

A COMPARATIVE STUDY OF URBAN AND RURAL
UNIVERSITY STUDENT'S MENTAL HEALTH STATUS DUE
TO ONLINE EDUCATION DURING COVID 19 PANDEMIC

By
Tusmeta Tasnim
17146008

A thesis submitted to the Department of Pharmacy in partial fulfillment of the
requirements for the degree of
Bachelor of Pharmacy

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Brac University
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Declaration

It is hereby declared that

1. The thesis submitted is my original work while completing my degree at Brac University.
2. The thesis does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The thesis does not contain material that has been accepted or submitted, for any other degree or diploma at a university or other institution.
4. I have acknowledged all the main sources of help.

Student's Full Name & Signature:

Tusmeta Tasnim
08/09/24

Tusmeta Tasnim
17146008

Approval

The thesis titled “A Comparative Study of Urban and Rural University Student's Mental Health Status Due to Online Education During Covid 19 Pandemic” submitted by

1. Tusmeta Tasmin (17146008)

Of Summer, 2020 has been accepted as satisfactory in partial fulfillment of the requirement for the degree of Bachelor of Pharmacy on [Date-of-Defense].

Examining Committee:

Supervisor:
(Member)



Afrina Afrose, PhD
Assistant Professor, Department of Pharmacy
Brac University

Program Coordinator:
(Member)

Hasina Yasmin, PhD
Professor, Department of Pharmacy
Brac University

Departmental Head:
(Chair)

Eva Rahman Kabir, PhD
Professor and Chairperson, Department of Pharmacy
Brac University

Ethics Statement

This study does not involve any human or animal trials.

Abstract

The latest COVID-19 pandemic has had a physical and psychological effect on people of all ages worldwide. Although there has been little research into COVID-19's impact on university students' mental health in Bangladesh, it is an important demographic to study because they are especially vulnerable to stress and mental health issues. As a result, an internet-based survey involving 410 Bangladeshi university students was conducted in February 2021. In our survey, we found that students who reside in rural areas are more stressed in urban areas. Among 410 students, 27% of rural students are extremely stressed due to online education whereas only 6% from urban areas. In addition, we have found that rural students are facing more depressing symptoms rather than urban students. According to our survey among 410 participants, 47% of rural students always feel more depressive symptoms whereas only 11% from urban areas.

Keywords: COVID19; Mental Health; Pandemic; Depression; Anxiety; Stress

Dedication

Dedicated to My Parents.

Acknowledgment

I would like to begin by thanking the Almighty for allowing and assisting me in the completion of this research paper. Next, I want to express my gratitude to our parents, who have consistently supported me with enduring guidance and inspiration over the years.

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List of Acronyms

| | |
|---------|---|
| SARS | Severe Acute Respiratory Syndrome |
| COVID19 | Coronavirus Disease 2019 |
| DGHS | Directorate General of Health Service |
| WHO | World Health Organization |
| NIMH | National Institute of Mental Health |
| IEDCR | Institute of Epidemiology, Disease Control and Research |
| BIGD | Brac Institute of Governance and Development |

Chapter 1

Introduction

1.1 Background

Physical access to the school, college, and the university has been restricted as a result of the long-term lockdown. Because of the COVID-19 outbreak, about 1.5 billion school-aged and university students have been affected. Closures of an educational institution may mainly impact children and young people (UNESCO, 2021). As an alternative to institutional closure, online education is in high demand during this pandemic. Nevertheless, both students and teachers may face a variety of obstacles and difficulties, including psychological problems, as a result of an inadequate learning strategy. Though online teaching is one of the most promising alternatives to the traditional classroom, still students have a negative view of online learning, which may be a major factor for psychological distress. Students are anxious because of a lack of enjoyment in the classroom. Course quality, content accessibility, technological ease, availability of technical assistance, and the probability of peer participation are all important factors that contribute to e-Learning failure (Hasan, 2020). The majority of e-Learning flaws are technology-based and software, hardware support is not readily accessible. Notwithstanding, several developing countries are not entirely supportive of the e-Learning scheme. A lack of technical knowledge in the deployment of e-Learning is another reason of e-Learning failure. Furthermore, discrimination against improved family amenities results in uneven learning opportunities for students. While the majority of educational institutions are embracing online courses, the issue remains as to how this strategy assists students from low-income households and those who live in rural regions. In developing countries like Bangladesh, there are so many students, suffering from poverty. There may be a strong relationship between poverty and psychological stress. They are mostly affected by information infrastructure services. Students from lower-income backgrounds had little or no access to online classes due to digital inequality and a lack of access to new technologies.

At the same time, high internet cost is another barrier to access in online education (Aufsatz, 2020). It is estimated that only a small percentage of students are physically and emotionally capable of participating in online learning. However, the above factors contribute to students' anxiety over losing an academic year. In many universities, online classes began around 5 to 6 months later of starting the pandemic (Wadud, 2020). As a result, those students had to drop their semester. Many students had to cancel the plan of going abroad for higher studies due to the COVID 19 pandemic. Thus, fear of academic year loss is the most concern which may enhance student's psychological anxiety (Mortuza, 2021).

1.2 Research Gap

As there is no such study regarding the comparison of mental health status between urban and rural university students in Bangladesh, so considering all these factors, we try to find out the mental health status of the university's students due to the online learning platform in urban and rural areas.

As most of the internet facilities are prevalent in the urban areas and there are a huge number of students who have to leave the city and the campus area because of the pandemic (UNB, 2020). Therefore, the students who reside in the rural area might find more difficulties and stress to continue their study in the online platform or it could be the other way around.

Other study also indicates that in this pandemic, university students show higher level of anxiety, stress and depression than another group (Rajib Ahmed Faisal, Mary C. Jobe, Oli Ahmed, Tanima Sharker , 2021). Another survey study titled "The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study" published by World Health Organization revealed that 28.5 percent of respondents had stress, 33.3 percent anxiety, 46.92 percent depression from mild to severe, and 69.31 percent had event-specific distress from mild to severe (Khan, Abid Hasan; Sultana, Mst Sadia; Hossain, Sahadat; Hasan, M Tasdik; Ahmed, Helal Uddin; Sikder, Md Tajuddin, 2020).

The pandemic has hard hit to the education system that we cannot deny but that also raises issues into the mind of the universities students as they faced the real trouble regarding their ongoing study which is now standstill in most university due to this crisis (Mormee Mahtab, 2021). This will also hurt the mental health illness of the university's students in urban and rural areas. Therefore, we conducted our survey in both urban and rural areas of university students in both public and private universities to find out whether there is any connection to their mental health illness due to this online learning platform in this COVID era.

1.3 Objectives of the Study

This paper intends to find out the below research objectives:

Objective 1: First of all, we try to find out the impact of the pandemic on student's mental health in Urban and Rural areas as most of the students have faced difficulties adapting to this new online platform.

Objective 2: Identifying the issues that students are facing while continuing online education in urban and rural areas. As the internet facilities and internet devices are necessary to participate in the online classes, assignment submission, therefore the urban and rural areas students might have different experiences to perform learning in the online platform.

Objective 3: We want to compare the mental health state between urban and rural university students during this pandemic due to online education.

1.4 Significance of the Study

Mental health issues became a prominent factor in this COVID 19 era. People regardless of their gender, age, and geographic region have faced a few or more severities of depression, anxiety, and other mental health issues during this pandemic time (Md. Hasan Al Banna, 2020).

In Bangladesh, the scenario during the pandemic affects the daily activities of the university students and also brings a huge change in the learning system from on-campus learning to the e-learning platform (Bhuiyan, 2020). Therefore, this paper is trying to find out the issues that have an impact on the university students' mental health who reside in urban and rural areas in the pandemic period.

Moreover, as the campus remains closed and most of the educational institutions have not properly adopted the online education system yet, therefore we are trying to find out the correlation between the e-learning platform and the mental health issues of the university students during this period.

We found that most of the article and research paper tried to find out the mental health status of university going students whereas we are trying to find the correlation of mental health with online education and also want to compare its effect between urban and rural areas students during this COVID 19 pandemic (Islam, 2020).

Chapter 2

Literature Review

2.1 Coronavirus

The latest threat to global health is the ongoing outbreak of respiratory disease that was recently given the name Coronavirus Disease 2019 (Covid-19). In December 2019, COVID-19 was first recognized. China's health authorities announced an outbreak of pneumonia of unknown origin in Wuhan, Hubei Province in late December 2019. Bangladesh has also been declared COVID-19-infected, according

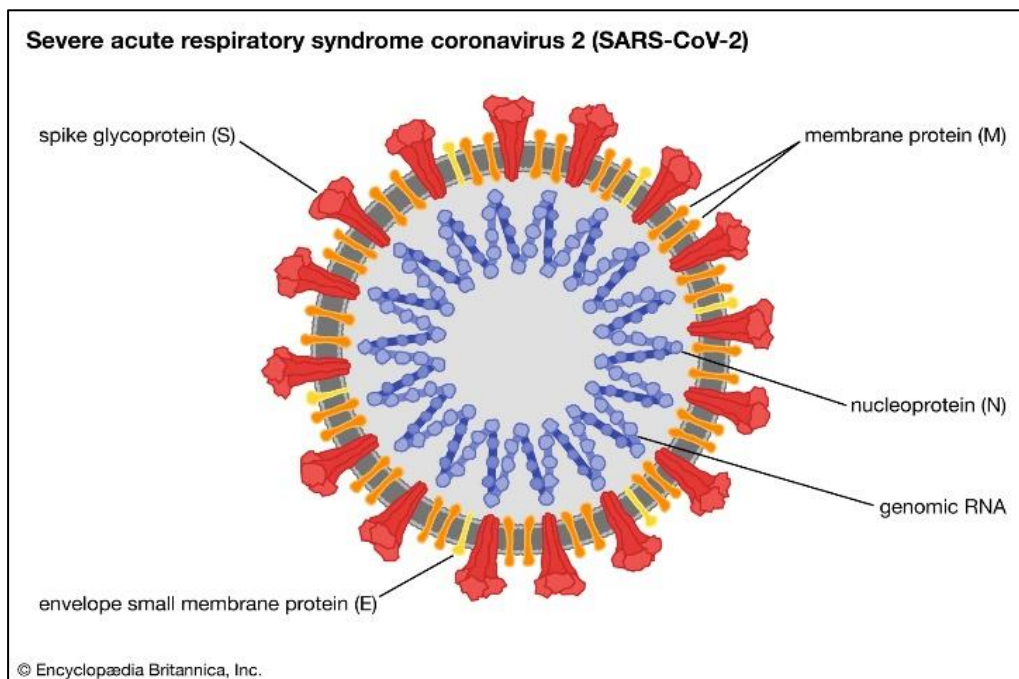


Figure 1: Coronavirus

to regular reports from the Directorate General of Health Service, with 48 confirmed cases and five deaths due to community transmission (dated 28th March 2020) (Md Kariul Islam, 2020). On January 30, 2020, the World Health Organization declared the disease a Public Health Emergency of International Concern, and on March 11, 2020, it was declared a pandemic (WHO, 2020). It was quickly determined that it was caused by a novel coronavirus with structural similarities to the virus that causes severe acute respiratory syndrome (SARS). The majority of patients infected with the COVID-19 virus will have mild to moderate respiratory symptoms and will recover without needing

any special treatment. Older people, as well as those with chronic medical conditions such as cardiovascular disease, asthma, diabetes, chronic respiratory disease, and cancer, are more likely to develop serious illness (Muhammad Adnan Shereen, Suliman Khan, Abeer Kazmi, Nadia Bashir, Rabeea Siddique, 2020).

