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Determining the Psychometric Properties and Measurement Invariance of the Partner Phubbing Scale

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Extended Abstract

Aim

Phubbing is an emerging phenomenon (Sun & Samp, 2022). The word "phubbing" is a combination of "phone" and "snubbing." Being phubbed means being ignored by a person who uses their cell phone instead of interacting with you while in your company. Partner phubbing occurs when this behavior happens in interactions with your spouse or significant other. In a phubbing situation, (Frackowiak, Hilpert & Russell, 2022). Phubbing is a pervasive phenomenon among cultural organizations, but there is little insight into phubbing behavior. There is an urgent need to understand phubbing in cultural contexts. With the increasing prevalence of smartphones and the number of people who use them extensively, the issue of phubbing has become more widespread. Studies have been carried out to understand the culture of phubbing. Although existing studies have begun to provide insights into this phenomenon, they are limited in number. The lack of studies on phubbing in non-Western societies is even more pronounced (Dilonardo, 2018). Research on phubbing is a relatively new topic, almost a decade old, which started with the advent of smartphone technology. This phenomenon has not been studied extensively, and there are very few contexts in which phubbing has been investigated. Therefore, the problem of the present research was to study the psychometric characteristics of the Partner Phubbing Scale (Roberts & David, 2016) and its adaptation to the cultural norms of Iran.

Methodology

The method of this research was practical in terms of purpose. In terms of data collection, it was descriptive-survey, and in terms of data analysis, it was correlational (exploratory and confirmatory factor analysis). The statistical population of this research comprised all married teachers in Zanjan province in 2022. A sample of 841 married teachers was selected using the convenience sampling method, and the link to the questionnaire was designed through the Porsline-ir system and distributed online among them. Descriptive statistics indicators, Pearson's correlation coefficient, exploratory and confirmatory factor analysis, and other methods were used to analyze the collected data. Data analysis was carried out using SPSS 26 software, the lavaan package (Rosseel, 2012), and the Exploratory Graph Analysis package (EGAnet) (Golino & Christensen, 2022) in R software (R Core Team, 2020).

Findings

Of the sample, 57.2% were female, 53.4% had bachelor's degrees, and approximately 44.36% were elementary school teachers. The mean age was 39.02 years (SD = 8.88), and the mean duration of marriage was 14.71 years (SD = 9.9). The skewness and kurtosis of all variables ranged from -1 to +1. The standard error of skewness and kurtosis for all variables was 0.12 and 0.24, respectively. The outputs of the parallel analysis, Velicer's Minimum Average Partial (MAP) test, and the Exploratory

Graph Analysis indicated that this scale has a unidimensional structure. Bootstrap analysis also confirmed the stability of this factor structure. The ratio of allocation items to the corresponding factor in the bootstrap based on 1000 samples showed that the number of times each item was placed on the corresponding factor was equal to 1, indicating high stability of the items on the single factor. The parameters and the fit indices of all the items, except for item 7, were suitable based on the graded response model. The fit of the single-factor model with the help of confirmatory factor analysis was also appropriate. All fit indices were proper in both the whole sample and the subgroups by gender. The alpha and composite reliability statistics were apt in both the whole sample and the gender subgroups. The average variance extracted (AVE) was low in the whole sample, women's group, and especially in the men's subgroup, indicating poor discriminant validity based on this indicator. The square root of the AVE index in the whole sample was 0.69, which is greater than the correlation of this construct with other variables studied in this research. Therefore, it can be said that although the discriminant validity at the construct level is low, it does exist (Voorhees et al., 2016). This finding was confirmed in the subgroups as well. The invariance of this scale based on gender was confirmed in four separate models (configural, metric, scalar, and exact). The factor loadings of the items (except for item 7) and the values of the intercept were significant in both the whole sample and the subgroups. Furthermore, the correlation coefficient of partner phubbing with most of the studied variables in the current research was significant.

Conclusion

The aim of the present study was to determine the validity and reliability of the Partner Phubbing Scale (Roberts & David, 2016) in Iranian society. The results of various exploratory analyses in the present study confirmed the single-factor structure extracted from the study of Roberts & David (2016), indicating the adaptability of the factor structure of this tool in Iranian society and its compatibility with the cultural norms of this society. The optimal fit of the parameters of the questions and the fit indices of all the items of the Partner Phubbing Scale, except item 7, based on the graded response model, shows that the model at the item level has well predicted the performance of the people and the efficiency of the items. This means that the results are trustworthy. Confirmatory factor analysis also proved the unidimensionality of this scale, which shows the construct validity of the scale. The results related to Cronbach's alpha and composite reliability were well-suited in both the whole sample and the subgroups, indicating the internal consistency of this scale. After checking the reliability in case of removing the item, it was found that only by removing item 7 did the total score reliability increase. As mentioned, the verb of this item is negative and it is scored inversely; it is possible that the poor reliability of this item is due to the participants' incomplete understanding of its concept. Taken together, this means that this scale has a stable measurement capability under similar conditions.

The results related to the AVE index were low in both the whole sample and the subgroups, due to the weak relationship of some items, such as item 7, with the corresponding construct. The square root of the AVE index in the whole sample was greater than the correlation of this construct with other variables studied in this research, which showed that the discriminant validity, although weak, was maintained at the construct level (Voorhees et al., 2016). That is, the partner phubbing variable has measured a concept different from what other constructs studied in this study measure. The results related to the invariance of the scale based on gender in four separate models had a good fit for all nine items, indicating the establishment of invariance at the construct level, which implies that the meaning of the items was the same for both subgroups of men and women. The results showed that the factor loadings of all items, except for item 7, were significant in both the whole sample and the subgroups. That is, apart from item 7, the rest of the items had a decisive role in explaining the variance of the Partner Phubbing Scale. The poor factor loading of item 7 could be due to the difficulty of matching the concept of the item and its response spectra by the participants. Considering the significant relationship between partner phubbing and most of the variables of the present study, it can be said that the convergent and divergent validity of this scale has been confirmed. Therefore, according to the results of the present study, it can be said that the Partner Phubbing Scale is a valid and reliable tool to measure this construct among Iranian samples.

Keywords: Couple Relationship, Exploratory Graph Analysis, Invariance, Item-Response Theory, Phubbing.

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Conflict of Interest
There are no conflicts of interest among the authors of this research.

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