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ORIGINAL ARTICLE

Self-efficacy, disability level and physical strength in the injured workers: findings from a major factory disaster in Bangladesh

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ABSTRACT

Introduction: In 24 April 2013, Rana Plaza – a high-rise building in Bangladesh where garments were being made for the Western markets collapsed. In this study, we report on the surviving workers' physical strength, self-efficacy, and disability level one year after the disaster. **Methods**: This cross-sectional study took place at the Centre for the Rehabilitation of the Paralysed (CRP) which provided care for more than 600 victims. For this study, upper extremity strength among the survivors was assessed by dynamometer hand grip (HG) and lower extremity strength by five time sit to stand test (FTSST). The WHODAS tool measured level of disability and General Self-Efficacy questionnaire measured self-efficacy. Post-traumatic stress disorder (PTSD) prevalence was determined by the PCL-scale. **Results**: The study recruited 181 injured workers. The mean disability score among them was 49.8 (SD 17.5) and mean self-efficacy score was 24.9 (SD 6.9). In multivariate models, after adjusting for age, gender, education, injury profile, employment, marital status and job category, self-efficacy was found to be higher among those who scored above median HG test score [β= −2.32 (95% CI: −4.63, −0.01)] and FTSST performance score [β= −2.69 (95% CI: −4.93, −0.46)]. The disability level was found to be significantly associated with PTSD score [β = 0.84 (95% CI: 0.62, 1.06)] and self-efficacy score [β= −0.45 (95% CI: −0.78, −0.13)]. **Conclusions**: There is an immense need to develop and deliver effective post-injury recovery, rehabilitation and return-to-work programs for injured workers in resource poor countries.

➤ IMPLICATIONS FOR REHABILITATION

- The study findings suggest that one year after the factory disaster in Bangladesh, the injured workers are suffering from a high degree of disability, low physical performance and reporting low self-efficacy. The national and international stakeholders including Western buyers, aid agencies, NGOs, worker advocacy groups, consumer associations and the government of Bangladesh can be updated on the progress made so far.
- There is an immense need to develop and deliver effective post-injury recovery, rehabilitation and return-to-work programs for injured workers in resource poor countries. International organizations like ILO, WHO, World Bank can help developing countries in building these capacities.

Introduction

An industrial disaster often results in short-term and long-term disability in the surviving workers. The recovery process for many of these conditions can be very difficult and lengthy. Often a multi-pronged approach that targets both the physical and mental damages incurred in such an incident is needed for a meaningful and sustainable recovery to occur. Documenting and describing the health status correctly and following up on the consequences after an industrial disaster is vital as it highlights the post-event human suffering and impact of often preventable workplace catastrophes. It also helps in identifying the vulnerability of the injured workers where interventions can make an impact. Findings from such research prioritize the needs where tertiary interventions should focus early on to help in making faster and sustainable recovery. In this unique study, we describe on the surviving workers' physical and mental health and explore their relationship with physical

strength and other related predictors one year after the Rana Plaza building collapse in Bangladesh – the largest industrial disaster in recent times.

Bangladesh is the second largest garment manufacturer in the world in terms of volume of export and this industry provides employment for approximately four million people – mostly young women.[1] These workers largely migrate to the capital city – Dhaka from rural areas; most of them do not have enough literacy or job skills and see garment work as the only feasible source of earning a regular income to become economically independent to help their family members and dependents and paying for their children's school expenses.[2] The garment industry is now this nation's primary source of manufacturing employment and earning of foreign currency and it is expected to grow rapidly over the next decade.

