

Test Development for Maslach Burnout Inventory – Human Services Survey, Role Conflict and Ambiguity Scale and Role Overload Subscale

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Abstract

The purpose of this study is to identify the prevalence and antecedents of burnout among nurses and to explore the consequences of burnout among nurses from public hospitals in Yangon. Burnout is a global concern and work-related stress has the potential to negatively affect the individual's psychological and physical health, as well as an organization's effectiveness. While burnout among hospital nurses has been widely researched in Western countries (Maslach & Jackson 1996), little research has investigated burnout among nurses in Myanmar, where a different culture and health system may result in different experiences for nurses. The translated version of the Maslach Burnout Inventory – Human Services Survey, Role Conflict and Ambiguity Scale, and Role Overload Subscale was used to measure in burnout 491 nurses from 7 public hospitals in Yangon. As a result of internal consistency reliability analysis of the 22 items Myanmar version of the Maslach Burnout Inventory – Human Services Survey, the coefficient alpha was found to be .79, 8 items of Role Conflict and Ambiguity Scale, the alpha was found to be .80, and 7 items of Role Overload Subscale, the alpha was found to be .85. These findings result indicate that the Myanmar version is a reliable test.

Introduction

This study intends to find out the prevalence and antecedents of burnout among nurses from public hospitals in Yangon. Burnout is a "chronic work place stress that has not been successfully managed" (ICD-11, 2019). It has been a global concern with potential negative effect upon the worker's psychological and physical health as well as the effectiveness of the organization. Maslach et al, (2001) categorized the signs and symptoms of burnout into a syndrome constituting three dimensions: they are emotional exhaustion, depersonalization, and reduced personal accomplishment. She also expounded that when one or two or all of these were experienced by nurses, overall job productivity and quality diminished, their wellbeing, quality of life, patient care and safety suffered. In addition, turnover among nurses increased. Thus, National Health Service (NHS) in England issued a report in 2013, about nurses leaving the profession due to occupational stress and inability to provide good quality care.

A group of researchers reported that these three dimension could be validity assessed by the Maslach Burnout Inventory – Human Services Survey (MBI-HSS) is the most frequently used indicator, or measure, of job-related burnout among researchers (Aiken, Clarke, Sloane, Sochalski, & Silber, 2002). This survey instrument was selected because it has been used extensively to measure burnout within the health services field and in multiple studies (Betoret & Artiga, 2010; Langdon et al., 2007; Leiter & Harvie, 1996; Leiter & Maslach, 1988). The MBI-HSS consisted of 22 statements that measured the subareas of burnout including emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA) and the overall levels of burnout. Responses for this inventory are scored from never (0), to a few times a month (3), and to daily (6). There were nine items to measure emotional exhaustion, five items to measure depersonalization, and eight items to assess personal accomplishment (Maslach et al., 2010). The manual associated with this inventory identifies a high degree of burnout if participants have high scores in EE and DP and low scores in PA (Maslach et al., 1996).

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Yet, management bodies of different work places appeared to be perplexed with multiple contributing factors to job-related stress and burnout of these Role Theory (Kahn, Wolfe, Quinn, & Snoek, 1964) gave rise to some insights into the antecedents of work stress and they constructed a measure known as Role Conflict and Ambiguity Scale. This study will use the Role Conflict Subscale (RCS), which consists of 8 items designed to measure the extent to which respondents experience role conflict in their work settings (Rizzo, House, & Lirtzman, 1970). Responses are scored on a 7-point Likert scale ranging from 1 to 7 based on whether these situations occur in their workplace. Scores can range from 8 to 56, with higher scores indicating higher levels of role conflict. RCS is the most widely used tool to measure role conflict. Another scale was developed by Zohar (1997) and this was called the Role Overload Subscale (ROS) for identifying contributing factors to burnout. These are, in fact, the scales constructed to use with English speaking population. But in our setting, these scales used to be translated and adapted to suit to Myanmar culture in order to use with Myanmar nurses.

