

Impact of Corona Pandemic On Healthcare System: a Case Study of Raxaul Town

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Abstract

The primary health care system is the most protruding health system in any nation's health index measures. The worthiness is tested at times when the entire nation is fighting against a global epidemic that is the result of any biological disaster that occurred in any part of the world and has spread across their geographical boundary. The PHCs then becomes the focal point for the entire human community. Likewise, in the present time, the entire world is struggling with the corona pandemic. Scientists and medical practitioners from across the globe are working day and night, experimenting and researching to find a cure to this disaster which spread to parts of the world from a biological lab of Wuhan, China. Since the entire nation has been affected and many hospitals and nursing centres have had challenges with the current situations, it becomes important to examine the impact of the coronavirus pandemic on the primary health care system with special reference to the city of Raxaul, Bihar. It is very important to scientifically study and analyze the primary and secondary data collected for this research paper. The sources of data collection being the various daily newspaper articles, magazines, personal interviews with staff of the government and non-governmental organizations, public, administration and police personals. The data has been collected using random sampling and personal interview techniques. After carefully examining the results of the data collected, we can conclude the effect of the corona pandemic can be widely seen on the primary health care system, which proves the absence of basic facilities, structural anomalies and healthcare staff availability.

Introduction

The coronavirus pandemic has heavily disrupted our lives and besides direct desolation of the healthcare, it has indirect effects on livelihood, environment and the supply chains. It has pushed the health systems to experience the immense pressure and stretched many beyond their capacity. As such, responding to this public health emergency and successfully minimizing its impact requires every health resources to be leveraged. Failure to protect healthcare in this rapidly changing context exposes health system to critical gaps and can have a long-lasting impact on the health and well-being of populations.

While the public safety measures as issued by the government has been put into practise, the measures have resulted in significant operational disruptions for many companies including those in including those in healthcare industry. Staff quarantine, supply chain failures, and rapid reduction in customers demand have generated serious complications for almost all companies across regions. The revenue lost in this period represents a permanent loss and has put a sudden pressure on working capital lines and liquidity.

In approximately 50 kms of area, Raxaul happens to be a prominent place both with respect to business and transit, the primary healthcare system should by large advanced and equipped to deal with any unforeseen circumstances, which is otherwise at pathetic condition in the current days.

Examining the serious challenges faced by the patients visiting the facility and infrastructure issues, it becomes imperative to summarize the same in the paper.

Study Area

Raxaul is a sub-divisional town in the East Champaran district of the Indian state of Bihar. It is situated on the Indo-Nepal border opposite Birgunj (Nepal), and serves as an entry point to Nepal by road and rail. The geographical coordinates of Raxaul town are latitude 26° 58' 47.35" N and Longitude: 84° 51' 2.34" E. The town is located on the banks of Sariswa and Bangari Rivers, and is one of the most important customs zones between Nepal and India. The town is also famous as it serves as the post for hassle free trade between the two countries.

Since Nepal is a land locked country and as per the **Treaty of the Trade** between Govt. of India and Govt. of Nepal, Raxaul caters to both Bilateral Trade and Transit Trade.

India and Nepal have "open border" under 1950 Indo-Nepal Treaty of Peace and Friendship. The bonafide citizens of India and Nepal do not require passport and visa to enter each other territory. However, passport holders of countries other than Nepal and India have to undergo the process of immigration clearance and customs procedures while crossing the border. The main purpose for their visit being Tourism, Medical, Religious and Business. Third country nationals seldom use this facility for entry into India or exit from India

The Indian border town of Raxaul has become one of the busiest towns for heavy transportation due to high trade volume. Almost 56% of the total products of Birgunj are exported to the Indian state of Bihar through this route.

LOCATION MAP OF STUDY AREA

CLIMATE

Raxaul experiences moderate climate. There is a lot of rainfall in the summer, and in the winter, it is quite dry again. The average annual temperature for Raxaul is 33° degrees and there is about 248 mm of rain in a year. It is dry for 282 days a year with an average humidity of 42% and an UV-index of 7.

The highest average temperature in Raxaul is 39°C in May and the lowest is 24°C in January.

