Exploring the impact of occupational factors on low back pain in ride-sharing motorbike drivers in Bangladesh: A comprehensive cross-sectional analysis

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ABSTRACT

Objective: Low back pain (LBP) is a major global public health issue, prevalent among various occupational groups worldwide. However, existing studies have predominantly focused on sedentary workers in developed nations, leaving a gap in understanding LBP prevalence and associated factors among occupational cohorts in low- and middle-income countries like Bangladesh. This study aimed to determine the prevalence and occupational factors contributing to LBP among ride-sharing motorbike drivers (RSMD) in Bangladesh.
Methods: A cross-sectional study was conducted in Dhaka city from May 20 to August 08, 2023. Data were collected from Bangladeshi adult RSMD using a paper-based questionnaire developed by Eriksen et al. Chi-square or Fisher's Exact tests compared categorical variables with and without LBP, and multiple logistic regression analyses were performed with LBP as the dependent variable and various predictors to compute adjusted odds ratios with a 95% confidence interval.
Results: The one-month prevalence of LBP was 58.8%. Regression analysis revealed elevated adjusted odds of experiencing LBP among participants with hypertension, those using multiple ride-sharing operators, commuter and older bike users, and non-users of riding kits. Additionally, increased adjusted odds of LBP were observed among participants of higher age, higher body mass index, and those covering longer distances per week.
Conclusion: This study underscores a significantly higher prevalence of LBP among RSMD in Bangladesh, with occupational factors strongly predicting LBP. Implementing strategies such as regular physical exercise, weight reduction, using sports and newer motorbikes, and reducing working hours per week may help mitigate the prevalence of LBP within this cohort.

1. Introduction

Low back pain (LBP) is the foremost global public health concern and is significantly prevalent among all occupational groups, from heavy weightlifters to sedentary workers (Hartvigsen et al., 2018). Statistics indicate that LBP imposes clinical and economic burdens on the entire population, including self-employed individuals, employees, and employers (Buchbinder et al., 2018). This burden encompasses various

dimensions and is calculated based on treatment costs and lost productivity of the affected individuals. A systematic review and *meta*-analysis have suggested that solely in low- and middle-income countries (LMICs), hospitalization rates for patients with LBP range between 13.4 % and 18.7 %. Furthermore, the review findings suggest an annual cost association of US $2.2 billion per population in LMICs (Jahn et al., 2023).

LBP is associated with numerous factors. Previous studies have identified multiple predictors of LBP, ranging from psychological factors to economic burdens (Jahn et al., 2023; Wong et al., 2022). Prolonged sedentary work to heavy weightlifting are also linked with LBP (Coenen et al., 2014; Mahdavi et al., 2021). The prevalence of LBP among professional drivers has been studied previously (Joseph et al., 2020); however, little is known about the LBP prevalence among motorbikers.

A significant portion of the adult population utilizes motorbikes for transportation. Specifically, in LMICs, motorbikes are highly popular as they offer cost-effective and convenient transportation for individuals of all economic statuses. Statistics indicate that ride-sharing opportunities have made motorbikes more popular in many parts of the world, including Asia (Thaithatkul et al., 2023). Motorbike riding is a complex phenomenon for riders, involving balancing, concentration, and physical activity for control. Furthermore, vibration, the dynamic structure of the motorbike, and carrying passengers make the situation more challenging for motorbikers. Therefore, investigating the prevalence and associated factors of LBP among ride-sharing motorbike drivers (RSMD) is justified.

In Bangladesh, LBP is highly prevalent among the general population (Ali et al., 2022); but it is more pronounced in sedentary occupations (Ali et al., 2020; Ali et al., 2023). A study also found a significantly high prevalence of LBP among professional bus drivers in Bangladesh (Nabi et al., 2023). The current study aims to explore the prevalence and associated occupational factors of LBP among RSMD in Bangladesh.

2. Materials and methods

2.1. Research design and participants

This cross-sectional study took place within the Dhaka City Corporation (DCC) area between May 20 and August 08, 2023. We gathered data from Bangladeshi RSMD aged 18 and above.

