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Review Article

Development and Validation of Nurse Emotional Labor Scale (NELS)

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Abstract

Emotionally demanding patient interactions, when coupled with organizational directives to focus on exemplary customer service, can prompt nurses to express feelings and emotions that are not genuine and involves a great deal of emotional labor. This study aimed to develop and validate a tool that measures emotional labor of nurses. The measured variables were taken from the underlying structures of nurse emotional labor based on scholarly literature and respondent's feedback. By virtue of their near-constant contact with patients and families, it is more difficult for nurses than for other healthcare professionals to escape emotional labor, and recharge their batteries for the next encounter.

Keywords: Emotional Labor; Nursing; Reliability; Validity; Philippines

Introduction

When considering a career, people probably think about what degree or skill set a particular job requires, but rarely do people consider, or sometimes even realize the kind of emotional skills they need in various occupations. In 1983, the Sociologist Arlie Hochschild coined the term emotional labor, in her book "The Managed Heart" [1,2]. It refers to professions which require individuals to express certain emotions, regardless of how they feel. The idea here is that employees are expected to display the right emotions to properly perform their jobs. The cashier or waitress is expected to smile at you and say, "Have a good day!" even if they aren't in a good mood and couldn't care less how the rest of your day goes. Every job requires a certain level of emotional labor. A good businessman needs to control his temper during a meeting, a good flight attendant needs to be kind and respectful toward passengers, and a good nurse needs to be empathic towards patients. Individuals do not often think of these emotional aspects of work as actual work, but they do require will-power and energy. They can often be just as draining as physical or mental work.

In 2009, Gray implied that most organizations with public-facing jobs require some degree of emotional labor, but it is thought to be most fundamental to nursing [3]. Nurses have contact with patients for prolonged periods of time and are required to deliver compassionate care often under demanding interpersonal circumstances. They are expected to regulate their own emotional reactions while assuaging the fear and distress of patients. Nursing has a set of shared unspoken rules concerning the emotions that should be displayed and those that should remain hidden. When performed for altruistic reasons, emotional labor can be a source of satisfaction; if not, it can threaten the wellbeing of nurses. For example, nurses who have difficulty managing the emotional demands of the job tend to report elevated levels of emotional exhaustion, emotional detachment and general fatigue [4].

All people have emotions. No matter who we are; behaviors, thoughts and actions are wound up with what we feel. Emotion is one key value people bring to organizations. This perspective is fundamental in health care organizations and plays an important role in helping professions like nursing. Nursing requires intensive emotional, physical and spiritual work, but it is also very rewarding and satisfying. Nurses have constant emotional involvement with

patients and their relatives. They have to listen to their complaints and deal with helplessness, suffering and death associated issues. Tension and turmoil come within the territory of being a nurse. The need for enhanced training and support to help nurses manage the emotional demands of their work has to be recognized. To perform such interventions, there must be an insight into the implications of emotional labor and the factors that might protect nurses from the negative effects of the emotional demands they encounter. Although there were several tools to measure emotional labor like the Brotheridge and Lee's [5,6] Emotional Labor Scale, there is no specific tool to measure emotional labor of nurses. Thus, the purpose of this study is to develop that tool and take inventory to adequately measure nurse emotional labor and to examine its psychometric properties.

Methods

Population and Sample of the Study

The target population was selected through purposive sampling technique; wherein the researchers chose the sample on its own. Among the 233 nurses working in the selected six tertiary hospitals in Central Luzon Philippines, there were 144 or 64.6% females and 79 or 35.4 % males. The researchers planned on having a sample size of N=240 for the first drafted questionnaire. However, since two items were deleted during the Content Validity Index (CVI), the final demographic profile of the respondents (N = 223) responds to the 22-point item of Nurse Emotional Labor Scale during field testing. The researchers applied the rule of thumb that there should be at least 10 observations per item [7]. Since NELS has a total of 22 items (questions), the respondents must be equal or more than 220, which was met in the sampling process of this study.

