Abstract

Loneliness is an adverse phenomenon that tends to peak during adolescence. As loneliness is a subjective state, it is different from the objective state of being alone. People's attitudes toward being alone can be more or less negative or positive. Cultures differ in the form and meaning of social behavior, interpersonal relationships, and time spent alone. However, for cross-cultural comparisons to be meaningful, measurement invariance of the measure should be established. The present study examined measurement invariance of the Loneliness and Aloneness Scale for Children and Adolescents (LACA) in a sample of 218 Belgian and 190 Chinese early adolescents, aged 11 to 15 years. Using nested multigroup confirmatory factor analyses, measurement invariance of the LACA across Belgium and China was established. More specifically, evidence was found for configural, metric, and partial scalar invariance. Because partial scalar invariance was established, the two cultural groups could be compared. No significant differences were found for peer-related loneliness. Regarding the attitudes toward aloneness, Belgian adolescents were more negative and less positive toward being alone than Chinese adolescents. The present study is encouraging for researchers who want to use the LACA for cross-cultural comparisons, in that we found evidence for measurement invariance across two disparate cultural groups speaking completely different languages.

Keywords: loneliness, attitudes toward being alone, measurement invariance, Belgian and Chinese adolescents.

Loneliness and Attitudes Toward Being Alone in Belgian and Chinese Adolescents: Examining Measurement Invariance

Loneliness is an unpleasant, subjective experience that occurs when people perceive their social relations to be deficient in some important way, either quantitatively or qualitatively (Perlman & Peplau, 1981). It is a universal phenomenon that is experienced by all human beings at some time in life, but tends to peak during adolescence (Qualter et al., 2015). Transient feelings of loneliness may represent normative experiences, but persistent feelings of loneliness may have detrimental effects on one's mental and physical well-being across development (Ernst & Cacioppo, 1999; Heinrich & Gullone, 2006). One can feel lonely when alone, but also when surrounded by other people. Hence, loneliness is different from being alone, which is an objective experience. People differ in their general reaction toward being alone, that is, their attitude toward aloneness, which may be more or less negative or positive. There might be cultural differences in adolescents' loneliness and negative and positive attitudes toward aloneness. However, before cross-cultural comparisons can be made, measurement invariance should be established.

Cultures differ in the form and meaning of social behaviors, and ascribe different values and meaning to interpersonal relationships (Chen & French, 2008; Van Staden & Coetzee, 2010). Cultures are often classified as varying in levels of individualism and collectivism. However, it is not clear which of these types of cultures has a higher prevalence rate of loneliness. Chen et al. (2004) and Lykes and Kemmelmeier (2014) both described two contrasting hypotheses. The first hypothesis stated that in more individualistic cultures, psychological autonomy and individuality are highly valued, which may lead to feelings of social alienation and loneliness among early adolescents. More collectivistic cultures are more group-oriented and provide more social support, which may lead to feelings of belongingness

and interpersonal connectedness. The second hypotheses, by contrast, stated that in these collectivistic cultures, the thresholds for loneliness may be relatively low. Expectations for social connections may be higher and therefore more difficult to meet, which results in feelings of loneliness. In a similar vein, in individualistic cultures, the threshold for loneliness may be relatively high. The expectations for social connections may be lower and therefore easier to meet. These theoretical notions, however, are about the importance of social connections in a particular culture, whereas loneliness is about the negative feeling that arises when there is a *gap* between the actual and desired social connections. Cross-cultural theories about this gap between actual and desired social connections, that is, loneliness, have not been developed yet.

Empirical evidence on cross-cultural differences in loneliness in adolescents is scarce. When comparing adolescents from two more individualistic cultures, that is, Western Australia and the US, no significant differences in loneliness were found (Renshaw & Brown, 1992). When comparing adolescents from two more collectivistic cultures, that is, Cape Verde and Portugal, no significant differences were found either (Neto & Barros, 2000). When comparing more individualistic with more collectivistic cultures, finally, no significant differences in levels of loneliness were found for adolescents from Canada, Southern Italy, Brazil, and China (Chen et al., 2004), Russia and the US (Stickley, Koyanagi, Koposov, Schwab-Stone, & Ruchkin, 2014), or Canada and China (Liu et al., 2015).