2.2. Determining sample size

At the onset of our study, there were approximately 1 million active motorcyclists in Dhaka city (Taherdoost, 2017); yet the exact number of RSMD remained unknown. Employing a confidence level of 95 %, a response distribution of 50 %, and a margin of error of 4 % (Taherdoost, 2017); we calculated a minimum sample size of 601. Prior studies in Bangladesh (Ali et al., 2022; Ali et al., 2023; Ali, 2022; Ali et al., 2022; Ali et al., 2022; Ali and Hossain, 2021) found this formula suitable for sample size determination. We initially approached around 700 RSMD to participate, obtaining consent and data from 650 individuals, yielding a response rate of 93 %. Only 50 RSMD refused to provide their data for this study. Following scrutiny, 633 datasets were deemed suitable for analysis, with 17 datasets excluded due to incomplete or inconsistent responses.

2.3. Ethical considerations and informed consent

This study adhered to the ethical principles outlined in the World Medical Association Declaration of Helsinki concerning medical research involving human subjects (World Medical Association Declaration of Helsinki, 2022). Ethical clearance was obtained from the Institutional Review Board (IRB) of the Institute of Physiotherapy, Rehabilitation & Research (IPRR) (IPRR/IRB/34/05/2023/91). This approval encompasses all research and data collection methods employed within the study, ensuring the protection of human subjects in accordance with institutional guidelines. Prospective registration for the cross-sectional study was obtained from the World Health Organization-endorsed Clinical Trial Registry-India: CTRI/2023/05/052915 [Registered on: 19/05/2023]. Throughout the study, we strictly adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies. Informed consent was secured from participants before individual interviews, wherein the study's objectives, potential benefits, and risks were explained. Participants were informed of the voluntary nature of their involvement.

2.4. Questionnaire

Data collection utilized a paper-based questionnaire comprising four sections. The first section encompassed various sociodemographic inquiries, including gender, age, marital status, education level, monthly household income in Bangladeshi Taka (BDT), family structure, housing type, and current address. The second section solicited information on participants' chronic disease diagnoses (e.g., hypertension, diabetes, kidney disease, asthma), tobacco or substance use, and regular physical exercise. The third section focused on services and motorcycle-related details, such as ride-sharing service provider, motorcycle type, brand, cubic capacity, age, service experience, weekly working hours, nature of service (full-time or part-time), earnings, job satisfaction, accident history, and use of safety gear. The final section evaluated LBP based on a scale developed by Eriksen et al., assessing LBP experienced in the past 30 days (Ali et al., 2020; Eriksen et al., 2016; Ali et al., 2021).

Similarly, participants were requested to assess the occurrence of low back pain across four categories. The intensity of each complaint was rated on a 4-point scale (0 = none, 1 = some, 2 = much, 3 = severe). Each complaint was assigned a score based on its duration (number of days) over the past 30 days. Multiplying severity by duration has commonly been employed to derive a total score (ranging from 0 to 90), indicating the severity of the complaint (Eriksen et al., 2016). In this study, participants reported some level of pain for at least 3 days ($1 \times 3 = 3$) in the last month resulting a score ≥ 3 were identified as experiencing LBP (Ali et al., 2020).

2.5. Data collection procedure

Data collectors visited motorcycle stands across conveniently selected nine different locations in DCC, inviting eligible RSMD to participate. Prior to interviews, informed consent was obtained, ensuring anonymity in data collection, analysis, and publication. One data collector conducted interviews and completed paper questionnaires, which were then reviewed by another collector to ensure accuracy and consistency. Interviews were conducted separately to maintain participant privacy.

2.6. Data analysis

Data analysis was performed using SPSS version 28.0.0.0 (IBM Corp; USA) software. Chi-square or Fisher's Exact tests compared categorical variables with and without LBP. Multiple logistic regression analyses, with LBP as the dependent variable and sociodemographic, behavioural, clinical, and service-related factors as predictors, were conducted to compute adjusted odds ratios (aORs) with a 95 % confidence interval (CI). Variables identified as statistically significant in descriptive analyses were included in the regression model to calculate aORs. The Hosmer-Lemeshow goodness-of-fit test ensured model adequacy, with P-values ≤ 0.05 considered statistically significant.

3. Results

3.1. Participants' general characteristics and association with LBP

In total, this study analysed the data of 633 individuals, with the mean age of participants being 33.46 ± 5.6 years. Approximately 58.8 % of the participants reported experiencing LBP. Table 1 presents descriptive statistics regarding sociodemographic and behavioural factors in relation to LBP. Notably, no female RSMD were included in the study. However, the majority of participants were married (78.7 %), had attained an educational level of higher secondary school certificate (HSC) (58.5 %), and had a monthly household income ranging between (৳)15,000 and (৳)30,000 (61.3 %). Most participants identified as Muslim (88.3 %), came from nuclear families (85.6 %), resided in rented accommodation (78.2 %), lived within urban areas (86.9 %), and 59.1 % were tobacco users. Conversely, only 5.2 % engaged in regular exercise, and 3.5 % were current substance abusers. Additionally, 13.1 %, 3.9 %, and 4.7 % of participants reported having hypertension, diabetes, and asthma, respectively.