However, this physically demanding industry in a country with low workplace health and safety standards and a lack of relevant

supportive and protective policies and regulations have led to many fatal incidents in recent years.[3] In 24 April 2013, Rana Plaza, a high rise building where several garment factories were housed collapsed. High rise building collapses and factory fires in addition to killing scores of people also result in severe and disabling injuries among who survive [4,5] and their health consequences are often forgotten. Serious injuries among the younger, productive age population negatively impact the earning potential for the rest of their life; for example, a 20-year-old garment worker when injured and disabled, loses about 30–40 years from their lifetime earning trajectory.[6] Loss of earning evidently impacts their family members' and dependent's wellbeing as well, and creates enormous burden for the society and the healthcare system and the government. This is particularly burdensome for a rapid industrializing country like Bangladesh with a very large younger population segment and where occupational injuries have been reported to account for over 8% of population mortality and disability.[7] The consequences of an occupational injury are more drastic and severe in a developing country where social safety and supportive system is almost non-existent in most cases and the injured or disabled workers become either destitute or remain as complete burden on their family members, relatives and well-wishers for the rest of their life. Wage from their work is often the only means of livelihood. Primary prevention measures of these incidents is most important; however, once a workplace disaster does strike, it is also important to document and understand its consequences and identify the need of rehabilitation and recovery so as to help a country and the stakeholders plan and develop tertiary intervention measures. To this day, evidence is largely unavailable on the human consequences after a major occupational disaster strikes like the Rana Plaza building collapse in Bangladesh.

This study focused on evaluating the physical and mental health status of the surviving workers using a few standardized tools: 1) the World Health Organization Disability Assessment Schedule 2.0 tool (WHODAS); 2) The General Self-Efficacy Scale; 3) Hand grip (HG) strength test and 4) five time sit to stand test (FTSST). In addition, relevant data on PTSD prevalence, demographics and economic status of the workers were also collected.

Both self-reported and performance-based tests help in better predicting overall functional status decline among the workers who are at higher risk of suffering long-term disability. The WHODAS score has shown to be a comprehensive evaluation tool for disability and has been validated across various countries and conditions affecting disability. The self-reported WHODAS disability score has been correlated to performance based assessments that included HG strength and sit to stand test. Hand-grip strength has been found to be correlated to disability, morbidity and mortality, depression, and self-rated health.[8] The FTSST is used to test lower extremity strength, which has been correlated to independence in activities of daily living, and as a measurement of disability.[9] It has also been reported to be a potential predictor of functional decline.[10] Recovery is a dynamic process affected equally by physical ability and psychosocial factors.[11] Post-traumatic stress disorder (PTSD), has been shown to affect recovery time, and in this particular population the prevalence of PTSD was reported to be very high as measured by the PCL-scale.[12] Self-efficacy is an individual's perception of ability to overcome barriers and it is a strong determinant of mental and physical well-being; therefore, we hypothesized that workers with higher self-efficacy would demonstrate higher physical performance and lower disability scores.

The goals of this research were to (1) assess the injured workers' current overall functional status as measured by disability level; (2) measure their physical strength objectively by two performance tests – sit to stand and HG; (3) report on their self-efficacy and finally (4) evaluate the association of self-efficacy and disability level with important predictor variables such as physical strength, PTSD, type of injury sustained, and other demographic and socioeconomic factors.

Methods

The Centre for the Rehabilitation of the Paralysed (CRP) was the site which provided care to nearly 600 victims from the Rana Plaza disaster. CRP is a large and a reputed nonprofit organization in Bangladesh that provides comprehensive rehabilitation services to people with injury and disability. Incidentally, CRP is closely located to the building that collapsed. The targeted study subjects consisted of the 517 survivors who were still receiving episodic or ongoing treatment/rehabilitation care at CRP one year after the incident. Interviews and physical assessments were planned on these workers. Between April and May of 2014, data were collected from a convenient sample of these subjects. They were recruited by two means; the first was the subjects who had a scheduled appointment for medical, physical therapy or vocational training at CRP. The second was by calling subjects who lived nearby to come to CRP to participate in this study. All these subjects were compensated for their travel as well as for their time to participate in this study.

Upper extremity strength was assessed by measuring HG using a dynamometer. The details on this test and its reliability and validity have been published before.[13–15] The participant sat in a standard chair with feet planted on the floor. They identified their strongest hand or the one used most and that hand was then used for testing. The participant's elbow was flexed at 90° when holding the dynamometer and then asked to hold it for five seconds. Of the two measurements, the highest number was recorded.

