

DEVELOPMENT OF MENTAL HEALTH SCALE FOR TRUCK DRIVERS: A PSYCHOMETRIC APPROACH

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ABSTRACT

Long-distance driving needs a lot of psychological abilities; amongst them, the most significant is mental health. The current study aimed to develop a Mental Health Scale for Truck Drivers Urdu (MHS-TD Urdu) for long-distance truck drivers (LDTDs) of Pakistan. The study sample was men LDTDs aged between 30 to 60 years who travelled a minimum 300 Kilometer daily, were approached in truck stands across Punjab, where truck drivers from other provinces also stay. The study consists of three sections. The first section consisted of exploration that results in an item pool generation. In the second phase, the sample (N =300) was collected for final scale administration. Factor analysis was run on the statistical package for social sciences version 25 (SPSS-25) to finalize sub-factors of the scale. In the final scale, 23 items were retained with factor loading .35 and above. The KaiserMeyer–Olkin (KMO) value was found adequate, which is .893 and Bartlett test was found significant at $p < .001$. The results indicated a .90 Cronbach's α , which indicates an excellent internal consistency. Mental Health Scale for Truck Drivers Urdu (MHS-TD Urdu) has two sub-factors, i.e., fragile of mood and somatic. The first scale has reliability .911 while reliability of second subscale is .685. This scale would be an excellent measure for clinicians to identify the level of mental health as well as mental health issues and help them to design a counseling plan according to the needs of the client.

Keywords: Truck driver, Mental Health, Stress, Depression

INTRODUCTION

Road transport is the dominant mode of land transport, accounting for more than 80 percent of cargo volumes. Despite poor conditions of parts of the road network, Pakistan has some of the lowest road freight transport rates in the world, partly due to the industry's structure. It is also important to recognize that neither physical nor mental health exists separately –mental, physical, and social functioning are interdependent (World Health Organization, 2004).

Furthermore, all health issues need to be considered within a cultural and developmental context, as do the social constructs of childhood and adolescence (Walker 2005). The quality of a person's mental health is influenced by idiosyncratic factors and experiences, their family relationships and circumstances and the wider community in which they live (WHO 2004). Additionally, each culture influences people's understanding of and attitudes towards mental health issues. However, a culture-specific approach to understanding and improving mental health can be unhelpful if it assumes homogeneity within cultures and ignores individual differences (World Health Organization, 2004). Culture is only one, albeit important, factor that influences individuals' beliefs and actions (Dogra 2003; Tomlinson, 2001). Interaction between different factors may lead to different outcomes for different individuals.

Blonk (2018) reported that stress and mood problems are the main issues that drivers have been faced and these issues indirectly affected their work and services. Truck drivers, especially those who drive long-haul routes, are faced with a multitude of mental health-related risks attributed to the transportation environment, Long work hours, disrupted sleep patterns and fatigue (Sabbagh-Ehrlich et al., 2005), spending many consecutive days away from home and family, time pressures due to demands of "just in time" (JIT) delivery requirements, compliance with "hours of service" (HOS) driving requirements (drivers in the US are not permitted to drive more than 14 hours per day; U.S. Department of Transportation, Federal Motor Safety Carrier Administration, 2010), as well as low job satisfaction and low control are aspects of the transportation work environment that breed mental health-related problems. Another study was conducted to see the personality trait in drivers that there are some traits that are responsible in stress and depression in drivers (Parsy, 2018). In a study of occupational stressors and the mental health of truckers with a sample of 59 male truck drivers located in an urban setting, job-related factors such as constant time pressures and social isolation were found to not only lead truckers to engage in risky behaviors (e.g., drug use and sex with sex workers) but caused them psychological strain and emotional distress (Shattell et al.,

2010). When psychological job strain was measured in relation to voluntary turnover among 820 Dutch truck drivers over a two-year period, researchers found that voluntary turnover and subsequent movement to any profession outside the trucking industry resulted in a large reduction in overall job-related psychological strain (De Croon et al., 2004). Risk factors for depression were examined among 300 male truck drivers at a local truck stop in Fortaleza, Brazil. Results revealed that 13.6% of truck drivers suffered from depression; further, multivariate analysis showed that low educational level, truckers' use of stimulants, and low wages, increased risk for depression. Research suggests that drug misuse often serves as a means to combat fatigue and help truckers meet their delivery deadlines (Shattell et al., 2010). High psychological demands and lowered perceived control over one's job were found to be related to mental health problems in a sample of 1,811 male and female participants of the general German population (Dragano et al., 2008).

