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Wheelchair Skills Capacity, Confidence And Performance of Manual Wheelchair Users with Spinal Cord Injury in Selected Communities of Bangladesh

Shamima Akter

Assistant Professor,

Department of Occupational Therapy

Bangladesh Health Professions Institute (BHPI)

Centre for the Rehabilitation of the Paralysed (CRP)

Chapain, Savar, Dhaka

1st Alternate Delegate- WFOT

Bangladesh Occupational Therapy Association (BOTA)



Background

- Manual wheelchair enhance the mobility of people with SCI and allow them to engage in major life activities [1,2,3].
- Manual wheelchair users must need wheelchair skills capacity, confidence and performance to accomplish their daily living activities independently [4].
- Centre for the Rehabilitation for the Paralysed (CRP) provides W/C training for person with SCI.
- No research was found in Bangladesh regarding level of W/C skills in community through literature search though the context and health care services are different.



Wheelchair skills training at institute
(photos are taken with permission for using in presentation)



Wheelchair skills training at institute



Wheelchair skills in community

Objectives of the study

1. To identify the level of wheelchair skills capacity, confidence and performance of persons with SCI.
2. To find out the association between socio-demographic factors (age, sex, type of injuries, wheelchair dependent life years).
3. To find out the correlation of wheelchair skills capacity with confidence and performance.

Methods and Materials

- Descriptive cross-sectional study design was used.
- **Purposive sampling** methods were used.
- 90 participants were selected from the rural community on the basis of inclusion and exclusion criteria's.
- Primarily reviewing existing file from CRP and then interview the study participants in their community.

cont...

- Data were collected using **Wheelchair Skills Test Questionnaire (WST-Q) version 4.3** in Bangla (local language).
- The research proposal were reviewed by the CRP-ERC and approved.
- Data was analyzed by descriptive statistics and non-parametric test.

Findings of the study

Table 1: Distribution of socio-demographic characteristics (N=90)			
Demographics		Numbers (n)	Percentage (%)
Age Category (years)	15-25	22	24.44
	26-35	34	37.78
	36-45	18	20.00
	46-65	16	17.78
	Mean age 35 (SD ±12.89) years		
Sex	Male	80	88.9
	Female	10	11.1
	Male-Female ratio is 8.00		
Level of education	Illiterate	13	14.44
	Primary	14	15.56
	Secondary	46	51.11
	Higher Secondary	03	03.33
	Graduate and above	14	15.56
Type of Injuries	Paraplegia	63	70.00
	Tetraplegia	37	30.00

Table 2: Distribution of socio-demographic characteristics (n=90)

	Demographics	Numbers	Percentage
Wheelchair dependent life (years)	Less than one year	18	20.00
	1-9 years	41	45.56
	10- 19 years	27	30.00
	20 years and above	04	04.44
	Mean of wheelchair dependent life	7.54 (SD ±7.15) years	
Present Occupation/ Job	Service Holder	07	07.78
	Self –business	27	30.00
	Student	06	06.67
	Day labour	02	02.22
	Farmer	09	10.00
	Household activities	14	15.55
	Did nothing	25	27.78

Table 3: Total percentage scores for WST-Q Capacity, WST-Q Confidence and WST-Q Performance			
Measure	WST-Q Capacity	WST-Q Confidence	WST-Q Performance
Range of possible value	0%-100%	0%-100%	0%-100%
N	90	90	90
Minimum value	0%	0%	0%
Maximum value	100%	100%	92.82%
Mean	63.34%	65.89%	60.47%
SD	26.03%	25.43%	24.98%
Median	74.26%	75.75%	72.00%
IQR (Inter Quartile Range)	57.02% -78.78%	66.66% - 80.01%	54.54% - 76.47%

