COVID-19’s Lethality for the Elderly and Alternative Case in Bangladesh: A Comparative Demographic Analysis

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ABSTRACT
COVID-19 pandemic has unfolded many of the underlying reality of the world. The demographic aspect of this concurrent crisis is one of them where the elderly are being affected on a large scale in most affected countries in Europe, America, and Asia. When the fact of the elderly people’s vulnerability to COVID-19 is well established by the data and statistics of affected rates around the world, Bangladesh has been experiencing the opposite trend by identifying many young people with COVID-19. This unique context of Bangladesh tempts our interest to give deep insights into this case by analysing demographic theories and models. Therefore, this paper aims to illustrate the rationalism behind this alternative case by developing a hypothesis using comparative demographic analysis between Bangladesh and other affected countries answering the questions: to what extent are the demographic differences responsible for the high level of young affected rates by COVID-19 in Bangladesh? The paper follows the qualitative research method while analyzing demographic and median age data and COVID-19’s lethality rate for elderly of different countries to understand the alternative scenario of the increasing lethality rate for the young in Bangladesh.

Keywords: COVID-19, lethality, elderly, young people, demography, Bangladesh

INTRODUCTION
Putting scientific authority, a researcher in a puzzle, Coronavirus disease -2019 (COVID-19) is at exponentially rising rate across the globe. The vaccine of this virus is yet to found and many researchers predict this outbreak will continue for another one or two more years- until 60% to 70% of the population has been infected (Fox 2020). Globally 199 countries are reported to have the pandemic and the situation getting worse each day where the World Health Organization (WHO) rates the global risk assessment as very high. The Pandemic has unfolded many of the reality of our time where socio-economic, cultural, political, and demographic impacts of this crisis are discussed most.

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The impact of this outbreak is severe to older aged people with heart, lung, and immunological conditions. Therefore, the COVID-19 pandemic creates a huge panic among elderly people who are affecting and dying on a rapid scale. Early data from China –where the transmission started – provided that older adults were the most sensitive to the worst effects of the disease. The elderly aged over 60 are the most vulnerable group of people illustrated by the statistics that more than 95% people aged over 60 died of COVID-19 in Europe (Keaten 2020), 75.3% of the COVID-19 deaths in India those who are 60 years old or above a (Coronavirus: 75% Cases of Deaths in Patients Aged 60 Yrs and above, 83% Have Co-Morbidities 2020) and as per official data, 80% deaths of China were among people in their 60’s and older. When this is the common scenario in most of the countries, Bangladesh recorded 10% affected people are in the age group of 60 or above and 60% are age group of 21-50 (IEDCR 2020). This opposite trend of affecting rate in Bangladesh is one of the primary concerns of this empirical study, where a comparative demographic analysis was put in place for better understanding the demographic dimensions of this crisis. Moreover, by illustrating Bangladesh’s opposite trend from the outer world, this study also focuses on some demographic theories to understand the dynamics of this unique case.

METHODOLOGY
The study follows the qualitative method of research approaches. Qualitative research –where the secondary literature is collected from both academic and non-academic sources like books, journals, web pages, etc. –helps to understand the basic idea of COVID-19 pandemic and its current situation throughout the world. Besides, it helps to get the present demographic scenario and the death rate of the people both in Bangladesh and the rest of the world where COVID-19 poses a high life threat. To compare the death rate between Bangladesh and other countries due to the COVID-19, the paper collects the related data from three regions of the world: Europe, East Asia, and North America which are now considered as the epicentre of the current pandemic. Within these three regions, we have selected two countries (Spain, and Italy) from the European region, three countries (China, Japan, and South Korea) from East Asian region and one country (United States) from North American region due to the highly affected rate of the COVID-19 pandemic of these countries. This data has been analysed along with the current demographic scenario and death rate of COVID-19 of both Bangladesh and other above-mentioned countries.

Data Collection and Analysis
Data has been collected from various sources including Indexmundi, Statista, and Worldometer. Here, the aging population and median age of different countries have been taken out as the base year 2018. On the other hand, the time till April 2020 has been selected for the collection of data on COVID-19 affected and deaths. After collecting data on those infected and death in COVID-19, it has been discussed with the current demography of different countries. Above all, we have tried to show why a higher number of young people are being affected by COVID-19 in Bangladesh.