The current study aims to develop a valid and reliable measure of mental health for LDTRs of Pakistan.

METHODOLOGY

Phase I: Item Generation

While developing an indigenous scale to assess mental health among LDTDs, phenomenological approach was used and semi-structured interviews were conducted using open ended questions. In individual settings 25 male LDTDs aged between 30 to 60 years who travelled minimum 300 Kilometer daily were interviewed. Interview with each participant started with the same statement "Let me know about your driving life experience. "It was done to gain a broader and actual unstructured view about the concept of mental health in Pakistani culture. An item pool of 56 items was developed. The interviews were closed after 30th interview seeing the saturation and repetition of responses of participants. Each interview comprised of an average of 50-60 minutes. In the end of this phase total 29 responses were retained as the subjective expressions of mental health in LTDs. Further, these responses were converted into self-report measures.

Phase II: Expert Validation

With driving motive to achieve a jury consensus to make the Mental Health Scale more scientific the final list of Mental Health consisted of 29 responses were presented to experienced (at least 3 years) Clinical Psychologists who also have experience of research tools. They were instructed to rate each item on 5 points Likert rating scale on the frequency of occurrence where 1 stand for "absolutely not relevant" and 5 for "absolutely relevant" in the light of mental health. Based on the expert consensus only those items were retained which were rated on 4 or above by the experts and all others were discarded. Consequently, in the end only 27 items were preserved and 2 items were discarded based on expert opinion.

Phase III: Pilot Study

This phase was planned to guarantee the sufficiency, user friendliness of the content achieved as the result of empirical validation. And to minimize the false impression, lay out, the font size, clearly written instructions, items and options and to defeat resulting mistakes of developed scale to gauge Mental Toughness in long journey truck drivers. The sample of this phase consisted of (n=30) long journey truck drivers. The age rang of the participants were 30-60 years, who were married. The participants were given a 5 point Likert scale where 1 stands for absolutely wrong and 5 stands for absolutely right and the instruction given to them were as such: read each statement clearly and mark on the number which is best fit with your skills, 1 denoted the least match and 5 denoted the highest match.

Total 26 items were retained in the end of this phase and three items were discarded because of their unclarity and lack of user friendliness. Therefore a final scale of 26 items was confirmed for measuring Mental Toughness of long journey truck drivers.

RESULTS

Establishment of Psychometric Properties of MHS_TD

The Scree plot is showing Eigenvalues and several factors that could be retained. The Scree plot helped in determining the number of factors. The KaiserMeyer–Olkin (KMO) value was found to be .893, and Bartlet test was found significant at $p < .001$. The results indicated a .901 Cronbach's α , which indicates an excellent internal consistency. Item analysis was also carried out with the computation of item-total correlation on 22 items; all the items showed significant item-total correlation. Two Factor solutions were obtained. Table 1 shows a high inter-item correlation. The criteria for retaining items in a factor were .35 or above, and the items falling within this range were retained in that particular factor. Those items with dubious loading, the content of the item were considered for the appropriateness of the retention in a particular factor. The first factor of the scale consisted of 17 items. The second factor of the MTS-TD Urdu consists of 5 items. The split-half reliability of MHS-TD was calculated by odd and even method. The test was divided into two halves, form A and form B. The internal consistency of form A was .911 and form B was .685, respectively. The correlation between the two halves was found to be $r = .835$ indicating high split-half reliability of the scale.

