Linguistic Validation and Cultural Adaptation of General Ostracism Scale (GOS): Psychometric Evaluation for Adolescents

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Abstract
Ostracism is quite common and pervasive and many human beings have been observed using ostracism within their groups; whereas on average, individuals experience one trivial ostracism event daily (Williams, 2007; Nezlek et al., 2012). Therefore, this study aimed to translate and adapt the Workplace Ostracism Scale as General Ostracism Scale (GOS) for adolescent boys and girls. In the first phase of the study the Workplace Ostracism Scale was translated into Urdu language and adapted following MAPI guidelines. The second phase of the study focused on determining the psychometric properties of the translated version of GOS. Confirmatory factor analysis revealed good model fit across adolescent boy's (Mage= 17.1; SD= 2.76) and the girl's (Mage= 18.2; SD=3.44). The equality of the parameters of the constrained models across gender was compared in the evaluation of measurement invariance of GOS. The results showed the strict or full measurement invariance of General Ostracism Scale. The translated scale will provide future researchers with a valid measure of ostracism for adolescence. This measure can further be used in various educational setups to identify ostracism among adolescent boys and girls. Furthermore, the preventive strategies can be designed based on the assessment through GOS.

Keywords: Ostracism, Confirmatory Factor Analysis, Measurement Invariance, Adolescents

1. Introduction

The need for belongingness and interaction in society has great importance to us. A person is at a clear disadvantage if he is not enjoying social interaction or is treated silently by the people around him. Exposure to such hostile conditions can lead to possible negative consequences. Hence being ostracized can result in deviant behavior, leading to many psychological problems for the individual. Ostracism is an unexplained action of being excluded or without explicit harmful devotion. This phenomenon is usually operationalized as a clarifying arrangement of reactions tolerated while being ignored and excluded (Williams, 2007). "The act of ignoring and exclusion" equally hurts as loneliness, explaining why we guard against it with more significant concern

and sensitivity (Polard, 2016). Rejection, ignoring, and excluding someone are destructively different social behavior and arrangement (Saylor, 2013). The psychological needs (affection, self-esteem, control, and meaningful existence) of the people who engage in such behavior determine their overall psycho-physical responses (Williams & Nadia, 2011).

The relevant literature concluded that social rejection weakens the colonial powers of the teenage population by depriving them of essential and optimal development. The normative developmental perspective convinces that the social relationships provide a foundation as well as an opportunity for the growing youth for social development and understanding the social norms, which are essential components of social competencies at this age (Laursen & Hafen, 2010; Furman & Buhrmester, 2009; Saeed & Malik, 2022). The researchers have also shown a strong association between being ostracized with depression and loneliness, experiencing peer victimization, and poor cognitive and affective functions (Witvliet et al., 2010; Saeed & Malik, 2022). Recent literature has also noticed that these effects are not consistent and similar across all ages but are somehow more prominent in adolescence than in children or adults (Pharo et al., 2011).

The concept and findings on ostracism have been developed from different social and developmental realms, highlighting other assessment methods. Psychological measurement tools, including self-report and task-based, have been widely used to identify ostracized individuals in various settings, including schools, organizations, etc. Typical method that has been used for adolescents is that participants are asked to evaluate or rate each other on different social domains such as popularity, friendships or fame, etc. The other interesting field is experimental where ostracism is induced through specific tasks in the research participants (Blackhart et al., 2009). However, the experiments have been predominantly done with the adult population rather than adolescents. The manipulation of ostracism in participants has ethical limitations and limited external validity. The other famous setting is the organizational setting (e.g. Ferris ei al, 2008). The corporate setting is specifically for the adult population in the work environment.

Self-report measures are more advantageous than other methods due to their provision of persons' understanding of their social standing and feelings (Mauss et al., 2011). They also provide robust external validity as compared to other methods. Self-report measures are especially of more importance when the investigated phenomenon is related with other social experiences. Keeping in view an example of peer aggression which is a source (Wolfer & Scheithauer, 2013) and outcome (DeWall et al., 2009) of ostracism both in different circumstances.