2.2 Impact of COVID 19 Pandemic on Mental Health

The coronavirus pandemic is causing widespread anxiety, worry, and fear among the general public, as well as specific groups such as older adults, teenagers, caregivers, and people with existing health conditions. In public mental health terms, the main psychological impact to date is elevated rates of stress or anxiety (S.M. Didar-UIslama, 2020). Quarantine, self-isolation, social distancing, financial crisis affects many people's usual activities, routines, or livelihoods. Levels of loneliness, depression, harmful alcohol and drug use, self-harm, or suicidal behavior are also expected to rise (Seyyed Mohammad, 2020). Children who are at home, away from school, classmates, and colleagues, may have more questions about the outbreak, and they look toward their parents or caregivers for answers. Children and parents do not both respond to stress in the same way. Anxiety, depression, social isolation, and an unstable environment may all affect a child's mental health in the short or long term (OECD, 2020). Besides, due to lockdown, and for preventing the spread of the virus, people cannot run their business properly. Many people have lost their job. The fall of the economy occurred in almost every country. As a result, people cannot meet their daily demands like before. Lifestyle has been changed. These factors are also increasing the stress and frustration of people especially in the middle class and lower-class families (Bilal Javed, Abdullah Sarwer ,Erik B. Soto, Zia-ur-Rehman Mashwani, 2020).

Physical distance caused by the COVID19 outbreak may have a severe detrimental influence on the mental health of the elderly and disabled individual. The mental health of the aged and disabled will be jeopardized by physical isolation among family members. Fear, tension, sadness, and even putting

them in a traumatic environment are all possible outcomes. Elderly individuals rely on young people for their daily needs, and self-isolation may be damaging to a family structure.

The elderly and disabled people living in nursing homes can face extreme mental health issues (Bilal Javed, Abdullah Sarwer ,Erik B. Soto, Zia-ur-Rehman Mashwani, 2020).

Doctors, nurses, and paramedics who are the front-line fighter or workers of the COVID19 outbreak may be more vulnerable to mental health issues. Fear of contracting a disease, long working hours, lack of safety gear and equipment, patient load, lack of effective COVID19 drug, death of coworkers after COVID19 exposure, social distancing, loneliness, and isolation from their family and friends, and the bad situation of their patients may play a negative impact on the mental health of health workers (Bilal Javed, Abdullah Sarwer ,Erik B. Soto, Zia-ur-Rehman Mashwani, 2020).

2.3 Mental Health Status in Bangladesh Nationwide

According to a study by the National Institute of Mental Health (NIMH), the number of adults suffering from mental health issues has increased in the country during the Covid-19 pandemic, according to a recent article published in The Daily Star titled "Pandemic Fallout: Depression, Anxiety Rise Across the Country" (Huda, 2020). In 2020 and 2021, 46 percent of patients suffering from various forms of mental health disorders reported suffering from depression, while 33 percent experienced anxiety, according to the survey (Sujan, 2021). Comparatively, in 2018 mental health illness was 18.7 percent (Sujan, 2021). This indicates clearly that this pandemic hurts the mind of young adults in Bangladesh. Moreover, this study indicated that collateral damage from this pandemic had driven people to raise more anxiety and depression which resulting severe mental health issues and even suicidal tendencies. In addition to that according to a report published by the Institute of Epidemiology, Disease Control and Research (IEDCR) states that approximately 38 people daily which is 14,000 throughout the year 2020 committed suicide when the pandemic has begun (Sujan, 2021). Another article that has been published recently in The Daily Star regarding the education in Covid-19 pandemic indicated that there

is a lack of preparedness in the emergency and students have faced severe difficulties to cope up with the online education system that has been followed by the educational institution (Mortuza, 2021).

2.4 Mental Health Status in University Student Bangladesh

As part of the effort to prevent the spread of COVID-19 in the early months, educational institutions in Bangladesh closed, depriving students of the sense of stability and stimulation provided by that community, as well as the opportunity to be with friends and receive the social support needed for good mental health (Rajib Ahmed Faisal, Mary C. Jobe, Oli Ahmed, Tanima Sharker, 2021). Dormitories at public universities that were unable to maintain spatial separation have remained closed for the safety of their students. Overall, the disruption of regular everyday activities caused by the pandemic has already been shown to generate stress and anxiety (Rajib Ahmed Faisal, Mary C. Jobe, Oli Ahmed, Tanima Sharker, 2021). After moving into online platform to continue educational activities, most of the students find it difficult to cope up and that also create more arguments in family members (Mohammed A. Mamun, 2020). According to an article titled “Mother and Son Suicide Pact Due to COVID-19-Related Online Learning Issues in Bangladesh: An Unusual Case Report”, it is found that online exams related issues creating depression among students and parents both and an incident of mother and son suicide has been reported into the national daily newspaper (Mohammed A. Mamun, 2020).

In addition to that, the article mentions that private universities have been capable to accommodate all the requirements to run classes through online platforms whereas public universities are far away from this. This also raises concerns of inequality in the education sector among university students. Moreover, lots of students have faced a year gap that raises mental health illness among most of the university’s students (Mortuza, 2021). In this regard, many students will face difficulties to find jobs by the time they finish their education, as the financial crisis caused by the pandemic will take years to recover the report suggest (Mortuza, 2021).

2.5 Mental Health Status of School-Going Children Bangladesh

In another study that has been conducted by the Brac Institute of Governance and Development (BIGD) study hours for students declined by 80 percent on account of school closure (Halder, 2021). In other words, study hours for learners at the school level dropped from 10 hours to just two hours, and the percentage of those students who were required to help their parents in supplementing family income for two or more hours increased from 4.0 percent to 16 percent. Children requiring family chores also jumped from just 1.0 percent to 13 percent (Md. Saiful Islam, 2021). After 10 months of school closure, this reflective image of a negative effect on the learning process primarily of deprived rural and slum students due to the coronavirus onslaught may have changed significantly (Halder, 2021).

2.6 Online Education Status in Urban Areas

Bangladesh presently has 21.6 million students enrolled in elementary and primary schools, 13 million in secondary schools, and 4 million in universities and colleges (Rafe, 2020). According to the Ministry of Education, rural regions have 76 percent of Bangladesh's secondary schools. Approximately 60% of elementary school students attend government-run institutions which are mostly in rural areas as well.

In the wake of the lockdown, Bangladesh's private schools have been fast to adopt online learning techniques, delivering lectures delivered via social media platforms like as WhatsApp, Facebook, YouTube, Zoom, and Google Meet. These institutions, which are mostly located in urban areas, are primarily attended by the country's wealthier classes. Not only are the schools better equipped and prepared, students are also more likely to have access to required technologies at home, with parents who are usually computer literate. Meanwhile, the Bangladeshi government has asked state-owned radio and television stations to broadcast live and recorded lectures in an effort to address the disruption of schooling due to the pandemic.

2.7 Online Education Status in Rural Areas

While rich urban children may continue their education online throughout the coronavirus pandemic, rural poor kids have been denied access to education due to a lack of resources and infrastructure. "Rural schools lack infrastructure, such as digital equipment, trained instructors, and hygiene facilities," says Mahtab Uddin, a research fellow at the South Asian Network, a non-governmental organization (NGO) (Rafe, 2020).

Universities have begun to give lectures using online platforms such as Zoom, although some students have complained about a lack of technological infrastructure. "We started providing lectures online in response to problems such as our students' inadequate access to digital equipment and technology," said Mohammad Sahid Ullah, a professor at Chittagong University, one of the country's largest universities with more than 25,000 students (Rafe, 2020).

According to the report published in The Daily Star, about 69.5 percent of the students did not participate in the distance learning and 57.9pc of them said they could not join the classes due to lack of devices and 69 percent of the students in rural areas said that they could not take part in the classes for not having devices, the report says. (Alamgir, 2021).

Chapter 3

Methodology

In conducting the survey, we first calculated the sample size of the overall student population and then split the sample size into two geographic regions as Urban and Rural.

Bangladesh has 8.5 lakh students currently pursuing higher education (Mannan, 2017). Based on our total population, we calculated the sample size with a 95% confidence level and confidence interval of 5. Considering this population, we had 410 respondents as a sample where the margin of error was 5%, the confidence level was 95%, and response distribution was 50%. The minimum sample needed for 95% confidence level would be 384, adding about 10 to 15% non-respondent error that becomes 423 to 442. Thus, our sample is significant, since $410 > 384$. We also calculated the confidence interval based on our sample size and we found 4.84 which is close to 5%.

We conducted an online survey among 410 students of which 50% are from rural areas and another 50% are from urban areas. We prepared a questionnaire consists of 27 questions that are related to our research objective. We took both public and private universities students in order to obtain relevant data to meet our research goal. After getting the responses from all the 410 participants, we analysis and interpret those data into graphs such as bar charts, pie charts, frequency tables and histograms using Excel.

Chapter 4

Result and Analysis

In this chapter, we will discuss the outcomes of our survey questionnaire along with the analysis of our findings related to our research topic. We shorted out 15 questions from 410 respondents among them 205 of urban area and 205 of rural area. Below are the details about the results that we found from our questionnaire.

4.1 Current Location

The Figure 2 is about urban and rural students of this research has participated in a total of 410 students. Among 410 participants, 50% of students are from urban areas. Another 50% are from rural areas.

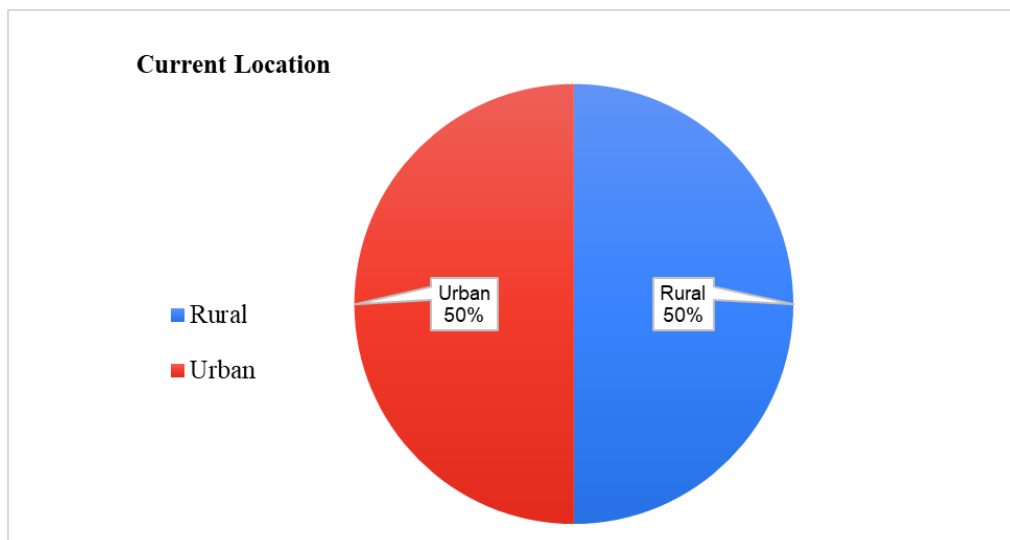


Figure 2: Current Location

That means the number of urban students and rural students 205.

4.2 Wi-Fi Connection

The Figure 3 is about to do all the students have a Wi-Fi connection or not. Among 410 participants, 223 students responded yes, they have a Wi-Fi connection. Among those 223 students, 7.07% are from

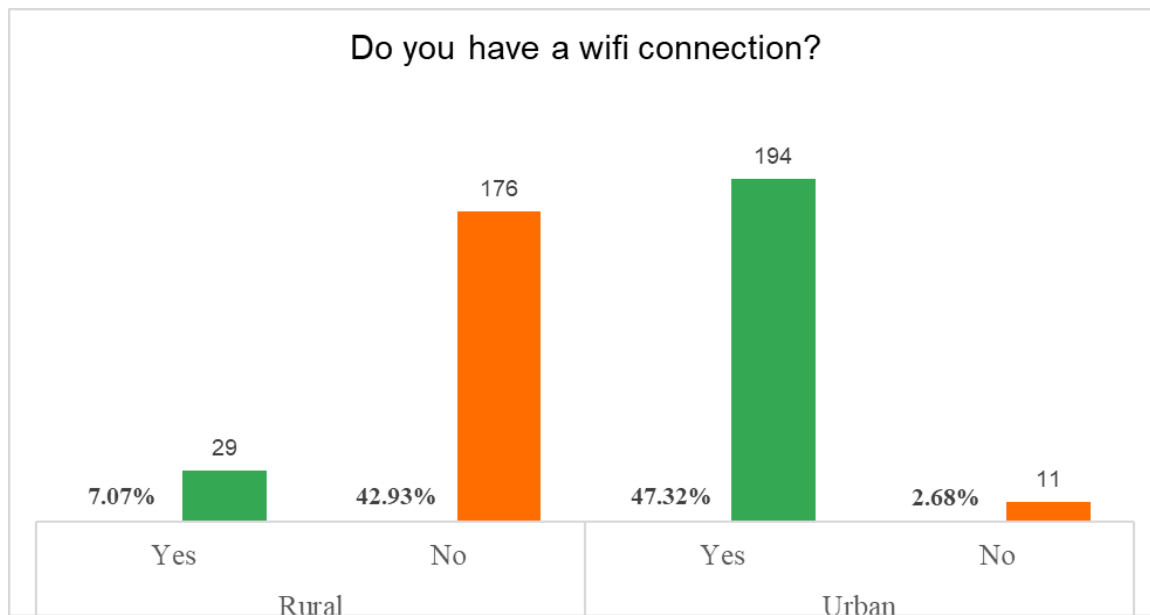


Figure 3: Wi-Fi Connection

the rural area. 47.32% are from urban areas. Then again, among 410 participants, 187 students responded no, they do not have a Wi-Fi connection. Among those 187 participants, 42.93% are from rural areas, and 2.68% are from urban areas.