Development of the Scale

Although the initial research using the MBI was carried out in the US and Canada, subsequently it has been used for studies in many countries around the world, and it has been translated into various languages (Maslach & Jackson 1996). The MBI-HSS, RCS and ROS were professionally translated into Myanmar by professionally translator following questionnaire back-translation processes (English – Myanmar – English). This is an essential method that was followed in the development of Myanmar version of the Maslach Burnout Inventory – Human Services Survey (MBI-HSS), Role Conflict and Ambiguity Scale (RCS), and Role Overload Subscale (ROS). These 3 scales will be used in my dissertation; Prevalence, Antecedents, and Consequences of Burnout among Nurses from Public Hospitals in Yangon.

The purpose of factor analysis is to identify the minimum number of determiners (factors) required to account for the intercorrelations among a battery of tests. The goal in factor analysis is to find a smaller set of dimensions, called factors that can account for the observed array of intercorrelations among individual tests. A typical approach in factor analysis is to administer a battery of tests to several hundred subjects and then calculate a correlation matrix from the scores on all possible pairs of tests. Fortunately, the computer implemented procedures of factor analysis search this pattern of intercorrelations, identify a small number of factors, and then produce a table of factor loadings. A factor loading is actually a correlation between an individual test and a single factor. Thus, factor loadings can vary between -1.0 and +1.0. The final outcome of a factor analysis is a table depicting the correlation of each test with each factor indicating validity.

Factor analysis is a statistical method in which variations in scores on a number of variables are expressed in a smaller number of dimensions or constructs. In the vast majority of factor analytic studies, especially in psychometrics, factor analysis is applied to the correlation between variables that indicates validity of the factors. The resultant factors are defined by their correlations (factor loadings) with the original variables.

Reliability, as it is applied to tests, has two distinct meanings. One refers to internal consistency, the second to stability over time. Most psychometric test constructors aim to make their psychological tests as internally consistent as possible. There is a sensible rationale for this demand for internal consistency since if one part of a test is measuring one variable, then, the other parts, if internal consistency is low, cannot be measuring that variable. Thus, if a test is to be valid, i.e. measure what it is intended to measure, then internal consistency must be high. This is the argument used by the vast majority of test constructors who write that high internal consistency is a prerequisite of high validity. Many test constructors use increasing

internal consistency as a criterion for retaining items in a test (Kline, 1999). In this study, internal consistency reliability was employed. Nunnally and Cronbach both consider that coefficient alpha is the best index of internal consistency reliability. Cronbach developed the statistical rationale of alpha and formula for the alpha coefficient is:

$$r_{kk} = \frac{k}{k-1} \left[1 - \frac{\sum \sigma_i^2}{\sigma_t^2} \right]$$

Where r_{kk} = the alpha coefficient of a test of k items, k = the numbers of items, σ_i^2 = the item variance and σ_t^2 = the test variance.

Method

Participants

As participants, a group of 491 nurses from 7 public hospitals in Yangon Region was used for the factor analysis in this study. The sample included 482 (98.2%) female nurses and 9 (1.8%) male nurses who were between 21 to 59 years old.

Procedure

In order to conduct the factor analysis, the data were entered onto a database in the Statistical Package for the Social Science (SPSS). Factor analytic method was used to produce the Myanmar version of the (MBI-HSS), (RCS), and (ROS). The reliability was checked by means of alpha.

Results and Discussion

Factor Analysis of the Myanmar Version of Maslach Burnout Inventory–Human Service Survey (MBI-HSS)

A principal components factor analysis using varimax rotation was performed on the 22-items Maslach Burnout Inventory – Human Services Survey to assess whether there was coherence among the items that were hypothesized to form different subscales. Table 1.1 presents the results of with eigenvalues are greater than one emerged from the analysis. The first factor was named Emotional Exhaustion. The second factor called Personal Accomplishment and the third factor was named Depersonalization, accounted for 46% of the total variance. The resulted items from the factor analysis study were organized as the 22-item Myanmar version of the Maslach Burnout Inventory – Human Services Survey. This study showed that the Myanmar version of the Maslach Burnout Inventory – Human Services Survey is an appropriate measure for the Myanmar cultural setting.

