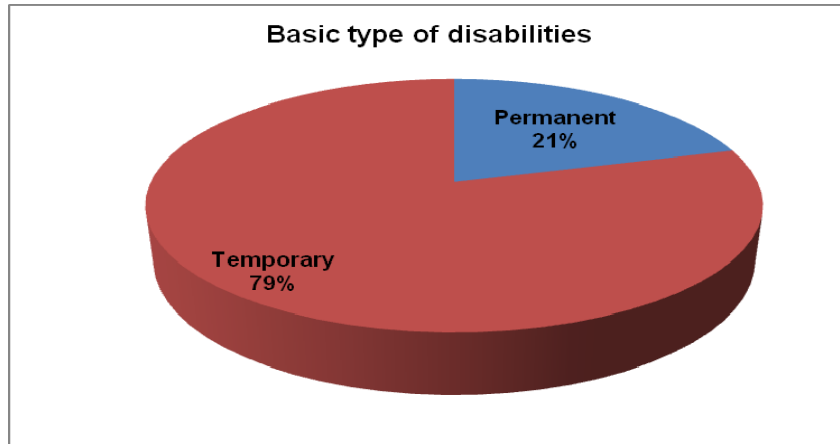


Figure 4.3: Type of disability of survivors

Different national and international organizations have given supports to survivors and most of the participants have got money (about 91.3%). Hence, they have got supports with shelters, lands and household resources .Only 1.1% participants have said that they did not have any support.

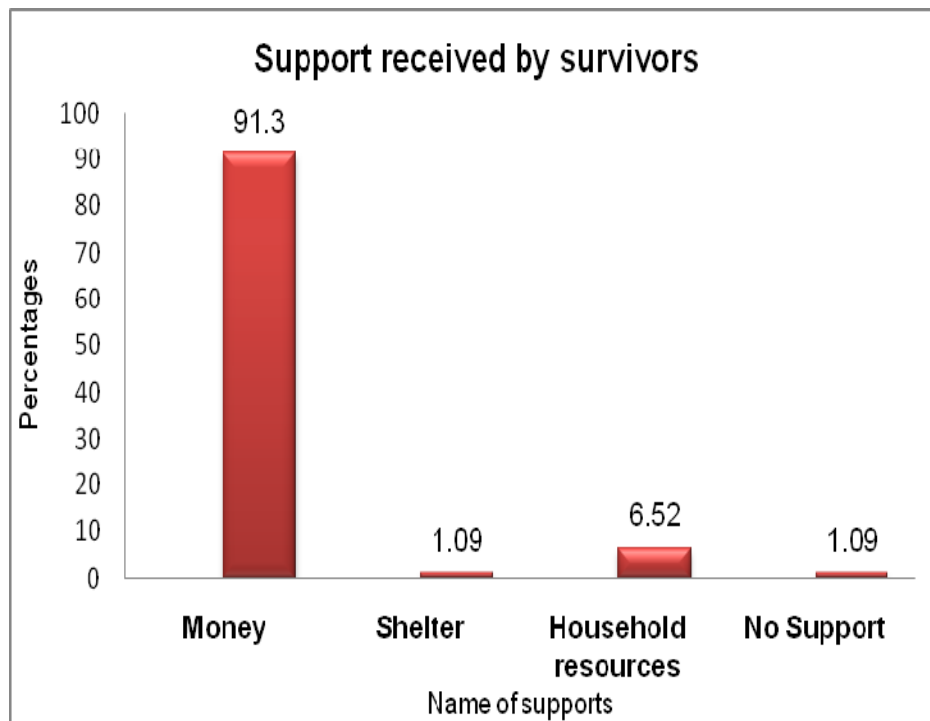


Figure 4.4: Survivors type of supports after building collapsing incidence

It has been calculated that the supports are equal to amount of money received by the survivors. About 32.6% (n=30) of participants have received money in between taka 50,001-75,000 range. Although, most of the participants have received the amount of money in between the 1, 00,001-5,00,00 and that is about 34.8% (n=32). According to their opinion, only one single participant has got more than five lac taka.

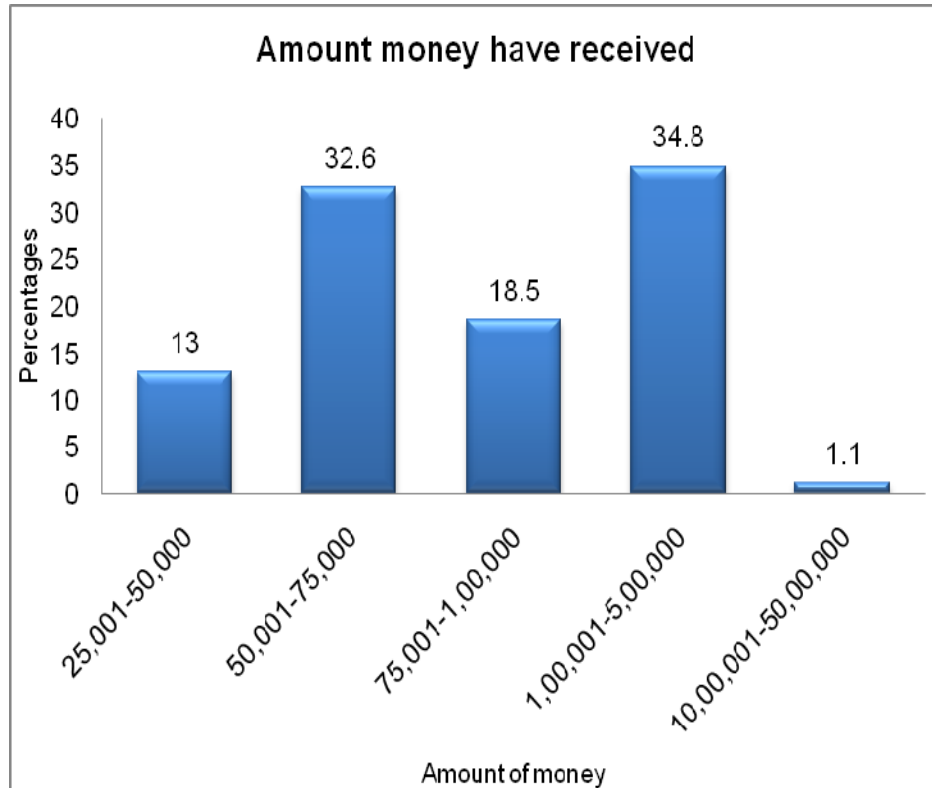


Figure 4.5: Amount of support received in different level

After receiving supports, most of participants are not satisfied (93%) with their supports and only 7 percentages is satisfied with their received supports.

Among all the survivors, most of the participants have more expectation to get money and about 55.43% (n=51) of them have demand to get more money where only 4.4% (n=4) has no expectation and they are satisfied with supports. On the other hand, another major group of participants, about 21.7% (n=20) has demanded to get job and only 6.5% (n=6) has expectation to get involvement in business. Some of them (about 3.3%) have expectation for more than one resource and only 4% have expectation for getting donation to start a business and 1% expects shelter from different agencies and organizations for the better quality of life.



Figure 4.6: More expectation of survivors after getting initial supports

In case of overall quality of life of Rana Plaza survivors (n=92), about 42.4% (n=39) of them have neither poor nor good quality of life, about 19.6% (n= 18) of them have very poor quality of life and only 10.9% (n=10) has good quality of life at the period of 10 months incident. However, no one led a very good quality of life.