Lower extremity strength was assessed using FTSST. The details on this measure and its reliability and validity have been published before.[16–19] A stable armless chair with a straight back was used. The participant sat down with a straight back, knees bent at 90° and legs straight down with feet on the floor. The subject was given instructions and time was counted after the instructor said "go". Timing stopped after the participant stood up for the 5th time. Each participant was given 30 s to rest and then the test was repeated.

The 12-item WHODAS 2.0 version was used to assess self-reported disability. The details on this test and its reliability and validity have been published before.[20–22] Each item has five different assigned scores: "none" (0), "mild" (1), "moderate" (2), "severe" (3) and "extreme" (4). Both the simple and the complex scoring methods were used. The simple scoring ranges from 0 to 48, while the complex scoring is based on the WHO algorithm so that there is a final summary score ranging from 0 to 100 (0 meaning no disability and 100 meaning full disability).

Self-efficacy is a 10-item tool used to assess optimistic self-beliefs to cope with difficult demands in life with a score range from 10 to 40. The details on this test and its reliability and validity have been published before.[23–25]

These surveys were translated into Bengali by the research team: two members of this team are Bangladeshi in origin. The research department at CRP provided further recommendations and a research personnel from Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) also looked into the translated version of the complete set of survey instruments. The translated surveys were then piloted by the CRP based care providers on a sample of care recipients of similar socio-economic and

Table 1. Self-efficacy and disability scores by demographic and other variables among Rana Plaza survivors.

Variables		N (%)	Self-efficacy score		Disability score	
			Mean (SD)	p values	Mean (SD)	p values
Overall sample		181	24.9 (6.9)		49.8 (17.5)	
Gender						
	Male	71 (39.2)	25.5 (6.6)	0.304	47.7 (19.7)	0.196
	Female	110 (60.8)	24.4 (7.1)		51.2 (15.9)	
Age						
	≤20 years	38 (21.0)	24.1 (7.5)	0.483[a]	45.5 (18.1)	0.121[a]
	21–25 years	40 (22.1)	25.5 (6.1)		49.9 (17.9)	
	26–30 years	56 (30.9)	26.0 (6.5)		49.6 (16.2)	
	31–35 years	25 (13.8)	23.7 (7.6)		57.6 (17.8)	
	>35 years	22 (12.2)	23.4 (7.4)		49.2 (17.4)	
Educational status						
	No schooling	42 (23.2)	24.0 (7.3)	0.644[a]	53 (15.6)	0.195[a]
	Less than High School	123 (68.0)	25.1 (6.9)		49.5 (17.5)	
	≥High School	16 (8.8)	25.4 (6.6)		43.9 (21.1)	
Marital status						
	Married	138 (76.2)	24.6 (7.0)	0.280	50.8 (16.3)	0.210
	Other	43 (23.8)	25.7 (7.0)		46.9 (20.8)	
Current employment status						
	Employed	30 (16.6)	24.6 (7.1)	0.929[b]	51.4 (14.3)	0.595
	Unemployed	151 (83.4)	24.9 (6.9)		49.5 (18.1)	
Job category						
	Supervisor/Technician/Engineer/Other	78 (43.1)	25.4 (7.1)	0.342	50.4 (18.5)	0.691
	General Worker	103 (56.9)	24.4 (6.8)		49.4 (16.8)	
Upper extremity injury						
	No	144 (79.6)	24.8 (7.1)	0.525[b]	50.5 (17.3)	0.297
	Yes	37 (20.4)	25.2 (6.3)		47.2 (18.3)	
Lower extremity injury						
	No	96 (53.0)	25.2 (6.7)	0.475	48.1 (16.7)	0.156
	Yes	85 (47.0)	24.5 (7.2)		51.8 (18.2)	
Received counseling after injury						
	No	114 (63)	25.3 (7.1)	0.289	49.4 (17.9)	0.696
	Yes	67 (37)	24.2 (6.6)		50.5 (16.9)	
PTSD						
	No	72 (39.8)	25.0 (6.8)	0.897	40 (14.2)	<0.001
	Yes	109 (60.2)	24.8 (7.0)		56.3 (16.5)	

p values from t test unless specified.
[a]p values from ANOVA test.
[b]p values from Wilcoxon Rank sum test.

literacy status and further modifications were made based on this feedback to improve clarity of the survey. The language was carefully selected so that workers with primary school level literacy could interpret and answer all questions. Finally, local translators – students of physical or occupational therapy at CRP – were recruited to assist the research team with communication and administration of the surveys. The translators helped in gaining consent forms as well as read the surveys to the participants.