Cultures also differ in the value they place on time spent alone (Jones, Carpenter, & Quintana, 1985; Larson, 1990). However, empirical evidence on cross-cultural differences in attitudes toward being alone in adolescence is almost non-existent. Some theoretical notions do appear in the literature. Regarding China and Western countries, two lines of reasoning can be found in the literature. According to the first line of reasoning, being alone might be valued more positively in Western countries and more negatively in China. In Western countries,

assertiveness and autonomy are valued and being alone might be seen as an autonomous expression of personal choice (Liu et al., 2015). In China, however, greater value is placed on interdependence and commitment to the group. Being alone might therefore be seen as selfish and in conflict with the group orientation (Liu et al., 2015). Based on this reasoning, we might thus expect more positive and less negative attitudes toward aloneness in Belgian than in Chinese adolescents.

According to the second line of reasoning, being alone might be more negatively viewed in Western countries and more positively in China. Most people in modern Western society see being alone as an undesirable state (Suedfeld, 1982). When alone, they actively try to find companionship or distract themselves, for example, by watching television. Also, when encountering another person who spends much time alone, they feel sorry for that person (Suedfeld, 1982). In China, attitudes toward being alone might be more positive. Several translations are available in Chinese for the English term “solitude”, all including the root term “du”, which is also the root for “independence” and “uniqueness” in Chinese (Averill & Sundararajan, 2014). Contrary to the more commonly noted Chinese emphasis on collectivism, there is a strong tradition of individualism in China. Similarly, in the West, a hermit is seen as an outsider, whereas in China this lifestyle is actually valued very positively and appears as a common theme in Chinese poetry (Averill & Sundararajan, 2014). Based on this reasoning, we might expect more positive and less negative attitudes toward aloneness in Chinese than in Belgian adolescents.

Associations among various aspects of one’s attitude toward being alone can also be examined. Positive and negative attitudes toward aloneness can be measured in early adolescence using the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen, Goossens, & Caes, 1987). These attitudes were found to represent separate factors in confirmatory factor analyses on almost 10,000 Belgian children and adolescents (Maes,

Klimstra, Van den Noortgate, & Goossens, 2015). Moreover, a recent meta-analysis showed a very small average correlation between the two (r = -.02; Maes, Van den Noortgate, & Goossens, 2015). However, the large majority of the studies included in that meta-analysis sampled from Western countries. It is not yet known whether a similar association between the two types of attitudes toward aloneness holds in adolescents from non-Western countries.

Peer-related loneliness can also be measured using the LACA. Associations between peer-related loneliness and attitudes toward aloneness again have been examined in Western countries mainly. Across studies, a small correlation was found between peer-related loneliness and negative attitudes toward aloneness (r = .15) and a medium correlation was found between peer-related loneliness and positive attitudes toward aloneness (r = .34; Maes, Van den Noortgate et al., 2015). However, it is not entirely clear how loneliness and attitudes toward aloneness are related (Majorano, Musetti, Brondino, & Corsano, 2015). For example, it could be the case that adolescents with positive attitudes toward aloneness create more opportunities to spend time alone and, as a consequence, may miss opportunities for social interactions leading to increased loneliness. However, it could also be the case that adolescents' dissatisfaction with their relationships with peers makes them more inclined to spend time alone (Majorano et al., 2015). Cross-cultural studies on these issues have not been conducted yet.

For cross-cultural comparisons to be meaningful, researchers should first establish measurement invariance, which basically means that the instrument is measuring the same factor structure in the cultures that are studied (Chen, 2007; Van de Schoot, Lugtig, & Hox, 2012). However, none of the studies mentioned earlier has directly addressed measurement invariance. There are several levels of measurement invariance. The first level is called *configural* invariance, and implies that items are associated with the same factors for the cultures being compared. Analyses at this level examine whether the instrument that is used is

configured to measure basically the same constructs. The second level is called *metric* invariance, and implies that the relations between specific scale items and the underlying constructs (i.e., factor loadings) are equal across cultures. Analyses at this level examine whether the latent constructs have exactly the same meaning across cultures (Van de Schoot et al., 2012). Metric invariance is important to establish when researchers aim to compare associations between variables across cultures. The third level of measurement invariance is called *scalar* invariance, and implies that not only the factor loadings, but also the levels of the underlying items (i.e., intercepts or constants when items are written as linear combinations of factors) are equal across groups. Scalar invariance should be established if researchers want to compare the means of different groups. Full scalar invariance, however, may be considered unrealistic, especially when diverse cultural groups are compared that speak completely different languages (Byrne & Watkins, 2003; Steenkamp & Baumgartner, 1998). Partial scalar invariance, with at least two items per factor exhibiting scalar invariance, has been found sufficient to conduct comparisons of means across countries (Byrne, Shavelson, & Muthen, 1989; Steenkamp & Baumgartner, 1998).