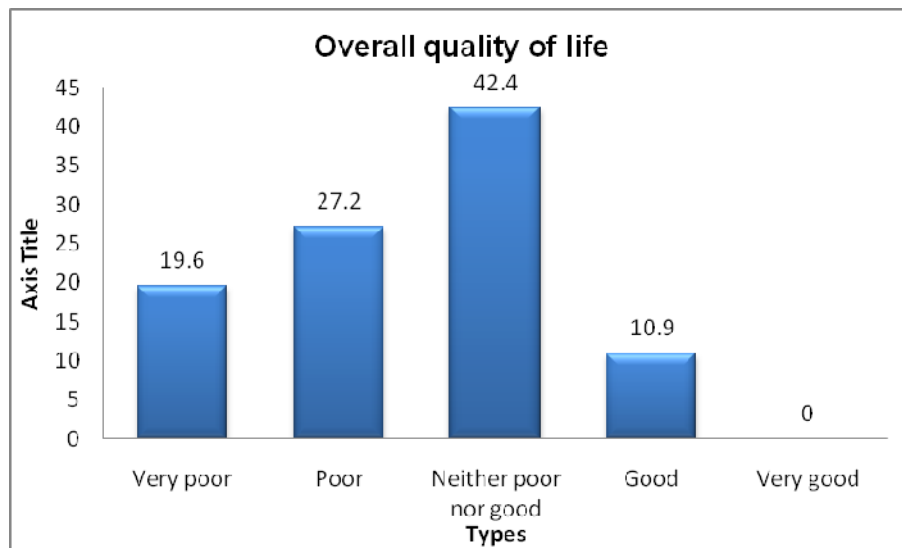


Figure 4.7: Rana Plaza survivors overall quality of life

After Rana Plaza disaster, the exposure that means the survivors level of health satisfactions has analyzed. Along all of survivors (n=92), about 33.7% (n=31) of participants are neither satisfied nor dissatisfied with their health satisfaction where 27.2% (n=25) were satisfied with their health status after receiving treatment and rehabilitation services. However, 12% (n=11) is very dissatisfied with their health

status and about 23.9% (n=22) of participants are dissatisfied with their health status but only a few, about 3.3% (n=3) is very satisfied with their health status.



Figure 4.8: Level of Health satisfaction of Rana plaza survivors in CRP

According to WHO Quality of life questionnaire, there are four domains of quality of life and those are physical, psychological, social relationship and environmental. In case of physical health, about 43% of participants have good quality of life where 32% has poor and about 25% has fair quality of life. In case of psychological aspect most of the participants (70%) have led life with good quality, where only 5% has fair and 25% have poor psychological quality of life. In case of social relationship about 48% has poor quality of life and about 36% led life with fair quality.

Table 4.2: 'Rana Plaza survivors' quality of life with four domains (physical, psychological, social relationship and environmental)

Quality of life	Physical Health	Psychological	Social relationship	Environmental
	(36.93±1.66) N=92	(40.17±11.16) N=92	(54.38±15.82) N=92	(40.01±9.6) N=92
Poor	32%	25%	48%	9%
Fair	25%	5%	16%	71%
Good	43%	70%	36%	20%

Another domain in environmental aspect, most the participants have fair quality of life (71%) where 20% has good quality but a very few about 9% has poor environmental quality of life.



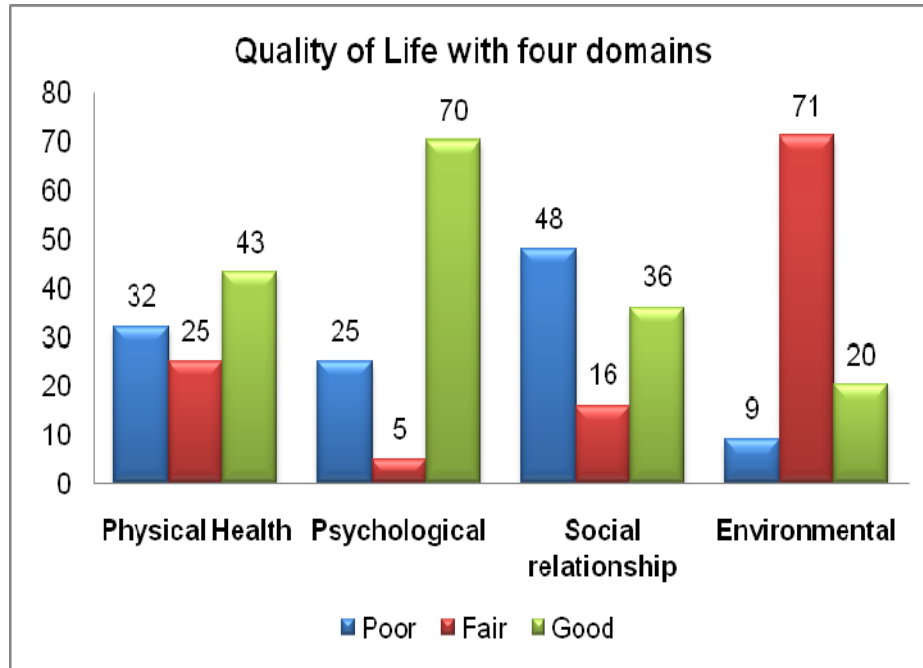


Figure 4.9: Quality of life with four domains (physical, psychological, social relationship and environmental)

### 4.3 Association between survivors' Demographic factors and overall Quality of life

The following Table-3 shows the association between quality of life and demographic characteristics of the survivors after Rana plaza disaster. A Pearson Chi-square test was performed to show association between these variables. It is found that there was no significant association between survivors' sex and quality of life,  $\{X^2 (3, N=92) = 2.46, p = 0.482\}$  and there were no variation in quality of life between male or female survivors after RANA plaza disaster (Table-3).

Regarding survivors age,  $\{X^2 (69, N=92) = 64.79, P = 0.621\}$ , there was no significant association between Rana plaza survivors' age and their overall quality of life and younger or older aged survivors have no significant changes in their quality of life. Table-3 showed that, 21-25 years age range has very poor, (33%) (n=6) quality of life and 27% (n=7) has poor level of quality of life where incase of 15-20 years age range, the survivors have 40% (n=4) of good quality of life. Also, there was no association between survivors educational background and their quality of life,  $\{X^2 (12, N=92) = 11.93, p = 0.451\}$ . Whether the survivors are highly educated or illiterate; is not a fact deciding their quality of life. Though, with survivors' marital status there have no significant associations with their quality of life  $\{X^2 (9, N=92) = 11.40, p = 0.249\}$  (Table 3).

Never the less, there was a significant association with survivors' type of disabilities and their quality of life,  $\{X^2 (3, N=92) = 18.563, p= 0.000^*\}$  that means the quality of life is quite better with temporary disabilities where it is very poor with permanent type of disabilities. About 55.6% (n=10) of permanent type of disability survivors have very poor type of quality of life where 100% (n=10) of temporary disability survivors have good quality of life. There was also a significant association with survivors' medical diagnosis and their quality of life,  $\{X^2 (21, N=151) = 42.051, p= 0.004^*\}$ , in this case the spinal injury survivors have very poor (22.2%; n=4) quality of life and no one have good quality of life, on the other hand in case of survivors with musculoskeletal problem 64.1% (n=25) has fair quality of life. There was also significant association with survivors' current occupations and their quality of life,  $\{X^2 (21, N=92) = 35.125, p= 0.027\}$ .

However, In case of amount of money received by Rana plaza survivors, there is no significant association with their quality of life,  $\{X^2 (12, N=151) = 19.512, p= 0.077\}$  (Table-4).

