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Psychology & Psychological Research International Journal
ISSN: 2576-0319

Preliminary Study for Gatekeepers Self-Efficacy Scale among Resident Assistants (GSS- RA)

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Research Article

Volume 9 Issue 2

Received Date: April 24, 2024

Published Date: May 09, 2024

DOI: 10.23880/pprij-16000412

Abstract

As the importance of promoting college student mental health increases and campuses work to prevent suicide, resident assistants (RAs) are called upon to serve as gatekeepers to facilitate professional help as a part of suicide prevention initiatives on campuses. However, assessing the efficacy of suicide prevention training is lacking. This study develops and validates the Gatekeepers Self-Efficacy Scale among resident assistants (RAs) based on the Question, Persuade, Response suicide prevention model. Exploratory Factor Analysis (EFA), Parallel Analysis, and Multidimensional Graded Response model (MGRM) were used with 302 RAs sample. Two factors were found, (1) Communicating about Crisis and (2) Knowledge of Resources, with appropriate item fit and parameter estimates. The response patterns of the two factors and their correlations with objective suicide prevention knowledge were estimated and discussed. The implications of these findings for practical application are discussed, along with suggestions for future studies.

Keywords: Scale Development; Self-Efficacy; Gatekeepers; Suicide Prevention Training

Abbreviations: RAs: Resident Assistants; QPR: Question, Persuade, Respond; MI: Multiple Imputation; PMM: Predictive Mean Matching; EFA: Exploratory Factor Analysis; MGRM: Multidimensional Graded Response Model; RMSEA: Root Mean Square Error of Approximation; TLI: Tucker Lewis Index; CFI: Comparative Fit Index; FDR: False Discovery Rate.

Introduction

Death by suicide is the second leading cause of death among youth and young adults between 15 and 24 years old in the United States, claiming the lives of about 6,000 young people in 2019 [1]. Within the collegiate setting, the issue of suicidality among students is of paramount concern, with nearly a quarter of college students reporting past experiences of suicidal ideation or behavior [2]. Despite the prevalence of mental health challenges among college students, those at risk often exhibit reluctance to seek professional help [3]. This hesitancy arises from several attributes commonly observed among college students, such as a lack of perceived need for professional help, a tendency of self-reliance, concerns regarding confidentiality, financial and time constraints, and the enduring stigma surrounding mental health issues [3]. Instead of professional help, college students tend to reveal their difficulties to individuals around them (i.e., friends, family), which may result in failure to provide adequate help to at-risk college students in a timely manner due to their limited knowledge and fear of

addressing the risk [4-6].

Gatekeepers, as defined by Quinnett [7], are individuals within a community who have direct contact with large numbers of community members as a part of their usual routine. They are acknowledged as being well-placed to identify persons at risk for suicide and facilitate their access to professional help [8]. Given college students' tendencies to seek help from those around them as opposed to mental health professionals, gatekeepers play a significant role in campus suicide prevention [5]. Campus Resident Assistants (RAs) are often called upon to fill the role of gatekeepers for campus suicide prevention due to their proximity and their inherent roles on campus [9,10].

Unfortunately, despite the role of RAs in campus suicide prevention training nationally [5], research focusing on RA's function as gatekeepers is still evolving and appropriate tools are required to measure its efficacy [9,11]. This study focused on developing and validating a tool to measure RAs' self-efficacy in helping residents at risk as gatekeepers for suicide prevention.

Method

Participants and Procedures

Data were collected from 302 RAs at two different southern/southeastern universities in 2013 (n = 142) and 2014 (n = 160). A total of 10 questions were constructed from items related to RA's self-efficacy in Swanbrow Becker [12] based on the Question, Persuade, Respond (QPR) model of intervention [7] and reviewed by experts in suicide research and clinical intervention. The questions assess confidence and comfort in the tasks required to identify students in distress, intervene, and refer them for help. Basic knowledge of suicide prevention gathered during the first data collection (n = 142), measured with 10 items (seven multiple-choice and three true-false) based on the didactic content of the suicide prevention program, was used to estimate the relationship between objective knowledge levels and self-efficacy. Participants received one point for each correct answer, resulting in a total score range of 0 to 13 points.