A first aim of this study was to examine measurement invariance across Belgian and Chinese early adolescents for the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen et al., 1987). A second aim was to explore cross-cultural differences in loneliness and attitudes toward being alone. Regarding loneliness, previous studies on adolescents did not find significant differences across cultures. So we did not expect marked differences in loneliness. Regarding attitudes toward aloneness, two contrasting lines of reasoning appear in the literature and no empirical evidence is available as of yet. Therefore, we could not state strong a priori hypotheses about cultural differences in these attitudes, and we examined these differences in a more exploratory way. Finally, we

also examined cross-cultural differences in the associations among loneliness and attitudes toward aloneness, again in an exploratory way.

Method

Participants

Two convenience samples were recruited for the present study. One sample came from the Dutch-speaking part of Belgium (N = 229) and the other came from Beijing, China (N = 200). The Belgian sample consisted of fewer females (53.7%) than the Chinese sample (66.5%), $\chi^2(2) = 264.98$, $p < .001$. All participants were between 11 and 15 years old, but the participants were somewhat younger in the Belgian sample (M = 12.80, SD = 0.74) as compared to the Chinese sample (M = 13.62, SD = 0.63), $t(422) = 12.14$, $p < .001$. Information about the socioeconomic background of the participants was not available, but the schools they were drawn from are known to serve primarily middle and upper middle class neighborhoods. Most Chinese adolescents (85%) came from two-parent families, but this information was not available for the Belgian adolescents.

Because measurement invariance studies rely on fitting the observed data to a model, any bias in one of the groups due to outliers will affect factor loadings, intercepts, and error variances (Van de Schoot et al., 2012). Therefore, before examining measurement invariance, we removed participants with univariate outliers. That is, values more than 3 SD below or above the mean (7 cases in the Belgian sample and no cases in the Chinese sample) were removed. We also removed participants with multivariate outliers, based on their Mahalanobis distance values (Tabachnick, Fidell, & Osterlind, 2001; 4 cases in the Belgian sample and 9 cases in the Chinese sample). Little's MCAR Test (Little, 1988) indicated that the data could be considered as missing at random, $\chi^2(434) = 459.04$, $p = .196$. Therefore, we imputed missing values by means of the Expectation-Maximization procedure in SPSS 22.0, except for one case from the Chinese sample that had missing values on 27 of the 36 LACA items and

therefore was removed from our dataset. This multi-step approach resulted in a final analytical sample of 218 Belgian and 190 Chinese adolescents.

Procedure

For the Belgian sample, information letters were sent to the schools, after which the principals of the schools were contacted. The participants filled out the LACA during regular school hours with a research assistant being present to introduce the study and answer questions. This assistant emphasized that participation was anonymous and voluntary, and that the adolescents could discontinue their participation at any time. This procedure was in line with the ethical standards at the time of data collection. The Chinese sample was drawn from the research project "Social Withdrawal, Friendship, and Social, School, and Psychological Adjustment in Chinese Adolescents". Participants were first contacted by telephone. If both parents and adolescents expressed interest, parental consent and adolescent assent forms were mailed to the home with preaddressed and stamped return envelopes, along with the questionnaire measurements.

Measure

Participants filled out three subscales of the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen et al., 1987) in either Dutch or Chinese. These subscales, of 12 items each, measured peer-related loneliness (e.g., "I feel sad because I have no friends"), negative attitudes toward being alone (e.g., "When I am alone, I feel bad"), and positive attitudes toward being alone (e.g., "I want to be alone"). Items could be answered on a 4-point Likert-type scale ranging from (1) *often* to (4) *never*. The fourth subscale of the LACA, measuring parent-related loneliness, was not included because the focus of the broader project for which the Chinese data were collected was on peer relationships (Wang, 2014).