Table 4.3: Association between survivors' Demographic factors and overall Quality of life of Rana plaza survivors in CRP-Savar, Dhaka

<b>Sex of Survivors</b>	<b>Very Poor</b>	<b>Poor</b>	<b>Fair</b>	<b>Good</b>	<b>X<sup>2</sup> Value</b>	<b>P value</b>
Male	7 (38.9%)	6 (24.0%)	13 (33.3%)	5 (50%)	2.461	0.482
Female	11 (61.1%)	19 (76%)	26 (66.7%)	5 (50%)		
<b>Age of Client</b>						
15-20 Years	6 (33%)	3 (12%)	9 (23.1%)	4 (40%)	64.789	0.621
21-25 Years	6 (33.5%)	7 (28%)	11 (28.1%)	3 (30%)		
26-30 Years	5 (27.9%)	9 (36%)	9 (23.1%)	2 (10%)		
31-40 Years	1 (5.6%)	6 (20%)	6 (15.3%)	2 (20%)		
41-46 Years	0 (0%)	1 (4%)	2 (10.4%)	0 (0%)		
<b>Educational qualification</b>						
No formal schooling	2 (11.1%)	6 (24%)	8 (20.5%)	0 (0%)	11.932	0.451
Less than primary education	4 (22.2%)	4 (16.2%)	6 (15.3%)	4 (40%)		
Primary education completed	6 (33.3%)	10 (40%)	15 (38.5%)	1 (10%)		
Secondary education completed	5 (27.8%)	4 (16%)	6 (15.4%)	3 (30%)		
High school completed	1 (5.6%)	1 (4%)	4 (10.3%)	2 (20%)		

<b>Marital Status</b>	<b>Very Poor</b>	<b>Poor</b>	<b>Fair</b>	<b>Good</b>	<b>X<sup>2</sup> Value</b>	<b>P value</b>
Never married	5 (27.8%)	1 (4%)	7 (18%)	3 (30%)	11.403	0.249
Married	12(66.7%)	24 (96%)	31 (79.5%)	7 (80.4%)		
Separated	1 (5.6%)	0 (0%)	0 (0%)	0 (0%)		
Divorced	0 (0%)	0 (0%)	1 (2.6%)	0 (0%)		
<b>Type of disability</b>					18.563	0.000*
Permanent	10(55.6%)	5 (20%)	4 (10.3%)	0 (0%)		
Temporary	8 (44.4%)	20 (80%)	35 (89.7%)	10 (100%)		
<b>Diagnosis</b>					42.051	0.004*
Amputation of Upper limb	3 (16.7%)	0 (0%)	0 (0%)	0 (0%)		
Amputation of Lower limb	2 (11.1%)	0 (0%)	4 (10.3%)	0 (0%)		
Fracture	3 (16.7%)	8 (32%)	5 (12.8%)	1 (10%)		
Spinal cord injury	4 (22.2%)	4 (16%)	1 (2.6%)	0 (0%)		
Musculoskeletal dysfunction	3 (16.7%)	13 (52%)	25 (64.1%)	9 (90%)		
Multiple disability	1 (5.6%)	0 (0%)	5 (12.8%)	0 (0%)		
Others	1 (5.6%)	0 (0%)	2 (5.1%)	0 (0%)		
upper and lower limb amputee	1 (5.6%)	0 (0%)	0 (0%)	0 (0%)		
<b>Amount of Money</b>					19.512	0.077
25,001-50,000	4 (22.2%)	5 (20%)	3 (7.7%)	0 (0%)		
50,001-75,000	1 (5.6%)	7 (28%)	15 (38.6%)	7 (70%)		
75,001-1,00,000	3 (16.67%)	6 (24%)	6 (15.4%)	2 (20%)		
1,00,001-5,00,000	10 (55.56%)	7 (28%)	14 (35.9%)	1 (10%)		
5,00,001-10,00,000	0 (0%)	0 (0%)	1 (2.56%)	0 (0%)		
	<b>Current job pattern</b>					
Government job	0 (0%)	0 (0%)	1 (2.6%)	0 (0%)	35.125	0.027
Non Gov. Office job	0 (0%)	2 (8%)	17 (43.6%)	3 (30%)		
Trainee	11 (61.1%)	20 (80%)	15 (38.5%)	4 (40%)		
Unemployment	3 (16.7%)	2 (8%)	2 (5.1%)	0 (0%)		
Housewife	1 (5.6%)	0 (0%)	2 (5.1%)	1 (10%)		
Business	1 (5.6%)	0 (0%)	0 (0%)	0 (0%)		
Study	0 (0%)	0 (0%)	1 (2.6%)	0 (0%)		
Refused	2 (11.1%)	1 (4%)	1 (2.6%)	2 (20%)		

There is a significant positive association with the survivors type of support and their level of health satisfaction,  $\{X^2 (12, N=92) = 42.537, p= 0.000*\}$ . Among those survivors have got money, about 92% (n=23) is satisfied with their health status and very few number of survivors are dissatisfied with their health status after receiving supports like- money, shelter and others.

Table 4.4: Association between Type of supports and level of health satisfaction

<b>Support received by Survivors</b>							
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied	Value	P-Value
Money	9 (81.8%)	21(95.5%)	30 (96.8%)	23 (92%)	1 (33.3%)		
Shelter	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (33.3%)	42.537	0.000*
Others	1 (9.1%)	1 (4.5%)	1 (3.2%)	2 (8%)	1 (33.3%)		
No Support	1 (9.1%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)		

However, there is no association with demographic factors (age, sex, marital status, educational background etc.) and health satisfactions. Therefore, the survivors' health satisfaction does not depend upon their different demographic characteristics.

**5.1 Socio demographic characteristic of the survivors of RANA Plaza tragedy**

Socio-demographic characteristics are a strong predictor of perceived quality of life among survivors. Rana plaza disaster survivors' sex is an important factor of socio-demographic characteristics. Regarding the socio-demographic status, this study finding is similar to other study findings. Demographic data of survivors, after building collapse shows that among all of participants, most of the participants were (66.3%) female rather than male. Hu et al. (2012) has revealed in his study that after any disaster the female exposure suffers a lot than male due to their physical structure and cultural aspect, in that study about 58% participants were female survivors. Zhang et al. (2012) has mentioned in their study that after SICHUAN earthquake in China; most of the survivors were females with fractures rather than male. In case of garments working sectors, females are highly getter than male workers. Therefore, the study participants are smaller than other study, thus why it does not match with another statistics of Bangladeshi garments sector.

The survivors mean age is (Standard deviation) SD 25.85. The survivors are industrial factory workers and among them most of the workers are younger. Therefore, the age range does not represent whole population because of age distance was in between 16 to 32 years of old. In Bangladeshi perspective, most of the garment workers (90%) are female (Bhattacharya & Rahman, 2000) and about 38% of workers age range is below 21 years. In between 22-30 years age range, about 42% workers worked in industrial site in Chittagong, Bangladesh (Chowdhury & Ullah, 2010).

In case of their marital status, about 17.4% were unmarried, 80.4% were married. In garments sectors it is unusual to found healthy statistics of separated and divorced women. In Rana plaza about 54% male workers were unmarried and about 38% female workers were unmarried. The number of married men and women worker with children are higher than no child workers (Monitoring the Rana Plaza Follow-ups 2013). In Bangladesh, one study in garments factory says that about 53% garments worker are married and secondly 36% are unmarried where divorce persons rate is 6% (Chowdhury & Ullah, 2010). Among all of the survivors, about 17.4% participants have never attended on any formal education and 34.9% of the participant has completed primary education where only 8.8% of the participant has finished their higher education. In Bangladesh, the garments workers are poor and their educational qualifications are not significant (Bhuiyan, 2012). Chowdhury and Ullah

(2010) say that in Bangladesh, most of the garment workers' educational level is between class I-IV (38%) and between classes VI-X for about 28% in Chittagong district. Generally, the survivors' educational level is poor in fact; they have shown risk taking behavior for their livelihood but have also poor awareness about building collapse impact.