4.3 Availability of Internet Connection

According to, the chart figure 4, we can see that among 410 participants, 40 students responded they have an excellent internet connection. Among these 40 students, 9.02% (37 students) are from the

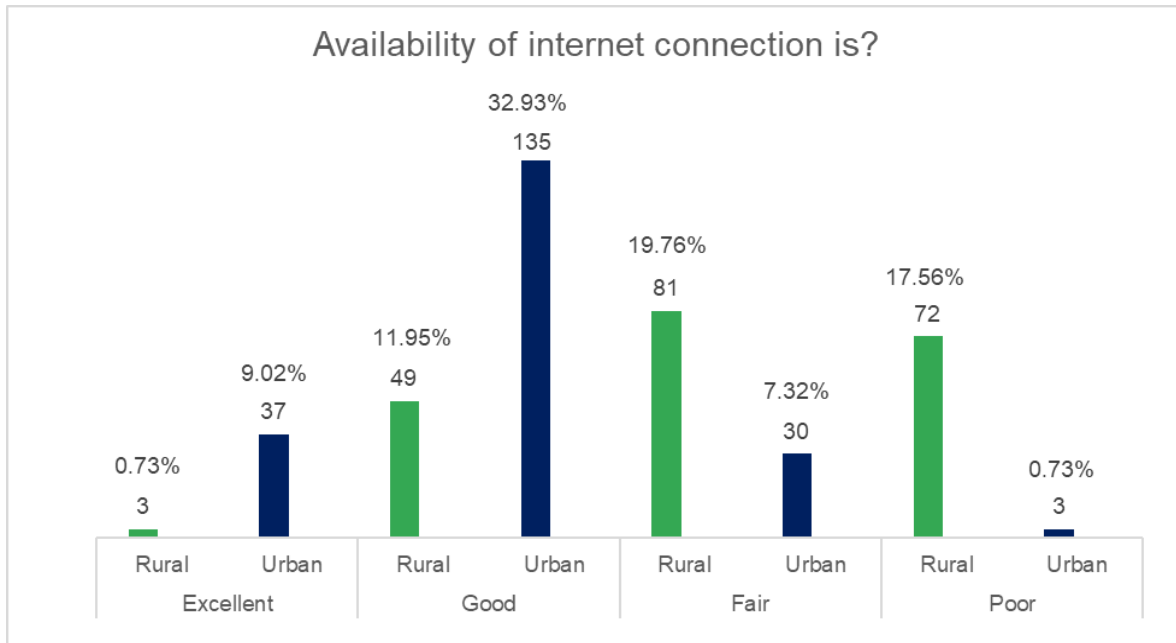
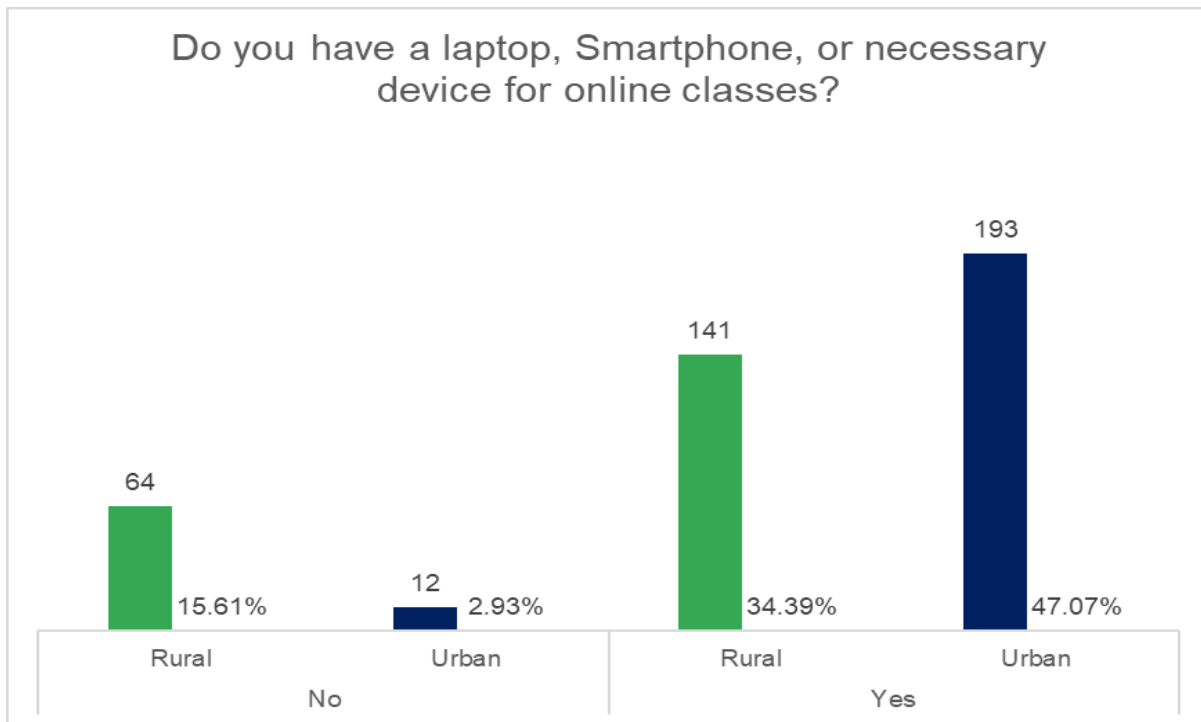


Figure 4: Availability of Internet Connection

urban area, and 0.73% (3 students) are from the rural area. Again, among 410 students who have participated, 184 students responded that their internet connection is good. Among those 184 participants, 11.95% (49 students) are from rural, and 32.93% (135 students) are from urban areas. Then again, among 410 participants, 111 students said that their internet connection is fair. Among those 111 students, 19.76% (81 students) are from the rural area. And the number of urban students is 30, which is 7.32%. Furthermore, among 410 participants, 75 students responded that they have a poor internet connection. Among those 75 students, 17.56% (72 students) are from rural area, 0.73% (3 students) are from urban area.

4.4 Do You Have a Laptop, Smartphone, Or Necessary Device for Online Classes?

The figure 5 is about whether all the students have laptops, smartphones, or necessary devices for online classes or not. Among 410 participants, 76 students responded no, they don't have virtual devices.



Figure

5: Availability of a laptop, smartphone, or necessary device

Among those 76 students, 15.61% (64 students) are from rural areas, and 2.93% (12 students) are from urban areas. Among 410 participants, 334 students responded yes, they have the necessary device for online classes. Among those 334 students, 34.39% (141 students) are from rural areas, and 47.07% (193 students) are from urban areas.

4.5 How Interactive Are Your Teachers with Their Students During Lectures on An Online Platform?

The figure 6 is about how interactive the teachers are with their students during lectures on the online platform. Among 205 rural students, 0.24% (1 student) responded always. That means their teachers

are always interactive during lectures. 4.63% (19 students) responded very often, 14.88% (61 students) responded sometimes, 19.27% (79 students) responded rarely, 10.98% (45 students) responded never, meaning that their teachers are never interactive with them during lectures on the online platform

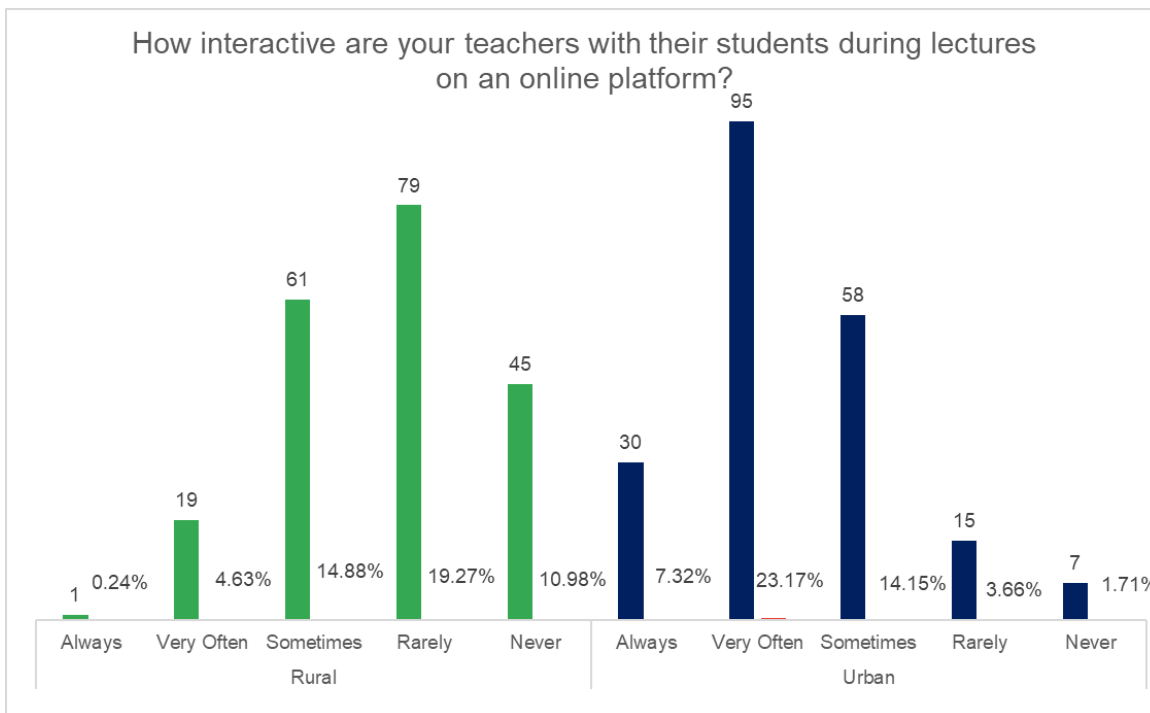


Figure 6: Interaction between teachers and students on online classes

Among 205 urban students, 7.32% (30 students) responded always. That means their teachers are always interactive during lectures. 23.17% (95 students) responded very often, 14.15% (58 students) responded sometimes, 3.66% (15 students) responded rarely, 1.17% (7 students) responded never. Means their teachers are never interactive with them during lectures on the online platform.

4.6 Do Your University Teachers Regularly Take Classes in the COVID-19 Pandemic?

The figure 7 is about whether the teachers take classes regularly during this pandemic or not. Among 410 participants, 269 students responded no. That means their teachers don't take classes regularly. Among those 269 students, 43.17% (177 students) are from rural areas, and 22.44% (92 students) are from urban areas.