The LACA was translated carefully into Chinese by several members of the research team who were fluent in both English and Mandarin (Wang, 2011). The LACA was then back-translated to ensure comparability with the English version. A variety of formal and informal strategies (e.g., repeated discussion in the research group, interviews with youth, and psychometric analysis) were applied to maximize the validity of the items. Earlier research indicated that the internal consistency of the subscales was high (i.e., $\alpha > .80$) in studies from several countries (Maes, Van den Noortgate et al., 2015). In the current study, Cronbach's alphas were also good, in both the Belgian and Chinese samples, for peer-related loneliness ($\alpha = .91$ and .89, respectively), negative attitudes ($\alpha = .79$ and .87, respectively), and positive attitudes toward being alone ($\alpha = .87$ and .83, respectively). Average scores for Belgian and Chinese adolescents were similar to the values reported in previous research (Maes, Klimstra et al., 2015) on the three subscales, that is, peer-related loneliness ($M_{BE} = 21.39$, $SD_{BE} = 7.50$ and $M_{CN} = 24.05$, $SD_{CN} = 7.19$), negative attitudes toward aloneness ($M_{BE} = 32.04$, $SD_{BE} = 6.15$ and $M_{CN} = 29.92$, $SD_{CN} = 7.17$), and positive attitudes toward aloneness ($M_{BE} = 29.06$, $SD_{BE} = 7.37$ and $M_{CN} = 32.52$, $SD_{CN} = 6.53$).

Statistical Analyses

All analyses were performed in M*plus* 6.11 (Muthén & Muthén, 2007). To test for configural invariance, we examined whether a three-factor model (with the items of the three respective subscales loading on these three factors) yielded adequate fit in both samples separately. Configural invariance is further established by running a multiple group confirmatory factor analysis (CFA) with no constraints. To test for metric and scalar invariance, we compared the fit of multigroup models without constraints (i.e., not assuming metric or scalar invariance) to constrained models (i.e., by constraining intercept and loadings to the same values for both groups, to explore metric and scalar invariance, respectively). As recommended by Cheung and Rensvold (2002), we relied on multiple indices when

evaluating model fit, including the Normed Chi-Square, the Comparative Fit Index (CFI), the Root Means Square Error of Approximation (RMSEA), and the Standardized Root Mean squared Residual (SRMR). The Normed Chi-Square should be between 1.00 and 5.00, as values below 1.00 reflect poor model fit and values above 5.00 reflect a need for improvement (Schumacker & Lomax, 2004). As regards CFI, .90 represents acceptable fit and .95 good fit. RMSEA and SRMR should not exceed .06 and .08, respectively, to consider the models as good-fitting models and should not be larger than .08 and .10, respectively, for mediocre-fitting models (Hu & Bentler, 1999). Following the guidelines of Chen (2007), we regarded metric invariance as established if the difference in CFI (ΔCFI) between models with group-specific or common factor loadings is smaller than .010, ΔRMSEA is smaller than .015 and ΔSRMR is smaller than .030. We regarded scalar invariance as established if ΔCFI, ΔRMSEA and ΔSRMR between models with group-specific or common intercepts is smaller than .010, .015, and .010, respectively. In addition, we relied on the Akaike information criterion (AIC) and the Bayesian information criterion (BIC), which should be as low as possible.

We did not use items as indicators of latent factors, but we aggregated items into parcels. Numerous researchers have highlighted the psychometric merits of parcels relative to items, such as higher reliability and communality, and the advantages of models based on parcels regarding factor solution and model fit (Little et al., 2002). A reduction in model complexity when using parcels is expected to lead to more stable parameter estimates (Nasser-Abu Alhija & Wisenbaker, 2006). Moreover, when the data to be analyzed are nonnormally distributed and coarsely categorized, is has been found that parameter estimates are usually unbiased, but that the model fit indices are adversely affected. Using parcels reduced this effect, without leading to biased parameter estimates (Bandalos, 2002). However, these advantages of parceling only hold when the set of parceled items within a factor is

unidimensional (Nasser-Abu Alhija & Wisenbaker, 2006; Bandalos, 2002). The factor structure of the LACA has been examined in previous studies (Goossens, 2015; Marcoen et al., 1987; Maes, Klimstra et al., 2015) suggesting that the items within each subscale of the LACA are unidimensional. This is confirmed by factor analyses on the data of the current sample. For each subscale, three four-item parcels were created based on the factor loadings obtained for the total sample, following the well-established item-to-construct balance parceling method described by Little, Cunningham, Shahar, and Widaman (2002).