DEMOGRAPHY

As of 2011 India census, Raxaul Bazar had a population of 55,536. Males constitute 54% of the population and females 46%. Raxaul Bazar has an average literacy rate of 75.62%, higher than the state average of 61.80%: male literacy is 82.14%, and female literacy is 68.25%. In Raxaul Bazar, 16.21% of the population is under 6 years of age.

Raxaul is a Town and Block in East Champaran district of Bihar state in India. Total number of villages in this Block is 43. Raxaul Block sex ratio is 899 females per 1000 of males.

Expected Population of Raxaul Block in 2019/2020 is between 171,197 and 217,085. Literate people are 68,973 out of 44,270 are male and 24,703 are female. Total workers are 64,329 depends on multi skills out of which 43,998 are men and 20,331 are women. Total 8,730 Cultivators are depended on agriculture farming out of 7,217 are cultivated by men and 1,513 are women. 27,286 people works in agricultural land as a labour in Raxaul, men are 20,923 and 6,363 are women.

PURPOSE OF STUDY

The focus area of the study or the research is to empirically investigate the various aspects of the healthcare centres in the Raxaul town which are in operation and has served its patients in the critical times of the world pandemic. We will also examine other relevant healthcare centre sponsored by other market players. In the course of my study, I would also talk about the thought process of the four pillars such as the public, local leaders, police and healthcare workers.

By summing all the views and thoughts or ideas collected during the personal interviews, we will be able to see the impact of the coronavirus pandemic on the healthcare centres of the Raxaul town.

Also, my aim will be to study and examine the flaws which should be removed in order to carry out the functions more smoothly. This would help in getting a better and managed healthcare facility and will eventually help the affected to get better treatment.

The synergy of the public and private players will bring in lot of new and advance mechanics of the treatment and thereby reducing the time taken and ultimately benefitting the end user.

RATIONALE OF THE STUDY

Raxaul happens to be a very small town with respect to the areas and the population but at the same time it holds a very prominent position on the geographical aspect by being on the verge of the international demarcation of India and Nepal. Lot of tourists and businesses use the route to visit the other country due to the simplified process and easy availability of the transport so having a better healthcare facility is both its need and requirement. I could not find any prominent study discussing any aspect about the healthcare system of Raxaul. The published and unpublished sources have never been in mainframe discussing the position of the healthcare system of the town and for the same reason the basic health of the area is below the national average. Although the PHC has been upgraded to a sub divisional hospital in the current year and has sanctioned 4 APHC and 33 HSC to its list yet the basic facility is still at the mercy of the state. The relevancy of all these issues has been discussed throughout the paper in various sections. Accordingly, this study aims to widen the horizon far beyond both in terms of scope and dimension which is reflected below as the objectives of this study.

OBJECTIVES

- To analyse the background of healthcare facilities and their preparedness for corona pandemic.
- To understand and analyse the view of general public.
- To understand the role of local administration amid COVID-19 pandemic.
- To find out the role of local leaders amid COVID-19 pandemic.

Research Design

The research is qualitative research and analytical in nature. It is based on qualitative data gathering technique.

Data

Since the study aims at the Healthcare sector in the coronavirus pandemic, the relevant health data is collected for the entire period of study. Scope of study includes both the public as well as the private healthcare providers. Further, appropriate/relevant data was collected to empirically investigate the determinants, direction and impacts of healthcare. The major challenge and strength of this study is the collection of quality data. Since this is an empirical study, data is collected from different sources like government and private hospitals which are currently functional and are treating patients on regular basis. This would provide an insight about their way of handling the cases related to the pandemic. Major source of information and data is personal interviews and questionnaires. Search engines like Google, Yahoo, PubMed and MSN along with various conversations have been helpful in shaping the research paper.

Ministry of Health and Family Welfare, Ayush, Ministry of Finance, World Bank, RBI, World Health Organization, NITI Aayog and other government web sites have authentic data bank for healthcare variables. Information has been obtained by interactions with the officials of the Hospitals (Private and Public) through structured interviews. To complete the set of information, the views of public and office bearers has also been incorporated.

