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Quality of Transport Services in Tertiary Public Hospital during COVID-19 Pandemic

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ABSTRACT

Background: Early in the COVID-19 outbreak, the government of Bangladesh instituted a transport lockdown and restricted people's movement. The lack of proper transportation services, particularly for healthcare personnel and patients, is a major concern for Bangladesh during the COVID-19 pandemic.
Methods: This cross-sectional study was conducted among 307 (101 patients and 206 nurses) transport service receivers including patient and health care workers (Nurses) at Khulna Medical College Hospital, Khulna. Data were collected through face-to-face interviews with the help of a semi-structured questionnaire to assess the state of the quality of transport services in tertiary public hospitals during the COVID-19 pandemic.
Results: The result showed that, out of 307 respondents 206 (67.1%) were nurses, and the rest of them 101 (32.9%) were patients and their mean age was 35.07 ± 8.45 and 43.86 ± 14.00 respectively. Here, more than half of the nurses 114 (55.3%) stated that service quality was poor as well as 76 (36.9%) nurses stated that service quality was fair and the rest of the 6 (7.8%) nurses stated that service quality was good respectively. Vice versa more than half of the patients 53 (52.5%) stated that service quality was good as well as (22) 21.8% of patients stated that service quality was fair and the rest of them 26 (25.7%) patients stated that service quality was poor respectively.
Conclusions: Hospital transport services play an important role in transporting infectious patients and healthcare workers during the lockdown and other times during the COVID-19 pandemic. Focusing on the safety and quantity of negative pressure transports, the existing experience of Bangladesh in the fight against the pandemic was more highly attacked than in other countries.

KEYWORDS: Lockdown, Pandemic, Quality of Transport Service, Transport Service Receiver, Tertiary public hospital.

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INTRODUCTION

Transport administration amid the COVID-19 widespread has brought to the surface issues, such as introduction to diseases and their control, which have generally been neglected since numerous nations have centered as well barely on the street transport framework itself and not on more extensive open well-being perspectives. The widespread has given us the opportunity to think about what makes transport and well-being frameworks really secure and flexible. It questions currently considered in this space and whether the degree of collaboration between well-being and transport experts is satisfactory in reacting to the health-transport issues that have come to the fore amid the widespread **(1).**

The COVID-19 pandemic, dubbed COVID-19 by the World Health Organization (WHO) is a global health emergency and the greatest challenge that humanity has faced since the Second World War. It first erupted in Wuhan, Hubei Province, China, in December 2019, and was called COVID-19 by the WHO **(2).** The spread of contagious diseases such as COVID-19 is aided by transportation **(3).** Since the entirety of the world's population is on "lockdown," road traffic numbers and movement behaviors on highways have declined. According to studies of different research, urban traffic has decreased everywhere in the world, but still not equally for all modes; the public transport system has taken the biggest hit **(4).**

Early in the COVID-19 outbreak, the government of Bangladesh instituted a transport lockdown and restricted people's movement. The lack of proper transportation services, particularly for healthcare personnel and patients, is a major concern for Bangladesh during COVID-19. In this pandemic condition, people resources, equipment supply, and service availability for population coverage are not consistent across all tertiary-level hospitals **(5).** HCWs personally caring for COVID-19 patients and many public transportation companies refuse to transport them due to the risk of COVID-19 spreading.

There have been cases of health workers losing their leases, being denied access to stores or public transportation, or being physically assaulted because they are suspected of spreading the illness **(6)**. During this COVID-19 pandemic, transportation challenges have surfaced due to the contagious nature of the virus. In this challenge, protecting healthcare workers (HCWs) by providing appropriate transport and developing strategies to minimize suffering. Ensuring local and regional preparations for transport may ensure staff and patient safety. An ideal service quality guideline is one that is both psychometrically sound and diagnostically robust enough to give managers with insights for corrective action in the event of quality shortcomings **(7)**. In a climate of innovation and adaptation, hospital transport service needs to learn from international ambulance services and share experiences. Evaluation of the quality of transport services response to COVID-19 is required to facilitate evidence-based planning for subsequent waves or future pandemics and to identify innovative practices for mainstreaming into routine service provision. **(8)**.

MATERIALS AND METHODS

Study design: A descriptive cross-sectional study design was used to assess the quality of transport services in the tertiary public hospital during the COVID-19 pandemic.

Study period: Total study period was 1 (one) year from 1st January 2021 to 31st December 2021.

Study place: The study was conducted at Khulna Medical College Hospital, Khulna. It was a fully Government-owned hospital. Khulna Medical College is a public medical college and hospital located at Sonadanga, Khulna. It was established in 1989.

Sampling technique and sample size: Convenient purposive type of non-probability sampling technique was followed. Calculated sample size was 307 (206 nurses and 101 patients).

Data collection: Data were collected through face-to-face interviews. The questionnaires were distributed among a total number of 206 nurses and 101 patients in Khulna Medical College Hospital, Khulna. A total of 307 respondents completed the questionnaire with a response rate of 100%.