All data were entered first on paper copies by the interviewers and then electronically into MS Excel. Statistical analysis was performed using STATA version 13.1. ANOVA, t test or non-parametric Wilcoxon-rank sum test were used to test the significance of the difference in the means between the groups. Multivariate regression models adjusted for demographic variables and injury profile evaluated the factors associated with the outcomes of interest.

Results

A total of 181 subjects agreed and participated in this study: their mean age was 27.8 years; 60.8% were women; 34.3% had completed only primary school education; 76.2% were married and the respondents had an average of 2.6 dependents. Prior to the incident, 56.9% of them worked as general workers (n = 103), and 43.1% (n = 78) worked as technicians/engineers and line supervisors. A majority, 83.4%, reported to be unable to work one year following the disaster due to their health conditions. Only a small proportion (16.6%; n = 30) has returned to work (of which 27 were

actually self-employed). The details on the socio-demographics and employment status of these subjects have been reported in a separate paper.[12]

Table 1 presents self-efficacy scores and disability scores by demographic and other characteristics. The average disability score was 49.8 (SD 17.5) and the average self-efficacy score was 24.9 (SD 6.9). Compared to men, women had a higher disability score and a lower self-efficacy score, but the difference was not statistically significant. No significant differences were observed in these scores across most demographic and other characteristics except that the mean disability score was significantly higher among those with PTSD compared to those who do not have PTSD [56.3 (16.5) vs 40.0 (14.2), p < 0.001].

A total of 179 (98.9%) participants were able to complete a HG test. Two subjects were unable to perform any physical task due to injury severity. The mean score for men was 55.9 kp (SD 25.8) while for females it was 33.2 kp (SD 12.9). Figure 1 shows the mean HG scores by demographic and other characteristics. Subjects were categorized into two groups (i.e. who scored ≥ median of 42.6 kp and those who scored less than median) for further analysis.

