Evaluation of the Relationship between Social Desirability and Minor Psychiatric Disorders among Nurses in Southern Iran: A Robust Regression Approach

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ABSTRACT

Background: Social desirability may affect different aspects of people's quality of life. One of the impressive dimensions of quality of life is mental health. The prevalence of Minor Psychiatric Disorders (MPD) among health care workers is higher than other health workers. This article aims at evaluating the relationship between social desirability and MPD among nurses in southern Iran.

Method: A cross-sectional study was carried out on 765 nurses who had been employed in hospitals in the southern provinces of Iran. The 12-item General Health Questionnaire (GHQ-12) and Marlowe-Crowne Social Desirability Scale (MC-SDS) were used for evaluating the MPD and social desirability in nurses, respectively. The Robust Regression was used to determine any quantified relationship between social desirability and the level of MPD with adjusted age, gender, work experience, marital status, and level of education.

Result: The mean scores of GHQ-12 and MC-SDS were 13.02±5.64 (out of 36) and 20.17±4.76 (out of 33), respectively. The result of Robust Regression indicated that gender and social desirability were statistically significant in affecting MPD.

Conclusion: The prevalence of MPD in female nurses was higher than males. Nurses with higher social desirability scores had the tendency to report lower levels of MPD.

KEYWORDS: Iran; Mental disorders; Nurses; Robust regression; Social desirability

INTRODUCTION

People do not always pretend or act like what they actually are since they desire more approval from others. Social desirability is the tendency of one to have a socially and culturally desirable manner, so he/she can be viewed positively by other people or seems consistent with social and cultural norms and expectations.[1] That is why people with high social desirability might want to present themselves with their best behaviours for a better feeling of satisfaction.[2] Moreover, they usually have a better communication with others.[3] Therefore, social desirability is an important, yet often neglected issue in the investigation of mental disorders.[4]

Minor Psychiatric Disorder (MPD) is one of mental health problems that have long been associated with work.[2] Multiple studies have so far investigated the relationship between social desirability and MPD.[3] Social desirability has been revealed not to have a strong connection with job performance.[4] However, the high social desirability can directly influence coping with MPD (e.g. work stress).[4]

Nurses like other health professionals are under a lot of pressure due to the type of their job. Various factors, such as shift work, sleep disorder, lack of time, repeated exposure to suffering and patient's death, lack of support, and professional responsibility can affect the mental health of nurses.[5-7]

The prevalence of MPD among health care personnel is higher than other groups of workers. The responsibility they take for people's health and the long times they spend with patients make their working environment highly stressful.[8] The prevalence of MPD among nurses in different countries has been reported to be between 34% and 41%.[4,8-10]

One of the factors among personality characteristics that can affect the level of MPD among nurses is social desirability. Nurses, because of having a persistent contact with patients and their families, are strongly influenced by them.[9] Social desirability may affect different aspects of people's life and in particular their mental health. Since health is something valuable for health care providers, nurses with high social desirability are expected to have fewer mental disorders.

On the other hand, nurses have a very important role in clinical and health related programs and paying attention to their mental health has been of great concern in the recent decades.[10-13] Scant studies so far have evaluated the relationship between social desirability and MPD.[14] However, this relationship has not been considered among nurses.

This study aimed at investigating the relationship between social desirability and MPD among nurses in southern Iran. However, there might be some variables confounding this relationship and we aimed to take them into consideration during the analysis.

METHOD

Study Population and Sampling Method

This was a cross-sectional study conducted in Fars and Bushehr provinces of Iran from April to July 2014. The study population consisted of nurses who were employed in hospitals of these provinces. After expressing the purpose of the study by actuaries to the nurses and obtaining fully informed verbal consent from them, they were asked to fill in the structured questionnaire anonymously. Participants were selected randomly using multi-stage sampling.