For our second aim, that is, to explore cross-cultural differences in loneliness and attitudes toward being alone, we used the same multi-group models. When using a multi-group model in M*plus*, the means of the latent variables for one group are automatically set to zero. The values of the means of the latent factors for the other group actually represent the difference in these means between the two groups. A two-tailed test is provided showing whether these values (i.e., the mean differences) differ from zero. Finally, we examined cross-cultural differences in correlations among the LACA factors between Belgian and Chinese adolescents in exploratory fashion, using the Wald Test.

Results

Configural invariance was first examined by running confirmatory factor analyses with the three-factor structure that was used to construct the LACA instrument for the two samples separately. Model fit is presented in Table 1. RMSEA was somewhat high, but the Normed Chi-Square, CFI, and SRMR suggested an acceptable to good fit for both the Belgian and Chinese samples. Table 2 shows the model fit indices for the unconstrained and constrained models. The unconstrained model also showed acceptable fit, which meant that the number of factors and the pattern of factor loadings were roughly equivalent in both groups and that we could establish configural invariance. Evidence for metric invariance was also found (ΔCFI = .003, $\Delta RMSEA$ = .003, $\Delta SRMR$ = .008), which meant that factor loadings

could be regarded as equal in both groups. The AIC and BIC values confirmed this finding, as AIC is only somewhat higher and BIC is even lower when comparing the constrained with the unconstrained model.

Because full scalar invariance could not be established (ΔCFI = .073, $\Delta RMSEA$ = .041, $\Delta SRMR$ = .017), we tested for partial scalar invariance. Based on the modification indices, we released the constraints of the intercepts for one parcel loading on the peer-related loneliness factor and for one parcel loading on the negative attitudes toward being alone factor. With these constraints released, evidence was found for partial scalar invariance (ΔCFI = .019, but $\Delta RMSEA$ = .010, $\Delta SRMR$ = .001). The AIC and BIC values seemed to confirm this finding as they were not much larger in the partial scalar invariance model compared with the metric invariance model.

Because partial scalar invariance was established, we proceeded to compare the factor means between Belgian and Chinese early adolescents. In addition, we examined the correlations among the three factors, that is, peer-related loneliness, and negative and positive attitudes toward being alone, for the two samples separately. Because the two groups differed significantly regarding gender and age, we controlled for these variables by adding them to the model. In this analysis, age was centered around the grand mean of 13 years. The differences in factor means between the two groups and the correlations among the factors are presented in Table 3.

No significant differences were found between the Belgian and Chinese adolescents regarding peer-related loneliness, but significant differences emerged for attitudes toward being alone. On average, Belgian adolescents scored higher on negative and lower on positive attitudes toward being alone than Chinese adolescents. Correlations among the three factors were also compared between the two groups. Results from an overall Wald Test demonstrated no significant differences, $\chi^2(3) = 5.06$, $p = .17$. Results from separate Wald tests for each pair

of correlations also indicated that there were no statistically significant differences between the two groups (p = .09 to .45).

Discussion

In all psychological research, it is essential to establish measurement invariance when groups are compared (Byrne & Watkins, 2003). The large majority of cross-cultural studies on loneliness, however, have not explicitly addressed this issue. Some cross-cultural researchers replicated the factor structure across cultural groups (i.e., configural invariance), but such evidence is not sufficient to conduct meaningful comparisons across groups. The present study examined more demanding levels of measurement invariance for the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen et al., 1987) in Belgian and Chinese early adolescents. In line with previous research in Belgium (Maes, Klimstra et al., 2015) and Italy (Cicognani, Klimstra, & Goossens, 2014), the model reflecting the proposed factor structure of the LACA yielded a good fit for both the Belgian and Chinese sample. In addition to configural invariance, we established metric and partial scalar invariance.

In addition, because partial scalar invariance could be established (Byrne et al., 1989; Steenkamp & Baumgartner, 1998), we explored cross-cultural differences in loneliness and attitudes toward aloneness. First, the Belgian and Chinese adolescents in our study did not differ on peer-related loneliness. This result is in line with previous studies that found no significant differences in loneliness between adolescents with diverse cultural backgrounds. These studies have used other measures of loneliness, including a single-item measure and two well-known loneliness measures, that is, the Children's Loneliness Scale (Asher, Hymel, & Renshaw, 1984) and the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). Despite this variety of measures, all studies show similar results, which seems to suggest that there are no differences in levels of loneliness in adolescents from different countries.