Procedure

Two guidelines provided by different scale developers - Hinkin [8] and Radhakrishna [9] which were also widely used by different scale developers were combined to better provide a detailed guideline in developing and validating the NELS.

The steps of constructing and developing the NELS were as follows:

Phase 1- Background: In this initial step, the purpose and objectives of the study were examined. The processes used to select the respondents and determining who may participate in the study was reviewed. A thorough understanding of the problem through literature search and readings was obtained. Good preparation and understanding of Step1 have provided the foundation for initiating Step 2.

Phase 2- Questionnaire Conceptualization and Item Generation: After developing a thorough understanding of the research, the next step was to conceptualize and generate statements/questions for the questionnaire. The researchers adapted the emotional labor scale [5,6], but since it was not intended for nurses working in the hospital setting, the researchers modified it and were able to develop its' own version of Nurse Emotional Labor Scale. The items in this questionnaire consist of three constructs, Surface Acting (10 items), Deep Acting (7 items) and Genuine Acting (7 items) with a total of 24 items.

On surface acting, a nurse portrays emotions that are not felt internally, and they mask their true emotions while in the workplace. On deep acting, a nurse changes internally felt emotions to align with required emotional expressions of the organization.

On genuine acting, a nurse shows natural emotions; in essence, no acting is required.

Phase 3- Format and Data Analysis: In Step 3, the focus was on the selection of questionnaire layout, format, question order, font size, proposed data analysis and appropriate scales of measurement. Scales are devices used to quantify a subject's response to a particular variable. This study used a 5-point Likert Scale (5-Always, 4-Often, 3-Sometimes, 2-Rarely and 1-Never).

Phase 4- Establishing Validity and Reliability: *Validity* is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform. As a process, validation involves collecting and analyzing data to assess the accuracy of an instrument. *Content validity* refers to the appropriateness of the content of an instrument. Content validity was established through the Content Validity Index (CVI) done by the six experts who rated the questionnaire.

The validity of NELS was measured through factor analysis using the Exploratory Factor Analysis (EFA). The aim of factor analysis was attempting to discover the simplest method of interpretation of observed data. Factor analysis of NELS operated on the notion that measurable and observable variables can be reduced to fewer latent variables that share a common variance and are unobservable, is known as reducing dimensionality [10]. EFA was done in NELS by shrinking the data-questions into a smaller data set that is more manageable and more understandable.

EFA consists of seven main steps: reliable measurements, correlation matrix, a factor analysis on principal component analysis, communalities, the number of factors to be retained, factor rotation, use and interpretation of the results.

In the development of NELS, the EFA process first checked if there were univariate and multivariate normality within the data. The assumptions were then next set, assuming that the three factors of emotional labor have a relationship on the items; by which according to Gorsuch [11] the assumption is based on the determining factor that there is a linear relationship between the factors and the variables.

Since factor analysis of NELS departures from a correlation matrix, the used variables were first of all measured at (at least) an interval level. Second, the variables were roughly normally distributed; this makes it possible to generalize the results of the analysis beyond the sample collected [12]. Third, the sample size was taken into consideration, as correlations are not resistant [13], and can hence seriously influence the reliability of the factor analysis [14].

Residuals are computed between observed and reproduced correlations. There are 99 (42.0 %) non-redundant residuals greater than absolute value 0.05. It is a rule that a model that has less than 50% of the non-redundant residual is a good fit.

Communality of a variable in NELS represents the proportion of the variance in that variable that was accounted for by all ('common') extracted factors. Large datasets that consist of several variables were reduced by observing 'groups' of variables or factors - that is, factor analysis assembles common variables into descriptive categories. In the factor analysis, the different assumption about the communalities was reflected in a different correlation matrix.

The initial communalities were assumed to be 1 by setting the Eigen value to 1 (values of communality factor loads must be greater than one) which is a criterion for the number of factors to rotate as to Kaiser [5] which implies that an Eigen value less than one implies that the scores on the component would have negative reliability.