Considering all the advantages of self-report measures for general adolescent age, this is very hard to find a relevant tool especially in Urdu language for measuring ostracism. Blackhart et al., (2009) reviewed 192 studies concerning social ostracism and identified eleven studies which explored the effects of ostracism in adolescents. None of the reviewed studies have used a valid self-report measure of ostracism. The present study will fill this gap by providing relevant validated tool for the assessment of ostracism.

2. Methods

The study was done in 2 phases. The first phase was based on the translation and adaptation of the Workplace Ostracism Scale (Ferris et al., 2008). At the same time, the second phase of the study was carried out to evaluate the psychometric properties, including measurement invariance of the translated and adapted version of General Ostracism Scale (GOS) for adolescents.

Phase I: Translation and Adaptation of General Ostracism Scale

Translation was done using MAPI guidelines (MAPI, 2008) which followed forward and backward translation, committee review and pilot testing. The details of translation procedure are as follows;

a. Translation Procedure

Forward Translation. In this step, five bilinguals having excellent proficiency in both Urdu and English languages translated the Workplace Ostracism Scale. They were requested to translate the items into Urdu focusing on contextual relevance. Based on responses, the most suitable translations were retained after a

thorough scrutiny which involved selection based on the original expression by the author. A committee of five experts (two assistant professors in Applied Psychology, two lecturers, and one PhD scholar in Applied Psychology) carefully evaluated the translated   items in Urdu for content clarity and to identify and avoid grammatical and syntactic errors. The best possible translated items were kept after the careful evaluation.

Back Translation. In this step, both the measures were translated back into English for the sake of accuracy. The back-translation method is a rigorous process used to reduce errors and biases in translation (Brislin et al., 1973). Four bilinguals' experts were requested to translate the Urdu items of the measure into the English language. Those who were selected for back-translation did not participate in the forward translation phase and therefore were not familiar with original items of the measure. A committee consisted of subject and bilingual experts (teaching staff), and two PhD scholars from the Applied Psychology and Linguistic department of Government College University Faisalabad, Pakistan carefully evaluated and back-translated each of the items and then the items were finalized for the Urdu version of both measures. After revision processes, a satisfactory concordance between the English and Urdu versions of the measure was achieved. All the experts agreed regarding the authenticity of the translation.

Pilot Testing. A number of ten participants (both boys and girls) of age 12-18 years were administered with Urdu translated General Ostracism Scale followed by the original version (English language) with a gap of four weeks. The overall scores showed good correlation ranging from r= .79 to r= .81 for individual items and overall scores.

b. *Adaptation of Workplace Ostracism Scale (WO; Ferris et al., 2008)*

The workplace Ostracism Scale was primarily translated and then adapted for the target population by considering the research objectives. The translation is usually followed by adaptation in psychological research (Carmona-Halty, 2022; Faran & Malik, 2021). The steps followed in this phase were as follows;

The original Workplace Ostracism Scale was specifically developed to assess the levels of ostracism in the workplace and was not intended to use with the general population or the individuals who didn't work in any professional setup. By keeping in view, the objectives of the current study this scale was translated and adapted for the convenience of the adolescent population of boys and girls.

Cultural Relevance. As the Workplace Ostracism scale was developed for Canadian working employees in different work settings which was not objective of the present study. The WOS needed to be adapted for the non-professional adolescent population. The contextual and cultural adaptation from WOS to GOS was performed in two steps where firstly, an expert panel comprised of one associate and two assistant professors and two Ph.D. scholars were approached and were asked to examine each scale item carefully and evaluate it according to the adolescent, non-working population. They were further asked to keep the rejection behaviors in mind that adolescents may face in general social settings. Keeping in view the expert panels' suggestions, the word 'at work' from the original WOS scale was replaced with a suitable word in the adapted GOS. For example, the original WOS item "You involuntarily sat alone in a crowded lunchroom at work." was replaced by "You involuntarily sat alone in a crowded place". Another original scale item was, "Others at work did not invite you or ask you if you wanted anything when they went out for a coffee break" which was adapted as "Others did not invite/ask, if you wanted anything when they go outside"; similarly, another original scale item was "My peers shut me out of the conversation" was rephrased as "You have not been included in conversation" (Ferris et al., 2008; Ismail & Habib, 2019).