Furthermore, Table 1 highlights that married individuals (65.7 %), those with an HSC education (67.3 %), nuclear family members (62.5 %), and tenants (62 %) reported LBP at significantly higher rates. Participants who never engaged in physical exercise (62.3 %), current tobacco users (70.1 %), and those with hypertension (88 %) also reported higher rates of LBP.

Occupation-related factors, such as motorbike types (commuter, 63.6 %), bike brand (Hero, 68.9 %), bike's cubic capacity (<150 cc, 65.9 %), bike's age (>5 years, 68.5 %), service experience (>5 years, 68.5 %), working days per week (every day, 71.3 %), service nature (full-time, 68.3 %), inadequate wages (63.2 %), and lack of riding kits (65.3 %), were associated with a higher prevalence of LBP (Table 1). Moreover, Table 2 illustrates that higher body mass index, service hours per week, and the distance covered by motorbike riders are significantly associated with LBP.

3.2. Regression analysis result

The results of the regression analysis reveal elevated adjusted odds of experiencing LBP among participants with hypertension (aOR 2.69, CI 1.17 to 6.20), those who utilise multiple ride-sharing operators (aOR 8.20, CI 2.66 to 25.26), commuters (aOR 1.79, CI 1.04 to 3.07), older bike users (aOR 4.36, CI 1.14 to 16.58), and individuals who do not use riding kits (aOR 2.08, CI 1.23 to 3.51). Additionally, increased adjusted odds of LBP are observed among participants of higher age (aOR 1.09, CI 1.04 to 1.15), higher body mass index (aOR 1.14, CI 1.05 to 1.25), and those covering longer distances (aOR 1.001, CI 1.00 to 1.002). See (Table 3).

4. Discussion

More than half of the RSMD suffer from LBP in Bangladesh. This study revealed that a higher prevalence of LBP has been found among RSMD who are tobacco users, do not engage in regular physical exercise, and participants with hypertension and higher body mass index. It was also found that RSMD who use commuter motorbikes, older motorbikes, lower cubic capacity motorbikes, have longer work experience, work more days in a week, work as full-time ride sharers, and do not wear protective gear while riding reported LBP at a significantly higher rate. Regression analysis also found hypertension, body mass index, service operator, bike type, age of the motorbike, and distance covered every week to be predictors of LBP.

To the best of our knowledge, this is the first study to reveal the prevalence and associated occupational factors among RSMD. Our previous studies suggested that the one-month prevalence of LBP among Bangladeshi bankers was significantly lower (Ali et al., 2020); however,

Table 1

Descriptive statistics and association between categorical variables (socio-demographic, behavioral, clinical, and occupational factors) and low back pain among 633 Bangladeshi ride-sharing motorbike drivers (study period May – August 2023).