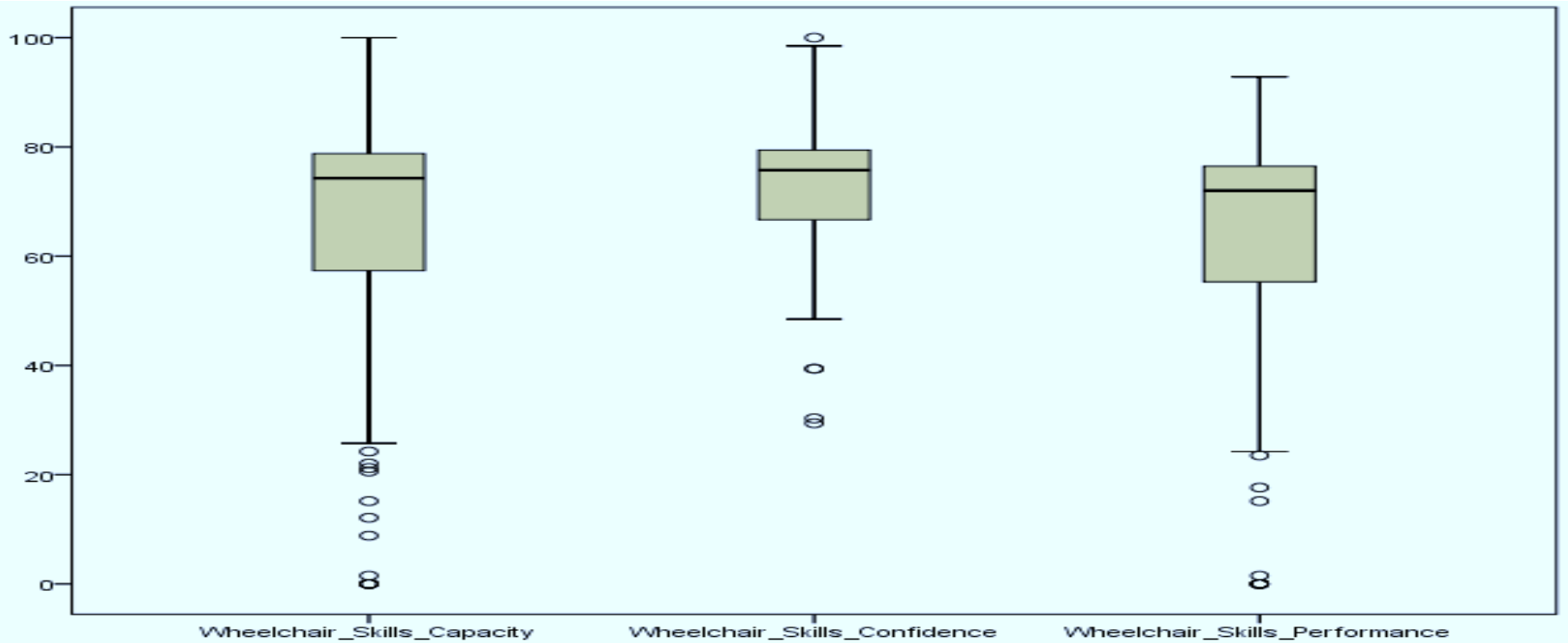


Figure-1: Box-and-whisker plots of the total percentage scores for WST-Q capacity, WST-Q confidence and WST-Q performance. The median values are represented by horizontal lines within the boxes; the interquartile ranges (from quartile 1 to quartile 3) are represented by the box limits; and the T bars (whiskers) represent those points that are >1.5 and <1.5 times the interquartile ranges. Outliers are shown as open.

Table 4: Association between WST-Q component areas with socio-demographic factors

Component Measures	Socio-demographic Factors									
	Age		Sex		Level of Education		Type of Injuries		W/C depended life Years	
	χ^2	p-value	χ^2	p-value	χ^2	p-value	χ^2	p-value	χ^2	p-value
W/C skills Capacity	211.63	.114	30.19	.973	262.34	.794	72.82	.009	149.12	.983
W/C skills Confidence	152.06	.164	19.55	.977	235.02	.067	69.65	.000	118.06	.864
W/C skills Performance	226.71	.232	42.62	.845	347.86	.120	75.76	.022	249.44	.040

Findings of the study (Cont.)