Sample Size

For the multivariate analysis, we require availability of data of all explanatory variables. However, it is difficult to obtain the information of all concerned variables. This study seeks to have the sample size of at least 100 observations for a comprehensive analysis (including questionnaire and personal interviews). Nevertheless, it is important to mention that various sample size for each segment has been used for testing of different hypotheses subject to availability of information for concerned variables

Methodology

This research is an outcome of the combined views of the participants of the personal interview and questionnaires. The participants have been strictly chosen to be the resident of the Raxaul town. There are a few people who such as the police personals, PHC staff, block staff but their views have been

included since they have been commissioned to serve the town at the time of pandemic. Since, the data is considered from different sections of the society, it is selected among pooled, panelled and cross-sectional models for different sections.

Data Analysis

Participants

Considering the census 2011, the combined population of Raxaul town is above 55000 represented by an MLA supported by Police Station and Nagar Parishad along with 2 major healthcare providers.

Among the people who responded, most of them were dependent on the government for the updates or any kind of information related to coronavirus pandemic as the area is backward and there are very less sources for media and NGOs to cater.

People did face lot of challenges like loss of earnings, exhausting personal savings and others which are referenced below using the responses captured and presented with the help of graphs.

The above graph shows about people of town experiencing awareness about the pandemic situation occurring all over the world. The main source of getting information about COVID-19 was from Government sources, relied news channels, radio channels, news papers etc. and local administration of Raxaul town. The role of local media was not much appreciable as clearly shows in the graphs as well and that's shows the poor infrastructure development of town, unavailability of correct information and unawareness among the people.

Food and water are the most essential elements after air (oxygen) for sustaining life on this planet but because of this COVID-19 pandemic situation, country was under lockdown situation where everything (industries and shops) were completely shut down for the time period and many people lost their livelihood and faced basic food crisis situation. The main problem after food crisis was mental health of people as they experienced depression, anxiety, and hyper tensions and other similar severe illness.

The major shops in Raxaul town are for clothes and related products which require staffs or labour, some who work in shops in monthly wages and some of them who work as loading and shifting of products from transport on daily wages. Because of the nationwide lockdown, many workers lost their source of livelihood who were the sole source of bread for their family members and this did badly affect their lives.

Additionally, the current situation is very threatening and the same is clear with the responses from the general public.

Many common people who work every single day to earn their livelihood starved badly and were only dependent on the daily food distribution carried out by various agencies since the pandemic took away their earning sources and left them with bare hands.

A lot of the general public feels that the situation in the town is not very good and the life is at risk due to lack of facilities at the PHCs.

Primary Healthcare Centre, Raxaul

The government run primary health centre which has been upgraded as the sub divisional hospital recently. There has been merely any extended support from the government agencies in these tough times. The research talks about the shortage of the hospital staffs on a regular day and increasing them should be the primary objective of the concerned authorities.

To help stop the spread of the coronavirus, a team of 6 doctors from Patna and Motihari was sent to Raxaul PHC for examining the patients for about two weeks.

The vacant position of the PHC, Raxaul should be immediately filled and should also be increased in order to cope with the rising population and retiring healthcare workers.

During the pandemic, there was a drastic change in the patient's seeking clinical help and those who visited the hospital premises were strictly advise to follow the safety protocols.

Leaves and any additional allowances were immediately cancelled and all the staff worked tirelessly day and night to ensure they provide the best possible service to the affected. The hospital staff were incentivised with a basic pay for 1 month in return for all their services. The fundings for Asha workers, Anganwadi staffs was delayed by the state agencies.

The government made the test kits available with the PHC and the tests for all the needy person was conducted free of charge. Even the private care referred their patients to PHC for the test and PHC was kind enough to facilitate them free of charge.

As on January 20, 2020, following are the coronavirus bulletin from Raxaul PHC:

Table-1 Source: PHC Record Book

Details	Count
Current Active Case	0
RT-PCR	71
True Net	288
Antigen	40735
YTD Positive Case	218
Casualty	6 (Co-morbid); 1 Female 5 Male

Despite the traumatising condition of healthcare facility, the casualty rate was very low. 1 female who passed away had cancer and 5 males who contracted the virus were affected by the old age disease.

1560 vaccines have been allocated for the healthcare workers in the first phase and this is expected to grow gradually covering almost everyone referred as frontline worker.

The following is the profile of the Raxaul PHC.