Most researchers use the Eigenvalue criteria for the number of factors to be extracted. Value of the percentage and variance explained method is also used for EFA and the screen test criteria for the selection of factors. In this method, Eigenvalue is plotted on a graph and factors are selected.

Researchers can determine the statistical power and significance level. For instance, in order to achieve a factor loading of .55 with a power of .80, a sample of 100 is needed. In NELS, factor loading will be assessed to determine the strength of the relationships in the interpretation of the factors. The factors will be identified by the largest loadings, but confirmation of the identification of the factors will be done by examining the zero and low loadings of the factors. Negatively scored items will be eliminated, where factors load >.40 does not exceed and .10 will be accepted. The researchers also determined the cut-off for a statistically meaningful rotated factor loading. A general rule to determine the reliability of the factor is to look at the relationship between the individual rotated factor loading and the magnitude of the absolute sample size.

The scree test of 22-point item scale will be used in conjunction with the eigenvalues to determine the amount of number of factors to retain; where the number of factors to be retained is the data points that are above the break or the point of inflexion. The scree plot is typically interpreted as follows: the number of factors appropriate for a particular analysis is the number of factors before the plotted line turns sharply right.

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and the Bartlett's test of sphericity were examined to decide if the data were performing the factor analysis appropriately. In this study, the criterion that was used to determine the number of factors to retain is Kaiser's criterion rule of thumb. This criterion according to Kaiser [15] suggests all retaining factors that are above the eigenvalue of 1 is accepted.

After validating the content of the instrument, the reliability of NELS was then measured. *Reliability* can be thought of as consistency. As to Carlson and Winquist [16] measure is said to have a high reliability if it produces similar results under consistent conditions. In this study reliability of the instrument will be tested with the aid of Cronbach's Alpha, coefficient (homogeneity reliability) and stability coefficient. Cronbach's Alpha scores were calculated to test the internal consistency of each subscale and each overall scale of the adapted instrument. The Alpha coefficients served as indicators for the quality of the instrument [17].

Phase 5- Final Version of NELS and its Readability: After all the steps above were taken, the NELS was then drafted for its final version. Its question numbers were rearranged according to the EFA done in Phase 4. Items that were extracted in the process of validity and reliability were removed. When the final arrangement was made, a test of readability was done to check the reading ease of the newly developed Nurse Emotional Labor Scale tool. The readability was computed by the use of Flesch Reading Ease formula.

The Flesch Reading Ease was used to test the readability of the questionnaire by measuring textual difficulty which indicates how easy a text is to read. According to Flesch reading-ease test, higher scores indicate material that is easier to read and lower numbers mark passages that are more difficult to read. With the reading ease formula, the interpretation would be based on the reading ease assessment scale of: 90 -100 (very easy); 80-89 (easy); 70-79 (fairly easy); 60-69 (standard); 50 -59 (fairly difficult); 30-49 (difficult) and 0-29 very confusing. The Flesch-Kincaid readability tests are readability tests designed to indicate how difficult a passage in English is to understand and was used to better ensure reliability and validity of the NELS.

Ethical Considerations

An ethical clearance was secured from the institutional review board to ensure that this study did not involve any form of invasion of respondents' integrity. Prior to data gathering, the respondents received written information about informed consent, purpose of the study, including its voluntary nature, study

procedures, benefits of the participation, voluntary participation, including the right to withdraw anytime, and a guarantee of the maintenance of anonymity, and confidentiality of the data.