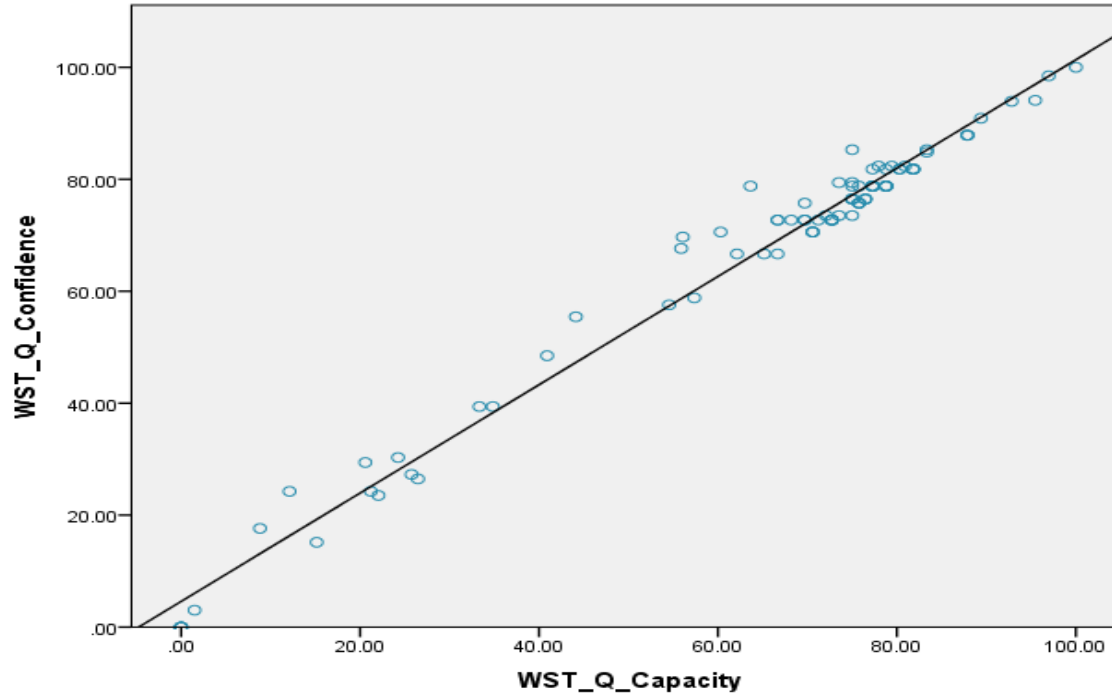


Figure 2: Total WST-Q Capacity vs WST-Q Confidence scores

Comments: The total WST-Q capacity scores significantly correlated with the total WST-Q confidence scores ($r=.95$; $P<.00$).

Findings of the study (Cont.)

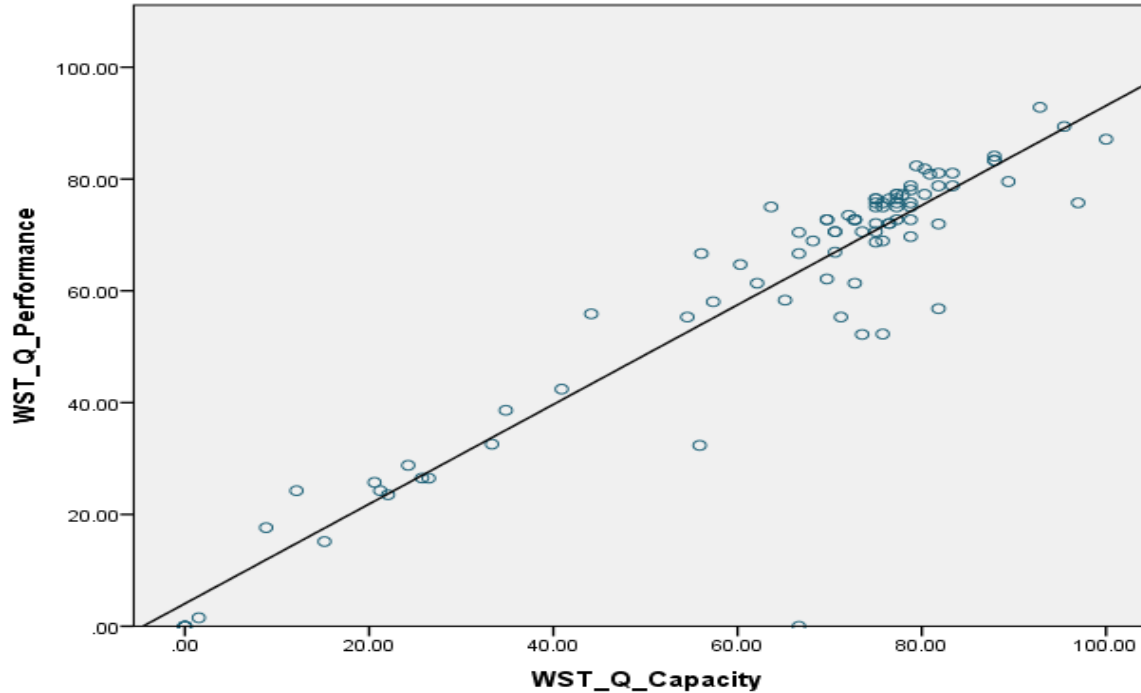


Figure 3: Total WST-Q Capacity vs WST-Q Performance scores

Comments: The total WST-Q capacity scores significantly correlated with the total WST-Q performance scores ($r=.88$; $P<.00$).

Conclusion

- Many people with spinal cord injuries are unable to perform some of the wheelchair skills that restrict them to participate in functional life.
- More intensive wheelchair skills training may improve the wheelchair skills capacity
- That will enhance their community mobility, participation and improve quality of life.

Reference

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4. Centre for the Rehabilitation of the Paralysed 2010, viewed 20th May 2013 from http://www.crpbangladesh.org/index.php?option=com_content&view=frontpage&Itemid=53



THANKS A LOT
&
EXPLORE BANGLADESH