Data analysis: The analysis was carried out by using both descriptive and inferential statistics with the help of Microsoft Excel 2019 and Statistical Package for Social Science (SPSS) version 23. Analysis was done according to the objectives.

Scoring system: We categorize the service quality by-
1. Good service quality
2. Fair service quality
3. Poor service quality

Service quality measures by following criteria-
The subjects were asked to choose in favor of yes and disfavor of no. Point 1 was given for a yes answer and point 0 was given for no answer. The total score is then converted into a percentage. The service quality was categorized into good (≥80%), fair (59-79%), and poor (≤59%). **(9)**.

Ethics: Ethical clearance was obtained from the Institutional Review Board (IRB) of NIPSOM followed by permission was taken from the ethical clearance committee of Khulna medical college hospital, Khulna. Bangladesh for data collection. Informed written consent was taken from each respondent and informed purpose, procedure, risk, and benefits of the study. The privacy of the respondents and confidentiality of data was maintained strictly.

RESULTS

Table 1: Socio-demographic characteristics of nurse respondents (206)

Age in year	**Frequency (f)**	**Percent (%)**
20-29	72	35.0
30-39	84	40.8
40-49	32	15.5
Above 49	18	8.7
Mean ± SD 35.07 years ± 8.45years	Minimum Age 22 years	Maximum Age 56 years.
Gender		
Female	165	80.5
Male	40	19.5
Educational Qualification		
Diploma in Nursing Science and Midwifery	167	81.5
Graduate	29	14.1
Post Graduate and above	09	4.4
Total	**206**	**100.0**

Table I shows, out of 206 of the nurses 84 (40.8%) age group were 30-39 years. The mean age was 35.07 years ± 5.79 as well as the age range was 30.00 whereas the minimum and maximum age was 22.00 & 56.00 years. Most of the respondents 165 (80.5%) were female, 167 (81.5%) were Diploma in Nursing Science and Midwifery, as well as 29 (14.1%), were Graduates, and the rest of them 09 (4.4%) were Post Graduates and above respectively.

Table 2: Socio-demographic characteristics of patient respondents (101)

Age in year	**Frequency (n)**	**Percentage (%)**
Below 20	4	4.0
20-29	18	17.8
30-39	13	12.9
40-49	29	28.7
Above 49	37	36.6
Mean ± SD 43.86 years ± 14.00 years	Maximum Age 79 years.	Minimum Age 18 years.
Gender		
Female	43	42.6
Male	58	57.4
Educational Qualification		
Illiterate	10	9.9
Under SSC	19	18.8
SSC	40	39.6
HSC	20	19.8
Graduate	10	9.9
Post Graduate and above	2	2.0
Total	**101**	**100.0**

Table 2 shows, out of 101 patients, 37 (36.6%) age group were above 49 years. The mean age was 43.86 whereas the minimum and maximum age was 79.00 & 18.00 years. Most of the respondents 58(57.4%) male, 40 (39.6%) patients' educational qualifications were SSC as well as 20 (19.8%) were HSC however 19 (18.8%) were under SSC whereas 10 (9.9%) were illiterate &10 (9.9%) were Graduate and rest of them 02 (2.0%) were Post Graduate and above respectively.

Table 3: Nurses' opinion about using transport services as a passenger (n=206)

Transported in a transport as a passenger	**Frequency (f)**	**Percent (%)**
Yes	180	87.4
No	26	12.6
Social distance maintained in the vehicle		
Yes	56	27.2
No	150	72.8
Feeling safe when transacting with employees		
Yes	100	48.5
No	106	51.5
Driver's friendly and caring behavior		
Yes	118	57.3
No	88	42.7
Transport service can be further improved		
Yes	101	49.0
No	105	51.0
Suggestion for improving ambulance services		
Services should be increased	91	45.5
Transport should be increased	61	30.5
Service quality should be improved	40	20.0
Seat in the transport must be increased	5	2.5
Safety in transport should be ensured	4	2.0

Table 3 shows, nurses used transport services as a passenger. Out of 206 nurses, 180 (87.4%) stated that they have been transported in transport as a passenger, 56 (27.2%) stated that there was social distance maintained in the vehicle,100 (48.5%) stated that they were feeling safe when transacting with employees, 118 (57.3%) stated that driver was friendly

and caring, 101 (49.0%) stated that transport service can be further improved and maximum 91 (45.5%) suggestion was increasing transport services. 61(30.5%) nurses said about increasing transport.