Conceptualizing the COVID-19 pandemic
The world has been going through a tough time with the transfusion of a new virus named COVID-19. COVID-19 widely known as Coronavirus is infectious pneumonia of unknown cause first detected in Wuhan- the capital of Hubei province in China. The Virus first detected on 31 December 2019 with the speculation of spreading from a local seafood market of Wuhan. Coronavirus (CoV) are a large family of viruses that causes cold, fever, tiredness, and dry cough to more severe diseases where Middle East Respiratory Syndrome (MERS CoV) and Severe Acute Respiratory Syndrome (SARS-CoV)
are two members of this family. World Health Organization declared the outbreak as a Public Health Emergency of International Concern on 30 January 2020 amid huge multifaceted cases found across the world. As of 2 May 2020 more than 3.34 Million cases of COVID-19 have been reported in 187 countries and territories which killed more than 238,000 lives (Coronavirus COVID-19 (2019-NCoV) 2020). In the history of the Pandemic 2009-2010 influenza pandemic was the first in the 21st century which caused by A (H1N1) virus. In this pandemic between 1000, 000-4000, 000 died globally in the first year of its outbreak. Before this outbreak in 2009, the Spanish Flu caused by the same virus had inflicted severe consequences by killing 20-50 million people in 1918-1920. On March 7, 2020, the first COVID-19 case has been found in Bangladesh. Since then 8,790 people identified as positive cases, 177 recovered and 175 death cases recorder in Bangladesh as of May 02, 2020.

COVID-19 is not just a health crisis; its implications in social life, economy, and politics are severe. Normal life has been disrupted by the fair of a supply shortage of food and grocery led by panic buying. The cancellation of all religious, cultural, sporting, political events created a huge social distance among people around the world. Moreover, the world economy is suffering the most in this sudden pandemic. It has been projected that the ongoing pandemic would cause the largest Global recession since the great depression in 1929 where World Economic Outlook- April projects that global growth in 2020 to fall to 3 percent (Gopinath 2020). Besides this, the proximity of food shortage and a higher rate of unemployment could create a new dynamic of the current crisis.

Demographic Fact and Mortality Rate of Elderly People in Different Regions
The current COVID-19 pandemic has a far-reaching impact on the elderly people across the world, particularly in the Western and East Asian countries where aged people are huge in number. Due to the standard of living and other healthy environmental circumstances of Westerns, the life expectancy of people is higher than the rest of the world. But unfortunately, the current contagious disease—which has no medical treatment till now—poses a serious life threat to these senior citizens and the mortality rate for the elderly is in peak compare to the young people in these regions. The laxness of the aged people, particularly those who are highly suffering from cardiovascular disease, diabetes, and hypertension are the most affected by the COVID-19. However, the current situation of the impact of COVID-19 over the elderly people and the real scenario of the demography of the Western and other East Asian countries are as follows:

Europe
Europe, including the USA, is now the epicentre of the current COVID-19 pandemic as the virus is spreading rapidly across the region. Countries like Italy, and Spain—worst-hit countries in the current pandemic—are at high risk because of both the rising number of affected people and deaths—though the recovery rate is also high in these countries. As of April 24, 2020, the number of coronavirus cases in the major three affected countries of Europe is 219,764 in Spain; 192,994 in Italy (Stewart 2020) where the death rate is 22,524; and 25,969 respectively (Worldometer 2020a). Besides, among the number of affected cases and deaths as well, the senior citizens are at the top in Europe. According to the World Health Organization (WHO), among the total COVID-19 fatalities in Europe, 95% are older than 60 (Lardieri 2020) —where according to Liton (2020) it is 95.1 percent and 95.4 percent are for Italy and Spain respectively. Statista Research Department (2020a) shows that, as of April 24, 2020, around 90 percent of all deaths of COVID-19 in Italy are people aged 60 or older where 59.4 percent is in Spain (Forte 2020).
On the other hand, the demographic scenario in these three coronavirus affected countries shows that a large portion of the total population is more than 60s. The aging population is already a serious concern for the developed European countries and it is now blighted due to a large number of elderly citizens. In Italy—the second-oldest population in the world—has nearly 23 percent of the population over 65 (Perper 2020) wherein Spain, it is about 17 percent. However, such a large number of elderly people has heightened the risk of being affected by the contagious disease, particularly coronavirus that is currently killing people through Europe. The preexisting health weakness and the less immune are caused to death to a large number of elderly people in these countries.