At first, of 39 cities, 20 were selected randomly (29 in Fars province and 10 in Bushehr province). 25 hospitals out of 60 were taken as a sample in Shiraz which is the largest city in the south of Iran. In those cities with more than one hospital, only one was chosen at random. The number of nurses in each hospital was selected by using probability proportional to sampling size, based on various wards and total number of nurses in each ward. In order to gain confidential issues, the participants were assured that their identity would remain anonymous. (The questionnaire contained no information about their identity). Moreover, they were assured that their information would not be used for

any purpose other than this research.

The sample size was 765 nurses in this study. There is no closed formula to determine the sample size for Robust Regression. Simulation studies show that the sample size depends on the number of the predictor variables and the data distribution, and studies with sample sizes with more than 500 have enough power to fit the model.[15] Primary inclusion criteria included the ability and willingness of nurses to participate and having at least one year of work experience. Distortion of the questionnaire, employment in another job at the same time, and part-time employment were the exclusion criteria in this study.

Instruments
a) GHQ-12

The 12-item General Health Questionnaire (GHQ-12) is a useful screening tool for assessment of individual's MPD over their past few weeks. Psychometric properties of the GHQ-12 have been previously evaluated in Iran.[16,17] The most common scoring methods of GHQ-12 are bi-modal (all items coded 0-0-1-1, ranging from 0 to 12) and four-point scale Likert scoring system (all items coded 0-1-2-3, ranging from 0 to 36). The overall GHQ-12 score is simply the sum of item scores. A lower score indicates the absence of MPD and a better mental health.[17] In this study, the Likert scoring method was used because, firstly, the Likert scale has different values for each item, while in bi-modal 1-2 and 3-4 options, scoring is the same. Secondly, in the robust regression, the Likert scoring method has a better fit since the dependent variable (i.e. sum of GHQ-12) must be of quantitative form.

b) Marlowe-Crowne Social Desirability Scale (MC-SDS)

Several scales have so far been developed for measuring social desirability.[18-20] Marlowe-Crowne Social Desirability Scale (MC-SDS) Questionnaires is one of the most widely used scales for detecting social desirability. MC-SDS consists of 33 items in which respondents are asked to choose true or false.

Negatively phrased items were reversed and the total score was calculated which is the sum of all scores and ranges from zero to 33; scores between 0 to 8, 9 to 19, and 20 to 33 indicate low, moderate, and high level of social desirability, respectively.[18] Those who score high on this scale have a tendency to present themselves in a socially acceptable manner which conforms to others' expectations.[21]

To translate MC-SDS questionnaire items from English into Persian language, we used the standard forward-backward procedure. At the first step, the questionnaire was translated into Farsi independently by two fluent bilingual experts in the field of psychology and mental health. Next, it was back-translated into English by two other independent translators, and finally the coordinator provided the Persian version of the MC-SDS by comparing and adapting these translations.

The Kuder-Richardson's alpha coefficient for this questionnaire was 0.702. The Cronbach's alpha for the entire 33-item scale was 0.704. This was well within the range of acceptable reliability, greater than 0.7. The goodness-of-fit of MC-SDS was demonstrated using the Store-Bentler scaled Chi-square (1200.954), X2/DF (2.426), Root Mean Square Error of Approximation (0.043), adjusted goodness-of-fit index, normed fit index (0.888), and Goodness-of Fit Index (0.901). All goodness-of-fit indexes were in the acceptable range.