Table 4: Patients' opinion about using transport services as a passenger (n=101)

Transported in an ambulance as a patient/ attendant	Frequency (f)	Percent (%)
Yes	101	100.0
No	0.00	0.00
Easy access to the ambulance services		
Yes	67	66.3
No	34	33.7
Supply of oxygen in the ambulance		
Yes	18	17.8
No	83	82.2
Driver takes extra money		
Yes	45	44.6
No	56	55.4
Feel safe when dealing with employees		
Yes	91	90.1
No	10	9.9
Kind of barriers		
More money was taken	24	23.8
An ambulance was not easily found	25	24.9
Didn't get proper facilities	6	5.9
Didn't get treatment in the ambulance	9	10.9
There was a lack of seats in the ambulance	3	3.0
The car was late	4	4.0
There was a lack of oxygen in the ambulance	7	6.9
Suggestion for improving ambulance services		
Service quality should be increased	39	37.7
The number of ambulances should be increased	25	24.7
Service facilities should be increased	14	13.8
The transport information center should be increased	8	7.9
Free service should be provided	4	4.0
Ambulance rental money should be reduced	5	4.9

Table 4 shows patients/ attendants transported in an ambulance as a patient/ attendant (n=101). Out of 101 patients, all 101 (100.0%) stated yes. Most of the patients' 67 (66.3%) stated that easy access to the ambulance services, 18 (17.8%) stated that there was a supply of oxygen in the ambulance, 45 (44.6%) stated yes that driver was taken extra money, 91 (91.1%) stated yes that they felt safe when dealing with employees and 24 (23.8%) opinion was taken more money. Some of them said that the ambulance was not getting easily. Other notable views were lack of oxygen in the ambulance, lack of seats in the ambulance, the ambulance was late, didn't get proper facilities, etc. Out of 101 patients, the suggestion gave 95 patients; a maximum of 39 (37.7%) suggestions were improving service quality. Some of them 25 (24.7%) were saying the number of ambulances should be increased; others' views were service facilities; transport information centers should be increased.

Table 5: Level of the Service quality opinion by nurses (n=206) and level of the service quality opinion by patients (n=101)

Level of the Service quality opinion by nurses	Frequency (f)	Percent (%)
Fair quality	76	36.9
Good quality	16	7.8
Poor quality	114	55.3
Total	206	100.00
level of the service quality opinion by patient		
Fair quality	22	21.8
Good quality	53	52.5
Poor quality	26	25.7
Total	101	100.00

Table 5 shows level of the service quality opinion by nurses. More than half of the nurses 114 (55.3%) stated that service quality was poor as well as 76 (36.9%) nurses stated that service quality was fair and the rest of them 16 (7.8%) nurses stated that service quality was good respectively. More than half of the patients 53 (52.5%) stated that service quality was good as well as (22) 21.8% of patients stated that service quality was fair and the rest of them 26 (25.7%) patients stated that service quality was poor respectively.

DISCUSSION

The current study "Quality of transport services in the tertiary public hospital during COVID-19 pandemic" was conducted in the transport branch of Khulna Medical College Hospital Khulna which is a tertiary-level hospital in Bangladesh with a vision to assess the quality of transport services in the context of assessing the quality of transport services among HCWs (nurse) and patient, and identifying major constraints of transport services. To read out these objectives, service receivers of transport services were preferred and among them, 206 nurses and 101 patients were selected as respondents who directly received transport services from that particular hospital.

According to the study, it can be described that most of the nurses (87.4%) used transport services during the lockdown period of COVID-19 and 12.6% were not used transport services due to many barriers. Most of the respondents 80.50% were female which was similar to another study where they found 93% of nurses were female **(10)**. A maximum of 52.6% had educational qualification diplomas in nursing, followed by B Sc in nursing and postgraduate degree which was not similar to the study of Jordan (Bhatia N et al., 2013). This difference is so much admissible because of differences in sociocultural patterns and practices between the two countries **(11)**.

This study shows, most of the patients 52.5% stated that service quality was good as well as 21.8% of patients stated that service quality was fair and the rest of the 25.7% of patients stated that service quality was poor respectively. Turner et al., 2019 said that twenty experts participated in two Delphi rounds to refine and prioritize measures; 20 measures scored ≥ 8/9 points, indicating good consensus, including the proportion of calls correctly prioritized, time to definitive care, and pain measures. Eighteen patients and public representatives attending a consensus workshop identified six measures as important including time to definitive care, response time, reduction in pain score, calls correctly prioritized to appropriate levels of response, and survival to hospital discharge for treatable emergency conditions. It is a very important issue where our country's people were deprived. The majority of the patients 92 (91.1%) stated that they would like to get more information about the ambulance service as well as 9 (8.9%) stated that they were not like to get more information about the ambulance in the hospital.

CONCLUSION

The study highlights some important issues in order to improve the quality of transport service during the COVID-19 pandemic. The pandemic has been contained effectively with a series of emergency measures in all countries of the world. Hospital transport services play an important role in transporting infectious patients and healthcare workers during the lockdown and other times during the COVID-19 pandemic. Focusing on the safety and quantity of negative pressure transports, the existing experience of Bangladesh in the fight against the pandemic was more highly attacked than in other countries. This study examined the quality of transport service among transport service receivers (nurse and patient). It provided unique insights into health care provider experience and also patient transport services in the midst of a crisis and represented a novel application of the framework for improving quality in the context of pandemic-imposed change. In particular, there was a need for a more formal and rigorous approach to service receiver and staff engagement and the implementation of quality improvement methods and measurement. This follows calls for research that improves the rigor and quality improvement practices and evaluations.

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Conflicts of Interest

The authors declare no conflicts of interest.

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