East Asia

East Asia, or particularly China is considered as the birthplace of the current COVID-19 pandemic. In China, the first coronavirus affected patient was suspected in the Wuhan city of Hubei province and later spread to other provinces in China. Due to this coronavirus, around 82,836 Chinese people were affected and 4,633 people died (China Coronavirus: 82,901 Cases and 4,633 Deaths 2020), where most are from the Hubei province. Among the total affected and death rates, the majority of the patient were elderly people who already had to experience weakness in their bodies. According to the Chinese Centre for Disease Control and Prevention, the elderly people are mostly victimized by the COVID-19 in China where among the total deaths of the COVID-19 more than 80 percent are from the 60s or older (“Age Is Not the Only Risk for Severe Coronavirus Disease” 2020).

However, after China, the pandemic has firstly spread in this East Asian region and contaminated both Japan and South Korea. In both Japan and South Korea, elderly people have witnessed big challenges where most of the affected people were senior citizens. In South Korea, as of April 30, 2020, among the total affected people, more than 23.62 percent (So 2020a) age is either 60 or older where the fatality rate is 37.4 percent (So 2020b) to the same age. Again, in Japan, among the total 288 deaths, 263 are from the 60s or older (Statista Research Department 2020b) as of April 29, 2020. On the other hand, all these three countries—China, Japan, and South Korea—in East Asia are facing the demographic problem where the mortality rate is very low and the life expectancy is 77.5 years, 85.0 years, and 83.5 years respectively. Even, this aging population is sometimes considered a major threat to the future of the countries, particularly barriers to their economic development. Alongside, Japan has the world’s most-oldest population having around 28 percent of 65 years and older (Statistics Bureau of Japan 2019) wherein China it is 12.6 percent (Textor 2020) as of 2019 and in South Korea, it is 14.42 percent (Plecher 2020) as of 2018. Such a high percentage of the elderly people of these countries are now facing tremendous life threat to the novel coronavirus.

USA

USA—the most hazardous epicentre of the current pandemic—has witnessed the largest setback due to the spreading of COVID-19. It has now lead the world in conformed COVID-19 cases while shares one-third of the total affected cases and deaths as well. Due to the relaxed controlling hurdles at the initial stage and irresponsible attitude of the high officials of the government, the coronavirus had spread rapidly across the country and causes the rising infected rates. However, as of April 29, 2020, the total global affected cases of the COVID-19 are 3,161,534 where the USA has 1,036,388 and in the case of death it is 59,284 among the total 219,287 deaths globally (Worldometer 2020b). Besides, the increasing death rate of elderly people in America is also rising due to COVID-19. As of
April 14, 2020, among the total deaths, around 72.3 percent are from 65s or older (Worldometer n.d.)

In the demographic sector, the total population of the United States is 331,002,651 of 2020 (Worldometer 2020c). Among the total population, around 16.3 percent are 65s or older in the USA which was only 12.4 percent in 2000 and expected to become 20.4 percent by 2040 (Urban Institute n.d.). Due to the high life expectancy rate—now 79.1 years—the aging population has been increasing in the USA and causing some social problems including healthcare costs. At the same time, the low immune of these elderly people, particularly those have already other diseases, are easily get affected by the recent COVID-19 pandemic.

COVID-19 and Demographic Reality in Bangladesh
Bangladesh—a densely overpopulated country said to be the most vulnerable to the COVID-19 from the beginning of the outbreak. The underlying factor of huge Bangladeshi people working abroad was also an important reason to assume Bangladesh as a vulnerable zone for a huge outbreak of COVID-19. The demographic transition, as well as the density of the population with its socio-economic factor, poses a serious threat of major community transmission in Bangladesh. After identified the first case in Bangladesh it has been observed that most young aged populations are affected by COVID-19 which presents a completely different scenario from the toughly affected countries of Europe, America, and Asia where elderly people are mostly affected by the coronavirus. This different Scenario can be better understood by the assessment of the demographic reality and the affected rate of the people in Bangladesh.