A total of 127 participants were able to complete FTSST, while a total of 54 participants (21 men and 33 women) were unable to complete the test due to injury severity or pain. The median time for FTSST was 19.6 s. For further analysis, the subjects were categorized into those who could not perform the test (n = 54, 29.8%), those who performed the test in less than the median time
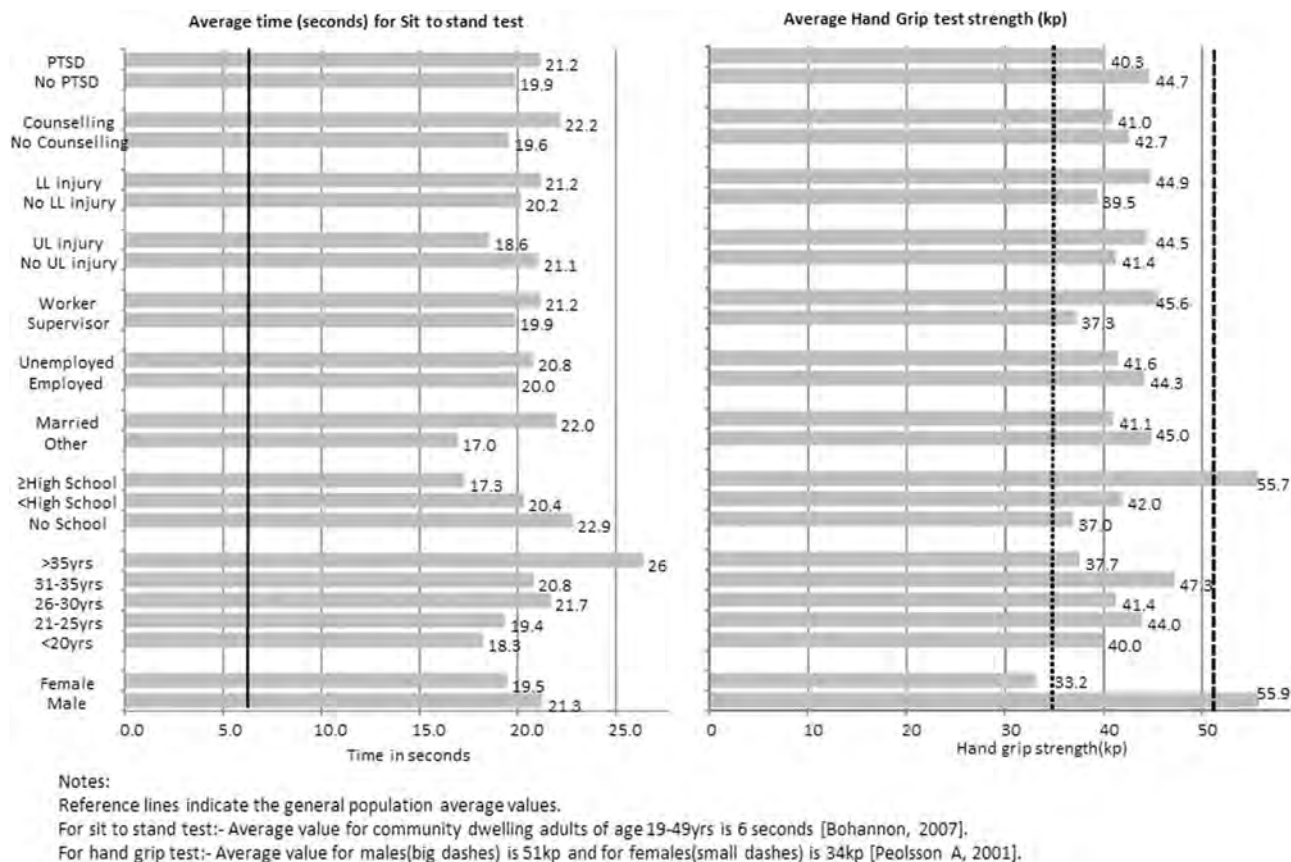
Figure 1. Averages scores of hand grip test and sit to stand test by demographic and other characteristics among injured workers of Rana Plaza.

Table 2. Multivariate regression: self-efficacy score among Rana Plaza survivors.

| | Self-efficacy score | | | |
| | | 95% CI | | |
Variables	Coef.	LL	UL	p values
Hand grip test score				
>=Median	Ref			
<Median	−2.32	−4.63	−0.01	0.049*
Sit and stand test time				
<Median	Ref			
>=Median/unable to perform	−2.69	−4.93	−0.46	0.018*
Type of injury (Ref = no for each category)				
Concussion	−0.11	−2.74	2.52	0.933
Crush	−2.94	−5.66	−0.24	0.033*
Fracture	−2.63	−5.16	−0.09	0.043*
Dislocation	−0.27	−3.12	2.58	0.851
Amputation	−5.50	−10.86	−0.14	0.044*
No. of dependents	−0.63	−1.14	−0.12	0.017*

*p values significant.
Model adjusted for age, gender, education, employment, job category and injury body parts.

($n = 64$, 34.8%) and those who were able to complete the test beyond the median time ($n = 63$, 34.8%). Figure 1 shows comparison of the mean test scores among different study subjects who completed this test.

Table 2 shows findings from the multivariate regression model with self-efficacy score as the outcome adjusted for age, gender, education, employment, marital status, job category and injury location. There was a significant difference in self-efficacy score between those who scored above the median in the HG test and those who scored below the median [β = −2.32 (95% CI: −4.63, −0.01)]. Significant differences in the mean self-efficacy scores also

existed by FTSST score; with those who were unable to perform the test or those who took more than the median time to complete the test [β = −2.69 (95% CI: −4.93, −0.46)] had lower self-efficacy compared to those who were able to complete the test below the median time of 19.6 s. Subjects who had crush injuries [β = −2.94 (95% CI: −5.66, −0.24)], fractures [β = −2.63 (95% CI: −5.16, −0.09)] and those who received amputations [β = −5.50 (95% CI: −10.86, −0.14)] had significantly lower self-efficacy scores compared to who have not had these injuries. Self-efficacy scores were also significantly associated with number of dependents: the higher the number of dependents the lower was the self-efficacy score.