After one year of the incident the survivors have set up their plan for job. About 78.2% (n=72) has already planned for self-employment and some are already involved with non-government jobs. Very few of them are struggling with no job due to their physical impairment. After any accident, most of the survivors lead life with mild or moderate disabilities. This challenging situation cannot make them stop. There are different vocational rehabilitation centre work with those disable person and make them self-employed (World Bank, 2004). The Rana plaza survivors are among them who have cope with their life by self-employment but those who have lost their limb and in psychological distress, they are struggling. Among all of the participants, at present 54.4% of participants are trainee and they are involved with vocational training for returning to their mainstream society with employment. From the spinal cord injury (permanent disability) survivors, who have taken service from CRP, about 22% of them have involved with government or non government services, 25% of women have involved with household activities and 23% of survivors returned to their study (Momin, 2004).

Among most of the survivors, 54.4% are diagnosed with musculoskeletal disorder and about 19% is surviving with fracture. Very few survivors have lost their limb and are suffering from lifelong disability (like- spinal cord injury). In India, after earthquake, huge numbers of buildings were collapsed. It is found that most of the survivor (23%) was diagnosed with upper extremity fracture and about 18% are diagnosed with head injury. Therefore, the situations are little bit similar.

Among all of Rana Plaza survivors, most of the participants (about 48.9%) were worker, about 19.6% was operators, 10.9% was supervisors, 4.3% was unit in-charges and only 2% was officers. Chowdhury and Ullah (2010) say that most the garments workers have worked as physical based operators and general logistic workers and most the workers have 2-3 years working experience where very few numbers of workers have more than 7 years working experiences. Different national and international organizations have given supports to survivors and most the participants have got money (about 91.3%). Kollwe, (2014) stated that the British agencies have estimated around 40 million dollars for development and rehabilitation of Rana plaza survivors. Hence, they have got supports with shelters, lands and household resources from national and international contributions. After receiving

supports most of the participants are not satisfied (93%) with their supports and only 7% is satisfied with their received supports. Due to a devastating trauma and physical lose; the survivors have a lot of expectation from government and international body. In Bangladesh, after any disaster the survivors have lots of expectation in response phase and used to with various source of support (Anam, 2002).

## **5.2 Overall Quality of life of survivors after 10 months of the incident**

In case of overall quality of life of Rana Plaza survivors, about 42.4% of them have neither poor nor good quality of life; therefore about 19.6% of them have very poor type of quality of life. However, no one led life with very good quality of life but 11% has only good quality of life. Nuhu et al. (2013) has said that one-third of the participants had poor overall QOL at palliative care survivors with cancer. After Rana Plaza disaster the exposure that means the survivors level of health satisfaction has analyzed, Along all of survivors about 33.7% of participants are neither satisfied nor dissatisfied with their health satisfaction where 27.2% are satisfied with their health status and about 23.9% of participants are dissatisfied with their health status but only a few are very satisfied with their health status. Nuhu et al. (2013) 66% has said that reported poor health satisfaction in quality of life at palliative center. Wang et al. (2000) mentioned that the quality of life for the person of traumatized disability has improved day by day with reducing anxiety and depression.

According to WHO Quality of life questionnaire, there are four domains of quality of life and those are physical, psychological, social relationship and environmental. In case of physical health, maximum participants have ensured good quality of life where one third has poor and another one third has fair type of quality of life. In case of psychological aspect most of the participants (70%) have led life with good quality, where only 5% has fair and one third has poor psychological quality of life. In case of social relationship, about half of the participants have poor quality of life and in environmental aspect, two third of the participants have fair quality of life where about 9% has poor environmental quality of life. Nuhu et al. (2013) revealed that about 21% had poor score on the physical domain while 19% had poor psychological domain QOL. In summary, the overall QOL and the physical, psychological, social and environmental domain QOL ware fair in palliative care centre. The research findings indicate that the earthquake related building collapse survivors had significantly lower scores in the psychological and environmental domains of WHOQOL-BREF (TR) than the individuals who were not exposed to a disaster (Ceyhan & Aykut, 2007). However, this study has mentioned the good psychological quality of life after 10

months of incident due to enough economical and health care support from rehabilitation centre. Bahrack and Parker, (1998) have said that the impact of any disaster work in human mind for a long period of time and create distress while sleeping, working and doing other activities. The younger children with 4 years age have high impact on their psychological stress after any natural disaster like hurricane.

### **5.3 Association between demographic factors and overall quality of life**

This study also sets out to show the association between overall quality of life, health satisfaction and Rana survivors' characteristics (age, sex, occupation, educational background, type of disabilities, diagnosis, amount of money received).

#### **Association between sex and quality of life**

In association it is found that there was no significant association between survivors' sex and quality of life that means there was no variation in quality of life between male or female survivors after Rana plaza disaster. Ceyhan & Aykut, (2007) and Nuhu et al. (2013) have mentioned in their study that the male survivors have poor quality of life than females. In Asian context the males are the main income personnel for family members. It may affects on their quality of life, especially in physical domain but in the Rana plaza survivors' sex and quality of life have no associations. According to result, Quality of life does not depend upon sex. Bangladesh is male dominant country and male take responsibilities for family than female but finding say that quality of life could be better or poor for both male and female.

#### **Association between age and quality of life**

Regarding survivors' age, there was no significant association between Rana plaza survivors' age and their overall qualities of life and younger or older aged survivors have no significant changes in their quality of life but the findings say that the younger aged people (21-25) mention that they have very poor quality of life than other age groups. Tsai et al. (2007) has mentioned that the survivors' age and quality of life have significant association where the younger aged quality of life is poorer than older survivors. However, the survivors' age range represents in between 16-32 years, the association could be significant if the age range represents all aged survivors. Either the survivors are too younger or older the quality of life does not vary with them. Quality of life could be good or bad for younger and older.



### **Association between educational background and quality of life**

Also there was no association between survivors' educational background and their quality of life. The survivors' quality of life does not depend upon their educational qualification. Tsai et al. (2007) has revealed that there is a close association between level of mental health and educational qualification but in this study, researcher found those survivors' educational qualifications has visible relation with their quality of life. However, in this study, there has no connection with education and quality of life. If anyone completed graduation might be good or bad quality of life besides, any illiterate person could led a bad or good quality of life. As a result, it could not say that the educated person has better quality of life than illiterate.

### **Association between marital status and quality of life**

Moreover, survivors' marital statuses have no significant associations with their quality of life. Nuhu et al. (2013) has revealed that the cancer survivors' quality of life does not depend upon their marital status. There has no connection between married and unmarried person with their quality of life.

### **Association between disability and quality of life**

However, there was a highly positive significant association between survivors' type of disabilities and their quality of life, which means the quality of life, is quiet better with temporally disable persons where it is very poor with permanent type of disabilities. There was also a significant association between survivors' medical diagnosis and their quality of life and in this case the long term disable survivors have very poor quality of life but no one have very good quality of life. Centre for Policy Dialogue (CPD) (2013) has mentioned that these survivors seem to have lost their earning ability by working in the industrial sector. The workers have also been afflicted with injuries such as backbone injury and trauma which need long-term treatment to rehabilitate and get back to normal condition. They would also require long time to get back to normal physical condition. A number of these survivors now face unemployment due to lack of full physical fitness. This is the only barrier they face leading a quality of life.

### **Association between current occupation and quality of life**

However, there is also a significant association with survivors' current occupations and their quality of life. Tsai et al. (2007) has revealed that in their study they did not get any association between earthquake survivors with building collapse and their occupations but in case of Rana plaza survivors, they have taken vocational training and engaged in honorable jobs. Therefore, their life styles have changed but some of them are also struggling. However, 1,000 workers were ready to get back to jobs;

BGMEA should disclose their re-employment scheme to different factories (Centre for Policy Dialogue, 2013).