Table-2. Source: PHC Record Book

PHC Staff	Regular	Contractual	Vacant
Chief Medical Officer	1		
Medical Officer	6		
Medical Officer - Child	1		1
Medical Officer - General Surgeon	1		1
Medical Officer - Gynae	1		1
Medical Officer - Ortho	1		1
Unani Medical Officer		6	
Ayurvedic Medical Officer			
Homeopathic Medical Officer			
Block Health Manager		1	
Block M&EO		1	
Extension Educator	1		
Health Educator	2		2
Pharmacist	1	1	
Lab Technician		3	5
Counsellor		1	
Nurse - A Grade		1	
ANM	20		
Family Welfare Worker	1		
Health Worker	1		
Computer Compiler	1		
Clerk	2		
Parichari	9		
GNM	25		25

Sh. Anil Kumar, UNICEF Block monitor talked about the awareness campaign which was carried out including door to door oxygen level check and digital temperature reading.

SRP Memorial Hospital, Raxaul

The private hospital, SRP Memorial Hospital introduced Doctor on Call facility to help the patients get expert opinion from the doctors without visiting the hospital through telecommunication devices.

Since the pandemic was a new to everyone and there was no way to examine the same in the initial days, the hospital used to treat the patients using CT scan of the lungs to determine if the person is healthy or infected.

Later on, when the government procured the test kits and made it available in the primary health centres, they were conducted for free for all those who really needed the tests as referred by the hospital.

Nagar Parishad

Additionally, Nagar Parishad employs approximately 300 staffs including daily wagers and permanent staff. In addition, we have 25 elected councillors who look after the ward's sanitation.

The Nagar Parishad did their best of efforts to restrict the contamination by getting the area sanitized, creating awareness and sharing safety guidelines with the people. The sanitation workers did their best to remove the garbage on a daily basis so that the people living in the area should not be affected by the garbage pile up.

The executive staff talked about the awareness campaign and sanitization drive which they undertook during the pandemic.

The Nagar Parishad spent about approximately INR 10,11,052/- in camping and quarantine centres and INR 9,88,460/- in sanitization. The funds spent has been out of pocket expenditure and is still awaited to be sanctioned from the state agencies. Also, the management has been very disturbed as the salary of the staffs has been delayed for almost all staff for about a year now.

Sh. Kashinath Prasad and Smt. Usha Devi discussed about the awareness campaign, safety measures and role of nagar parishad in keeping the city clean during the pandemic.

The Block development officer Mr. Sandeep Saurav, circle officer Mr. Vijay Kumar and returning officer Mr. Santosh Singh also contributed in by sharing their experience about the pandemic. The circle officer shared about the expenses made by the block and the amount spent was about INR 56,00,000/- against the allocated amount by the state agency was just INR 21,00,000/-.

Talking about the police personnel, the deputy superintendent Mr. Sagar Kumar along with his team of one inspector and 5 sub inspectors and 5 assistant sub inspectors talked about their views and experience of dealing with the pandemic. The major challenge they faced was of the sanitization of the uniform on daily basis. They tried their best to assist the block officers, local administrators in maintaining law and order of the city.

Additionally, they talked about the exertion to an extent that even the police chef was allocated with the responsibility of guarding the quarantine and isolation centres.

One of the major challenges which the officers faced was about the transfer during the pandemic. This affected them in giving their best to serve their area as the instructions was overlapping with the officers

servicing before them and vice versa.

The similar situation was faced by the BDO who took over the office in August 2020.

Sh. Pramod Sinha, MLA – Raxaul who took over the office after the November 2020 assembly elections shared his experience wherein, he along with his team distributed the food and medicine to the needy people and donated to several affected from his personal savings. He ensured about the proper channelization of the test kits so that it reaches the centres asap and proper testing can be completed.

Even when the vaccine is rolled out, the beneficiaries are properly registered and the concerned authorities are themselves working to ensure a fair supply.

Almost everyone we met during our interview process, took the pandemic as a challenge to save their fellow citizens by constantly spreading awareness, supplying food to the needy and getting preventive medicines for immediate use.

Apart from the people holding any office of profit from the government, several financially stable people came forward to help the society by means of providing food and clothes to the severely affected.

Conclusion

PHCs acted as the lifeline in this coronavirus epidemic. It is also evident in our research findings that the current time have a profound impact on the core competencies of PHCs. They try to demonstrate a flexibility and resilience when confronted with the challenges but failed miserably due to the poor infrastructure, mismanagement and shortage of staffs.