Figure 2 is a scatter plot of fitted lines that shows the linear relationship of disability score with PTSD score and self-efficacy score. The disability score was positively associated [slope of 0.98 (95% CI: 0.77, 1.19), p = <0.001] with PTSD score and was negatively associated [slope of −0.55 (95% CI: −0.92, −0.19), p = 0.003] with self-efficacy score.

The results from the multivariate regression model with disability score as outcome (adjusted for age, gender, injury profile, education, employment, marital status and job category) are shown in Table 3. PTSD score [β = 0.84 (95% CI: 0.63, 1.07)] and self-efficacy score β = −0.48 (95% CI: −0.78, −0.17) were found to be significantly associated with disability score.

Discussion

In this study, we present a comprehensive assessment of the Rana Plaza surviving workers' physical and mental health. Our findings suggest that one year after the disaster; the injured workers have
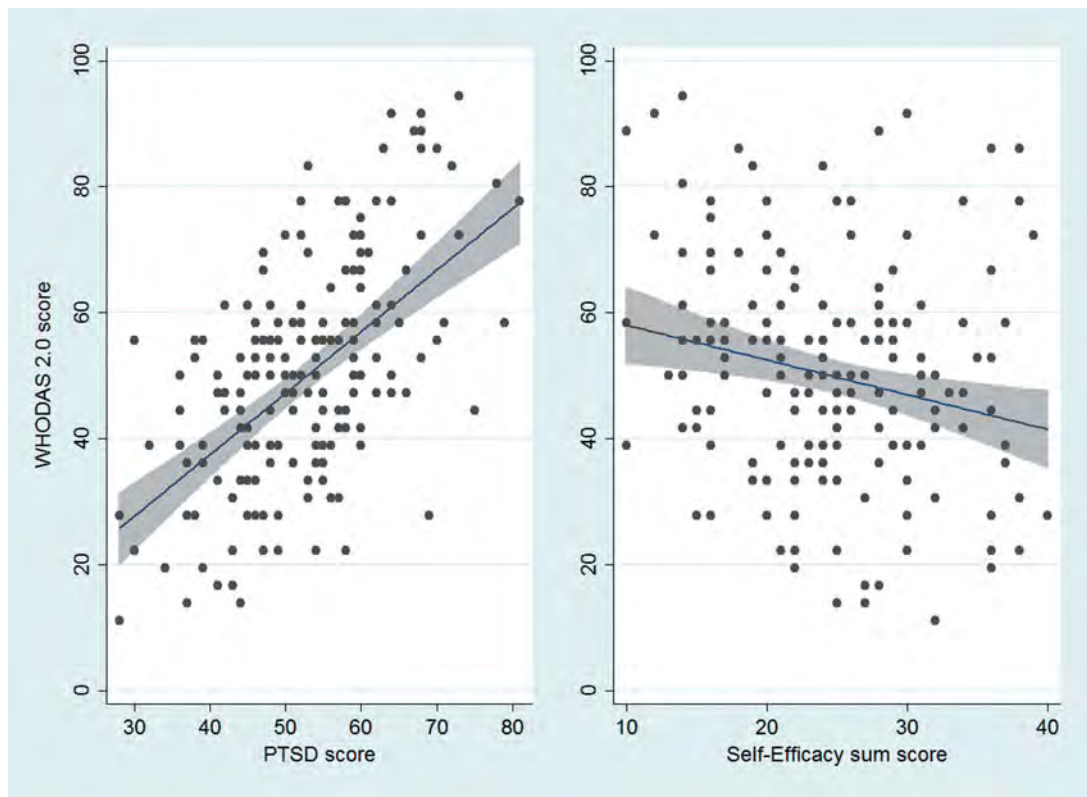
Figure 2. Scatter plot showing linear association of WHODAS disability score with PTSD score and Self-Efficacy sum score among injured workers of Rana Plaza.