Affected Rate of People
In Bangladesh, the first case had been detected on 7 March 2020 by the Institute of Epidemiology, Disease Control and Research (IEDCR). In the first month of detection, the infection rate was slow with 51 cases but over time multifaceted cases had been increased from April 2020. As of 26 April 2020, 7103 people have been identified with COVID-19 positive and 150 recovered, 163 death cases declared by the IEDCR. Data exposed by IEDCR showed that young and working-class people have been infected most. Professor Meerjady Sabrīna Flora, director of IEDCR said to the United News Bangladesh (UNB) that infected people age over 60 is relatively low. Giving an age-wise analysis she said of the total of 2,456 virus-infected cases in the country as of 19 April, over 60% of are in the age group of 21-50 while around 10% are age group of 60 (Jahangir 2020). She stated further that “it observed that people of 21-30 age group are affected much more and often 31-40 and 41-50 age group are falling victims more”. Moreover, data provided by IECDD on 22 April 2020 exposed that 64 percent of the infected case were aged between 21 and 50 years. Additional director general at the Directorate General of Health Services, Professor Nasrin Sultana has also stated that “among the infected patients until April 22, the highest number of infection rate was recorded in the age group 21-30 with 24 percent, followed by age group 31-40 with 22 percent, 41-50 with 18 percent, 51-60 with 15 percent, 60 above with 10 percent, 11-20 with 8 percent and under 11 with three percent” (Liton 2020).

Demographic reality
Bangladesh is the eighth-most populous country in the world with 160 million people which represents 2.11% of the global share. The population density in Bangladesh is 1,253 people per square kilometre calculated on a total land area of 130,170 square kilometres (Worldometer 2020d).
Bangladesh experienced a high rate of population growth in the 1960s and 1970s but over time the fertile rate has decreased. For three decades it dropped from 7 to 2.4 in 2005-2010 (United Nations (UN) 2017). Among this total population, youth constitutes the major part –third of the Bangladeshi population. At present, Bangladesh is enjoying a demographic dividend with more than 65% of Bangladeshi population is of working-class aged between 15 and 64 and another 34% aged 15 and younger and just 5% aged 65 and older. The demographic dividend has started in 2007 and now we are in the midst of the dividend period (Haider 2019). Moreover, Bangladesh is now home to 105.6 million working-age people among 160 million which will increase by 130 million by 2030. It also speaks about the number of old (60+) in the country which will increase to 22% by 2050. Among this total youth 51% is male and 49% is female. These young aged people are seating in the driving seat of the economy of Bangladesh by holding the major part of the labour market inside and outside the country. According to Ubaidur Rob, Population Council Country Director in Bangladesh two million young people enter in labour market every year. Each year more than 400,000 Bangladeshi leaves Bangladesh for overseas employment which most of them are young. This young population is accelerating the economic growth of Bangladesh which would continue if these huge working-aged people are well managed.

COMPARATIVE DEMOGRAPHIC ANALYSIS

The world has witnessed a very critical time in the early 21st century due to the spread of the current COVID-19 pandemic where almost all countries are affected by the coronavirus. From developed to least developed countries; from east to west; from north to south; there be no place in the world where coronavirus didn’t affect any single people. Coronavirus has changed its character and affects countries with different forms. Besides the different forms, a common picture is seen across the world is the rate of lethality to the elderly people, particularly in the Western countries where the COVID-19 is the epicentre right now. But in the case of Bangladesh, an alternative scenario has been seen regarding the lethality rate of the pandemic which has been described above. A different aspect can describe the high lethality rate to the young people in Bangladesh. However, this paper mainly describes the demographic fact of Bangladesh and other Western countries to find out the real causes of the growing rate of affected young people in Bangladesh and aged people in the westerns through the lens of demographic transition theory.