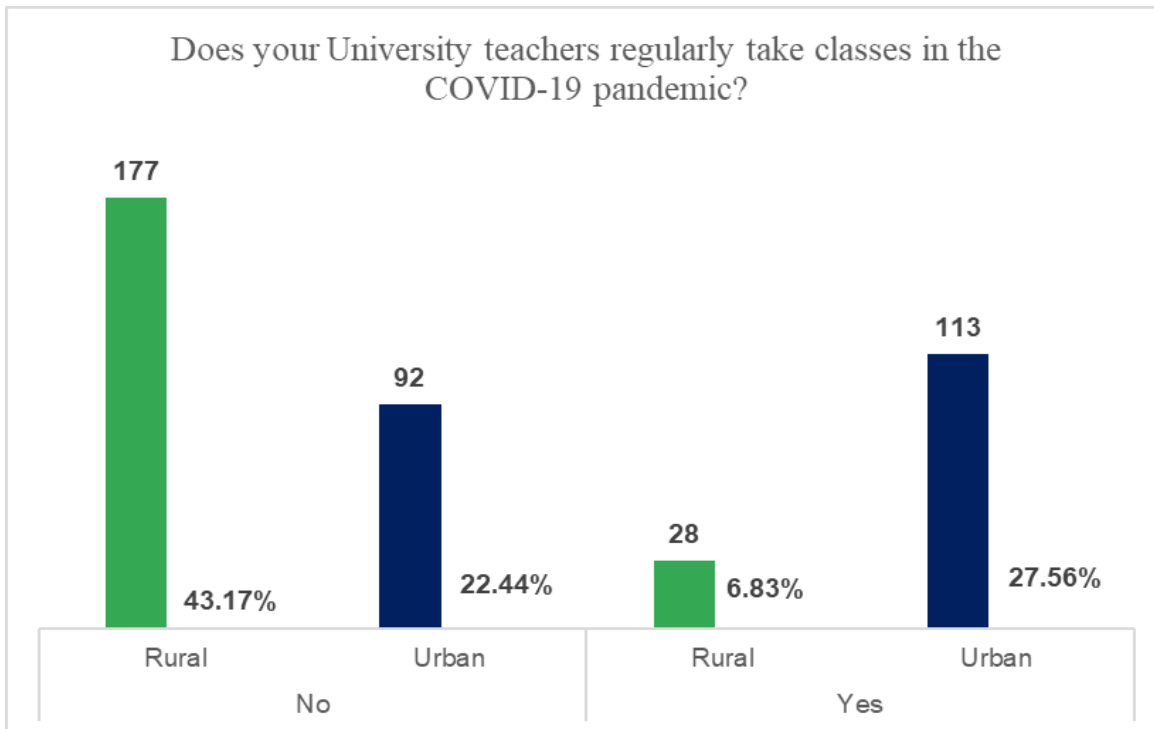


Figure 7: Online classes during COVID 19 pandemic

Then again, among 410 participants, 141 students responded yes. That means their teachers take classes regularly during this pandemic. Among those 141 students, 6.83% (28 students) are from rural areas, and 27.56% (113 students) are from urban areas.

4.7 Assuming You Get A Bad Grade, Do Most of Your Teachers Try to Give You Positive Reinforcement During This COVID-19 Pandemic?

The figure 8 is about whether most teachers try to give students positive reinforcement while getting bad grades during this COVID 19 pandemic. Among 410 participants, 65 students responded yes; their teachers try to provide positive support. Among those 65 students, 3.17% (13 students) are from the rural area. Another 12.68% (52 students) are from urban areas.

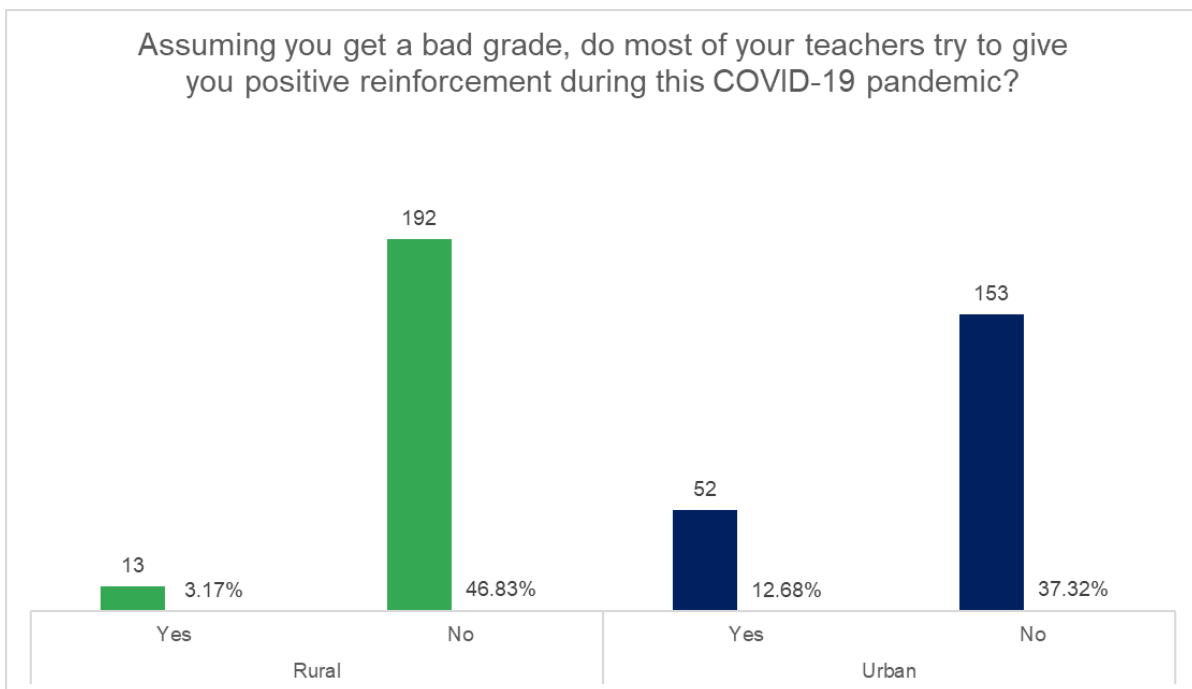


Figure 8: Teachers positive reinforcement while getting bad grades

Among 410 participants, 345 students responded no. That means their teachers do not try to give positive reinforcement while getting a bad grade. Among those 345 students, 46.83% (192 students) are from the rural area. Another 37.32% (153 students) are from urban areas.

4.8 How Do You Perceive the Relationship with Your University Teachers During the Period of the COVID-19 Pandemic?

In this survey question, we tried to find out the relationship with teachers during the period of the COVID -19 pandemic. For this, we used a linear scale to measure the relationship with students and teachers in 0 to 4 from below linear scale metrics (Table 1).

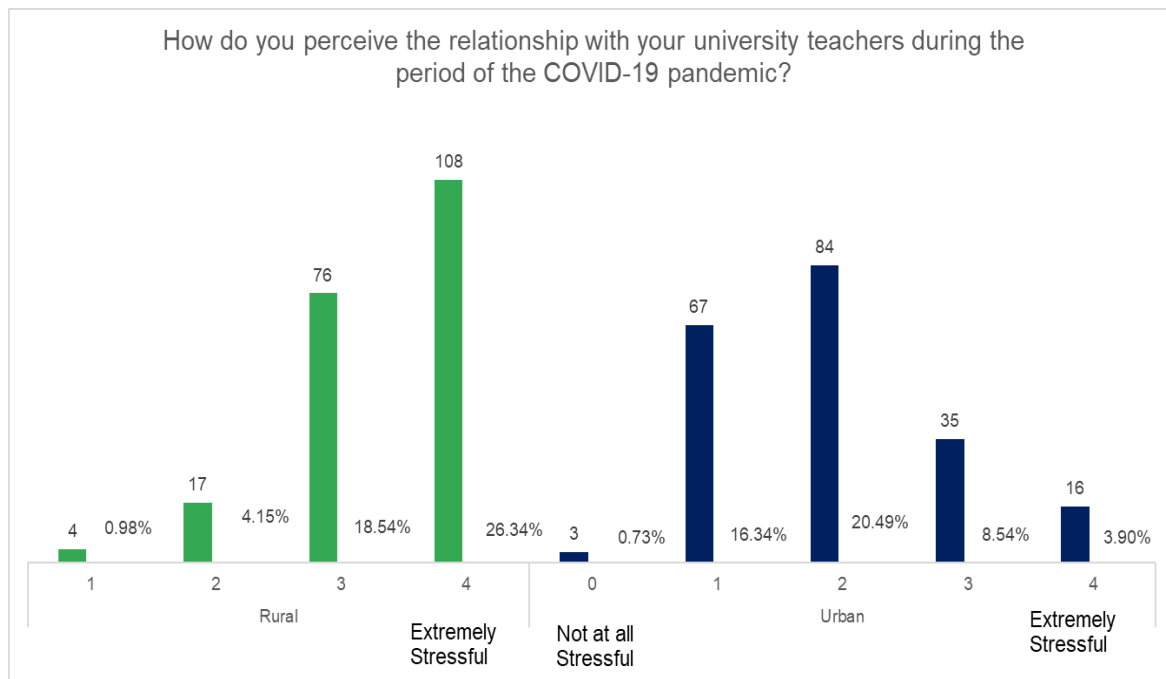


Figure 9: Perception of the relationship between teachers and students

Rural, 0.98% responded that their relationship with the teachers is less stressful, 4.15% responded moderately stressful, 18.54% states that Stressful, and 26.34% responded it extremely stressful.

In the Urban area, 0.73% responded that their relationship with the teacher is stressful, 16.34% responded it less stressful, 20.49% responded moderate stressful, 8.54% responded stressful, and 3.90% responded it extremely stressful.

| Stress Level | Scale |
|----------------------|-------|
| Not at all Stressful | 1 |
| Less Stressful | 2 |
| Moderate Stressful | 3 |
| Stressful | 4 |
| Extremely Stressful | 5 |

Table 1: Relationship Metrics with Students and Teachers

We found that 108 of 205 students in the rural area state that they perceive that relationship with their teachers is extremely stressful, which is 26.34% of the total participant in this survey. On the other hand, only 16 of the 205 urban area students (3.90%) perceive that during this covid period, relationship with their teachers is extremely stressful.

4.9 Can You Cope Up with The New Learning System?

The figure 10 is about whether the students could cope up with the new learning system or not. Among 410 participants, 236 students responded no they can't cope up. Among those 236 students, 39.51% (162 students) are from rural area, and 18.05% (74 students) are from urban areas.

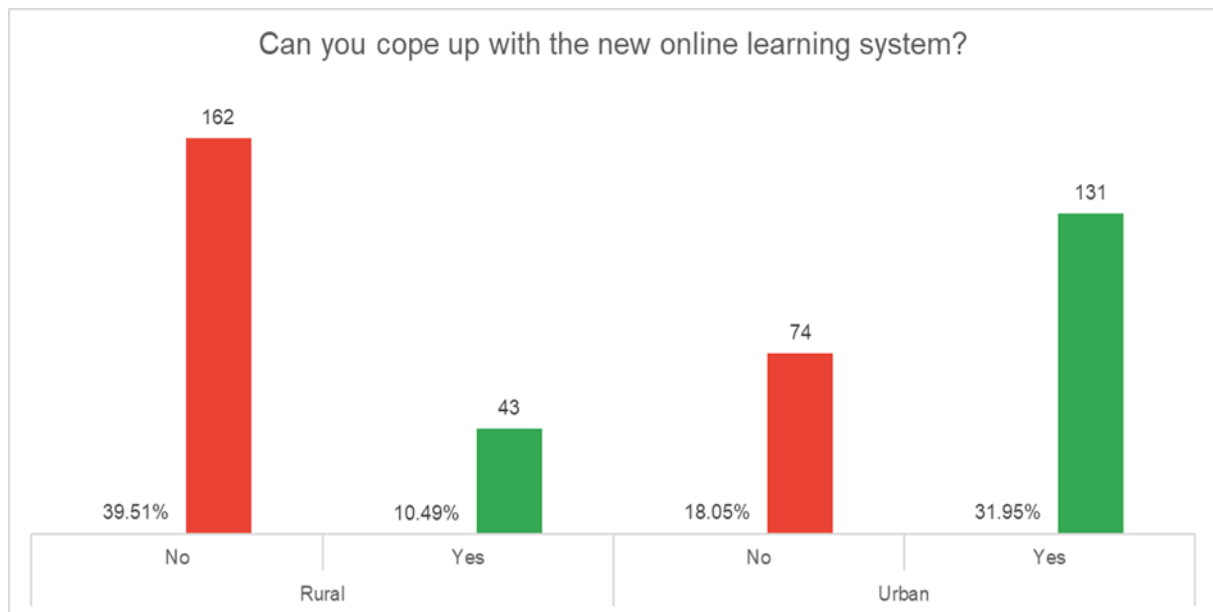


Figure 10: Coping Up with the New Learning System

Among 410 participants, 174 students responded yes; they can cope up with the new learning system. Among them, 10.49% (43 students) are from the rural area. And 31.95% (131 students) are from urban areas.