Apart from being psychologically affected, people were physically unfit and faced several challenges in the earlier days when the proper testing was unavailable and special care was missing. The pandemic has left us with a lesson for all the sectors of people and specially the government to formalize, structuralize and be prepared in case any other adverse scenario occurs. The government should work towards ensuring a decent hospital with fully functional basic facility at all levels and vacant positions to be immediately filled in. The administration should be reviewed with proper channels at regular intervals to avoid any anomalies which can hamper at the functionality in any specific area. The state agency should also encourage advanced research at regional levels to investigate new and varied types which can empower the nation to face any other pandemic which may have negative impact as the coronavirus.

Suggestions

Scrutinizing the condition and studying the results of the research, we can suggest that the government and concerned agencies should work on strengthening the various agencies working in the field of healthcare and sanitation. The Nagar Parishad should be allowed to exercise additional rights to generate additional revenue so that they can be empowered to work more efficiently.

Declarations

Conflicts of Interest Statement

The authors whose names are listed immediately below certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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Author names:

None

This statement is signed by all the authors to indicate agreement that the above information is true and correct:

Author's name (typed) Author's signature Date

Deepali Gupta September 24, 2021

Pankaj Kumar September 24, 2021

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Figures

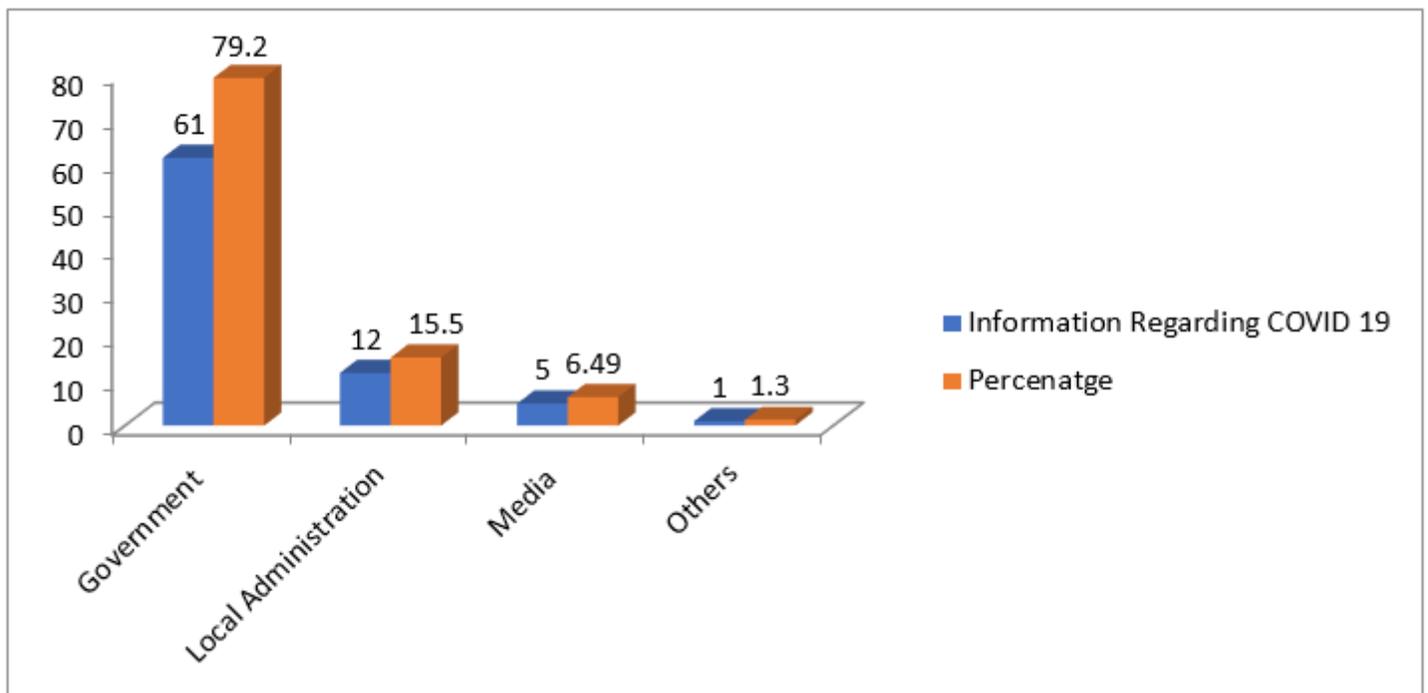


Figure 1

Information Regarding COVID-19 Source: Primary Data

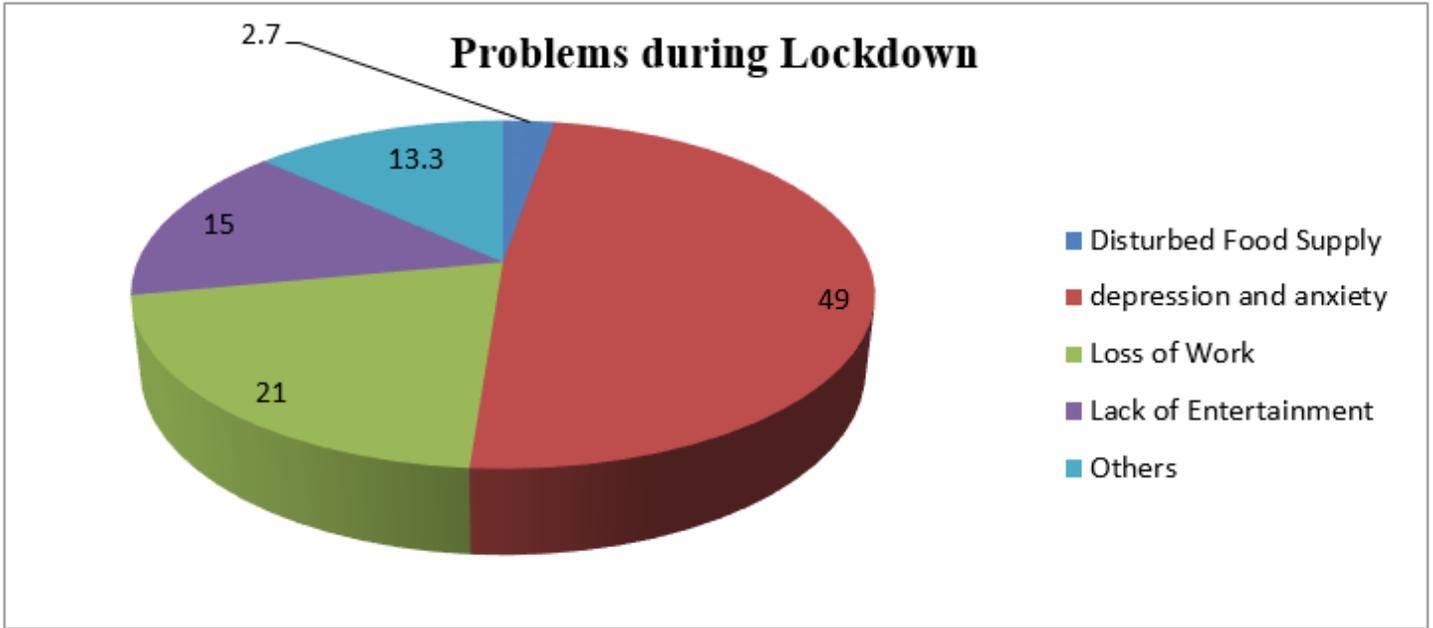


Figure 2

Problems during Lockdown Source: Primary Data

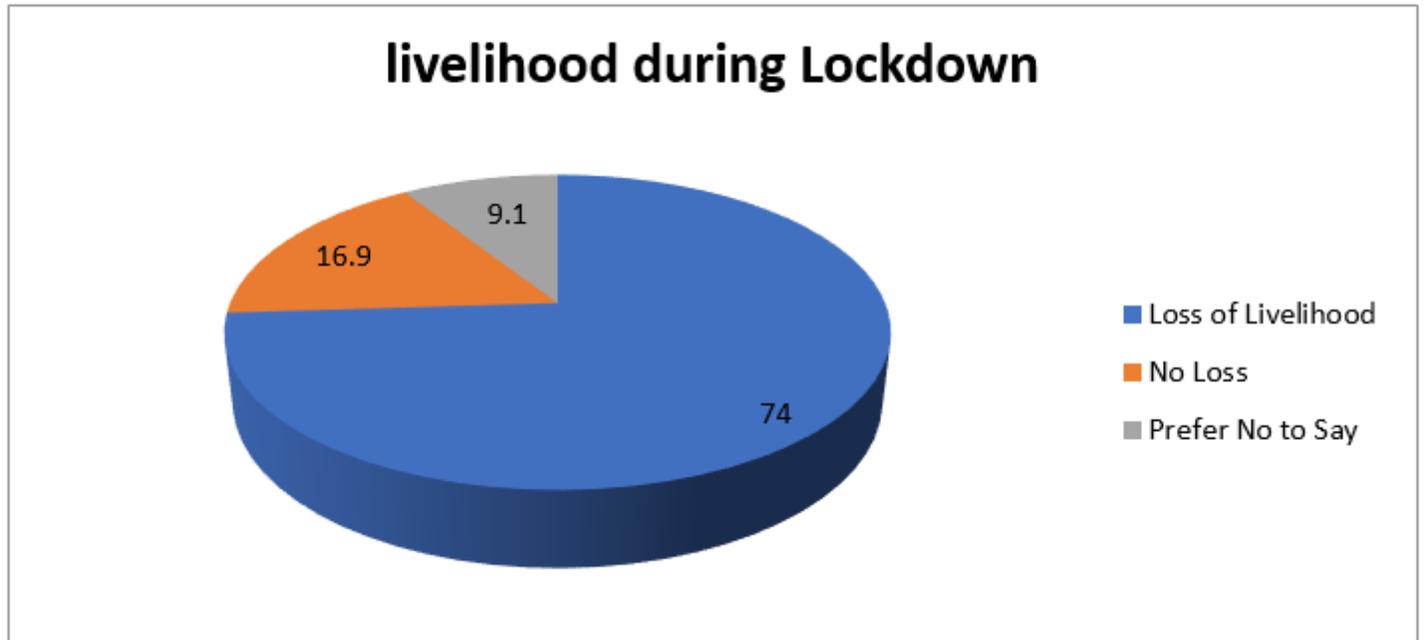


Figure 3

Losing Source of livelihood Source: Primary Data

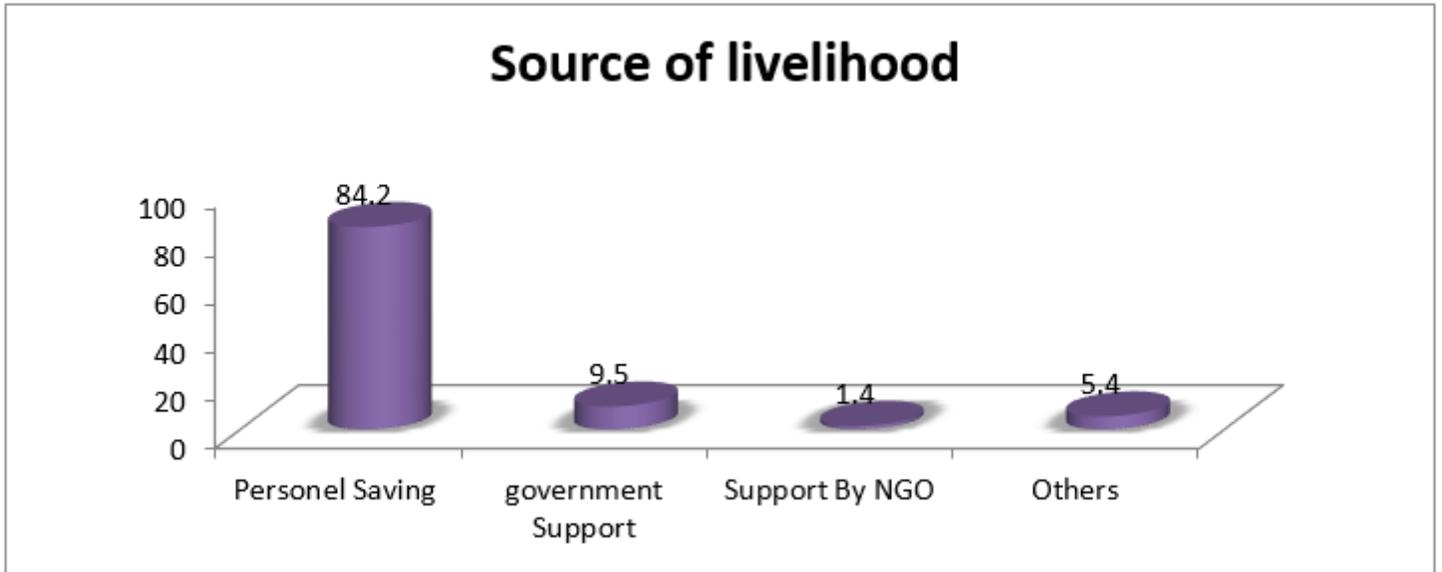


Figure 4

Source of Livelihood during Lockdown Source: Primary Data

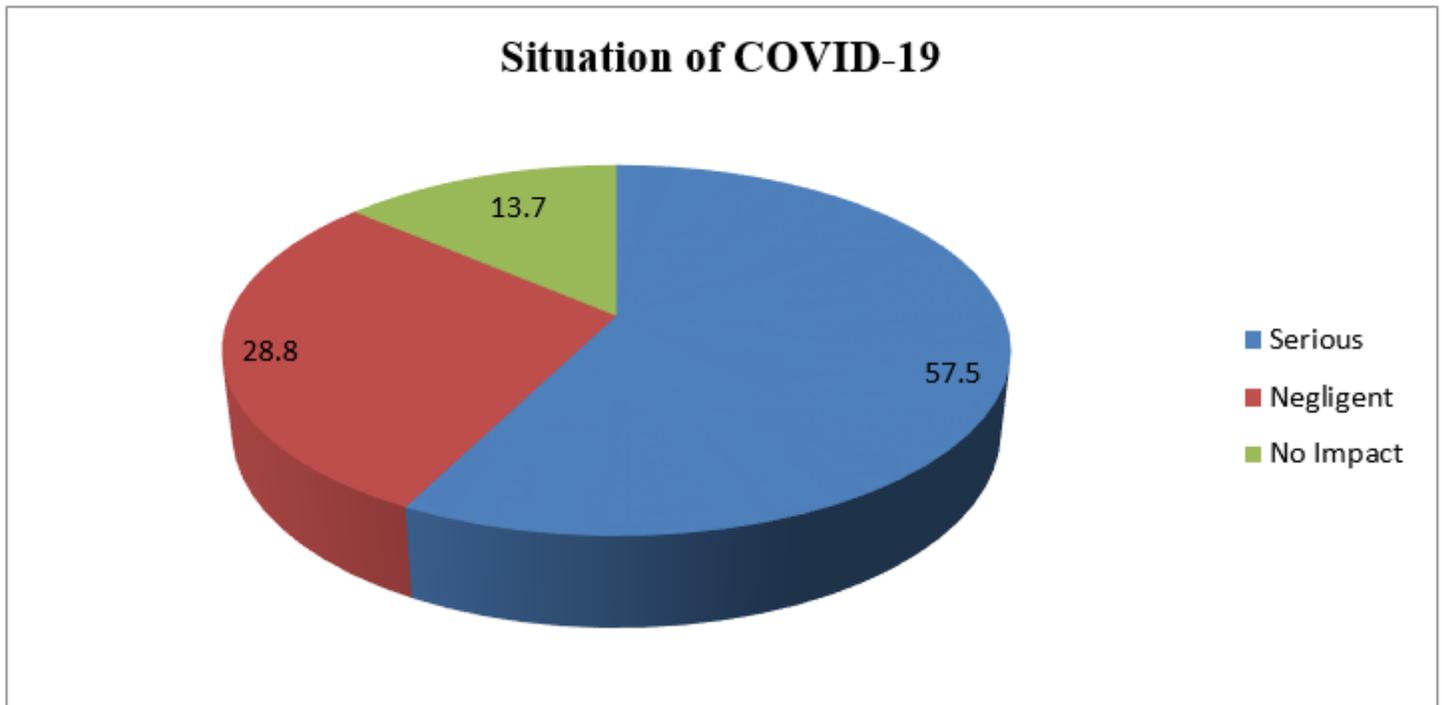


Figure 5

Situation of COVID-19 Source: Primary Data

Supplementary Files

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