The statements of the finalized adapted measure of GOS were further validated by another expert panel, following the established criteria (Lawshe, 1975). At this step, the adapted items were rated by the expert panel on the option such as 'essential,' 'useful, but not essential,' or 'not necessary'. The content validity index was .95 for the six experts (including two psychologists, two sociologists, and two native language experts who reviewed for the grammatical and semantic errors) (Lawshe, 1975), indicating that all adapted items were relevant to the content regarding general, not workplace ostracism keeping in view the Pakistani cultural context.

Cognitive debriefing of the relevant sample was done at the second step of this phase. The participants were asked to evaluate every item as per their understanding and provide any alternative words for those which may have confused them. They didn't report any confusion in wording however, responding on 7-point Likert scale was a challenge for them. For this reason, the response set was converted into 5-point rating scale which

is most used in psychological assessment tools (McLeod, 2019; Paulhus, 1984) which was followed by a tryout with 20 adolescents and it was noted that the understanding and responding to the adapted response set was convenient for them.

Phase II: Determining the Psychometric Properties of the General Ostracism Scale (GOS)

To determine the psychometric properties of the GOS, first- order confirmatory factor analysis was used on 13 items with 5 point Likert- type scale to validate the factor structure of the general ostracism scale. Structural Equation Modeling (SEM) through AMOS (Analysis of Moment Structure) version 24.0 was applied to validate and confirm the factor structure of the general ostracism scale for adolescent boys and girls.

Participants

During applying Confirmatory Factor Analysis (CFA) it is usually recommended that the greater sample is better to validate a measure. Therefore, the sample size was determined keeping in view the minimum criteria of 10:1 (10 cases per parameter/ item) (Haier et al., 2010). However, for the empirical evaluation the community-based student sample of eight hundred (400=boys; 400=girls) from the educational institutes of districts of Faisalabad, Toba Take Singh, and Lahore were selected. The boy's (M_{age}= 17.1; SD= 2.76) and the girl's (M_{age}= 18.2; SD=3.44). The convenient and purposive sampling techniques were used for the selection of study samples.

Inclusion and exclusion criteria. The study participants were regular students of six to ten grade in government and private schools. Students with any physical and psychological issues were excluded from the study.

Measures

The following measures were used in this study:

Demographics Information Sheet. It includes the demographic information of the study participants (like their gender, age, and grade).

General Ostracism Scale: Adapted Version (Ismail & Habib, 2019). The General Ostracism Scale is a 13-item scale. It contains 5-point Likert type scale range from (never= 1) to (always= 5). It is a reliable and valid measure to check the ostracism level of individuals. The scale did not contain any reverse coded items. Due to the availability of this scale in the English version, it was adapted and translated into the Urdu language for the convenience of the general population.

Procedure

The permission to use the scale to adapt and translate into the Urdu language and validate it for the adolescent sample was taken from the authors of the original WO scale. The authority letter was used with authentic identity of the researcher and the topic under study. The sample of adolescents were selected through convenient and purposive sampling strategies. The participants were thoroughly explained about the nature and main objectives of the research. The individual consent was taken from the study participants. All the queries while responding to the scale by the study participants were addressed by the researcher. After that the demographic information sheet and General Ostracism Scale (GOS) were administered on the study participants. During data collection phase the main ethical considerations were followed like confidentiality and anonymity of the data were ensured to the study participants. After data completion all the study participant were thanked for their active contribution in providing the data.