Statistical Analysis

Internal consistency reliability of the MC-SDS questionnaire was assessed using the Kuder-Richardson Formula 20 (KR-20) coefficient, which measures the appropriateness for testing dichotomous variables (Yes/No). Kuder-Richardson coefficient above 0.7 indicates an acceptable level.[22] Confirmatory Factor Analysis (CFA) with a maximum likelihood method of estimation was used to examine the construct validity of the questionnaire. Normally distributed quantitative variables were

demonstrated as mean±standard deviation. The Shapiro-Wilks test revealed that both GHQ and social desirability scores depart significantly from normality, so Mann–Whitney and Kruskal–Wallis test were used to compare MC-SDS and GHQ-12 scores on demographic variables. Because of non-normality and the presence of outliers in the GHQ-12 score, Robust Regression method was used for discovering the relationship between social desirability and other factors with the level of MPD. In general, ordinary least squares estimation is used for the classical multiple regressions. If the assumptions for regression do not hold, the inference about parameter estimation and the results will be misleading.[23] If outliers are present in the data, the assumption of normality is violated; then, the least squares regression may not be the most powerful technique and might have an adverse effect on the estimation of parameters.[24] Therefore, statistical methods that are able to handle or detect outliers have been developed. Robust Regression is effective for analyzing data including outliers.[23] It can be used to detect outliers and to provide resistant results in the presence of outliers. Statistical analysis was conducted using R, version 2.8.0.

Result

269 out of 765 nurses (35.2%) were men. The mean age of the participants was 32.08±6.29 years old and the mean work experience was 7.75±5.80 years. The mean score of social desirability was 20.17±4.76. Low, moderate and high levels of social desirability were observed in 1.2%, 41.2% and 57.6% of the participants, respectively.

The GHQ-12 scores in sum, for men and for women were 13.02±5.64, 12.58±5.35 and 13.26±5.78, respectively. Men had lower GHQ-12 score and better mental health than women, but the difference was not statistically significant by Mann–Whitney U test. Kruskal-Wallis test showed that the scores of GHQ-12 and MC-SDS differed in the levels of education. Mann-Whitney and Kruskal-Wallis test showed that the scores of GHQ-12 and MC-SDS did not differ in gender, marital status, age, and work experience. Table 1 summarizes the characteristics of the participants in this study.

Table 2 shows the relationship between covariates and the level of MPD using Robust Regression. Robust regression could reveal the effect of an independent variable (i.e. MC-SDS score) on a dependent variable (i.e. GHQ-12 score) while controlling for the other covariates

Table 1: Result of non-parametric tests for comparison of MC-SDS and GHQ-12 in demographic characteristics

Variable		N	Social Desirability		General Health	
			Mean±SD	Statistic (P value)	Mean±SD	Statistic (P value)
Gender	Male	269	19.72±4.87	3.632 (0.057)	12.58±5.35	2.515 (0.113)
	Female	496	20.41±4.69		13.26±5.78	
Marital Status	Single	221	19.87±4.89	1.174 (0.279)	13.24±6.24	0.480 (0.489)
	Married	544	20.28±4.71		12.93±5.38	
Level of education	Associate Degree	48	22.56±4.10	6.648 (0.001*)	11.77±5.50	1.827 (0.162)
	Bachelor degrees	696	19.99±4.76		13.14±5.59	
	Master of Sciences	21	20.38±4.84		11.81±7.040	
Age Categorical	Lowest thru 30	377	20.13±4.75	0.013 (0.987)	13.35±6.00	1.242 (0.290)
	30 thru 40	308	20.15±4.79		12.74±5.25	
	Highest thru 40	70	20.23±4.85		12.59±5.25	
Work experience Categorical	Lowest thru 5	275	20.39±4.80	2.241 (0.107)	13.28±6.27	0.699 (0.497)
	5 thru 10	221	19.62±4.80		12.92±5.72	
	Highest thru 10	251	20.45±4.61		12.70±4.88	
Total		765	20.17±4.76		13.02±5.64	

Table 2: Result of Robust Regression for modeling factors affecting MPD

Parameter	Estimate	Standard Error	P value
Gender	1.273	0.446	0.004*
Marital status	0.466	0.487	0.338
Level of education	-0.612	0.701	0.382
Age	-0.331	0.488	0.497
Work experience	0.036	0.056	0.522
Social desirability	-0.348	0.043	<0.0001*

*Significant at 5%

(i.e. gender, marital status, education, age, and work experience). The factors affecting MPD were social desirability and gender. R-squared (R^2) was 0.690 for this model.