#### **Association between amount of money and quality of life**

However, In case of the amount of money received by Rana plaza survivors, there is no significant association with their quality of life. The result indicates that money and wealth could not recover the survivors' quality of life. Those have lost their limbs and stay alive with permanent disabilities; they are struggling badly with their quality of life. We can keep hope that trauma might be reduced and enhance QoL by appropriate technology and meaningful empowerment after a long period of care.

#### **Association between supports and health satisfaction**

There is a significant positive association with the survivors' type of support and their level of health satisfaction, those survivors, who have got money, maximum of them are satisfied with their health status but very few numbers of survivors are dissatisfied with their health status after receiving supports like- money, shelter and others. Therefore, the amount of money helped the survivors to expand their treatment cost for better quality of life. It has only ensured their health satisfaction, not the quality of life. After getting a huge amount of money, the survivors get mental satisfaction and they demand more money for fulfilling their family needs (Monitoring the Rana Plaza Follow-ups, 2013). However, these survivors have stayed long time inside CRP and involved with rehabilitation program thus why overall they are satisfied with their health status. It seems different if we go for find out the level of health satisfaction to general people.

## CHAPTER 6 CONCLUSION

A building collapse in Bangladesh is a significant and traumatic experience. Some risk factors such as gender, type of disabilities and diagnosis after the event can affect the QOL and health prospect with their physical, social, psychological and environmental aspect of survivors. While the QOL in the physical health domain of female survivors was lower than that of male survivors, the younger male survivors have poor quality of life rather than female survivors. The QOL in the psychological and environmental domains of the survivors has reached a positive position but in case of social relation and physical domain they are still struggling. This quality of life was found after ten months of rehabilitation services that include psycho-education and counseling, physical treatment, therapeutic service, vocational training etc. These rehabilitation interventions could be effective at helping to improve their quality of life. The government and concerned authorities should take necessary measures to implement the court directives in case of compensation, support to injured workers, taking legal actions against those who are responsible for the incident. Besides, cases which have been lodged by the Department of Labor seem to be weak as it was not filed by the appropriate person from the Department. Necessary measures will need to be taken in this regard. Given the severity of the incident, government should not intervene with the legal process, and should ensure that other organizations including BGMEA will not try to influence or hinder the investigation and charge-framing process. Finally, we should become more concerned to prevent any type of manmade disasters like- building collapse, fire etc. by a appropriate collaboration from top to bottom.

The study was not able to quantitatively assess subsequent adversities after the building collapse, which prevents us from providing a clearer profile of there relationship between initial exposure, subsequent adversities, and post-disaster QoL. The information might be more effective if further research possible to follow-up their quality of life. Despite the limitations, this cross sectional study could be a longitudinal study. The finding could be generalized, if QoL could assess again further and follow-up it until five to ten years. The results also suggest that the physical impairments in different QoL dimensions are not universal. However, most of the findings highlight the impact of any further disaster such a country like Bangladesh. The study could spread out some message for further preparatory action plans. It could help to take further necessary steps in recovery and rehabilitation activities for ensuring sustainability.

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## Appendix 1

### Consent Form

The investigator, Md. Yeasir Arafat Alve is in the 4<sup>th</sup> semester (Spring 2014) and student of Master in Disaster Management from BRAC University. This study is a part of final semester course curriculum. The title of the study is:

**“Quality of life among survivors after building collapsing incidence (RANA PLAZA TRAGEDY) in Bangladesh”**

In this study I am \_\_\_\_\_ a participant and am clearly informed about the aim of the study. I will have the right to refuse taking part any time at any stage of the study. For that reason I will not be bound to answer any question. This study will not have any impacts on me or my family at present and future.

I am aware that, the entire information collected from the interview that will be used in the study will be confidential and my name will not be disclosed. Here, only the researcher and supervisor will have access to the information. The researcher will be available to answer any study related question or inquiry to the participant.

I have been informed about the above mentioned and agreed to participate in the study willingly. I hereby give my consent.

**Signature of the participant:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Signature of the researcher:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Signature of the witness:** \_\_\_\_\_ **Date:** \_\_\_\_\_



## Appendix 2

### მასშვZცი

GB მთელი YmU 4\_©Aa@tI P` `hvm e`e`vcbv wefvM, etK wekte``vj tqi Aa`qtbI GKwU Ask wetkI | მთელი K tgyt Bqvmi AvivdvZ Avj fx etK wekte``vj tqi gv÷vi Bb wWRv÷vi g`vfbRg`vU wefvfMi 4\_©Aa@tI P` (w`úš 2014) Aa`qbi ZGKRb wbcqgZ QvT | Zvi მთელი Yvi wel q-

“evsj vt` tk wevi satm we``gvb kigKt` i Rxebhvcv wbi fcb wel qK mgx¶v (i vbvctRv) |”

GB მთელი Yvq Awg .....GKRb AskMhYKvi x Ges Awg GB მთელი Yvi Dt`I k` cwi`wi fvtē RvbZ tcti wQ | Awg th tKvb mgq Ges მთელი Yvi th tKvb ch¶q Avgvi AskMhY cZ`vni Ki tZ cwi | G Rb` Awg Kvtiv KvqQ Revw`wn I ¶wZcY w`tZ eva` bB | GB მთელი Yvq AskMhY Kiv ev bv KivZ Avgvi ev Avgvi cwi evti i Dci tKvb c¶ve ci te bv |  
mv¶vZKvti i mKj Z\_` th M¶j v მთელი Yvi KvR e`eüZ nte, tm\_ tj v tMvcbxqZvi mv¶\_ wbi vc` `vfb ivLv nte | i agvT მთელი K G Z\_` M¶j vi c¶ekwaKvi cvte Ges Kvi I bvg tKv\_vl bv Qwctq G Z\_` tj v მთელი Yvct` c¶vKZ nte |

Awg Dctiv<sup>3</sup> mKj Z\_` tj v m¶útk¶Rwb Ges Awg GB მთელი Yvq AskMhY b m¶švZ Ávcb Ki wQ |

---

AskMhYKvixi wUcmB A_ev mv¶i:	Zvi L:
მთელი Kvi mv¶i	Zvi L:
¶¶xi wUcmB A_ev ¶¶i:	Zvi L:

---

## Appendix 3

### Socio-demographic questionnaire for Rana Plaza survivors

Name of Interviewer: .....

Date of interview: ..... Time of interview: .....

#### Part one: Respondent Identification

Name of Respondent:..... ID no: .....

Address:.....

..... Contact number where possible: .....