Variables	Low back pain		Total (%)	p-value
	No (%)	Yes (%)		
All	261 (41.2)	372 (58.8)	633 (100)	
Marital status				<0.001*
Married	171 (34.3)	327 (65.7)	494 (78.7)	
Single	90 (66.7)	45 (33.3)	135 (21.3)	
Educational Qualification				<0.001*
High school or lower	58 (45.3)	70 (54.7)	128 (20.2)	
HSC	121 (32.7)	249 (67.3)	370 (58.5)	
Graduate and above	82 (60.7)	53 (39.3)	135 (21.3)	
Monthly household income in thousand (৳)				0.091
Below 15	31 (47.7)	34 (52.3)	65 (10.3)	
15–30	146 (37.6)	242 (62.4)	388 (61.3)	
31–45	61 (44.5)	76 (55.5)	137 (21.6)	
> 45	23 (53.5)	20 (46.5)	43 (6.8)	
Religion				0.102
Muslim	237 (42.4)	322 (57.6)	559 (88.3)	
Non-Muslim	24 (32.4)	50 (67.6)	74 (11.7)	
Family type				<0.001*
Nuclear family	203 (37.5)	339 (62.5)	542 (85.6)	
Joint family	58 (63.7)	33 (36.3)	91 (14.4)	
Type of home				0.007*
Own	19 (52.8)	17 (47.2)	36 (5.7)	
Rented	188 (38.0)	307 (62.0)	495 (78.2)	
Mess/Hostel	54 (52.9)	48 (47.1)	102 (16.1)	
Living location				0.167
City	221 (40.2)	329 (59.8)	550 (86.9)	
Semi-city	40 (48.2)	43 (51.8)	83 (13.1)	
Regular Physical Exercise				0.008*
Current	16 (48.5)	17 (51.5)	33 (5.2)	
Never	178 (37.7)	294 (62.3)	472 (74.6)	
Previous	67 (52.3)	61 (47.7)	128 (20.2)	
Tobacco user				<0.001*
Current	112 (29.9)	262 (70.1)	374 (59.1)	
Never	136 (57.4)	101 (42.6)	237 (37.4)	
Previous	13 (59.1)	9 (40.9)	22 (3.5)	
Substance abuse				0.637
Never	253 (41.4)	358 (58.6)	611 (96.5)	
Current/previous	8 (36.4)	14 (63.6)	22 (3.5)	
Hypertension				<0.001*
No	251 (45.6)	299 (54.4)	550 (86.9)	
Yes	10 (12.0)	73 (88.0)	83 (13.1)	
Diabetes				0.074
No	255 (41.9)	353 (58.1)	608 (96.1)	
Yes	6 (24.0)	19 (76.0)	25 (3.9)	
Asthma				0.097
No	253 (42.0)	350 (58.0)	603 (95.3)	
Yes	8 (26.7)	22 (73.3)	30 (4.7)	

(continued on next page)

Table 1 (*continued*)

Variables	Low back pain		Total (%)	p-value
	No (%)	Yes (%)		
Service provider				<0.001*
Uber	23 (17.6)	108 (82.4)	131 (20.7)	
Pathao	20 (19.2)	84 (80.8)	104 (16.4)	
Multiple operators	122 (52.1)	112 (47.9)	234 (37.0)	
Freelancer	84 (62.2)	51 (37.8)	135 (21.3)	
Other operators	12 (41.4)	17 (58.6)	29 (4.6)	
Bike type				<0.001*
Commuter	172 (36.4)	300 (63.6)	472 (74.6)	
Sports	89 (55.3)	72 (44.7)	161 (25.4)	
Bike brand				0.003*
Yamaha	18 (45.0)	22 (55.0)	40 (6.3)	
Suzuki	26 (46.4)	30 (53.6)	56 (8.8)	
Honda	44 (48.9)	46 (51.1)	90 (14.2	
Hero	38 (31.1)	84 (68.9)	122 (19.3)	
Bajaj	47 (51.6)	44 (48.4)	91 (14.4)	
TVS	56 (32.7)	115 (67.3)	171 (27.0)	
Others	32 (50.8)	31 (49.2)	63 (10.0)	
Bike's cubic capacity				<0.001*
<150	152 (34.1)	294 (65.9)	446 (70.5)	
≥150	109 (58.2)	78 (41.7)	187 (29.5)	
Bike's age (year)				<0.001*
<1	27 (73.0)	10 (27.0)	37 (5.8)	
1–5	141 (34.6)	267 (65.4)	408 (64.5)	
5–10	83 (51.6)	78 (48.4)	161 (25.4)	
>10	10 (37.0)	17 (63.0)	27 (4.3)	
Service experience (year)				<0.001*
<1	73 (65.2)	39 (34.8)	112 (17.7)	
1–5	165 (36.8)	283 (63.2)	448 (70.8)	
>5	23 (31.5)	50 (68.5)	73 (11.5)	
Working day per week				<0.001*
1–4 days	67 (71.3)	27 (28.7)	94 (14.8)	
5 days	52 (57.1)	39 (42.9)	91 (14.4)	
6 days	44 (41.5)	62 (58.5)	106 (16.7)	
Everyday	98 (28.7)	244 (71.3)	342 (54.0)	
Service nature				<0.001*
Part-time	126 (60.9)	81 (39.1)	207 (32.7)	
Full-time	135 (31.7)	291 (68.3)	426 (67.3)	
Wages earn for living				0.015*
Insufficient	128 (36.8)	220 (63.2)	348 (55.0)	
Sufficient	133 (46.7)	152 (53.3)	285 (45.0)	
Job satisfaction				0.286
No	147 (39.4)	226 (60.6)	373 (58.9)	
Yes	114 (43.8)	146 (56.2)	260 (41.1)	
Fallen in a bike accident				0.250
No	169 (41.9)	234 (58.1)	403 (63.7)	
1–3 times	88 (41.5)	124 (58.5)	212 (33.5)	
>3 times	4 (22.2)	14 (77.8)	18 (2.8)	
Use of riding kits				<0.001*
No	166 (34.7)	312 (65.3)	478 (75.5)	
Yes	95 (61.3)	60 (38.7)	155 (24.5)	

Abbreviations: HSC, higher secondary school certificate. Data are presented as n (%). The P-value of categorical variable came from weighted chi-square tests or fisher's exact tests. P-values are significant at a 5% significance level and significant values are presented with *.