Second, we explored cross-cultural differences in attitudes toward aloneness, which has not been done before. We found that the Belgian adolescents in our sample showed greater negative and less positive attitudes toward being alone than the Chinese adolescents. This finding is in line with previous findings (Suedfeld, 1982) that indicated that in the Western world, being alone is seen as an undesirable state. Our findings are also in line with research (Averill & Sundararajan, 2014) that emphasized the Chinese traditions of eremitism (i.e., living in seclusion from social life) and individualism. However, replication of these results is needed, as this is the first study to examine attitudes toward being alone from a cross-cultural perspective. Third, we examined cross-cultural differences in associations among loneliness and attitudes toward aloneness between Belgian and Chinese adolescents and found no differences in this regard. For both groups, negative and positive attitudes toward aloneness were negatively related. In addition, peer-related loneliness was positively related with both attitudes toward aloneness in both Belgian and Chinese adolescents. However, although we found no significant differences in these associations between the two groups, the size of the associations seem to differ and additional research on these correlations is needed.

Besides the innovative aspect of this study, there are also some limitations to keep in mind. Both samples were of medium size and not nationally representative. We were only able to establish measurement invariance for Belgian adolescents from the Dutch-speaking part of the country and Chinese adolescents from Beijing. Future research should aim to replicate our results using larger and nationally representative samples. Such samples could include, for instance, a more diverse set of participants, such as children and adolescents from other regions of Belgium and China and participants with other cultural and socioeconomic backgrounds. Furthermore, the present study examined measurement invariance only. This is an important requirement before groups can be compared, but it is not the only one. Other

types of biases might exist as well (Van de Vijver & Tanzer, 2004) and future studies should address these. One such study could be a more qualitative study with open interviews to investigate whether Belgian and Chinese adolescents themselves mention similar feelings, thoughts, and behaviors when talking about loneliness and attitudes toward being alone. Finally, no data were available for the fourth subscale of the LACA, that is, parent-related loneliness, which should be included in future research.

Despite these limitations, the present study extends the current literature on loneliness in significant ways. We found evidence for measurement invariance of the Loneliness and Aloneness Scale for Children and Adolescents across two disparate cultural groups speaking completely different languages. In addition, we confirmed previous research that found no differences in loneliness in adolescents with a different cultural background. Finally, we extended the literature by examining cross-cultural differences in attitudes toward aloneness in an exploratory way. The findings regarding the latter topic, which question traditional views on solitude in collectivistic cultures, are in need of replication in future research on larger and more representative samples.

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Table 1

Configural Invariance for the Belgian and Chinese Sample

Model	χ^2 / *df*	*CFI*	*RMSEA*	*SRMR*
Belgium	2.77	0.96	0.09	0.08
China	4.22	0.92	0.13	0.08

Note. χ^2 / *df* = Normed Chi-Square; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; SRMR = Standardized root mean squared residual.

Table 2

Metric and Scalar Invariance Across Cultural Groups

Model	χ^2 / *df*	*CFI*	*RMSEA*	*SRMR*	*AIC*	*BIC*
Unconstrained	3.50	0.939	0.111	0.079	5573.05	5813.72
Metric invariance	3.36	0.936	0.108	0.087	5574.58	5791.19
Scalar invariance	5.50	0.863	0.149	0.104	5711.44	5903.98
Partial scalar invariance	3.84	0.917	0.118	0.088	5607.71	5808.27

Note. χ^2 / *df* = Normed Chi-Square; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; SRMR = Standardized root mean squared residual.

Table 3

Unstandardized Differences Between Factor Means and Intercorrelations Among the Factors Controlling for Gender and Age

Subscale	M_{Diff}	*SE*	1	2	3
1. Peer-related loneliness	-0.07	0.07	-	.14	.53***
2. Negative attitudes toward being alone	0.28**	0.08	.30***	-	-.26**
3. Positive attitudes toward being alone	-0.36***	0.08	.43***	-.16	-

Note. Intercorrelations for the Belgian sample are presented above the diagonal and intercorrelations for the Chinese sample are presented below the diagonal. A positive mean difference, M_{Diff}, means that the Belgian sample scores higher.

* $p < .05$. ** $p < .01$. *** $p < .001$.