#### Part Two: Demographic Information

SN	Questions	Response	Code
01.	<b>Sex</b> ( <i>Record Male / Female as observed</i> ) ( <i>Circle Male / Female as observed</i> )	1.Male 2. Female	<b>SEX</b>
02.	How <b>old</b> are you? ( <i>Help participant to estimate their age</i> )	Years: 99. Refused	<b>AGE</b>
03.	What is the <b>highest level of education</b> you have completed? ( <i>If a person attends a few months of the first year of secondary school but did not complete the year, record "primary school completed". If a person only attended a few years of primary school, record "less than primary school".</i> ) ( <i>Circle appropriate response</i> ).	1. No formal schooling 2. Less than primary school 3. Primary school completed 4. Secondary school completed 5. High school completed 6. University completed 7. Post graduate degree 99. Refused	<b>EL</b>
04.	What is your <b>marital status</b> ? ( <i>Circle the appropriate response</i> ).	1. Never married 2. Married 3. Separated 4. Divorced 5. Widowed 99. Refused	<b>MS</b>

#### Part Three: Socio-economic Information

SN.	Questions	Response	Code
05.	Which one of this list best describes your main work status now? ( <i>Circle appropriate response</i> )	1. Government employee 2. Non-government employee 3. Self-employed 4. Non-paid 5. Student 6. Homemaker 7. Trainee 8. Retired 9. Unemployed (able to work)	<b>CWS</b>

		10. Unemployed (unable to work) 11. Others 99. Refused	
06.	What is the nature of your work/job now? <i>(Applicable for those who are in a work/job)</i>	1. Mostly involve physical effort 2. Mostly involve mental effort	<b>JN</b>
07.	Which one of this list best describes your work in RANA Plaza? <i>(Circle appropriate response)</i>	1. Non-paid 2. Unemployed (able to work) 3. Student 4. Homemaker 5. Guard 6. Worker 7. Supervisor 8. Unit incharge 9. Shopkeeper 10. Officer 11. Manager 12. Self-employed 13. Others 99. Refused	<b>RPJ</b>
08.	Type of disabilities	1. Permanent 2. Temporary	<b>ToD</b>
09.	Diagnosis	1. Amputation of Upper limb 2. Amputation of Lower Limb 3. Fracture 4. Spinal Cord Injury 5. Musculoskeletal dysfunction 6. Others	<b>Do</b>
10.	What type of support has got from Govt. or non-govt. organization?	1. Money 2. Shelter 3. Cattle 4. Goods 5. Vehicle 6. Land 7. Others 8. No support	<b>ToS</b>
11.	Support in amount of money		
11.	Are the support was satisfactory for you?	1. Yes 2. No	<b>SWS</b>
12.	Have you utilized the support meaningfully?	1. Yes 2. No	<b>USM</b>

## Appendix 4

### RbmsL`vZwvZ`K Z\_`vej (Demographic Questioner)

Z\_` MhYKvi xi bvg: \_\_\_\_\_

Z\_` vbeÜtbi w` b: \_\_\_\_\_ mgq: \_\_\_\_\_

ce©1: Z\_` cÜ vbKvi xi cwi uPwZ

Z\_` cÜ vbKvi xi bvg: \_\_\_\_\_ AvBwW bs: \_\_\_\_\_

w/Kvbr: \_\_\_\_\_

### RbmsL`vZwvZ`K Z\_`vej (Demographic Information)

µugKbs	ckmgm	DI i	†KwW
01.	wj ½ (cjl / gwnj v) chfe¶tbi gra`tg	1 = cjl`l 2 = gwnj v	
02.	Avcbri eqm KZ? (AskMhYKvi xtK gtb Ki †Z mrvh` Ki`b)	eqm = cZ`vL`vb = 99	
03.	Avcwb mtePP †Kvb&tkYx chSZ tj Lycov Kti †Qb? (hiv` †Kvb e`w³ gra`ugK we`vj †q c`g K†qKgvm AskMhYK†ib wKŠZi GK eQi AwZewwZ bv Kij tm cÜ`ugK wK¶¶vq wK¶¶Z etj Mb` nte) (hiv` †Kvb e`w³ cÜ`ugK we`vj †q K†qK eQi AskMhY Kti Zte tm Amgvß cÜ`ugK wK¶¶vq wK¶¶Z etj Mb` nte)	1 = †Kvb AbpömbK wK¶¶v bvB 2 = Amgvß cÜ`ugK wK¶¶v 3 = cÜ`ugK wK¶¶v m`úwv` Z 4 = gra`ugK wK¶¶v m`úwv` Z 5 = D`P gra`ugK wK¶¶v m`úwv` Z 6 = mwZK cvk 7 = mwZ†KvI i cvk 99 = cZ`vL`vb	
04.	Avcbri `eewwK Ae`v wK?	1 = AwewwZ 2 = weewwZ 3 = Zvj vKcÜß 4 = weaev / wecuZK 5 = cZ`vL`vb	
05.	cv†ki Zwj Kvq eZ¶t†b †Kvb c`ghP v Avcbri Rb` Dchp`?	1 = mi Kvi x PvKwi Rhex 2 = temi Kvi x PvKwi Rhex 3 = AvZK¶g¶s`vb 4 = †m`Qv†mex 5 = Qv† 6 = Mj¶Yx 7 = cÜ¶¶Yv`P 8 = Aemi cÜß 9 = teKvi (Kg¶¶g e`w³) 10 = teKvi (K†g`A¶¶g e`w³) 11. Ab`vb` 99 = cZ`vL`vb	
06.	Avcbri eZ¶vß K††Ri aiY †Kgb? (hivv K†R ev PvKix K††b Z†† i †¶¶††)	1 = Awdm/ cÜZövbw†w† K 2 = gwVKg†©	

07.	ivbcvRvq KgPZ Ae <sup>-</sup> vq Avcub tKvb c`gh <sup>®</sup> vq AšZf <sup>®</sup> iQtj b?	tm <sup>®</sup> Qrtmex teKvi (Kg <sup>®</sup> Ig e <sup>iv3</sup> ) QvT MunYx `vti vqvb (v <sup>®</sup> mKDwi vU) kigK m <sup>®</sup> cv <sup>i</sup> f <sup>v</sup> BRvi BDvbUBbPvR <sup>®</sup> f <sup>v</sup> Kvb <sup>®</sup> vi Awdmvi g <sup>v</sup> tbRvi AvZk <sup>®</sup> g <sup>®</sup> is <sup>-</sup> vb Ab <sup>v</sup> b <sup>®</sup> 99 = cZ <sup>v</sup> L <sup>v</sup> vb	
08.	ikaitbi cūZeiUZv?	1 = <sup>-</sup> vqx 2 = mvgvqK	
09.	cūZeiUZvi ai bibYq-	1 = n <sup>v</sup> Zi AsMnvbx 2 = cvtqi AsMnvbx 3 = dvK <sup>®</sup> P <sup>®</sup> i 4 = <sup>-</sup> ūvBbj BbR <sup>®</sup> vi 5 = nvogism tckxms <sup>v</sup> všZ 6 = Ab <sup>v</sup> b <sup>®</sup>	
10.	miKvix ev temiKvixcūZôvb t <sub>t</sub> K Avcub ik ai <sup>t</sup> bi m <sup>v</sup> nv <sup>h</sup> tcti <sup>t</sup> Qb?	1 = A <sup>®</sup> 2 = evm <sup>-</sup> vb 3 = Mew <sup>-</sup> ci cvLx 4 = hvbevb 5 = f <sup>v</sup> g 6 = Ab <sup>v</sup> b <sup>®</sup> 7 = tKvb m <sup>®</sup> t <sup>h</sup> wMZv cvBvb	
11.	Avcub ik mšóó?	1 = n <sup>v</sup> u 2 = bv	
12.	Avcub ik m <sup>v</sup> nv <sup>h</sup> A <sup>®</sup> enfite cūq <sup>v</sup> M Ki <sup>t</sup> Z tcti <sup>t</sup> Qb?	1 = n <sup>v</sup> u 2 = bv	

## Appendix 5

### Permission for using WHO Quality of Life- 100 scale

#### User Agreement for "WHOQOL-100" and/or WHOQOL-BREF and related materials

This agreement is between the World Health Organization ("WHO") and MD. YEASIR ARAFAT ALVE. WHO hereby grants the User a nonexclusive, royalty-free license to use the World Health Organization Quality of Life Questionnaire and/or related materials (hereafter referred to as "WHOQOL-100" or "WHOQOL-BREF") in User's study outlined below. The term of this User Agreement shall be for a period of 1 year, commencing on (date) 05-09-2014 or 05<sup>th</sup> March, 2014,