Table 1.1 Items from the Myanmar version of the Maslach Burnout Inventory – Human Services Survey (MBI-HSS) and varimax rotated factor loading (N = 491)

Item	Statement	Factor	Factor	Factor	λ^2
		I	II	III	
Factor I: Emotional Exhaustion					
EE8	I feel burned out from my work.	.81	-.02	.11	.66
EE1	I feel emotionally drained from my work.	.79	.08	.01	.63
EE2	I feel used up at the end of the workday.	.79	-.00	-.04	.63
EE3	I feel fatigued when I get up in the morning and have to face another day on the job.	.76	-.06	.04	.58
EE6	Working with people all day is really a strain for me.	.70	-.10	.19	.54

Table 1.1 ~ *Continued*

Item	Statement	Factor	Factor	Factor	λ^2
		I	II	III	
EE20	I feel like I'm at the end of the rope.	.63	-.08	.30	.49
EE13	I feel frustrated by my job.	.60	.00	.29	.44
EE16	Working with people directly puts too much stress on me.	.53	-.05	.29	.36
EE14	I feel I'm working too hard on my job.	.49	.21	.07	.28
Factor II: Personal Accomplishment					
PA18	I feel exhilarated after working closely with my recipients.	.02	.76	-.15	.59
PA19	I have accomplished many worthwhile things in this job.	.10	.72	-.21	.58
PA17	I can easily create a relaxed atmosphere with my recipients.	-.15	.62	-.06	.41
PA7	I deal very effectively with the problems of my recipients.	.01	.62	.04	.39
PA12	I feel very energetic.	-.26	.61	.13	.46
PA9	I feel I'm positively influencing other people's lives through my work.	.01	.59	-.08	.36
PA21	In my work I deal with emotional problems very calmly.	.07	.56	-.03	.32
PA4	I can easily understand how my recipients feel about things.	.10	.49	-.15	.27
Factor III: Depersonalization					
DP15	I don't really care what happens to some recipients.	-.01	-.13	.75	.58
DP5	I feel I treat some recipients as if they were impersonal objects.	.18	-.25	.66	.53
DP10	I've become more callous toward people since I took this job.	.14	-.09	.62	.41
DP22	I feel recipients blame me for some of their problems.	.30	.07	.48	.33
DP11	I worry that this job is hardening me emotionally.	.44	-.06	.47	.42
<i>Sums of square</i>		5.31	3.40	1.55	10.26
<i>Percentage of variance</i>		24.15	15.45	7.02	46.62

Table 1.2 Internal consistency reliability of the Myanmar version of the Maslach Burnout Inventory – Human Services Survey

No	Test	Alpha
1	Emotional Exhaustion	.87
2	Personal Accomplishment	.77
3	Depersonalization	.64

As a result of internal consistency reliability analysis of the 22-items Myanmar version of the Maslach Burnout Inventory – Human Services Survey, the coefficient alphas were found to be .87 for Emotional Exhaustion (EE), .77 for Personal Accomplishment (PA), and .64 for Depersonalization (DP) (see Table 1.2). The result indicates that the Myanmar version of the Maslach Burnout Inventory – Human Services Survey is a reliable test.

Factor Analysis of the Myanmar Version of Role Conflict and Ambiguity Scale (RCS).

A principal components factor analysis using varimax rotation was performed on the 8 items RCS to assess whether there was coherence among the items that were hypothesized to form different subscales.