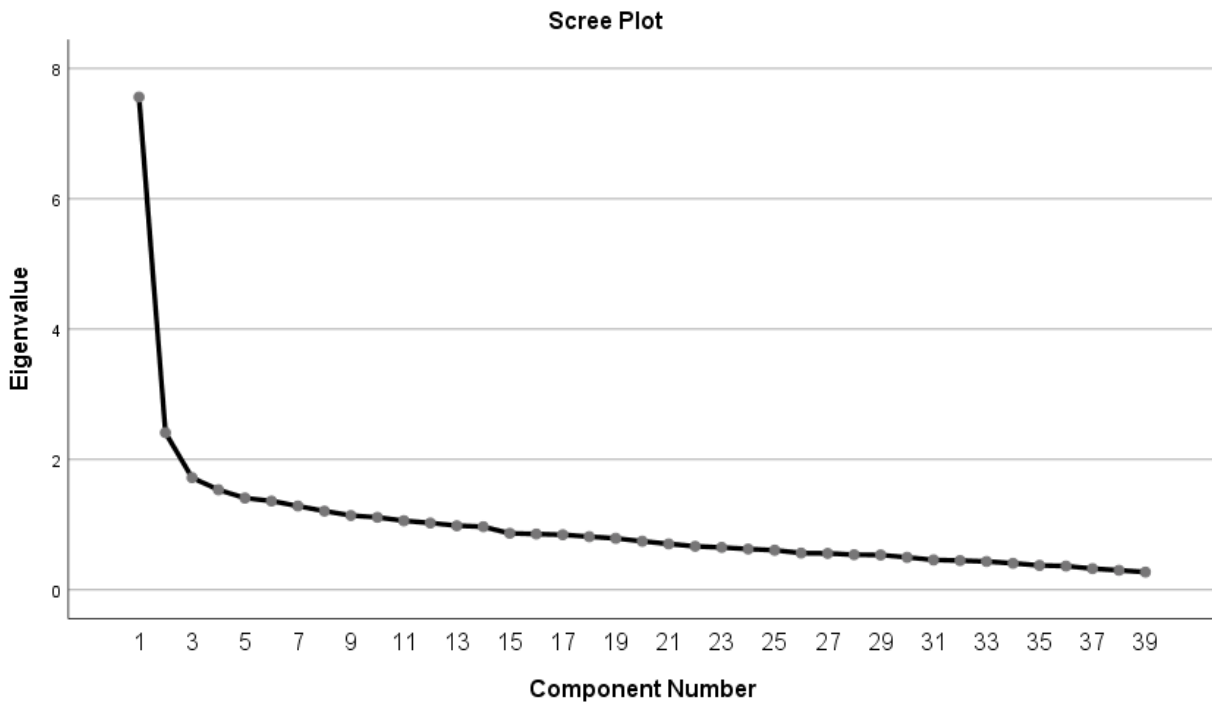


Table 1

The Factor Structure of Mental Health of Long Journey Truck Drivers with Promax Rotation (N = 300)

Sr.#	Items	F1	F2
1.	MHS15	.86	.10
2.	MHS 16	.84	.02
3.	MHS 17	.77	.01
4.	MHS6	.76	.04
5.	MHS18	.73	.12
6.	MHS2	.68	.10
7.	MHS13	.66	.03
8.	MHS7	.65	.05
9.	MHS5	.59	.13
10.	MHS20	.58	.02
11.	MHS1	.54	.01
12.	MHS8	.51	.02
13.	MHS9	.50	.02
14.	MHS23	.50	.08
15.	MHS21	.48	.02
16.	MHS4	.47	.04
17.	MHS11	.41	.12
18.	MHS3	.03	.69
19.	MHS24	.08	.66
20.	MHS10	.10	.66
21.	MHS26	.13	.63
22.	MHS19	.04	.54

Note: Factor loading >.30 have been bold faced

Table 2

Eigen Value and Variance Explained by Two factors of Mental health of Long Journey Truck Drivers (N=300)

Factors	Eigen value	% of Variance
F1	8.13	31.28
F2	2.34	9.01

Factors Description of Mental Health of Long Journey Truck Drivers (MHS_TD). The two factors extracted as result of exploratory factor analyses were named as Fragile Mood and Somatic. The descriptive details of both of them were as such:

Fragile mood. The first factor consisted of 17 items denoted different statement related to mood fragile. Examples include “hard to take initiative”, “anxious outlook”, “sensitive”, “over-reactive”, and “high heart beat”. The higher the score in this factor the higher mood fragile and vice versa.