The approved study for this User Agreement is:

Study Title	<i>Quality of life among survivors after building collapsing incidence (RANA PLAZA TRAGEDY) in Bangladesh</i>
Principal Investigator	<i>MD. YEASIR ARAFAT ALVE</i>
Sample characteristics	<i>Survivors with or without physical disabilities of the collapsed building</i>
Sample size	<i>Approximately 60</i>
Treatment Intervention	<i>No treatment intervention. just go for survey as convenient way with face to face interview.</i>
Total number of assessments	<i>60</i>
Assessment time points	<i>7 days time line for 60 data collection.</i>
"WHOQOL-100" or WHOQOL-BREF version – Please specify language version(s) you would like to receive.	<i>BANGLA</i>
Other measures	<i>Demographic questionnaires</i>

This User Agreement is based upon the following conditions:

1. User shall not modify, abridge, condense, translate, adapt, recast or transform the WHOQOL-100 or BREF in any manner or form, including but not limited to any minor or significant change in wording or organization, or administration procedures, of the WHOQOL-100 or BREF. If User thinks that changes are necessary for its work, or if translation is necessary, User must obtain written approval from WHO in advance of making such changes.
2. User shall not reproduce WHOQOL-100 or BREF, except for the limited purpose of generating sufficient copies for its own uses and shall in no event distribute copies of the WHOQOL-100 or BREF to third parties by sale, rental, lease, lending, or any other means. In addition, User agrees that it will not use the WHOQOL-100 or BREF for any purpose other than conducting studies as specified above, unless agreed in writing by WHO. In any event, the WHOQOL-100 or BREF should not be used for research or clinical purposes without prior written authorization from WHO.

3. User agrees to provide WHO with an annual update regarding activities related to the WHOQOL-100 or BREF.

4. User agrees to provide WHO with a complete copy of User's raw data and data code books, including the WHOQOL-100 or BREF and any other instruments used in the study. This data set must be forwarded to WHO upon the conclusion of User's work. While User remains the owner of the data collected in User's studies, these data may be used in WHO analyses for further examining the psychometric properties of the WHOQOL-100 or BREF. WHO asserts the right to present and publish these results, with due credit to the User as the primary investigator, as part of the overall WHOQOL-100 or BREF development strategy.

5. WHO shall be responsible for preparing and publishing the overall WHOQOL-100 or BREF results under WHO copyright, including:

- a. the overall strategy, administrative set-up and design of the study including the instruments employed;
- b. common methods used by two or more Users;
- c. the data reported from two or more Users ;
- d. the comparisons made between the data reported from the Users;
- e. the overall findings and conclusions.

6. User shall be responsible for publications concerning information developed exclusively by User and methods employed only by User. Publications describing results obtained by User will be published in User's name and shall include an acknowledgement of WHO. User agrees to send to WHO a copy of each such paper prior to its submission for publication.

7. WHO may terminate this User Agreement at any time, in any event. Should WHO terminate this User Agreement, User shall immediately cease all use of the WHOQOL100 or BREF and destroy or return all copies of the WHOQOL-100 or BREF. In the event of such termination, all other collateral materials shall be destroyed and no copy thereof shall be retained by User. Notwithstanding the return or destruction of the WHOQOL-100 or BREF and its collateral materials, User will continue to be bound by the terms of this User Agreement.

8. It is understood that this User Agreement does not create any employer/employee relationship. User and its affiliates are not entitled to describe themselves as staff members of WHO. User shall be solely responsible for the manner in which work on the project is carried out and accordingly shall assume full liability for any damage arising therefrom. No liability shall attach to WHO, its advisers, agents or employees.

Please confirm your agreement with the foregoing by signing and returning one copy of this letter to WHO, whereupon this letter agreement shall become a binding agreement between User and WHO.

WHO:

*Accepted*

Dr. Somnath Chatterji  
Health Statistics and Health Information Systems (HSI)  
World Health Organization  
Avenue Appia  
Geneva 27  
CH 1211 Switzerland

Date:

USER:

*Accepted*  
By: *MD. YEASIR ARAFAT ALVE*  
Title: *Lecturer in Occupational Therapy*  
Institution: *Bangladesh Health Professions Institute (BHPI)*  
Address: *Centre for the Rehabilitation of the Paralyzed (CRP),  
CRP- Chapain, Savar, Dhaka, Bangladesh, 1343.*  
Date: *05th of March 2014*

10/17/13  
3 of 3



## Appendix 6

### WHO Quality of Life- 100 Questionnaire (English)

#### WHOQOL-BREF

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. **Please choose the answer that appears most appropriate.** If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life **in the last four weeks.**

		Very poor	Poor	Neither poor nor good	Good	Very good
1.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2.	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last four weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3.	To what extent do you feel that physical pain prevents you from doing what you need to do?	5	4	3	2	1
4.	How much do you need any medical treatment to function in your daily life?	5	4	3	2	1
5.	How much do you enjoy life?	1	2	3	4	5
6.	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7.	How well are you able to concentrate?	1	2	3	4	5
8.	How safe do you feel in your daily life?	1	2	3	4	5
9.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

		Not at all	A little	Moderately	Mostly	Completely
10.	Do you have enough energy for everyday life?	1	2	3	4	5
11.	Are you able to accept your bodily appearance?	1	2	3	4	5
12.	Have you enough money to meet your needs?	1	2	3	4	5
13.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
14.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

		Very poor	Poor	Neither poor nor good	Good	Very good
15.	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16.	How satisfied are you with your sleep?	1	2	3	4	5
17.	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18.	How satisfied are you with your capacity for work?	1	2	3	4	5
19.	How satisfied are you with yourself?	1	2	3	4	5

20.	How satisfied are you with your personal relationships?	1	2	3	4	5
21.	How satisfied are you with your sex life?	1	2	3	4	5
22.	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24.	How satisfied are you with your access to health services?	1	2	3	4	5
25.	How satisfied are you with your transport?	1	2	3	4	5

The following question refers to how often you have felt or experienced certain things in the last four weeks.

		Never	Seldom	Quite often	Very often	Always
26.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	5	4	3	2	1

**Do you have any comments about the assessment?**

---



---

*[The following table should be completed after the interview is finished]*

	Equations for computing domain scores	Raw score	Transformed scores*	
			4-20	0-100
27. <b>Domain 1</b>	$(6-Q3) + (6-Q4) + Q10 + Q15 + Q16 + Q17 + Q18$ <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/>	a. =	b:	c:
28. <b>Domain 2</b>	$Q5 + Q6 + Q7 + Q11 + Q19 + (6-Q26)$ <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/>	a. =	b:	c:
29. <b>Domain 3</b>	$Q20 + Q21 + Q22$ <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/>	a. =	b:	c:
30. <b>Domain 4</b>	$Q8 + Q9 + Q12 + Q13 + Q14 + Q23 + Q24 + Q25$ <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/> + <input type="checkbox"/>	a. =	b:	c:

\* See Procedures Manual, pages 13-15

## Appendix 7

### WHO Quality of Life- 100 Questionnaire (Bengali)

C. (WHOQOL-BREF) এ অংশের মূল্যায়ন, আপনি আপনার জীবন, স্বাস্থ্য ও জীবনের অন্যান্য দিক সম্পর্কে কি ভাবেন, সে সম্পর্কে দয়া করে সবগুলো প্রশ্নের উত্তর দিন। যদি কোন প্রশ্নের উত্তর কি হবে না বুঝেন তবে যেটিকে সবচেয়ে সঠিক মনে হবে সেই উত্তরটি দিন। এটা প্রায়ই প্রথম উত্তর হতে পারে।