3. Results

Structural Equation Model (SEM) especially AMOS (Analysis of Moment Structure) (Arbukle, 2012), was employed to validate the factor structure of the General Ostracism Scale for adolescents. Covariance based structural equation modeling has various strengths that made it more appropriate for the current study. The indices of the model fit for confirmatory factor analysis are indicated in table 1

Table 1: Fit Indices of Confirmatory Factor Analysis for the General Ostracism Scale (N=800).

Model	χ^2	Df	χ^2/df	GFI	CFI	NFI	RMSEA	SRMR
Initial Model	306.88	130	2.36	.94	.92	.91	.05	.04

Note. N=800, All change in "chi square values are computed relative to model, $\chi^2 > .05$, GFI=

Goodness of fit index, CFI=comparative fit index, NNFI= non-normed fit index; RMSEA=root mean square error of approximation, SRMR=Standardized root mean square".

Table 1 shows the model's fit indices for the General Ostracism Scale (GOS). GOS had an absolute fit of χ^2 (130) =306.88, p.05. The chi-square test, according to Hair et al., (2010), is sensitive to sample size, number of parameters considered in a model, and non-normality of the distribution.

So, the researchers suggest using a variety of relative fit indices to measure model fit. As a result, the model's relative fit indices, such as CFI, NFI, GFI, RMSEA, and SRMR, were used. Hu and Bentler (1999) suggested that relative indices be defined as χ^2/df being between zero and three, RMSEA and SRMR indices being 0.08 or less, and CFI, NNFI, and GFI being 0.90 or higher.

Since the initial model's RMSEA and SRMR were set to 0.05 and 0.04 while the GFI, CFI, and NFI values were 0.94, 0.92, and 0.91, respectively. As a result, the model was the best fit for estimating the measurement model.

Figure 1: First Order Confirmatory Factor Analysis of General Ostracism Scale (N=800).

Table 2: First order CFA for General Ostracism Scale.

Items	Boys				Girls			
	α	ω	AVE	λ	α	Ω	AVE	λ
GOS1	.93	.92	.53	0.754	.94	.93	.56	0.751
GOS2				0.656				0.689
GOS3				0.798				0.77
GOS4				0.696				0.658
GOS5				0.733				0.718
GOS6				0.723				0.654
GOS7				0.785				0.863
GOS8				0.708				0.774
GOS9				0.72				0.795
GOS10				0.714				0.758
GOS11				0.744				0.785
GOS12				0.691				0.715
GOS13				0.738				0.79

Note. ω = McDonald's reliability, AVE = Average variance extracted, λ (lambda) = standardized factor loading

Psychometric properties of the General Ostracism Scale were ended up with the excellent reliability and validities estimates. As shown in table 2, McDonald's omega, Cronbach's alpha reliabilities and average variance extracted (AVE) values were above their cutoff values of 0.7 and 0.50 respectively (Henseler et al., 2016; Hair et al. 2010). The factor structure of the General Ostracism Scale was accounted for 53% and 56% of the variance i.e., average variance explained (AVE) for boys and girls respectively. Simultaneously, the McDonald's omega and Cronbach's alpha reliabilities were ranging from .92 to 94 for both genders.

4. Measurement Invariance

Measurement invariance was also used to test the measure's generalizability across two different populations i.e., boys and girls. The goal of measurement invariance was to evaluate whether the participants from different groups interpret a measure in the same way (Byrne & van de Vijver, 2010). Invariance of the measures can be categorized in full and partial measurement invariance where full invariant model included (configural, matric, scalar, factor variance-covariance and error variance invariance). Whereas partially invariant model accounted for configural, matric and scalar invariance across groups (Hair, 2010). The evaluation of measurement invariance entails a series of nested model, which often begin with the creation of a well-fitting baseline model i.e., unconstrained configural model (see table 3).

