Quality of Life

Military Deployment-related Traumatic Brain Injury Quality of Life Item Banks

In 2004, the National Institutes of Health (NIH) funded the development of the Patient Reported Outcomes Measurement Information System (PROMIS) to assess important health-related changes in individuals' health-related quality of life (HRQOL). Likewise, the National Institute of Neurological Disorders and Stroke supported the development of quality of life (QOL) in Neurological Disorders (Neuro-QOL) measurement system with a set of item banks for individuals with neurological disorders. Researchers at the Defense and Veterans Brain Injury Center (Tampa, Florida) conducted a study to evaluate the relevance and appropriateness of the generic Patient Reported Outcomes Measurement Information System (PROMIS)/ Neuro-QOL domains and sample items to military deployment-related (MDR)-traumatic brain injury (TBI) and to identify new HRQOL domains and items highly relevant to MDR-TBI. Three focus groups were held at four Department of Veterans Affairs (VA) Polytrauma Rehabilitation Centers 1. VA Palo Alto Health Care System (Palo Alto, California) 2. James A Haley Veterans Hospital (Tampa, Florida) 3. VA Medical Center, Minneapolis (Minneapolis, Minnesota) 4. Hunter Holmes McGuire VA Medical Center (Richmond, Virginia); two groups comprised veterans with MDR-TBI (with mild versus moderate/severe injuries); one comprised VA providers.

Coding of transcripts and a literature review identified three HRQOL domains and subthemes unique to individuals with MDR-TBI: posttraumatic stress disorder (PTSD) issues, military-related loss (MRL), and guilt. The research team generated 147 potential items: 31 for PTSD, 66 for MRL, and 50 for guilt items. The item banks were field-tested in a sample (n = 485) of veterans enrolled at the VA and diagnosed with an MDR-TBI; confirmatory factor analysis supplemented by bifactor modeling indicated that these domains were relevant for individuals with MDR-TBI.

The researchers created three new item banks representing unique domains of MDR-TBI health outcomes: 15 new PTSD items (Table 1) plus 16 Spinal Cord Injury Quality of Life Measurement System legacy trauma items; 37 new MRL items plus 18 Traumatic Brain Injury Quality of Life Measurement System (TBI-QOL) legacy grief/loss items; and 33 new guilt items. Convergent and discriminant analyses results, as well as known group comparisons, supported the validity and clinical utility of these new item banks and their short forms (*Toyinbo et al. 2016*).

The results of this study extend the current TBI-QOL system by incorporating QOL concerns targeted to Veterans with TBI. By capturing unique aspects of MDR-TBI, it will provide more holistic information to medical providers.

This research was funded by VA.

TABLE 1: Response frequencies, mean standard deviation scores and correlations with total items for 15 PTSD (new) + 16 Trauma (legacy) items and 9-item short form (bold and italicized). (Table used with permission from the authors)

Response frequencies, mean (SD) scores and correlations with total items for 15 PTSD (new) + 16 Trauma (legacy) items and 9-item short form (bold and italicized)

		Cronbach's coefficient alpha = 0.97	Percent endorsing response categorie					Scores		
Content type[a]	Item ID	Item content	0: Never	1: Rarely	2: Sometimes	3: Often	4: Always	Mean	SD	Corrected Item-Total Correlation
R	TT1	I had thoughts that were frightening	9.7	13.6	32.0	32.0	12.8	3.25	1.139	.775
H	TT2	I was watchful for anything bad that might happen	3.3	4.1	23.3	34.4	34.8	3.93	1.020	.685
H	TT3	I felt jumpy	4.7	11.5	28.2	34.0	21.4	3.56	1.092	.795
H	*TT4*	*I felt on the lookout for anything harmful that could happen to me*	3.7	8.7	18.1	33.6	35.9	3.89	1.101	.669
R	TT5	I was frightened by sudden noises	6.4	8.7	28.2	29.3	27.4	3.63	1.158	.713
R	TT6	I felt stunned by everything that's happened to me	12.8	16.5	36.7	22.7	11.3	3.03	1.166	.753
R	TT7	I broke into a sweat when I thought about what happened	18.4	20.4	28.9	19.6	12.8	2.88	1.278	.776
R	TT8	I was afraid in open spaces	23.9	19.4	26.4	18.4	12.0	2.75	1.324	.748
R	TT9	I was afraid in crowds	12.2	9.9	22.1	27.8	28.0	3.50	1.320	.795
?	TT10	I thought about death	12.4	15.9	28.9	22.5	20.4	3.23	1.283	.635
R	TT11	I avoided things that reminded me of what happened	12.0	11.3	24.3	23.1	29.3	3.46	1.335	.711
A	*TT12*	*I felt emotionally numb*	8.0	9.3	26.0	29.7	27.0	3.58	1.206	.741
R	TT13	I was afraid to be left alone	30.7	23.9	21.4	14.0	9.9	2.48	1.320	.568
R	*TT14*	*I felt trapped*	18.8	17.1	31.3	21.0	11.8	2.90	1.263	.761
H	TT15	I felt that most people couldn't be trusted	9.5	9.5	24.3	26.8	29.9	3.58	1.266	.720
A	TT16	I avoided making plans for the future	19.6	14.4	26.2	24.5	15.3	3.01	1.337	.675
R	PTSD1	I avoided public places	12.0	14.0	29.3	32.0	12.8	3.20	1.189	.775
R	*PTSD2*	*I felt like I was re-living something again*	14.0	19.8	38.4	20.8	7.0	2.87	1.110	.770

REFERENCES:

Toyinbo, P. A., Vanderploeg, R. D., Donnell, A. J., Mutolo, S. A., Cook, K. F., Kisala, P. A., and Tulsky, D. S. 2016. "Development and Initial Validation of Military Deployment-Related TBI Quality-of-Life Item Banks." J Head Trauma Rehabil 31 (1):52-61. doi: 10.1097/ HTR.0000000000000089.