DISCUSSION

In this study, we used robust regression to assess the relationship between social desirability and MPD in southern Iran.

According to the results, the mean±SD of GHQ score in Iranian nurses was 13.02±5.64 and based on cut-off point of 9 from a previous study, 27.3% of the nurses had MPD.[25]

The mean±SD of MC-SDS score in this study among nurses was 20.17±4.76 which is classified as high. Based on previous studies, the mean of social desirability among the general population was 20.03±2.99, and no significant difference was found in the mean of social desirability between the general population and Iranian nurses (T-value=0.33, P=0.741).[26] Although there was no similar studies evaluating social desirability in nurses by MC-SDS-33, in other populations using the short version of MC-SDS, the mean±SD of MC-SDS among Chinese nurses was 7.02±1.74 based on the cut-off point of 5 (for MCSDS-10), indicating a high level of social desirability,[24] among respondents from 20 to 35 years old in Romanian sample was 15.48±5.14,[27] and among bariatric surgery candidates in southeastern U.S academic medical center was 22.03±5.74.[28] The non-parametric result showed that MPD did not differ significantly across gender, age, education, work experience and marital status and the total social desirability scores were

different in various levels of education. MC-SDS scores did not differ significantly across gender, age, work experience and marital status. In most of the previous studies, the relationship between socio-demographics and social desirability was not significant.[29-32] It is reassuring for users of the MC-SDS to know that there is no need to treat MC-SDS scores for men and women or for different levels of education, marital status, work experience and age differently. The only exception was the relationship between education and social desirability.[29,30] This finding is in line with earlier studies which showed that respondents who had 4 or more years of college education had lower social desirability scores than those with less than 4 years' experience of attendance at the university.[33]

Our results from the Robust Regression represented a statistically significant effect of gender and social desirability on MPD. According to these findings, the nurses' MPD was inversely affected by social desirability while controlling the socio-demographic factors like gender, age, marital status, education and work experience, i.e. nurses with higher scores on social desirability had reported lower MPD.

The MC-SDS has been found to have a negative association with symptoms of poor mental health, a finding that has failed to be fully reported as an undesirable state for those with a high need for approval.[34]

However, there was no similar study on nurses, but this was consistent with a study that was done on Bariatric surgery candidates, showing a significant inverse relationship between social desirability and the factors

such as anxiety and depression.[28]

Before controlling social desirability variable (non-parametric result), the nurses' MPD was not statistically significant among men and women. After controlling for social desirability variable using Robust Regression, the nurses' gender was a statistically significant predictor of MPD. The reason why gender was not significant in non-parametric tests could be the fact that women had significantly higher social desirability scores than men.[35] From a statistical point of view, one limitation of the present study is that the sample size was unequal between men and women, and this could confound the results of non-parametric tests. However, this restriction will not affect the results of the robust regression.

Our findings were consistent with previous studies which have reported that women are more likely to have mental disorders than men.[36,37] Based on a research, prevalence of mental disorders among women is 2.7 times higher than men.[38] One possible cause is that women, because of their distinct physical and psychological conditions, are exposed to more sources of mental disorders than men.

CONCLUSION

In summary, it appears that nurses' social desirability has a significant effect on their MPD. However, further studies among different nations and cultures are required to provide a better insight into the relationship between social desirability and MPD. Also, other factors such as social support, job satisfaction, and job performance should be taken into consideration while evaluating the connection between social desirability and MPD. Moreover, this is essential to assess the relationship between social desirability and the factors mentioned above. Our findings can provide a guideline for senior decision makers in health policy organizations in order to identify the factors affecting MPD in nurses for development of strategic plans to improve their mental health. According to the results, if one is interested in evaluating MPD among nurses, social desirability should be considered as an effective factor.

Conflict of Interest: None declared.

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