



University of Social Welfare and Rehabilitation Sciences

Health in Emergency and Disaster Research Center

Ph. D. Dissertation in Health in Emergency and Disaster

Title:

Modeling of the bio-psychological health assessment in Tehran pre-hospital emergency staff based on the theory of bio-centric health management

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June 2021

Register Number:961236002

Abstract:

Introduction: People who provide public services should be biologically and mentally healthy so that people can benefit more efficiently from their services. The performance and physiological status of workers providing relief services, such as emergency care staff, is of particular importance due to their two vital and sensitive roles. They face stressful environments and, in addition to their usual duties, they are responsible for transport patients and saving their lives. The theory of bio-centric health management based on the bio-centric paradigm has been established as a new and different perspective from the dominant human-centered paradigm for assessing bio-psychological health since 2000 by Stack et al. For this purpose, the present study was designed to model the risk assessment of bio-psychological health of pre-hospital emergency care staff based on the theory.

Materials and Methods: This study is a quantitative multi-method research based on the positivist paradigm. In the first part, the design, development and validation of the set of tools for assessing the risk of bio-psychological health was a methodological study. The pool of variable items of the bio-centered acting outcome was classified into three categories of the antecedent, feature and after-effect in the panel of experts using the adopted Hybrid method of Schuartz. Then, the process of psychometrics and validation of the set of tools was performed. In the second part, relationships between the study variables were explained by modeling structural equations in a descriptive correlational study. The study population was the emergency medical staff of Tehran.

Results: At the end of the first part of the study, psychometrics (the formal validity, content, structure and reliability), the set of tools including 87 items of external and internal sources of stress, stress outcomes, workload status, bio-centered acting and physiological status were measured. A total of 585 people participated in the study. The exploratory factor analysis and the confirmatory factor analysis were performed with 300 and 263 participants, respectively. The results of the second part identified the fit indices (GFI = 0.788, NFI = 0.651, CFI = 0.810, RMSEA = 0.053 and CMIN = 1.746). Therefore, the structural equation model of bio-psychological health of Tehran emergency care staff had an acceptable fit. Also, most relationships were significant and the largest general relationship was between the bio-centered function and physiological status while the smallest relationship was

between the self-related internal factors and the consequences of stress (the resilience outcome).

Conclusion: The present study showed that the fit of the final model of relationships between the variables based on the cognitive model in the selected sample of this study was desirable; therefore, the structural equation model, of a bio-psychological risk assessment based on the theoretical framework is established in the Tehran pre-hospital emergency staff. This model showed that the external and internal sources of stress as the independent variables affected on the mediating variables of the external status of workload and the stress outcomes; finally, the bio-centric function as the first consequence and the physiological status as the final consequence indirectly affected. The mediator role of the external status of workload and the stress consequences has been emphasized so that the effect of all independent and mediating factors of this model has been confirmed through the bio-centric performance over time. The internal and external factors of stress can alter the performance of pre-hospital emergency care staff over time. Therefore, programs that are prepared to manage these factors should pay special attention to 1- Adverse emotional, cognitive, somatic (physiological and neuromuscular) and social consequences, also the status of the work environment as well as 2- the consequences of resilience and adaptability.

Keywords: Modeling, Bio-psychological assessment, Pre-hospital emergency, Health management, Bio-centric function, Physiological status