Somatic. The second factor consisted of 5 items denoted different statement related to somatic symptoms in truck drivers Example include “low self-esteem”, “negative react to change”, “muscle tension” and less sociable. The higher the score in this factor the higher somatic symptoms and vice versa.

Table 3: Summary of Inter-Correlation of Two Factors of MHS with Chronbach Alpha

MHS Factors	Fragile mood	Somatic	α
Fragile mood	--	.36***	.91
Somatic		--	.68

Note. *** $<p=001$, MHS= Mental Health Scale

The table indicated significant positive inter factor correlation between two factors of MHS.

Validity and Reliability of MHS_TD

To check split half reliability odd and even method was used to determine the split-half reliability of MHS. The split half reliability of the MHS is very high which is $r=.835$, $p<0.001$. In the same way test-retest reliability was also checked after two weeks. The total sample size for test-retest reliability is twenty ($n =20$) and the test-retest reliability is $r=.976^{**}$.

DISCUSSION

Mental health includes emotional, psychological, and social well-being. It affects how one thinks, feels, and acts. It also helps determine how one handles stress, relate to others. Fragile of mood is the first factor of the mental health scale. Mood is an important factor in the mental health of stress. Researches showed that stress is a key factor in the health of drivers, which means that in stress, truck drivers cannot perfume their duty well. Significant symptoms of fragile of mood experienced by truck drivers support earlier work (Wong et al., 2007), which reported that 25.9% of truckers surveyed in Hong Kong were more stressful and anxious after becoming truck drivers. At the same time, our findings are contrary to those of the Australian Work Outcome Research Cost-Benefit Project, which found lower levels of stress and anxiety among truckers than that found in the general Australian population. In the US, anxiety disorders are the most common classification of mental illness. 28.8% of the general (male and female) US population have reported experiencing one or more anxiety disorders in their lifetime (Kessler et al., 2005).

In the present study, the second factor is somatic. Somatic symptoms were a significant finding in our study; depression was reported by 26.9% of the participating truckers, which is significantly higher than the 4.8% one-year incidence rate of men with depression in the general US population (Substance Use and Mental Health Services Administration, 2011). Somatic has been associated with lower levels of education, low social support, high occupational stressors and job strain, financial strain, and sleep problems in non-trucking samples of working men (Grav et al., 2012). These factors are particularly prevalent among long-haul truck drivers, who are often away from friends and family for several days to weeks at a time, who may experience the stressful trucking work environment for lengthy periods (Apostolopoulos, & Sönmez, 2010). Since truckers have long work hours and must abide by HOS requirements, sleep problems are common. For example, when truckers reach the maximum number of hours that they can drive in a single day, they are required to pull over and wait the required number of “off” hours, until they are permitted to drive again. Both sleepiness and insomnia are common problems for truckers as a result of the nature of their work. Although significant levels of depression were found among drivers in earlier work, the truckers did not report antidepressant use (Pereira da Silva-Júnior et al., 2009), whereas a small number of our study participants (7.8%) reported being treated with antidepressant medications.

CONCLUSION

The current study is an attempt to understand the manifestation and dynamics of mental health of truck drivers and to introduce an indigenous scale for its measurement.

RECOMMENDATIONS AND SUGGESTION

This was the initial step towards measuring mental health among LDTDs. The scale can be translated in different local languages to apply for assessing the mental toughness of truck drivers on larger levels. This research will further help in a better understanding of the multifaceted and dynamic nature of mental health among LDTDs. These findings may be useful for transport stakeholders, psychiatrists, psychologists, particularly traffic psychologists, counselors to develop intervention strategies and training programs. Mental health can also be checked by general drivers in future researches. In the same way this scale can also be used for seasonal drivers as well.

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