Table 3: Testing for Measurement Invariance of General Ostracism Scale.

Model	χ^2	df	$\Delta\chi^2$	Δdf	CFI	ΔCFI	RMSEA
Unconstrained Configural	229.92	65	-		.931	-	.06
Configural Invariance	306.88	130	76.6	65	.922	.009	.05
Matric Invariance	326.12	143	19.24	13	.927	.005	.04
Scalar Invariance	346.23	156	20.11	13	.929	.002	.04

Note. CFI=comparative fit index, RMSEA=root mean square error of approximation, SRMR=Standardized root mean square, $\Delta\chi^2$ = chi square change, Δdf= degree of freedom change, ΔCFI= CFI=comparative fit index

The equality of the parameters of the constrained models across different groups is compared in the evaluation of measurement invariance of a GOS. The measurement invariance process involves comparing the fit series of sequentially constrained models to a previous set of constrained nested models. When comparing nested models that are constrained, researchers propose the use of the likelihood ratio test (i.e., chi-square test of difference) to evaluate the comparison. The chi-square difference value, or delta chi-square, follows a chi-square distribution with degrees of freedom equivalent to the difference in degrees of freedom (i.e., delta degree of freedom) between the nested models. If the statistical significance of the chi-square difference test is not supported (i.e., $p > .05$) when contrasting two nested models, it indicates that the two models exhibit measurement invariance across different groups (Hair et al., 2010).

The chi-square test is impacted by factors such as sample size, the number of parameters to estimate, and the distribution's non-normality (Hair et al., 1999). To address this issue, Cheung and Rensvold (2002) have suggested a more robust approach for evaluating invariance, using the change in the cumulative fit index (CFI) or delta CFI, to determine whether the compared models exhibit invariance or not. When the change in CFI is equal to or less than 0.01, it indicates that all the constraints specified for the nested models are acceptable. However, if the change in CFI exceeds 0.01 between two nested models, the most restrictive model is not invariant.

In the initial stage of the study, an unconstrained model was compared to a well-fitted multi-group constrained model. The results showed that the factor structure was invariant across both boys and girls, as evidenced by the test of invariance of the configural model, where $\Delta\chi^2 = 76.60$ with $\Delta df = 65$ at $p > .05$, and ΔCFI was .009. These findings suggest that the number of latent factors and the factor loading structure of the items on the general ostracism scale were comparable between different groups, including boys and girls. Thus, these results support the configural invariance of the measurement model and enable further investigation into more rigorous invariant models, such as matric, scalar, factor variance, and error variance invariances.

After confirming configural invariance, a critical test of invariance was conducted by examining matric invariance, which involves constraining the factor loadings to be equal across groups. Specifically, the item loadings of the latent factors of the general ostracism scale were constrained to be equal for both boys and girls. The results indicated that the change in the Comparative Fit Index (ΔCFI) between the unconstrained and constrained models was not greater than 0.01, indicating an acceptable threshold for model fit. Furthermore, the change in Chi-square ($\Delta\chi^2$) value of 19.24 with degrees of freedom (Δdf) equal to 13 at a significance level of $p > .05$ supported the establishment of matric invariance between the two groups. Therefore, the factor loadings for the general ostracism scale were considered invariant across gender, indicating that the measurement instrument was measuring the same constructs across groups and can be used to make valid comparisons.

The third stage of the study aimed to investigate scalar invariance of mean and intercept as a rigorous test of measurement invariance, which entailed examining whether the means and intercepts for the latent factors were equivalent across groups. The findings indicated that scalar invariance was established, as shown by a significant increase in the ΔCFI of both constrained models, matric and scalar, by 0.002. Furthermore, the change in Chi-square ($\Delta\chi^2$) value of 20.11 with degrees of freedom (Δdf) equal to 13 at a significance level of $p > .05$ provided support for the homogeneity of means and intercepts across boys and girls. These results suggest that the General Ostracism Scale demonstrates strict measurement invariance, allowing for valid comparisons across gender groups. The establishment of scalar invariance enhances the validity of the measurement tool and strengthens the reliability.