Table 3. Multivariate regression of overall functioning score (WHODAS) among Rana Plaza survivors.

Variables	Coef.	LL	UL	p values
		95% CI		
PTSD score	0.84	0.63	1.07	<0.001*
Self-efficacy score (sum)	−0.48	−0.77	−0.17	0.002*
Hand grip test score				
>=Median	Ref			
<Median	−2.75	−7.33	1.84	0.238
Sit and stand test time				
<Median	Ref			
>=Median	−1.26	−11.40	8.87	0.806
Couldn't perform	5.67	−5.08	16.4	0.299
Type of Injury (Ref = No for each category)				
Concussion	3.90	−1.39	9.18	0.148
Crush	−3.13	−8.62	2.35	0.26
Fracture	3.38	−1.77	8.55	0.197
Dislocation	2.12	−3.49	7.74	0.457
Amputation	11.38	0.50	22.27	0.041*
No. of dpendents	0.08	−0.94	1.1	0.881

*p values significant.
Model adjusted for age, gender, education, employment, job category and injury body parts.

a high degree of disability, low physical performance and are reporting low self-efficacy.

The disability scores based on WHODAS survey instrument showed high level of disability in this affected population. Higher level of disability has been found to be associated with home-bound status, severe pain and necessary caregiver hours.[26] This must be putting further strain on the family members as they are the likely ones taking care of the injured workers. Most of the survivors did not have high self-efficacy level; it is less that than those reported in Western populations with 29.5 sum score on average.

Individuals with higher self-efficacy have been found to be more likely to return to work after an injury.[27] In this study, those with lower self-efficacy had lower HG strength, longer FTSST and higher disability scores. Thereby, it is no surprise that the return to work rate has been quite low in this population.

In a previous study where elderly patients were assessed using WHODAS, Silva et al. found that FTSST was the most important predictor of the disability score, and that lower performance scores potentially identified individuals who were at the greatest risk of functional decline.[10] Higher self-efficacy has shown to improve self-management ability of chronic diseases among Bangladeshi immigrant patients living in the UK; this is particularly important in dealing with chronic pain and debilitating injuries.[28,29] In a previous study; people with disabilities in Bangladesh were found to have high emotional problems such as depression and grief, and in this study lower self-efficacy has been found to be associated with higher levels of depression.[30] In a study among older South African men and women, HG strength was found to be associated with less functional disability among men, and overall better cognitive functioning and lower disability among women.[31] Among persons suffering from chronic disease such as COPD, higher self-efficacy was found to be independently associated with better overall functioning as measured by WHODAS irrespective of the degree of illness and depression present.[29]

After a mass disaster, primary provisions of medical care is imperative; however, rehabilitation measures provided by professionals like physical and occupational therapists are also needed for recovery from these injuries and in helping re-integration of the injured to society. It is no surprise that so few, less than 20%, have returned to work in this studied population after one year. In a country where disabled individuals meet much adversity, self-efficacy plays a greater role in a person's ability to return to work or remain employed; therefore, future interventions should

incorporate strategies that may help in retaining and improving self-efficacy.

Previous research studies in shoe manufacturing, textile and weaving factories in developing countries have highlighted adverse working conditions, including crowded workspaces, poor lighting and air quality, and a variety of ergonomic hazards, such as repetitive movements, awkward postures and piecemeal work.[7] Among the adverse health effects in garment factories, vision disorders, musculoskeletal disorders and respiratory abnormalities (ranging from chronic cough and difficulty in breathing due to asthma) are common, and these get compounded by limited access to quality healthcare. It is possible that the workers studied here had compromised health status and lower performance and functional measures even prior to this disaster.

The garment industry provides important and major economic opportunities for Bangladesh, in particular for women with lower socioeconomic status and lower literacy and skills. The massive number of jobs created for women by this industry has been credited to create opportunities for mobility, decision making ability in the family, higher incentive for girl child's education, delaying early marriages and reduced birth rate.[1,2] At the same time, the growth of this industry has led to women being segregated into low-paying, exploitative and potentially hazardous jobs with resulting low satisfaction about their safety and compensation.[3] Occupational safety concerns were only brought to the international spotlight following the recent garment fire and collapse tragedies, but are by no means a new phenomenon. The study results here show that much work still needs to be done for this particular population to preserve and promote their work potential; in particular stronger and stricter laws and programs are needed to ensure building and fire safety and reduce serious workplace hazards.