The participants were comprised of 120 men (39.7%) and 182 women (60.3%). The grade distribution of the participants was as follows: 0.3% (n = 1) freshmen, 32.5% (n = 98) sophomores, 37.4% (n = 113) juniors, and 29.5% (n = 89) seniors. The mean age was 19.9 years (SD = .99, n = 293). Majority of participants were Caucasian (n = 155, 51.3%); 16.2% were Asian (n = 49), 11.6% were African American (n = 35), 10.6% were Hispanic (n = 32), and 10.3% identified as "Other" (n = 31). Prior suicide prevention training experience was only measured for the university in the first data collection. In the first data collection of 141 responders, 54.6% of the students (n = 77) had prior suicide prevention training experiences.

Analysis

Missing values were treated with Multiple Imputation (MI) using the Predictive Mean Matching (PMM) approach, the collected data (n = 302) were randomly split into training (n = 150) and testing (n = 152) datasets. We estimated the number of factors with the training dataset via exploratory factor analysis (EFA) with WLSMV and parallel analysis (PA) with principal components (99th percentile criterion with 200 replications). Next, local independence (LID) in the context of multidimensional graded response model (MGRM) [13] was investigated using Q_3 [14] to address the assumption of MGRM. MGRMs were fitted to examine factor structures and item response functions using the testing dataset. The final MGRM model was determined by comparing different factor models, its latent trait theta scores for persons were obtained from the entire dataset (n = 302), and correlations were estimated between RA's levels of self-efficacy and suicide prevention knowledge.

MGRM was evaluated with model fit indices: Root Mean Square Error of Approximation (RMSEA), Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Standardized Root Mean Square Residual (SRMR), M2*, and the sample size adjusted BIC (saBIC). Item fit investigations were made using the generalized S- χ^2 [14] with False Discovery Rate (FDR) [15]. Hu and Bentler [16,17] suggested a cutoff value close to or above .95 for TLI and CFI, a cutoff value close to or below .08 for SRMR, and a cutoff value close to or below .06 for RMSEA to be described as a "good fit". These rules of thumb for cut-off scores have been proposed for modeling with continuous data, but our field lacks guidelines for categorical ordinal data analysis cut-off scores for these fit indices; therefore, interpretations should be made cautiously. The model with at least a 10-point lower value of saBIC was strongly preferred [18]. Non-significant results for M2* and generalized S- χ^2 suggest good model fit and item fit, respectively. Unlike the above conventional fit indices, the M2* [19] was developed for item response theory modeling with categorical ordinal data. Item discrimination parameter (α) and item threshold parameter (b1-b4) were examined.

Analyses were conducted using the Mplus 8.0 for EFA models, R3.6.3 program for MI (*mice* package) [20], PA (*psych* package) [21], and multidimensional GRM (*mirt* package) [22], and SPSS 22.0 for correlations.

Results

Exploratory Factor Analysis

Only the 1-factor and 2-factor models were compared among 1-factor to 6-factor model because of empirical non-identification issues (Heywood case and nonconvergence). The model fit indices showed that the 2-factor model had a better model fit than the 1-factor model (χ^2 (9) = 124.62). PA also supported this result showing that the eigenvalues of the empirical data was greater than those from the simulated data up to two-component solution. From these results, the 2-factor model was finally selected as the most appropriate model to describe the data given statistical significance of the loadings, the structure of item loading, and the results from PA.