5. Discussion

The present study aimed to adapt the workplace ostracism scale for Pakistani adolescents as a general ostracism scale and to validate it. The workplace ostracism scale was originally developed by (Ferris et al., 2008) and was a unidimensional scale specifically used with Canadian professionals working in different setups (like accountants, bankers, nurses, waiter, sales associate, retail clerk, IT consultant, general laborer and assistant manager) to assess the levels of workplace ostracism among them. Therefore, by keeping the current study objectives in view, the WOS was initially adapted as a general ostracism scale to use with the adolescent Pakistani population.

The conceptualization of workplace ostracism was that employees suffered from the ostracism in the workplace perceiving exclusion, obliviousness and disrespectful conducts by others (Ferris et al., 2008). Furthermore, the workplace ostracism comprised of behaviors (like rejecting/ avoiding behavior or eye contact with the exclusion), compared to the abusive administration, uncivilized conducts, and bullying. Keeping in view the original conceptualization of ostracism in workplace settings the researcher tried to incorporate multiple social rejection behaviors/ exclusions towards adolescents by their peer group in the adapted version of WOS as GOS. To attain this objective the word "workplace" and workplace situations were replaced with the most suitable general social settings faced by the adolescents in their everyday lives where they might face exclusions or disrespectful conducts in their surroundings. The other main aim of the current research was to translate the GOS into Urdu language for better understanding of the items of the ostracism scale. The findings of the pilot study subsequently showed high effect size on translated version of GOS. Therefore, it can be concluded that the Urdu version of GOS can be used with the adolescents to assess ostracism.

Furthermore, the psychometric evaluation of the GOS was carried out and display excellent reliability and validity estimates. As a reliability estimate, the McDonald's reliability (omega coefficient) was calculated to determine the internal consistency of the General Ostracism Scale. The statisticians have warned that the Cronbach's alpha (α) is not an optimum coefficient of internal reliability (Hayes & Coutts, 2020); while for CFA, the use of McDonald's omega (ω) is a more ideal measure of reliability coefficient. Alongside, the evidence of validity, that is average variance extracted for convergent validity of the GOS also fall within the acceptable ranges (Hair et al., 2010) for adolescent population.

The phenomena of ostracism were recently explored among Pakistani young adults and an ostracism scale was developed with two- factor solution naming ostracism experience and psychological effect (Shahzad et al., 2022). The confirmatory factor analysis output revealed that the GOS is a unidimensional scale with excellent model fit indices (see Table 2). The uni-factor structure of GOS was found to be consistent with the existing literature (Ferris et al, 2008; Anjum et al., 2019). Our study results validate that general or workplace ostracism best fits as a unidimensional construct. General Ostracism Scale was also validated across adolescent boys' and girls' samples through strict measurement invariance following the criteria of Hair et al. (2010) (see Table 3). Hence, it was concluded that the General Ostracism Scale is invariant in all aspects of measurement invariance across the boys' and girls' adolescent population.

6. Conclusion

For the General Ostracism Scale (an adapted version of WOS), the confirmatory factor analysis was performed, which validated the uni-factor structure with excellent psychometric properties across the adolescent boys and girls. Moreover, the measurement invariance test also displayed that the general ostracism scale was invariant at all levels of strict invariance (configural, matric, scalar, factor covariance, and error variance).

Implications

The provision of General Ostracism Scale (Urdu version) for adolescents has paved the way for the research community and professionals towards an opportunity to explore the phenomenon of ostracism from different perspectives, including parental attachment, clinical sub-setting, school scenarios, etc. Based on the assessment of ostracism among adolescents, school/ university counselors can tailor their counseling plans and teach the ostracized individuals effective coping strategies.

Acknowledgement

Statements and Declarations

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