Table 1.3 Items from the Myanmar version of the Role Conflict and Ambiguity Scale (RCS) and varimax rotated factor loading (N = 491)

Item	Statement	Factor I	Factor II	λ^2
Factor I: Ambiguity				
RCS3	I receive incompatible requests from two or more people.	.80	.10	.65
RCS2	I have to buck a rule or a policy in order to carry out an assignment.	.73	.07	.53
RCS4	I do things that are apt to be accepted by one person and not accepted by others.	.70	.20	.53
RCS1	I have to do things that should be done differently.	.57	.33	.43
RCS6	I work with two or more groups who operate quite differently.	.51	.39	.41
Factor I: Role Conflict				
RCS8	I receive assignments without adequate resources and material to execute them.	.15	.86	.77
RCS7	I receive assignments without the manpower to complete them.	.13	.86	.75
RCS5	I work on unnecessary things.	.42	.51	.44
	<i>Sums of square</i>	2.46	2.01	4.47
	<i>Percentage of variance</i>	30.74	25.60	56.34

Table 1.4 Internal consistency reliability of the Myanmar version of the Role Conflict and Ambiguity Scale

No	Test	Alpha
1	Ambiguity	.75
2	Role Conflict	.71

As a result of internal consistency reliability analysis of the 8-items Myanmar version of the Role Conflict and Ambiguity Scale, the coefficient alphas were found to be .75 for Ambiguity, and .71 for Role Conflict (see Table 1.4). The result indicates that the Myanmar version of the Role Conflict and Ambiguity Scale is a reliable test.

Factor Analysis of the Myanmar Version of the Role Overload Subscale (ROS)

A principal components factor analysis using varimax rotation was performed on the 7 items ROS to assess whether there was coherence among the items that were hypothesized to form different subscales.

Table 1.5 Items from the Myanmar version of the Role Overload Subscale (ROS) and varimax rotated factor loading (N = 491)

Item	Statement	Factor	λ^2
Factor : Role Overload			
ROS4	Had difficulty in completing a task due to bureaucratic constraints.	.76	.58
ROS5	Had too few resources (staff, equipment, budget) for dealing with a task.	.75	.56
ROS1	Felt under time pressure, had difficulty due to insufficient time.	.74	.55
ROS6	Had to waste time over some unimportant activity.	.74	.54
ROS3	Had to stay too many extra hours or do inconvenient shiftwork schedule.	.72	.51
ROS2	Had too much or too many things to take care of.	.71	.51
ROS7	Had insufficient formal authority to do things my way.	.71	.50
	<i>Sums of square</i>	3.74	3.74
	<i>Percentage of variance</i>	53.39	53.39

Table 1.6 Internal consistency reliability of the Myanmar version of the Role Overload Subscale

No	Test	Alpha
1	Role Overload	.85

As a result of internal consistency reliability analysis of the 7 items Myanmar version of the Role Overload Subscale, the coefficient alpha was found to be .85 (see Table 1.6). The result indicates that the Myanmar version of the Role Overload Subscale is a reliable test.

Conclusion

Several studies have shown the reliability and validity of the MBI-HSS. “Internal consistency was estimated by Cronbach’s coefficient alpha from more than one thousand respondents. The reliability coefficients for the subscales were the following: .90 for Emotional Exhaustion, .79 for Depersonalization, and .71 for Personal Accomplishment” (Maslach et al., 2010, p. 12).

Result in this study showed that reliability coefficient for the 22 items Myanmar version of the MBI-HSS scale was $\alpha = 0.79$, the reliability coefficients for the three sub scales were : $\alpha = 0.87$ for Emotional Exhaustion; $\alpha = 0.64$ for Depersonalization; which was slightly lower with the result from the previous study ($\alpha = 0.79$) (Maslach et al., 2010), and $\alpha = 0.77$ for Personal Accomplishment. 8 items of Role Conflict and Ambiguity Scale, the alpha was found to be $\alpha = 0.80$, and 7 items of Role Overload Subscale, the alpha was found to be $\alpha = 0.85$. These findings suggest that the Myanmar versions are reliable and suitable for the practical used in the present research.

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