Multidimensional Graded Response Model (Multidimensional GRM)

After confirming local independence assumption for each factor of the 2-factor model [14] (Table 1), we found the 2-factor model also had a better model fit in RMSEA (.05; 95% C.I.[0, 0.14]), CFI (.99), TLI (.96), and SRMR (.07) compared to the 1-factor model (RMSEA = .11; 95%C.I. [.04, .18], CFI = .95 , TLI = .84, SRMR = .11). M2* and saBIC also supported the 2-factor model (M2*(4) = 5.61, p = .23; saBIC=3614.65) over the 1-factor model (M2*(5) = 13.72, p=.02; saBIC=3686.61). Moderate factor correlation (ψ = .63) in the 2-factor model suggested the two factors are similar, but practically separable independent constructs.

Results (Table 2) showed each item in the 2-factor model strongly loaded to the relevant factors (>.2) [23]. Non-significant S-χ^2 tests with FDR (p > .05) indicated good item fit in this model. Item discrimination parameter estimates were appropriate (α_j(j=1,2)= 1.09 ~ 2.71, j = factor number) [24].

Specifically, high levels of discrimination parameters were observed in item 2 (α = 2.71) and item 3 (α = 2.34) in factor 1. Also, item 6 (α = 2.00), item 7 (α = 2.06), and item 8 (α = 2.47) in factor 2 showed high levels of discrimination parameters. Patterns of item thresholds for categories were distributed to cover different levels (below zero to above zero) of the latent trait properly, with higher response categories corresponding to higher levels of the latent trait as intended (b1-b4 in Table 2). There was a difference in response patterns between the items in factor 1 and the items in factor 2. The items in factor 2 (items 6 – 10) showed distinctly lower levels of average threshold (-1.95 through -1.12) than the items in factor 1 (items 1 – 5) (-0.22 through -0.06), which represents that students tend to endorse items in factor 2 more easily than items in factor 1. Each factor was labeled "Communicating about Crisis (1st factor)" and "Knowledge of Resources (2nd factor)" based on item content. Knowledge of suicide prevention tended to positively correlate with the two factors (Communicating about Crisis: r = .16, p = .07; Knowledge of Resources: r = .17, p = .05).

Discussion

This study investigated GSS-RA to propose it as an instrument for self-efficacy of RAs as campus gatekeepers. The two factors: Communicating about Crisis and Knowledge of Resources were found utilizing a series of analyses. The results suggest an emphasis on recognizing and balancing the two respective factors for effective RA gatekeeper training and quality monitoring. Specifically, noticeably lower levels of average item thresholds in factor 1 than those in factor 2 were consistent with the previous findings [9] as an RA's knowledge of resources was not always aligned with their self-efficacy of early detection of risk, conversation about risk, or referrals to support. Further, the tendencies of positive correlations between self-efficacy and objective suicide prevention knowledge supported construct validity of the scale.

The GSS-RA could be a useful tool for campus suicide prevention training for RAs, but future studies are requested to further investigate its validity measures and generalizability of the scale. The findings here consolidate clear conceptualization of different aspects of RA's self-efficacy as gatekeepers and provided empirical evidence to appropriately measure latent traits of the self-efficacy to better gauge the effectiveness of training.

Conclusion

This study sought to develop, explore, and validate Gatekeepers Self-efficacy Scale for RAs (RSS-RA) to provide a valid and reliable measure of assessing the efficacy of university suicide prevention training programs for RAs and understanding RAs' competency in their roles as gatekeepers. The research demonstrated validity of the RSS-RA by finding factor structures, analyzing item functioning, and confirming construct validity in the scale. The study results here support two factors in the RSS-RA, "communicating about crisis" and "knowledge of resources." Overall, the study indicated the items in the RSS-RA appropriately measure two latent concepts of self-efficacy in helping residents at risk.

Acknowledgments

This research includes a part of the second author's dissertation study [12]. The contents of GSS-RA were initially created and used as a part of the research materials in [12]. However, the scale was not developed with the current

procedures for validating proper psychometric properties. In this research, GSS-RA was revised via quantitative psychometric methodology and utilizes a larger sample size.

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