আপনার মান, আশা, আনন্দ ও বিবেচ্য সমূহ স্মরণ রাখুন। আমরা আপনার জীবনের গত দুসপ্তাহের কথা স্মরণ করতে বলবো।

সবগুলো প্রশ্ন পড়ুন, আপনার অনুভূতি যাচাই করুন এবং পাশের ছকে যে উত্তরটি সবচেয়ে সঠিক মনে হবে সে নম্বরটিতে বৃত্ত তৈরী করুন।

		খুব খারাপ	খারাপ	ভালও নয় খারাপও নয়	ভাল	খুব ভাল
1. (G1)	আপনার জীবন যাত্রার মান কেমন?	1	2	3	4	5

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
2. (G4)	আপনার স্বাস্থ্য নিয়ে কি আপনি সন্তুষ্ট?	1	2	3	4	5

নিচের প্রশ্নগুলো গত দুপ্তাহে নিম্নবর্ণিত অভিজ্ঞতাগুলো কি পরিমানে হয়েছে সে সম্পর্কে।

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
3. (F1.4)	শারীরিক ব্যথার জন্য আপনি কি পরিমাণ প্রয়োজনীয় কাজ থেকে বিরত ছিলেন?	1	2	3	4	5
4. (F11.3)	আপনার দৈনন্দিন কার্যক্রম ঠিক রাখতে চিকিৎসা কতটুকু প্রয়োজন?	1	2	3	4	5
5. (F4.1)	আপনি জীবনকে কতটুকু উপভোগ করেন?	1	2	3	4	5
6. (F24.2)	জীবনকে আপনার কতটুকু অর্থপূর্ণ মনে হয়?	1	2	3	4	5

		একদম না	কম	মোটামুটি	বেশী	খুব বেশী
7. (F5.3)	আপনি কাজে কতটুকু মনসংযোগ করতে পারেন?	1	2	3	4	5
8. (F16.1)	আপনি দৈনন্দিন জীবনে কতটুকু নিরাপত্তা অনুভব করেন?	1	2	3	4	5
9. (F22.1)	আপনার ভৌত পরিবেশ কতটুকু স্বাস্থ্যকর?	1	2	3	4	5

নিচের প্রশ্নগুলোতে জানতে চাওয়া হয়েছে - গত দুই সপ্তাহে আপনি কতটুকু সম্পূর্ণভাবে কোন কাজ করতে বা অভিজ্ঞতা লাভ করতে পেরেছেন।

		একদম না	কম	মোটামুটি	অধিকাংশ	পরিপূর্ণভাবে
10. (F2.1)	আপনার কি প্রতিদিন কাজ করার মত শক্তি আছে?	1	2	3	4	5
11. (F7.1)	আপনি কি আপনার শরীরের গড়ন নিয়ে সন্তুষ্ট?	1	2	3	4	5
12. (F18.1)	আপনার কি প্রয়োজন মেটাতে যথেষ্ট টাকা আছে?	1	2	3	4	5
13. (F20.1)	আপনি কি দৈনন্দিন জীবন-যাপনের জন্য প্রয়োজনীয় তথ্য পান?	1	2	3	4	5
14. (F21.1)	অবসর কাটানোর/বিনোদনের সুযোগ আপনার কতটুকু আছে?	1	2	3	4	5

		খুব খারাপ	খারাপ	ভালও না মন্দও না	ভাল	খুব ভাল
15. (F9.1)	আপনি কতটা ভালভাবে চলাফেরা করতে পারেন?	1	2	3	4	5

নিচের প্রশ্নতে জানতে চাওয়া হয়েছে - গত দুসপ্তাহে আপনার জীবনের বিভিন্ন দিক নিয়ে আপনি কতটুকু সন্তুষ্ট?

		খুব অসন্তুষ্ট	অসন্তুষ্ট	সন্তুষ্টও নয় অসন্তুষ্টও নয়	সন্তুষ্ট	খুব সন্তুষ্ট
16. (F3.3)	আপনার ঘুম নিয়ে আপনি কতখানি সন্তুষ্ট?	1	2	3	4	5
17. (F10.3)	দৈনন্দিন কাজ করার ক্ষমতা নিয়ে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
18. (F12.4)	আপনার কাজ করার ক্ষমতা/দক্ষতা (ক্যাপাসিটি) নিয়ে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
19. (F6.3)	নিজেকে নিয়ে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
20. (F13.3)	অন্যদের সাথে আপনার ব্যক্তিগত সম্পর্কসমূহ নিয়ে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
21. (F15.3)	আপনার যৌন জীবন নিয়ে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
22. (F14.4)	বন্ধুদের কাছ থেকে পাওয়া সাহায্যে আপনি কতটুকু সন্তুষ্ট?	1	2	3	4	5
23. (F17.3)	আপনি আপনার বাসস্থানের অবস্থা নিয়ে কতটুকু সন্তুষ্ট?	1	2	3	4	5
24. (F19.3)	আপনি যে স্বাস্থ্যসেবা পান তাতে কি সন্তুষ্ট?	1	2	3	4	5
25. (F23.3)	আপনি যাতায়াত ব্যবস্থা নিয়ে কতটুকু সন্তুষ্ট?	1	2	3	4	5

নিচের প্রশ্নগুলোতে জানতে চাওয়া হয়েছে - গত দুসপ্তাহে ঐ নির্দিষ্ট বিষয়সমূহ আপনি কতবেশী/ঘনঘন অনুভব করেছেন?

		কখনো না	কখনো কখনো	মাঝে মাঝে	প্রায়শই	সব সময়
26. (F8.1)	আপনার হতাশা, উদ্বেগ, অবসন্নতা এই সব নেতিবাচক অনুভূতি কত ঘন ঘন হয়?	1	2	3	4	5

(নিশ্চিত হোন যে সব প্রশ্নের উত্তর দেয়া হয়েছে।)

## Appendix 8

### Ethical permission for Data collection



পক্ষাঘাতগ্রস্তদের পুনর্বাসন কেন্দ্র (সিআরপি)  
**Centre for the Rehabilitation of the Paralyzed (CRP)**  
a project of the Trust for the Rehabilitation of the Paralyzed  
Head Office: CRP-Savar, CRP-Chapain, Savar, Dhaka-1343, Bangladesh  
Tel: +880 (0)2-7745464-5, Fax: 7745069, E-mail: contact@crp-bangladesh.org, Website: www.crp-bangladesh.org

Ref: CRP/R&E/0401/93

Date: 23/03/2014

To

Md. Yeasir Arafat Alve

ID no. 13168003

Post graduate program in Disaster Management (PPDM)

BRAC University.

**Subject: Accept to conduct research on “Quality of life among survivors after a building collapse: Case study of RANA PLAZA, Savar; Dhaka”.**

Dear Mr Md Yeasir Arafat Alve,

Thank you very much for showing your interest of your thesis work at CRP (among the Rana Plaza Survivors). We are pleased to accept your request as per the following terms and conditions-

- You are permitted to collect data for the academic purpose only. As CRP is currently conducting a similar survey by its own Research & Evaluation Department, so you will not be allowed to proceed the study result for further publication.
- CRP may use the full or partial result of your study work for its own study purpose.

You are requested to contact directly with the relevant departmental head/unit in-charge to fix up your schedule as per requirement of your work.

We will highly appreciate if you please submit an approved copy of your thesis work to the undersigned after completion for our learning and record.

Please note that CRP will not be responsible for the food, transport or any other logistics during your thesis work.

*Morshedul*

Mohammad Morshedul Quadir  
Research Associate  
Research, Monitoring & Evaluation Department  
CRP, Savar, Dhaka-1343

On behalf of Ethics Committee, CRP

Cc: 1. Manager, Rehab. Wing  
2. In-charge, Vocational Training