Results and Discussion

Validity and Reliability of NELS

The initial draft of NELS was answered by 223 nurses from 6 tertiary hospitals with at least two years' experience. The assumptions were then next set, assuming that the three factors of emotional labor have a relationship on the items; by which according to Gorsuch [11] the assumption is based on the determining factor that there is a linear relationship between the factors and the variables. Since factor analysis of NELS departures from a correlation matrix, the used variables were first of all measured at (at least) an interval level. Secondly, the variables were roughly normally distributed; this makes it possible to "generalize the results of the analysis beyond the sample collected" [12]. Thirdly, the sample size was taken into consideration, as correlations are not resistant [13], and can hence seriously influence the reliability of the factor analysis [14]. Results showed that NELS has a 42.5% of non-redundant residuals. Residuals are computed between observed and reproduced correlations. There are 99 (42.0 %) non-redundant residuals greater than absolute value 0.05. It is a rule that a model that has less than 50% of the non-redundant residual is a good fit. Therefore, since NELS has less than 50% non-redundant residuals, the model is a good fit.

Large datasets that consist of several variables were reduced by observing groups of variables or factors. Factor analysis assembles common variables into descriptive categories. In the factor analysis the different assumption with regard to the communalities was reflected in a different correlation matrix. After running the communality factor, the remaining 15 items are 2, 3, 4, 5, 6, 9, 10, 12, 13, 14, 17, 18, 19, 20, and 21. According to Kaiser [15], the initial communalities were assumed to be 1 by setting the Eigen value to 1 (values of communality factor loads must be greater than one) which is a criterion for the number of factors to rotate. All the remaining questions have eigenvalue of 1, which implies that the score on the component all have positive reliability. Therefore, NELS model is considered valid in its communalities. The screen test of 22-point item scale was used in conjunction with the eigenvalues to determine the amount of number of factors to retain; where the number of factors to be retained is the data points that are above the break or the point of inflexion. The scree plot is typically interpreted as follows: the number of factors appropriate for a particular analysis is the number of factors before the plotted line turns sharply right. The elbow in the screen plot occurs at Factor Number 3, indicating that there are three factor solutions for the 22 items

Items are arranged from largest result to smallest result by each factor. Item 3 has the largest absolute value of .716. Item 5 and 21 has an absolute value of .711. Item 9 has .660, item 2 has .648 and item 13 has .625. Item 19 has .575, item 20 has .569, item 18 has .556, item 17 has .533 and item 12 has .522. Item 14 has .495, item 4 has .418, item 10 has .417 and item 6 has .453. Out of 22-point item initially developed questions only 15 were left. The items eliminated were item numbers: 1, 7, 8, 11, 15, 16, and 22. These items received an absolute value >.40, therefore they were extracted. To determine the strength of the relationships in the NELS in the interpretation of the factors, the loadings were then assessed. The factors were identified by the largest loadings, but confirmation of the identification of the factors was also done by examining the zero and low loadings of the factors. Negatively scored items were eliminated, where factors load >.40 does not exceed .10 were accepted. The researchers also determined the cut-off for a statistically meaningful rotated factor loading. A general rule to determine the reliability of the factor is to look at the relationship between the individual rotated factor loading and the magnitude of the absolute sample size.

In this study, the criterion used to determine the number of factors to retain is Kaiser's criterion which is a rule of thumb. This criterion according to Kaiser [15] suggests retaining all factors that are above the eigenvalue of 1. The KMO score is .853; it is a rule that, the sample is adequate if the value of KMO is greater than 0.5, since we have .853 as KMO the sample is then concluded to be adequate. The Bartlett's test of sphericity was significant at a level of .000. Both tests indicated that the data was appropriate for factor analysis. In the number of factors to be retained, it is important to know that the eigenvalues and scree test are used in the NELS to determine how many factors to retain. Before the extraction the Eigenvalue is set at a level greater than 1. So, as indicated that factor 1 (Surface Acting) received an eigenvalue of 6.5, factor 2 (deep acting) earned an eigenvalue of 3.2 and factor 3 got an eigenvalue of 2.3. Since all three have eigenvalues of greater than 1, it can then be concluded that all factors have positive internal consistency reliability. Three factors explain 63.60% of the variance in the 22-point items which means that the scale is very useful to measure the emotional labor in terms of the three constructs of surface acting, deep acting and genuine acting.