Table 2

Descriptive statistics and association between continuous variables (socio-demographic and occupational factors) and low back pain among 633 Bangladeshi ride-sharing motorbike drivers (study period May – August 2023).

Variables	Low back pain		Total (Mean/ SD)	p-value
	No (mean/ SD)	Yes (Mean/ SD)		
Age	31.38 (5.22)	34.92 (5.41)	33.46 (5.61)	<0.001*
Body mass index	24.26 (2.79)	25.86 (2.58)	25.19 (2.78)	<0.001*
Service hour per week	43.93 (22.13)	63.09 (46.98)	55.19 (39.82)	<0.001*
Run per week (KM)	549.63 (317.84)	733.52 (342.25)	657.58 (344.27)	<0.001*

Abbreviations: SD, standard deviation; KM, kilometer. Data are presented as mean ± SD. P-values of continuous variables came from weighted Student's t-test, significant at a 5 % significance level and significant values are presented with *.

the LBP prevalence was similar to that of Bangladeshi shopkeepers (Ali et al., 2023). Another study conducted among Bangladeshi bus drivers showed that the prevalence of LBP among drivers was significantly lower than that of RSMD (Nabi et al., 2023). The nature of motorbike driving, such as controlling and handling the motorbike, may explain the higher prevalence of LBP found in this study. This study suggests that occupational factors such as bike type, cubic capacity, bike age, and riding gear successfully predict LBP among the participants. It can be inferred that commuter bikes and lower cubic capacity bikes are more rigid, less comfortable, and harder to control than sports and higher cubic capacity bikes. Predictably, riding an uncomfortable bike for a long period can trigger or exacerbate LBP among motorbikers. These findings are aligned with the results of previous studies where authors showed that prolonged uncomfortable sitting or working is significantly associated with LBP (Lis et al., 2007). A systematic review and *meta*-analysis suggested that more vibration from engines and jerking produced from poor shock absorbers might be considered risk factors for the development of pain in the lumbar spine, bearing in mind that the exposure is for long periods (Mendes et al., 2021).

A large-scale population-based study suggested that hypertension is independently associated with lumbar disc disease (Samartzis et al., 2014). Another clinical study suggested that high blood pressure increases the risk of back pain (Suri et al., 2023). However, a cross-sectional study found that hypertension had an inverse relationship with the prevalence of LBP and osteoarthritis (Bae et al., 2015). The results of the current study, similar to previous findings conducted among Bangladeshis, revealed a significant association between hypertension and LBP (Ali et al., 2022). Further longitudinal studies are required to confirm these results. Among other factors, this study revealed, older age and a high body mass index were significantly associated with LBP, which aligns with the findings of previous studies (Nitecki et al., 2023).

This study has certain limitations that need to be acknowledged. Firstly, being a cross-sectional study, it cannot determine the cause of the relationship between independent and dependent variables. Secondly, as this study was conducted specifically in DCC, the findings may differ in other urban or rural areas of Bangladesh. Lastly, future studies should include data on treatment needs and the chronic nature of LBP among various occupational groups.

5. Conclusion

In conclusion, this study found a significantly higher prevalence of LBP among RSMD in Bangladesh, with occupational factors strongly predicting LBP. Regular physical exercise, weight reduction, using sports and newer motorbikes, and reducing working hours per week may decrease the prevalence of LBP among this cohort. Additionally, regular health screening of the bikers may help prevent chronic LBP among

Table 3
Sociodemographic, behavioral, clinical, and occupational predictors of low back pain among 633 Bangladeshi ride-sharing motorbike drivers in 2023.