Convenient sampling method used in this study may have excluded survivors who were badly injured or who already recovered completely and may no longer be accessing the services at CRP. Thus, this study might have included subjects who suffered injuries which were neither too severe not mild in nature and reflected more on injuries of moderate severity. A study design like this applied here can be associated with some degree of selection and information bias. All spectrum of injury severity may not have been captured and workers might have difficulty in recalling incident details one year after the incident. However, this study did no need a lot of recollection from the participants on the job or working conditions; it rather focused on their current health status. A failure to recall exact pre-disaster and post-disaster events and access to care should not affect the study findings. All care recipients at this institution (CRP) were invited to participate and it does not appear to the research team that only certain types of subjects preferentially participated. There is well-developed trust and relationship between CRP and these care recipients and the way data were collected in this research through extensive engagement of this organization's own staff and students should not preclude certain types of injured from participating in this study. Another limitation was associated with translation and communication. It is possible that translation of the survey instruments despite taking all precautions might still not have captured the real meaning of some questions. All surveys, however, were piloted first on a comparable population and CRP research staff who are experienced in conducting such research carefully reviewed all the questions and corrected for any changes needed prior to beginning of the final data collection. Answers to the demographic and socio-economic parts of the survey and the standard survey tools used depended on self-reports and any such

study may have some biases in interpretation and reporting. Also, this study was conducted one year after the disaster and there may have been some difficulty in recalling by these subjects of their exact salary, departments and occupations. However, this study also used some objective measures.

The study findings may be generalizable to other similar working age populations in other resource-poor countries who have sustained similar industrial disasters. Given the population demographics, nature of jobs, factory and work settings, injuries sustained, health care provisions available, researchers in other settings and countries should be able to undertake comparable research studies using similar research design, methodology, survey tools and objective measures as used in this research and more such research can build on the knowledge and evidence base on the plight of workers suffering from similar injuries and disabilities.

The study strengths include subject recruitment and data collection at a well-established, trusted and respected organization in Bangladesh. CRP provided a wonderful opportunity to easily reach the target population. Additionally, local bilingual translators associated with CRP were involved in conducting this study. The active engagement of trained local research staff and students allowed adjusting for cultural sensitivity for many study measures and helped create greater trust among the injured workers. The sample size was large enough as about 35% of the total subjects ever received care at CRP after the disaster was captured in this study. With about 60% women, the study subjects somewhat reflected the general garment worker population demographics in this country.

Many survivors of occupational disasters like Rana Plaza face challenges to get back to work and more and better job skills training is needed for them. Creation of modified jobs and making other workplace accommodations for people who have recovered from injury and for individuals with disability are of pivotal importance for this country and other similar rapidly industrializing countries. In Bangladesh, like in many other developing countries, disabled individuals face insensitivity and marginalization in the society.[18] These countries need to continue developing economic and social opportunities for such vulnerable populations. Finally, the Western buyers and consumers should also take more responsibility and play active roles. They need to demand and ensure better safety standards anywhere they outsource. Western buyers, aid agencies, worker advocates, NGOs and consumer groups along with the garment factory owners and respective country's governments need to work together to ensure workplace safety including formulating and enforcing building and fire safety codes to prevent unnecessary injury, death and suffering.[32]

There is a great need to expand the existing capacity of physical and occupational therapy services and other similar disability assistance programs in Bangladesh – which is the 7th largest country in the world in terms of population and other developing and resource-poor countries. Using and fitting of more prosthetics and providing mental health counseling may assuage some of the very high affliction incurred after sustaining major injuries from disasters.

Acknowledgements

Ethics

Human subject ethics approval for this study was obtained from the School of Medicine at UT Health Science Center, Texas and from the Centre of Rehabilitation of the Paralysed (CRP) in Bangladesh.

Disclosure statement

The authors report no declarations of interest.

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