The Cronbach's reliability that was used to measure the internal consistency of the NELS test score showed a computed value of .87 for SA, 0.87 which internal consistency is describe in the Cronbach's alpha rule as 'good' because it marked on the alpha range of ($0.9 > \alpha \geq 0.8$); .81 for DA, interpreted as 'good' ($0.9 > \alpha \geq 0.8$) and .78 for GA which is interpreted as 'acceptable' because it falls on the alpha range of 0.8 ($> \alpha \geq 0.7$) which indicated that the factors for scale have an acceptable internal consistency.

Readability of NELS

The final NELS scored 87 in the Flesch Reading Ease which

can be concluded that it is easy to read. As indicated, its reading grade level is 4, meaning that even individuals in the fourth grade can read and understand the developed Nurse Emotional Labor Scale. They were separated into 3 different subscales (Surface acting, Deep acting, Genuine acting) and re-numbered (1-15) according to the highest number of their factor loads. There are 5 items in each category. 10 items (# 3, 4, 5, 6, 8, 9, 10, 12, 13, and 15) were retained from the modified scale of Brotheridge and Lee's 15 item tool entitled Emotional Labor Scale. The remaining 5 items (1, 2, 7, 11, and 14) were based from the researchers' theoretical perspective and analysis of related literature. (Table 1) presents the final version of the 15-item tool. The researchers have seen 2 limitations that may be improved upon. The first one is that in the CVI, all 6 expert panels hold an administrative position; therefore, they may not have had the best viewpoint in judging its composition because they do not handle patients in a day to day basis. However, they are very qualified in judging its construct, content and validity based on their professional skills and training. The second limitation is confirmatory factor analysis was not done, due to time restraint of the researchers. This scale still needs to be replicated in different contexts to ensure its consistency. The primary purpose of this tool is to adequately measure emotional labor among nurses.

Surface Acting	**1 Never**	**2 Rarely**	**3 Sometimes**	**4 Often**	**5 Always**
I feign emotions I don't really feel when telling patients bad news.					
I pretend to be sad when my patient tells me a bad experience.					
I put on an act in order to deal with patients s in an appropriate way.					
I have to cover up my true feelings when dealing with patients.					
I behave in a way that differs from how I really feel.					
Deep Acting	1	2	3	4	5
I work hard to feel the emotions that I need to show when dealing with my patients.					
When dealing with difficult patients, I imagine them being little kids so that I can be more patient with them.					
I try to show appropriate emotion at the right time when dealing with patients.					
I try to actually experience the emotions that I must show when interacting with patients.					
I have to concentrate more on my behavior when I display an emotion that I don't actually feel.					
Genuine Acting	1	2	3	4	5
I show the same feelings that I feel inside.					
I actually feel the emotions that I need to show to do my job.					
The smiles I share with my patients are sincere.					
I genuinely care for my patients and their well-being.					
The emotions I show to patients match what I truly feel.					

Table 1: Final Version of the NELS.

Scoring high on one subscale does not preclude the fact that you can also score high on the rest of the subscales. This tool measures which emotional strategies nurses are using in their everyday encounters with their patients the most. Individual differences do not significantly affect the way nurses perform emotional labor; and individuals' affective style or empathic level do not significantly associate with the type of acting one adopts to perform emotional labor. This tool is intended for hospital administrators or nursing managers to give to nurses working in hospital settings. It can be given during their year-end review to assess and measure where nurses may stand in terms of emotional labor. From there, the hospital administrators or nurse managers can take stock and re-evaluate these test scores, along with the individual's characteristics, and performance to see if any

adjustments are needed to be made.

If nurse scores high in the Surface Acting category, the management must re-assess its policies or develop retraining programs to teach necessary skills to perform emotional labor. If the hospital administration could provide appropriate training that would help nurses learn to deep-act emotional labor, nurses could provide sincerer hospitality. They would also gain a sense of satisfaction from their ability to act out emotional labor. Nurses need to be courteous to clients; however, clients have no obligation to return empathy or even courtesy. In some situations, where clients exercise the privilege of "Customers are always right," nurses face real challenges suppressing their true feelings. It is critical for both nurses and organizations to learn how to deal with such situations. Openly discussing the frustration on their jobs is a cure to heal nurses' wounds when they are hurt or insulted by clients.