4.10 How Do You Feel About the New Learning Process?

The figure 11 is about how students are feeling about their new learning process. Among 410 students, 10 students have responded that they feel very easy about this new learning process. Among those 10 students, all of them are from urban areas. (2.44%).

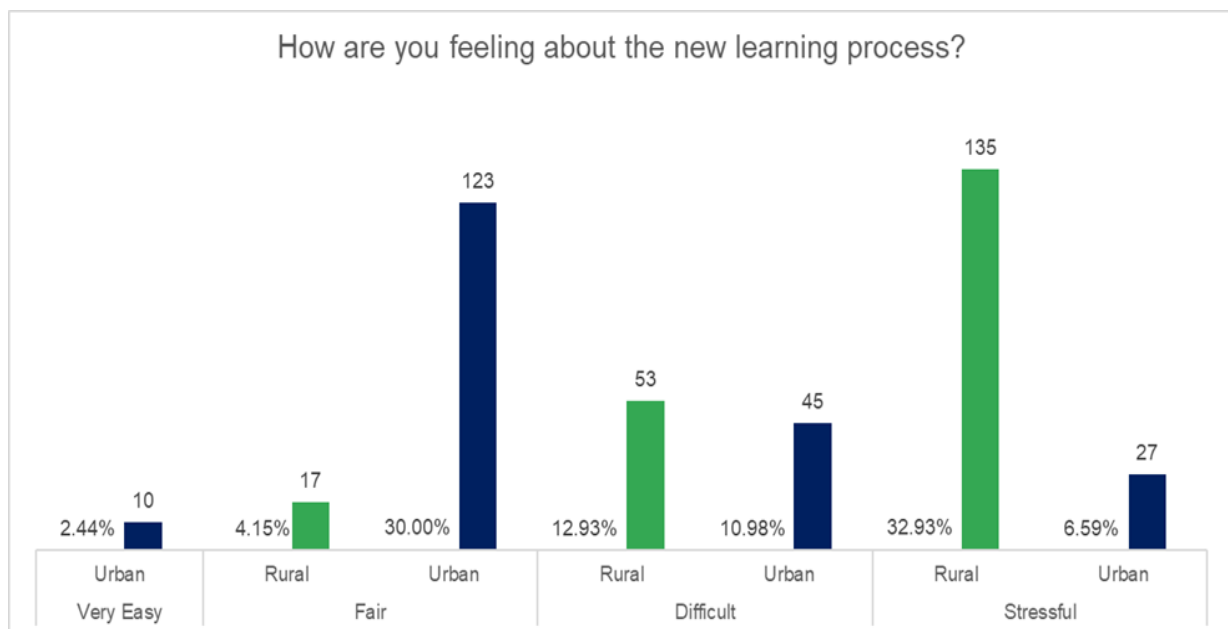


Figure 11: Feeling about the New Learning Process

Again, among 410 participants, 140 students have responded that they are feeling is fair. Among those 140 students, 4.15% (17 students) are from the rural area, 30% (123 students) are from the urban area.

Then again, 98 students responded that they are feeling it difficult among the total students who have participated. Among those 98 students, 12.93% (53 students) are from the rural area, and 10.98% (45 students) are from urban areas.

Furthermore, among 410 participants, 162 students have responded that they are feeling it stressful. Among those 162 students, 32.93% (135 students) are from the rural area, 6.59% (27 students) are from urban areas.

4.11 How Do You Perceive Your Academic Studying Experience During This Period of the COVID-19 Pandemic?

The figure 12 is about how is student’s academic studying experience during this pandemic. Among 205 rural students, 26.83% (110 students) responded that their academic experience during this COVID-19 pandemic is extremely stressful. And 19.02% (78 students) respond that their study experience was stressful. 3.41% responded it moderately stressful, 0.49% responded less stressful, and only one of the students respond that not at all stressful. (0.24%)

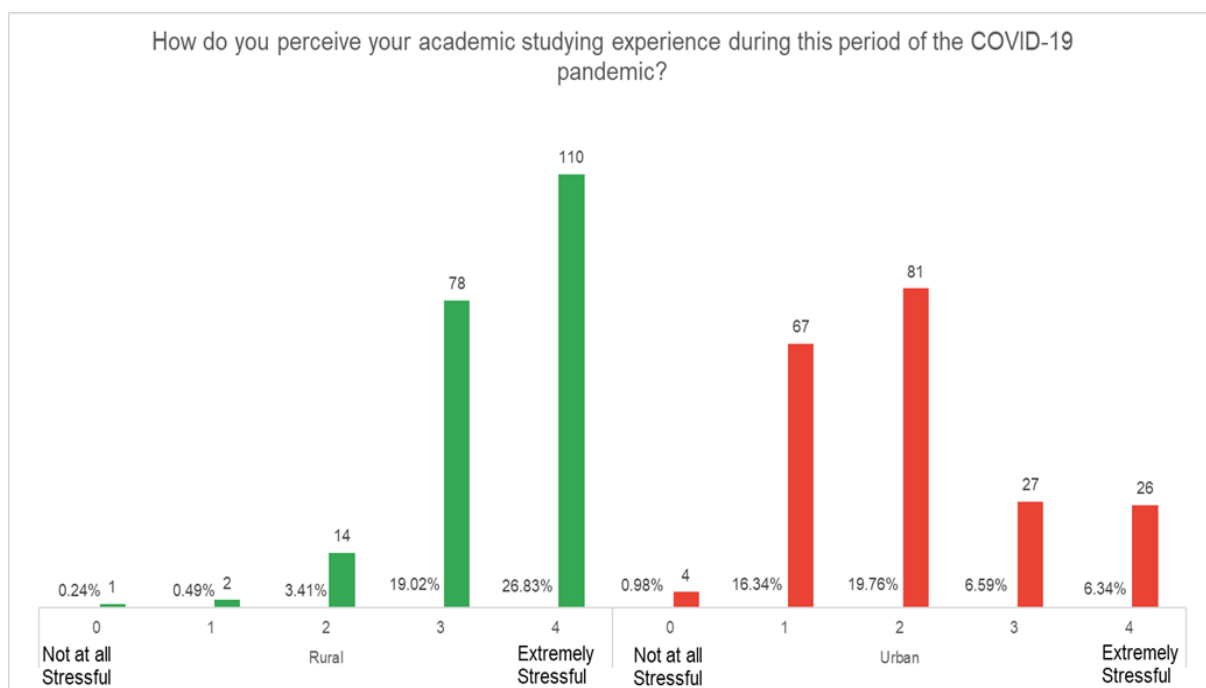


Figure 12: Perception of academic study experience

On the other hand, in the urban area, 0.99% responded not at all stressful, 16.34% responded less stressful. 81 students, which is 19.76% of all the participants in this survey, said that they find their academic experience during this COVID 19 period moderately stressful. However, 6.34% and 6.59%

of the total participant in the urban area find that their educational experience during this COVID 19 is extremely stressful and stressful, respectively.

4.12 Do You Feel Restless or Depressed During This COVID-19 Period?

The figure 13 is about among 205 urban students, 167, which is 40.73% of the total participant, said that they feel restless or depressed during this COVID period some of the time, 6.59% feel restless or depressed all of the time, and 2.68% feel none of the time.

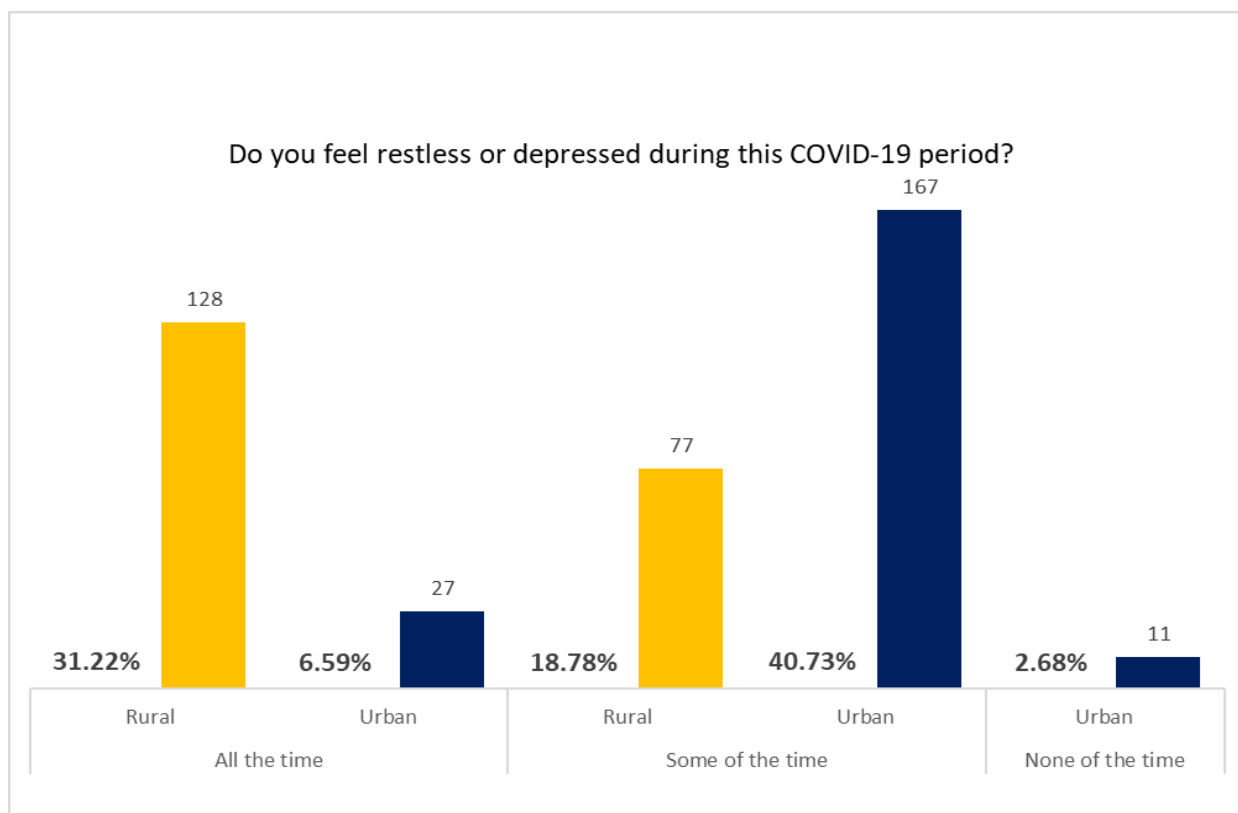


Figure 13: Feeling of restlessness and depression during COVID 19

Among 205 urban students, 167, which is 40.73% of the total participant, said that they feel restless or depressed during this COVID period some of the time, 6.59% feel restless or depressed all of the time, and 2.68% feel none of the time.

On the other hand, among 205 rural students, 128 which is 31.22% of the total participant, said that they feel restless or depressed during this COVID period all the time, 77 (18.78%) feel depressed and restless some of the time, and 0 (0%) feel restless and depressed none of the time.

4.13 Do You Feel Tired for No Reason?

The figure 14 is about whether the students feel tired for no reason or not. Among 205 rural students, 27.80% (114 students) responded that they feel tired all the time. 20.98% (86 students) responded some of the time, 1.22% (5 students) responded none of the time.