Variables	AOR	SE	95 % CI		p-value
			Lower	Upper	
Marital status					
Married	0.973	0.339	0.501	1.890	0.936
Single	Reference				
Educational qualification					
High school or lower	1.156	0.340	0.594	2.250	0.670
HSC	1.409	0.309	0.769	2.582	0.266
Graduate and above	Reference				
Family type					
Joint	Reference				
Nuclear	1.697	0.308	0.929	3.101	0.085
Type of home					
Own	Reference				
Rented	0.932	0.460	0.378	2.298	0.879
Mess/Hostel	0.692	0.512	0.254	1.890	0.473
Regular physical exercise					0.310
Current	1.992	0.476	0.783	5.065	0.148
Never	1.006	0.292	0.568	1.784	0.983
Previous	Reference				
Tobacco User					
Current	1.211	0.575	0.392	3.741	0.739
Never	2.126	0.568	0.698	6.476	0.185
Previous	Reference				
Hypertension					
No	Reference				
Yes	2.696	0.426	1.171	6.209	**0.020***
Service provider					
Uber	0.580	0.551	0.197	1.708	0.323
Pathao	5.299	0.540	1.840	15.259	**0.002***
Multiple operators	8.207	0.574	2.666	25.266	**<0.001***
Freelancer	0.890	0.516	0.323	2.447	0.821
Other operators	Reference				
Bike type					
Commuter	1.796	0.275	1.048	3.077	**0.033***
Sports	Reference				
Bike brand					
Yamaha	Reference				
Suzuki	1.129	0.543	0.390	3.272	0.822
Honda	0.661	0.476	0.260	1.680	0.384
Hero	0.723	0.476	0.284	1.841	0.497
Bajaj	0.350	0.500	0.131	0.931	**0.035***
TVS	0.605	0.459	0.246	1.486	0.273
Others	0.482	0.507	0.178	1.302	0.150
Bike's cubic capacity					
<150	1.244	0.277	0.723	2.140	0.430
≥150	Reference				
Bike's age (year)					0.191
<1	Reference				
1–5	2.310	0.513	0.844	6.318	0.103
5–10	2.268	0.554	0.766	6.716	0.139
>10	4.361	0.682	1.147	16.588	**0.031***
Service experience (year)					
<1	Reference				

Table 3 (*continued*)

Variables	AOR	SE	95 % CI		p-value
			Lower	Upper	
1–5	1.092	0.302	0.605	1.973	0.770
>5	2.089	0.455	0.857	5.093	0.105
Working day per week					
1–4 days	Reference				
5 days	1.103	0.407	0.497	2.452	0.809
6 days	1.245	0.430	0.536	2.892	0.610
Everyday	0.944	0.443	0.396	2.251	0.897
Service nature					
Part-time	Reference				
Full-time	1.331	0.360	0.657	2.694	0.428
Wages earn for living					
Insufficient	0.683	0.235	0.431	1.084	0.106
Sufficient	Reference				
Use of riding kits					
No	2.085	0.266	1.237	3.515	**0.006***
Yes	Reference				
Age	1.098	0.026	1.044	1.155	**<0.001***
Body mass index	1.149	0.043	1.056	1.250	**0.001***
Service hour per week	0.999	0.007	0.985	1.013	0.861
Run per week (km)	1.001	0.000	1.000	1.002	**0.047***

Abbreviations: AOR, adjusted odds ratio; SE, standard error; 95 % CI, 95 % confidence interval. P-values are significant at a 5 % significance level and significant values are presented with *. The regression model included the factors that found statistically significant in descriptive analyses.

them.

Ethical approval

Ethical clearance was obtained from the Institutional Review Board (IRB) of the Institute of Physiotherapy, Rehabilitation & Research (IPRR) (IPRR/IRB/34/05/2023/91). Prospective registration for the cross-sectional study was obtained from the World Health Organization-endorsed Clinical Trial Registry-India: CTRI/2023/05/052915 [Registered on: 19/05/2023].

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CRediT authorship contribution statement

Mohammad Ali: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Monirul Islam:** Writing – review & editing, Validation, Investigation. **Md. Abu Bakar Siddiq:** Writing – review & editing, Validation, Investigation. **Nujaim Khan Pranto:** Writing – review & editing, Validation, Investigation. **Marium Akter:** Writing – review & editing, Validation, Investigation. **Marjan Akter Munny:** Writing – review & editing, Validation, Investigation. **Md. Yusuf Ali:** Writing – review & editing, Validation, Investigation. **S.M. Ahsan-ul-Hoque:** Writing – review & editing, Validation, Investigation. **Suriya Afrin:** Writing – review & editing, Validation, Investigation. **Md. Murad Hossain Mehedi:** Writing – review & editing, Validation, Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

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