This type of training has several effects. First, it delivers a message to nurses that the organization is aware of and acknowledges the emotional contribution that nurses put into jobs. This positive feedback can motivate nurses to increase their productivity and be more committed to their jobs and organizations. Second, it provides an opportunity to ventilate nurses' negative emotions caused by their jobs. Third, by implementing this type of training, organizations can develop in their nurses the ability to suppress anger or avoid frustration. If companies do not provide formal or informal ways to ventilate employees' anger and frustration, sooner or later, nurses will express anger to their clients.

Implications of the Study

For many within the nursing profession, the work role involves a great deal of emotional work or emotional labor. By virtue of their near-constant contact with patients and families, it is more difficult for nurses than for other healthcare professionals to escape emotional labor, and recharge their batteries for the next encounter. Unfortunately, emotional labor is not something that nurses are prepared for. They aren't taught in nursing school to put on a brave face so that they can exude confidence around patients and coworkers, even when they are falling apart inside. Nurses just intuitively know that they have to do this, and with experience, they perfect the art. This doesn't mean that nurses should just accept emotional labor as an inevitable part of the job and get on with their work. Emotional labor might be integral to the practice of nursing, but it impairs psychological health. Furthermore, depression, absenteeism, burnout, and turnover intention are among the consequences of unrelieved emotional labor.

Conclusion

The measured variables can be taken from the underlying structures of nurse emotional labor based on scholarly literatures; respondent interviews; expert feedback consist of 15 components, thus making the NELS final version a 15-point item tool, which were initially 22 items during the initial conceptualization. The latent constructs that underlie the battery of measured variables are surface acting, deep acting and genuine acting. The NELS was validated using the CVI and EFA. In CVI, 22 out of 24 items were retained which the six experts validated by giving relevance ratings of 3 and 4. In EFA, the KMO test score was greater than 0.5, which concludes that the sampling size was adequate. Bartlett's test of sphericity was significant at a level of .000. This indicates that the data was appropriate for factor analysis. All three factors have an eigenvalue higher than one, indicating that the factors are stable and valid. The reliability of the Nurse Emotional Labors scale as to its factors is: surface acting and deep acting have good reliability and genuine acting has an acceptable reliability. Overall, the reliability of all sub-scales of the scale had higher internal consistency than a suggested value of .70 [18], which can be interpreted as adequate. In Flesch Reading ease test, NELS scored 87, which concludes that it is easy to read. Its reading grade level is 4, meaning that even individuals in the fourth grade can read and understand the developed Nurse Emotional Labor Scale. These findings measure the emotional labor of nurses.

Recommendations

In depth investigation of other constructs to include in the study of NELS should be further investigated. Emotional Labor may result from the overlap between task-related and patient related job characteristics. For example, nurses who are expected to provide a good service to patients (patient-related) and at the same time do charting and endorsement (workload), may experience role conflict that can lead to emotional dissonance. Using the development guidelines of Hinkin et al. [8] and Radhakrishna [9] would still help prove useful when doing further in-depth research in Emotional Labor. Moreover, confirmatory factor analysis should be done to further validate the NELS. Further applications of other reliability test (test-re-test) should be conducted to better test the consistency of the scale. Further tests should also not be limited to tertiary government hospitals, but also include private hospitals, primary and secondary hospitals. All nurses should also be included in the study, regardless of how long they have worked. Consequently, interventions are needed to inform nurses on the detrimental influences of surface acting and train them in the daily use of deep acting as the healthier emotional regulation strategy. Interventions targeted at the enhancement of the individual capacity for self-control would be beneficial to nurses' health. More research is needed to seek solutions to the problem, as well as to better understand the impact of emotional labor on nurses and nursing care.

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