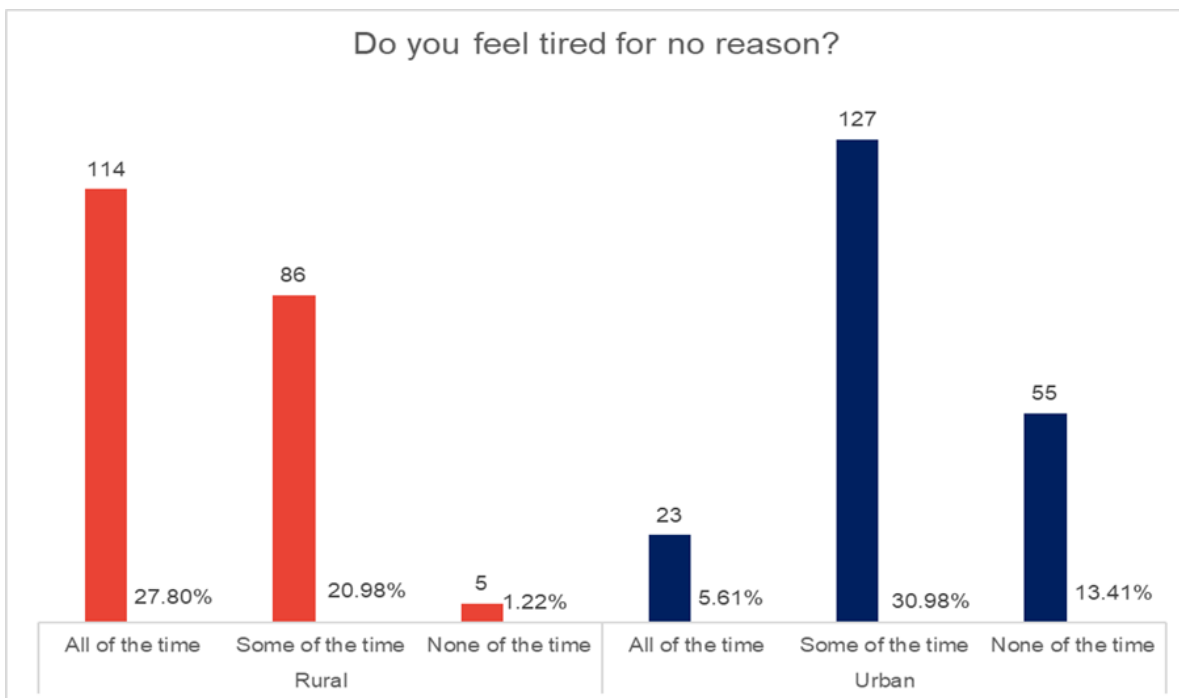


Figure 14: Feeling of tiredness

Again, among 205 urban students, 5.61% (23 students) responded that they feel tired all the time for no reason. 30.98% (127 students) responded some of the time, 13.41% (55 students) responded none of the time. That means they never feel tired for no reason.

4.14 Do You Feel Hopeless or Worthless?

The graph in figure 15 is about whether the students feel hopeless and worthless or not. We can see from the chart, 124 of 205 rural students said that they feel hopeless or worthless all of the time, which is 30.24 % of all participants of the survey. Moreover, 79 rural students said that they feel hopeless or worthless some of the time, which is 19.27%. Only 2 (0.49%) states that they feel hopeless or worthless none of the time.

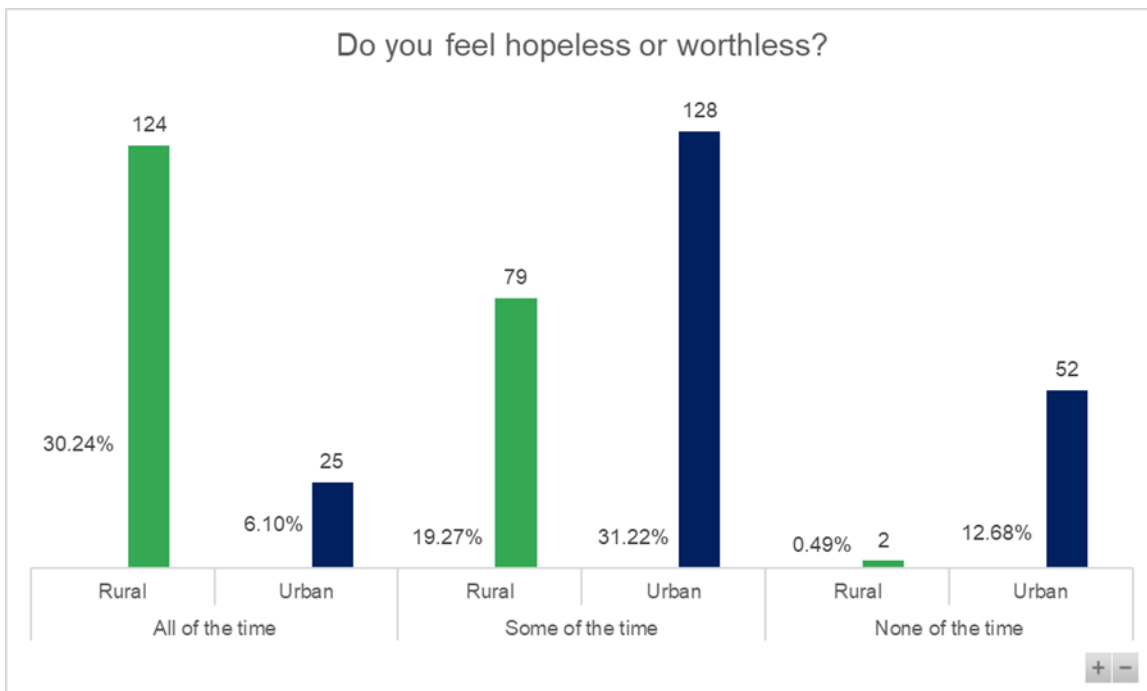


Figure 15: Feeling of Hopelessness or Worthlessness

However, 128 of 205 urban students in this survey said that they feel worthless or hopeless some of the time. On the other hand, 25 (6.10%) feel hopeless or worthless all of the time. In addition to 52 (12.68%) feel hopeless or worthless none of the time.

4.15 How Often Do You Have Negative Feelings Such as Despair, Anxiety, And Depression?

The graph in figure 16 shows that among 205 rural students, 97 of the students (23.66%) feel negative feelings such as despair, anxiety, and depression always, and 73 often have negative emotions such as despair, anxiety, and depression which is 17.80%. 33 (8.05%) responded sometimes, 2 (0.49%) states that they feel anxiety, despair, and depression rarely.

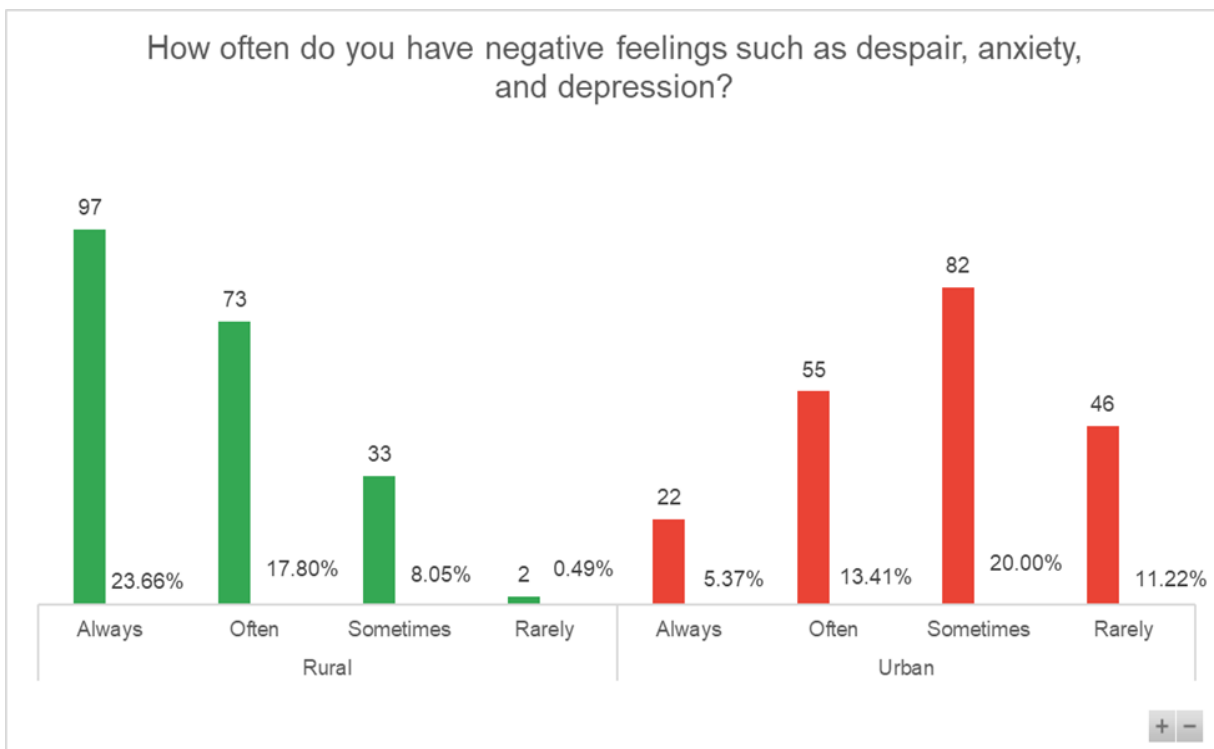


Figure 16: Frequency of negative feelings such as despair, anxiety, and depression

On the other hand, 82 students from the urban area sometimes feel despair, anxiety, and depression which is 20 % of all participants in this survey. Besides, we found that 22 (5.37%) always feels, 55 (13.41%) feels often, and 46 (11.22%) feels anxiety, despair, and depression rarely in the urban area.

4.16 How Much Do You Enjoy Life?

In figure 17, we found that in a rural area, 1.71% says that they enjoy life an extreme amount, 16.59% responded a moderate amount, and 31.71% says that they enjoy their life, not at all.

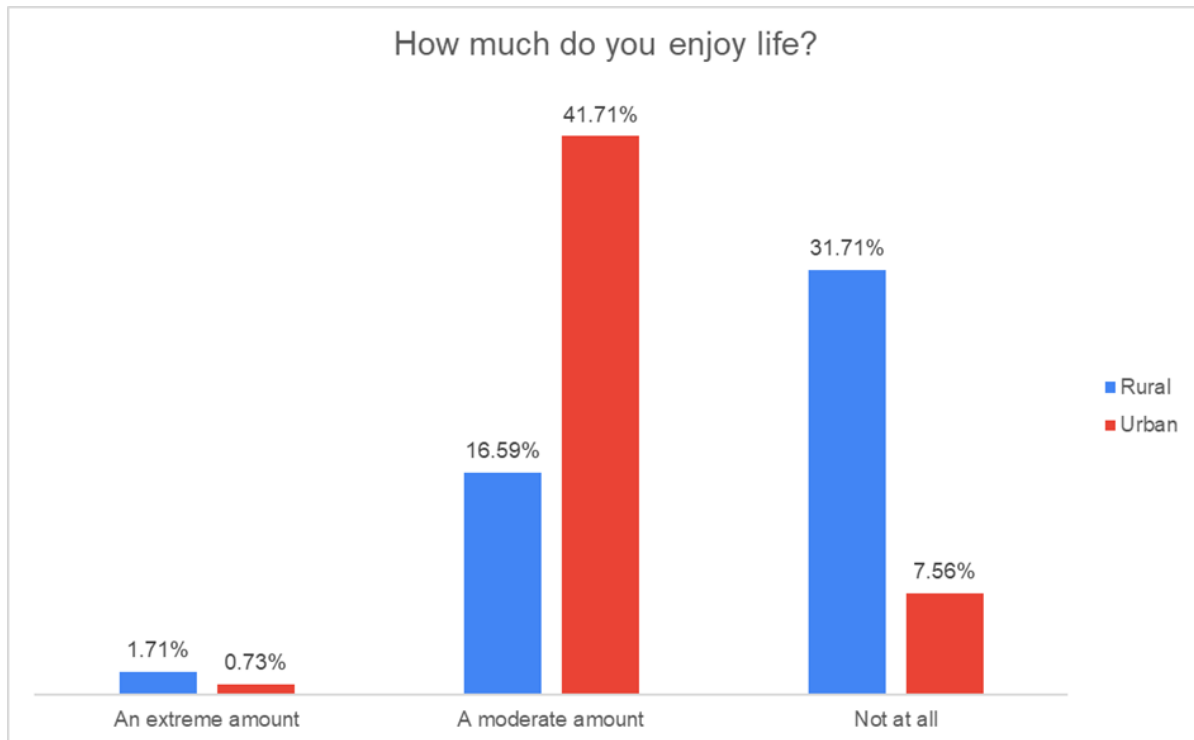


Figure 17: Capacity of enjoying life

On the other hand, in the urban area, 0.73% say that they enjoy life an extreme amount, 41.71% responded a moderate amount, and 7.56% responded not at all.