Demographic Transition Theory and Analysing Lethality Cases of COVID-19

Demographic transition theory is a popularly known theory to describe the changes in the birth rate and death rate of a particular country. The theory mainly shows the economic development by reducing the death rate in different four stages –Pre-transition, Early transition, Late transition, and Post-transition (UNFPA n.d.). Under the demographic transition theory, every state must go through these four stages; from high birth and death rate of the first stage to low birth and death rates in the fourth stage. The countries which belong to the second stage –known as population explosion (Theory of Demographic Transition (With Diagram) n.d.) –have the opportunity of high mobility of labor. Due to the increasing number of the working-age population, the economic development has speeded up and it helps countries, belonging to this second stage, to move toward rapid urbanization.

According to the demographic transition theory, the above mentioned 6 countries –Italy, Spain, America, China, Japan, and South Korea –are either in the last section of the third stage or in the fourth stage. Due to the growing impact of economic development and huge opportunities for
family planning, countries like China have witnessed a low birth rate in her demographic transition. Even in France, since the mid-18th century, both fertility and mortality rate has started to be declined. Today, these developed countries are facing a low level of both birth and death rate. Besides, the number of elderly people has been increasing due to the lower rates of disease and better food consumption –throw the states into a serious demographic crisis in the 21st century. On the other hand, Bangladesh is currently in the second stage of the demographic transition theory where the country’s young working population is increasing day by day. Due to various measures taken by the government, the death rate has decreased and the average life expectancy has increased. The two largest sectors of the country’s economy are the garment industry and remittances, where the majority are young. This huge working population is pulling the economy of Bangladesh upwards and it is these young people who are playing a leading role in transforming the country into a middle-income country.

**Aging and median age analysis**

As it has already mentioned that, the Western developed countries, according to the demographic transition theory, belong to either the last part of stage three or entered into the fourth stage; Bangladesh on the other hand just belongs to the second stage. Demographic crisis, particularly the increasing rate of aging people, low birth rate, and labour crisis of these western countries has been increasing at an alarming rate while Bangladesh now enjoying the demographic dividend due to the large number of young working-age. Figure 1 shows that both the USA and Italy –two most seriously affected countries –has 16 percent and 22 percent people whose age is from 65s or older where the rate of young people (age 15-24) in these two countries are only 13 and 10 percent respectively.

**Figure 1: Age Distribution of Population, 2018**

![Age Distribution of Population, 2018](image)

Source: Data collected from Indexmundi, Statista, and Worldometer, 2020
This aging scenario is also apposite to the other mentioned countries where Japan is in the most vulnerable position having around 28 percent of the 65 and over aged people. The rate of the working-age population is very low in these western countries. However, due to having a large number of elderly people, these countries are facing tremendous jeopardy during this current COVID-19 pandemic. Among the total lethality rate of the COVID-19, elderly people’s position is at the top in all these alluded western countries. Due to their other previous several biological problems, these elderly corona patients face difficulties to get rid of these diseases and sometimes the death rate of these senior citizens are higher than other younger people.

On the other hand, in Bangladesh, a diverse scenario has been seen where, according to the chart 1, the 65s or elder people are just 6 percent and the working-age young population is higher than the other western countries. In the case of life expectancy, the average age of the above mentioned western and East Asian countries is around 80 years wherein Bangladesh is only 72 (Liton 2020). Moreover, a potential economic benefit is gained due to the changes in the age structure—known as the demographic dividend. A good number of the working-age population—around 105.6 million (UNB 2016)—has been increased and the dependent age people have declined in Bangladesh in this second stage of demographic transition. This demographic dividend—which is now experiencing by Bangladesh once-in-a-lifetime—could be an asset for economic growth as well as social development if the present increasing working force can be regulated properly.

However, due to the low rate of the elderly people, the Bangladeshi people have witnessed a very different scenario in case of a lethality rate comparing to the others. As Bangladesh has a large number of young people in the age pyramid, the fatality rate of the COVID-19 is also high to these young generations. Moreover, this vast number of young population—19 percent’s age between 15 to 24 years—is the principal source of the family earning and attached to the different job sectors and become easily contaminated by other coronavirus affected people. Elsewhere, due to the few numbers of senior citizens in Bangladesh, the lethality rate of the elderly people of COVID-19 is lower in Bangladesh.