4.17 How Safe Do You Feel in Your Daily Life?

This graph in figure 18 is about how much safe students feel in their daily life. The above chart shows that in rural areas, 78 (19.02%) feel a moderate amount of safety in their everyday life, 8 (1.95%) feel an extreme amount, and 119 (40.24%) feel safe not at all in their daily life.

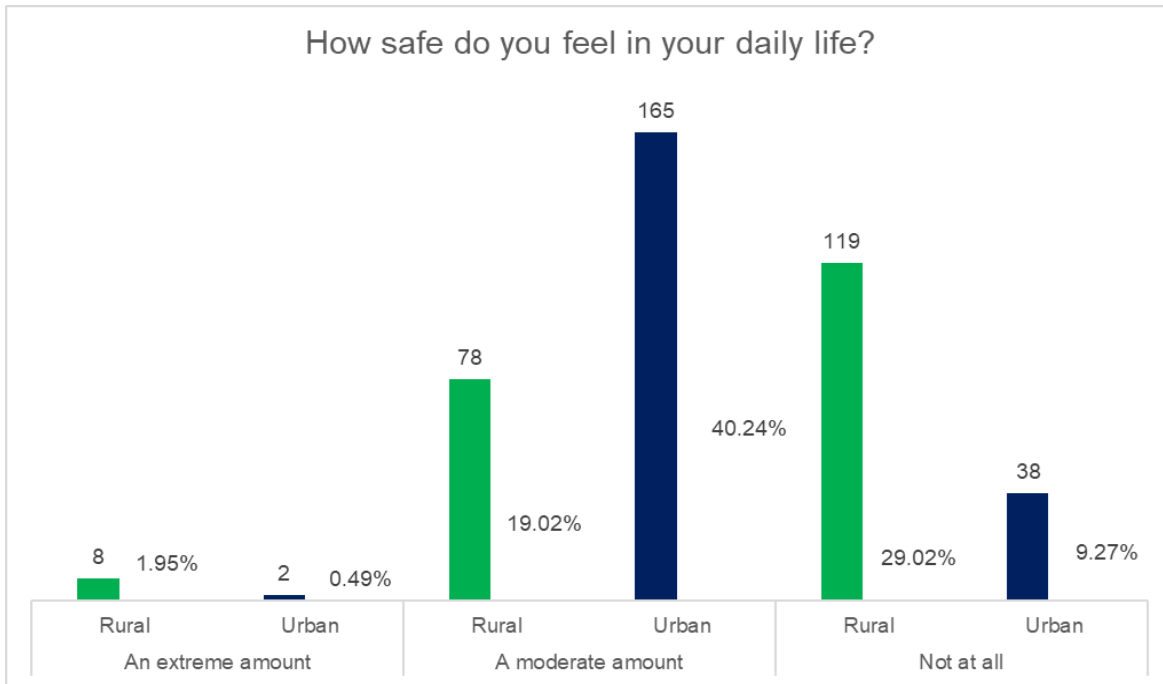


Figure 18: Capacity of feeling safe daily life

On the other hand, in urban areas, 2 (0.49%) feel safe an extreme amount in their daily life whereas 165 (40.24%) feel a moderate amount and 38 (9.27%) feel safe not at all in their everyday life.

4.18 How Satisfied Are You with Your Access to Health Services?

The figure 19 is about how satisfied the students are with their health service. From this graph, we found that 2 (0.49%) of the 205 respondents in rural area students find access to health service Satisfied, 55 (13.41%) found neither satisfied nor dissatisfied, 148 (36.10%) found dissatisfied.

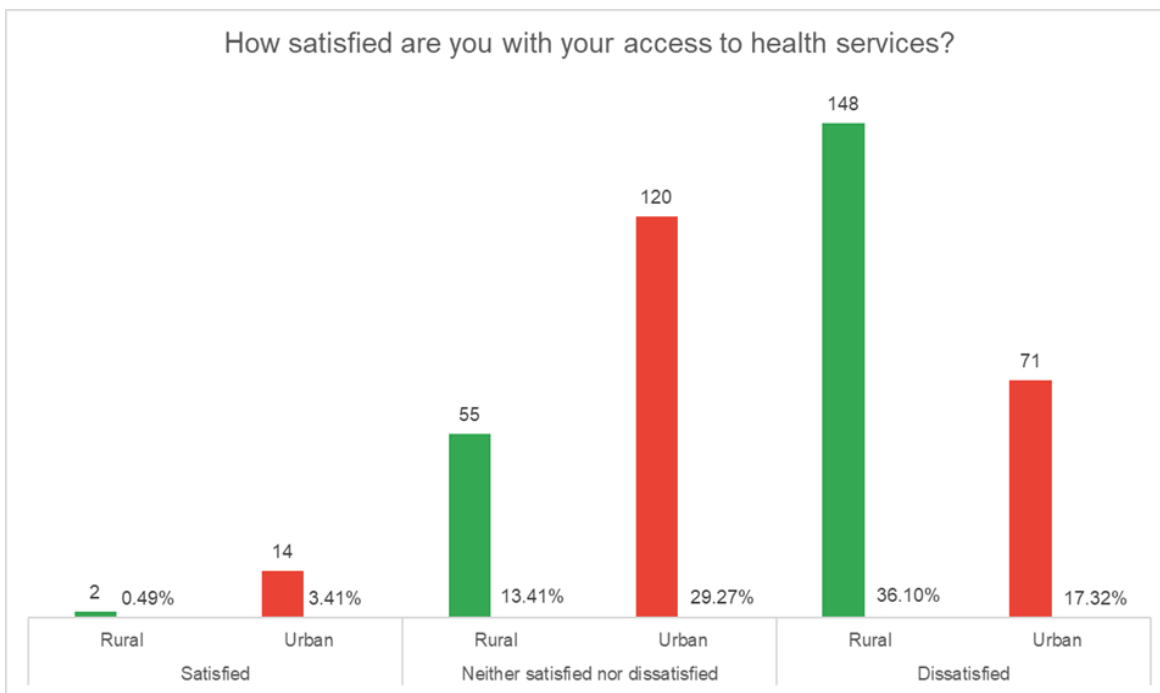


Figure 19: Satisfaction level with access to Health Services

On the other hand, in urban areas, 14 (3.41%) found satisfied, 120 (29.27%) found neither satisfied nor dissatisfied, and 71 (17.32%) found dissatisfied with access to health services during this COVID 19 pandemic.

4.19 Have you or any of your family members infected with coronavirus?

The figure 20 shows that 98 (23.90%) of the total participant in this survey of rural areas students' family members have been infected with coronavirus, and 107 (26.10%) states that none of their family members have been infected with the coronavirus.

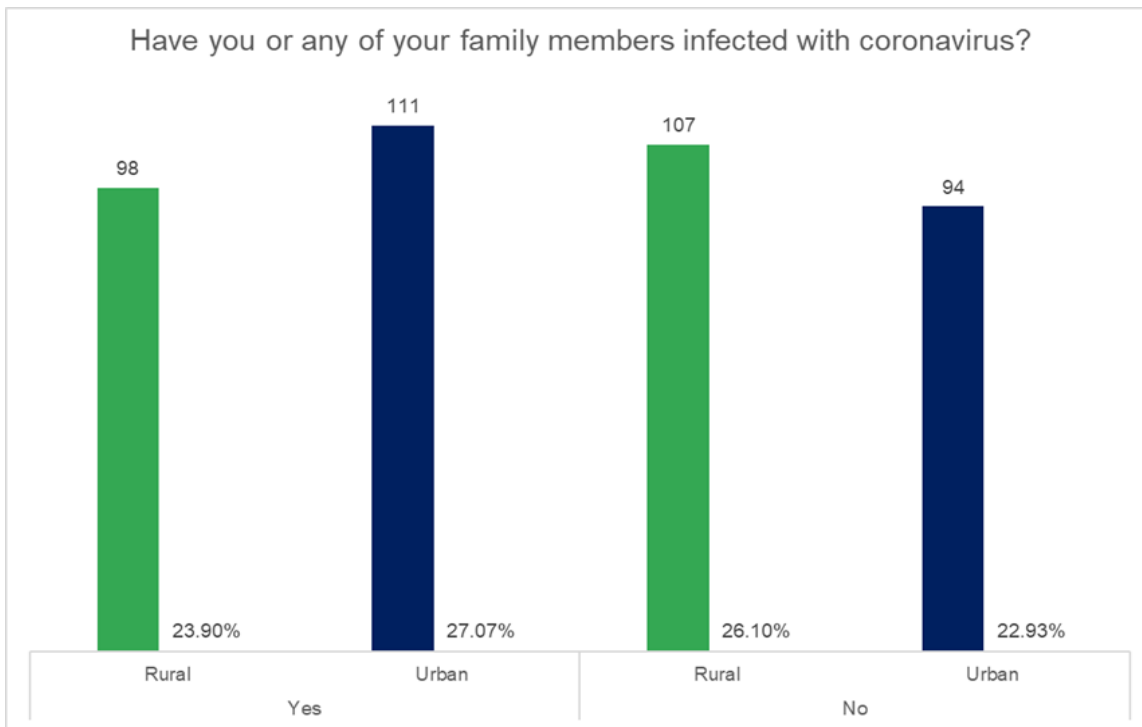


Figure 20: Family member infected with Coronavirus

On the other hand, in the urban area, 111 (27.07%) states that their family members have been infected with coronavirus, and 94 (22.93%) say that none of their family members have been infected with the coronavirus.

Chapter 5

Discussion

In this chapter, we will discuss the key findings and also raising the concern regarding the mental health of the university's students during this COVID 19 period and the relationship with e-learning.

5.1 Students Who Reside in Rural Areas Are More Stressed Than Urban Areas

We asked 410 students regarding their online academic experience during this pandemic and most of the respondents in the rural area said that they feel online academic learning experience during this pandemic moderate to extremely stressful (Table 2).

| Stress Level | Rural | Urban |
|----------------------|-------|-------|
| Not at all Stressful | 0% | 1% |
| Less Stressful | 0% | 16% |
| Moderate Stressful | 3% | 20% |
| Stressful | 19% | 7% |
| Extremely Stressful | 27% | 6% |
| Total | 50% | 50% |

Table 2: Stress Level of Urban and Rural Students

When we tried to find out the stress level of the students in an urban and rural area through our survey questionnaire, we found that 27% of respondents said that they are feeling extremely stressed while learning online in this pandemic period (Figure 21).

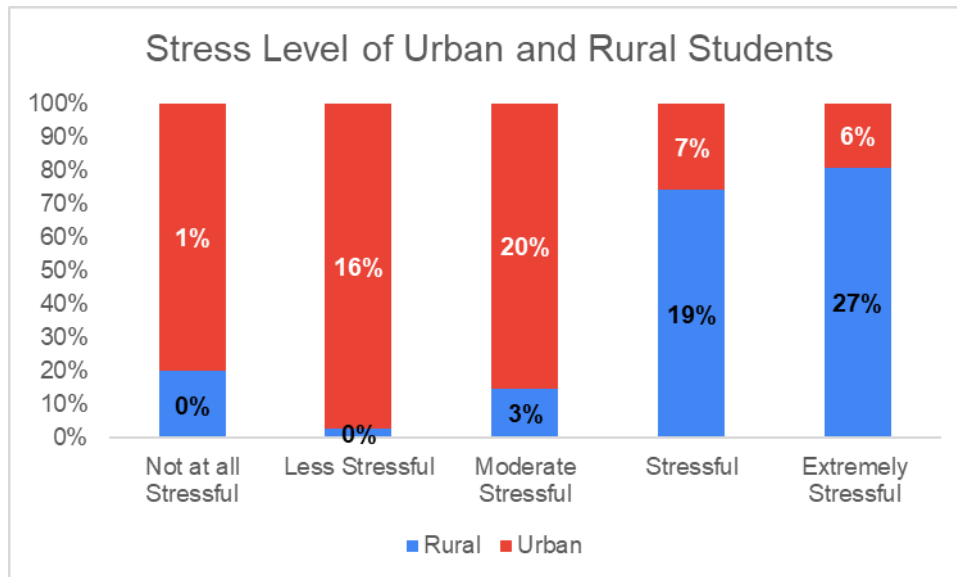


Figure 21: Stress Level of Urban and Rural Students in Terms of Academic Study Experience

On the other hand, we also asked whether they could cope up with the new online learning system during this pandemic period or not. Surprisingly, we found that 40% of students who are located in the rural area said that they cannot cope up with the new online learning system whereas 32% of urban students adapt with the new online learning system. This shows that rural students are facing difficulties to continue their online education because of the poor internet connection in most of the remote areas. Nevertheless, most of the rural area does not have good coverage of Wi-Fi connection as we found that 42.93% in the rural area said that they do not have a Wi-Fi Connection whereas 47.32% in the urban area said that they have Wi-Fi facilities. This is also another factor for which rural students are not capable to cope up with the online learning platform which results in a higher rate of extremely stressful experience of online learning during this pandemic period.

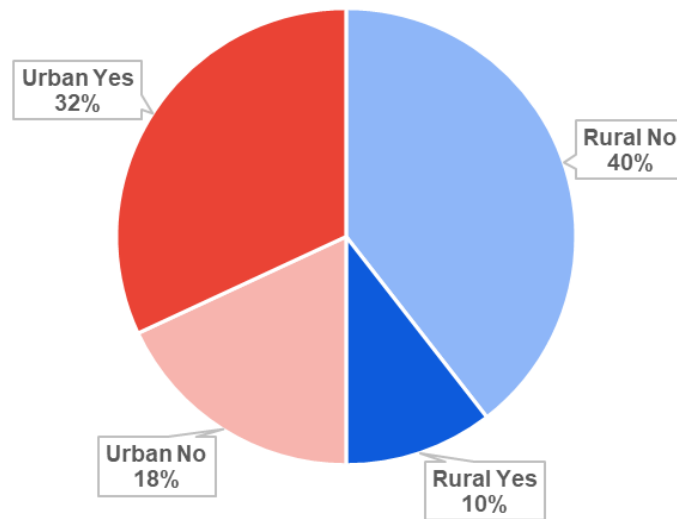


Figure 22: Coping Up with New Online Learning System

Another reason for having rural student's higher Extremely Stressful rate is that the relationship with their teachers during this COVID 19 period is stressful. About 108 (26.34%) from rural participants said that they perceive their relationship with the teachers during this pandemic as extremely stressful on the other hand only 16 (3.90%) from Urban participants found their relationship with teachers is extremely stressful. This data indicates that the rural students are facing difficulties to maintain communication and getting support from their teachers regarding the online academic process as they are not getting proper internet connection relative to the urban students.

The above discussion proved that the online learning system is not well equipped for rural students that leads into higher stress level than urban students. Moreover, lack of Wi-Fi connection makes the internet costly for most rural students and they have to depend on mobile data which also does not have good coverage of 3G and 4G. These all lead to their academic experience extremely stressful than the urban students.

5.2 Rural Students Are Facing More Depressive Symptoms Rather Than Urban Students

For finding the depressive symptoms we asked all the participants some indirect questions that have a connection with depression. We asked them about their daily life experience, tiredness, whether they feel hopeless or not, etc. Surprisingly, we found that the student from the urban area feel hopeless most

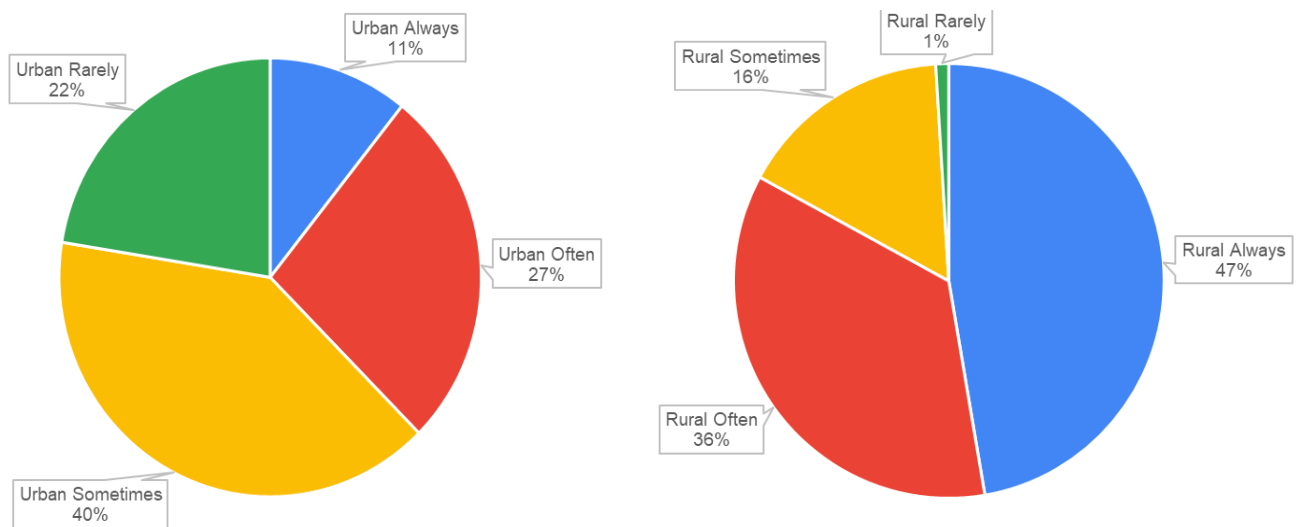


Figure 23: Negative Feelings Such as Despair, Anxiety, and Depression of Urban and Rural Students

of the time and they have more tiredness and bad life experience than the urban students. The reason behind this can be the high dissatisfaction rate of rural students in access to health service during this pandemic than the urban students. 148 (36.10%) of the rural student said that there are dissatisfied with the access to the health services in their area whereas only 71 (17.32%) of urban participants said that.

On the other hand, we also asked them about negative feelings during this pandemic such as despair, anxiety, and depression, and we found that 47% rural participants said that they always feel negative feelings such as despair, anxiety, and depression. However, only 11% of the participants from the urban area said that they always have feelings of those negative emotions.

The above finding and discussion suggest that students of the rural areas have a greater impact on their mental health and showed more depressive symptoms than students from urban areas.

Chapter 6

Limitations

This thesis study faces several limitations:

1. Time was not adequate to complete the thesis more perfectly.
2. Public university students are not involved in online education yet they participated in this study which may create some error in our findings.
3. As the pandemic going on, we had to fill up our survey through social media and online platform. It was bit challenging for us to complete the survey questionnaire through online media.

Chapter 7

Future Recommendations

There are a number of gaps in our knowledge around public and private university student's involvement in research that follow from our findings, and would benefit from further research, including realist evaluation to extend and further analysis the results and findings developed here:

1. We try to find out the Urban and Rural students mental stress level due to online education in this COVID 19 pandemic. We found a significant number of differences between the Urban and Rural areas students stress level. It would be better if we can be able to find out the other factors such as family income, conditions, and no. of family members to more accurate assessment in this mental health and stresses.
2. In-depth exploration of how online learning triggered stress level and how to cope up the new learning system in this pandemic period that would be very helpful. Further research might be comparing the student's mental health status with the different types of universities such as public and private.
3. More methodological work is needed on how to robustly capture the data from the students including their family members for further analysis and exploration of impact of online learning in COVID 19 era.
4. Research to develop approaches and carry out a full cost–benefit analysis of student's stress level in urban and rural areas would be beneficial. Although methodologically challenging, it would be very useful to conduct some longer-term studies which sought to quantify the impact of mental stress on such key indicators as participant recruitment and retention in trials.
5. A final relatively narrow but important question that we identified after data collection had finished is: what is the impact of the student's long term mental stress relative to the initial stage when the pandemic and countrywide lockdown started?

Chapter 8

Conclusion

The outcomes of the survey and the discussion chapter clearly suggest that the rural areas students are suffering more from depression, anxiety, stress in short depression, anxiety and stress syndrome in this pandemic period which lead to develop mental health issues. In addition to that, online education without properly equipped the students in rural areas, unable to access high speed internet connection such as Wi-Fi further developed more severe depression, anxiety and stress. Which is making it more vulnerable to the severe mental health issues for rural areas students. Consequently, this severe mental health problems can develop other physical and neurological complexity such as high blood pressure, chronic migraine pain, muscle cramp, and further weaken the immune system response (Morrison, 2021).

All previous studies showed that the majority of university students of Bangladesh are suffering serious mental health issues but those survey did not compare the mental health status between urban and rural areas. Our study finds the further and revealed that the rural areas university students are facing more severe mental health issues due to the online learning in this pandemic that the urban areas students. Furthermore, it is also found that the rural students are not properly equipped for this new online learning system and their academic experience during this pandemic period is more stressful than the urban areas students. These factors are deepening in the COVID 19 period for rural areas which result to risks of developing mental health issues more than the urban areas students.

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Appendix

Questionnaire

This survey questionnaire has been designed to investigate and compare the impact of Covid 19 pandemic on mental health between urban and rural university students

* Required

1. Email *

2. Which age group you are from? *

Check all that apply.

15 to 20

21 to 25

26 to 30

31 to 35

3. Gender *

Mark only one oval.

Female

Male

Prefer not to say

4. Your University Name *

5. Type of university you are studying ? *

Mark only one oval.

Public

Private

6. Current location? *

Mark only one oval.

Urban

Rural

7. Do you have a wifi connection? *

Mark only one oval.

Yes

No

8. Availability of internet connection is? *

Mark only one oval.

Excellent

Good

Fair

Poor

9. Do you have a laptop, Smartphone, or necessary device for online classes? *

Mark only one oval.

Yes

No

10. How interactive are your teachers with their students during lectures on an online platform? *

Mark only one oval.

Always

Very Often

Sometimes

Rarely

Never

11. Does your University teachers regularly take classes in the COVID-19 pandemic? *

Mark only one oval.

Yes

No

Other: _____

12. Assuming you get a bad grade, do most of your teachers try to give you positive reinforcement during this COVID-19 pandemic? *

Mark only one oval.

Yes

No

13. How do you perceive the relationship with your university teachers during the period of the COVID-19 pandemic? *

Mark only one oval.

| | | | | | | |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|---------------------|
| | 0 | 1 | 2 | 3 | 4 | |
| Not at all Stressful | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | Extremely Stressful |

14. Can you cope up with the new online learning system? *

Mark only one oval.

- Yes
 No

15. According to you, do you think that the E-Learning system is beneficial than on-campus learning? *

Mark only one oval.

- Yes
 No

16. How are you feeling about the new learning process? *

Mark only one oval.

- Very Easy
 Fair
 Difficult
 Stressful
 Other: _____

17. Are you facing any year gap or semester gap? *

Mark only one oval.

Yes

No

18. Did you have to cancel or postpone your higher education plan abroad due to this pandemic? *

Mark only one oval.

Yes

No

19. How do you perceive your academic studying experience during this period of the COVID-19 pandemic? *

Mark only one oval.

0 1 2 3 4

Not at all Stressful Extremely Stressful

20. How satisfied are you with your ability to perform your daily life activities in this COVID-19 pandemic? *

Check all that apply.

Dissatisfied

Nether satisfied nor dissatisfied

Satisfied

21. Do you feel restless or depressed during this COVID-19 period? *

Check all that apply.

- All the time
- Some of the time
- None of the time

22. Do you feel hopeless or worthless? *

Check all that apply.

- All of the time
- Some of the time
- None of the time

23. Do you feel tired for no reason? *

Check all that apply.

- All of the time
- Some of the time
- None of the time

24. How much do you enjoy life? *

Check all that apply.

- Not at all
- A moderate amount
- An extreme amount

25. How safe do you feel in your daily life? *

Check all that apply.

- Not at all
- A moderate amount
- An extreme amount

26. How satisfied are you with your access to health services? *

Check all that apply.

- Dissatisfied
- Neither satisfied nor dissatisfied
- Satisfied

27. How often do you have negative feelings such as despair, anxiety, and depression?

*

Mark only one oval.

- Always
- Often
- Sometimes
- Rarely
- Never

28. Have you or any of your family members infected with coronavirus? *

Mark only one oval.

- Yes
- No

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