On the other hand, Figure 2 exhibits the median age of different countries. Here, the increasing median ages mark the aging population of any country. However, the chart shows that the Western and East Asian countries have a rising number of median ages where both European countries have more than 45 years as their median age and in the USA it is around 38.2 years. In East Asia, particularly Japan has experienced the highest number of median age around 47.7 years. Due to the low fertility rate and rising life expectancy, these countries have to witness the increasing number of the aging population and the working-age population is declining. This large part of the total population is getting affected by the COVID-19 due to the declining immunity of the elderly people. As a result, because of the growing older people, these countries have witnessed the increasing lethality rate of the elderly in this current COVID-19 pandemic.
In converse, Bangladesh is in a favourable position where the median age is only 27.1—means half of the population is younger than 27. As a consequence, this young working-age generation will serve Bangladesh’s economy for the next one or two decades, resulting in a demographic dividend. In the case of the lethality of the current COVID-19 pandemic, young people were less likely to be affected due to the high immune system in the body. But a completely different scenario has been witnessed despite being mostly young people in Bangladesh. Here, younger people are more being affected by the COVID-19 rather than the older. The underlying cause of a more lethality rate for the younger in Bangladesh is to despise the horror of the COVID-19. They act like they are unconquerable to the coronavirus and severely break the government imposed lockdown. Besides, a large number of young working manpower has been engaged in other countries. It is thought that the current pandemic has spread in Bangladesh through these labourers who came back to Bangladesh from the contaminated countries, mostly from Italy—turning the ‘median age’ or ‘demographic dividend’ into a national disaster. Moreover, low nutritional foods do not boost immunity in young people in Bangladesh and they are susceptible to coronavirus. Due to which, despite the low median age, the number of young people infected with COVID-19 is higher in Bangladesh.

CONCLUSION
The whole world is going through a catastrophic time right now—COVID-19 pandemic. Even the world’s largest economic and technologically advanced countries are currently finding no way to prevent this pandemic. Advanced medical science has not been able to solve the disease rather many people are being infected and the number of deaths is increasing. On the other hand, these developed countries of the world have been dealing with the problem of the aging population for a long time. The current COVID-19 has dealt the biggest blow to these senior citizens. Elderly people are the most affected by the current pandemic in these countries and they are also ahead in terms of deaths as well.
On the other hand, Bangladesh has witnessed a different case in this current pandemic. Where the elderly people are most affected and dying in the world by the COVID-19, the picture of Bangladesh is just the opposite. Here, the affected rate of young people is higher than elderly people. The biggest reason for this is the growing number of young people in Bangladesh where it is crossing the demographic dividend having the largest working-age population. The number of elderly people is very low in Bangladesh comparing to the above-mentioned countries. Moreover, Bangladesh is a growing economy with its huge young aged manpower engaged in the workforce both at home and abroad. This manpower mostly stays out of home for working and travel abroad which makes them vulnerable to COVID-19. However, having the largest number of young people –positioning the second stage of the demographic transition theory –Bangladesh is facing the risk of lethality for the young people in this current COVID-19 pandemic.

REFERENCES

Age is not the only risk for severe coronavirus disease 2020: In: The Japan Times, 9.4.2020 [https://www.japantimes.co.jp/article-expired/#Xqs9MKgzbIX, 15.4.2020]


Coronavirus: 75% cases of deaths in patients aged 60 yrs and above, 83% have co-morbidities 2020: In: India Today, 18.4.2020 [https://www.indiatoday.in/india/story/coronavirus-india-health-ministry-pc-deaths-comorbidities-percentage-total-cases-1668391-2020-04-18, 27.4.2020]


Keaten, J 2020: UN: 95% of Europe’s virus dead over 60 but young not immune. In: AP News, 2.4.2020 [https://apnews.com/ea659712e529d83c191f64a6ca111b50, 10.4.2020]


UNFPA. n.d.: Demography on the world stage, n.d. [https://papp.iussp.org/sessions/papp101_s01/PAPP101_s01_090_010.html, 20.4.2020]


