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CHILD PUPPET LONELINNES SCALE: A NEW TOOL FOR LONELINESS ASSESSMENT IN YOUNG CHILDREN

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Abstract:

The aim of this study was to create a new method for loneliness assessment in children aged from 4 to 8 years. The method has a form of Child Puppet Interview – an interview between 2 puppets which simulates peer conversation. Pilot testing of a set of 30 newly developed items was conducted on children form nursery and elementary schools (N = 100, 45% boys, 28% school-children). Exploratory factor analysis identified 2 factors: family-related loneliness and peer-related loneliness. These 2 domains were subsequently examined by item analysis. 2 versions of method were created – a short one, suitable for immediate use and a long one, on which further pilot testing is intended. Both versions showed good reliability properties in terms of internal consistency and inter-rater reliability. Confirmatory factor analysis provided support for the 2-factor model of loneliness. An alternative bifactor solution was examined as well, showing even better fit indexes. Comparison with external criteria demonstrated correlations of the new scale with conduct problems and prosocial behaviour (-). Possibilities of further usage and limitations are discussed.

Keywords: loneliness, children, psychometrics, psychodiagnostics

INTRODUCTION

The debate about children's' loneliness has been long and vivid in psychology, however, no researcher has seemed to be extensively interested in this phenomenon in children as young as 4 years old. Examining the inner feelings of children in such early age may appear as a task which is both uneasy yet very needful as persistent feelings of loneliness in early childhood lead into many severe developmental consequences, some of them being aggressive behavior (Coplan, Closson & Arbeau, 2007), victimization (Ladd, Kochenderfer, & Coleman, 1997) and decreased self-worth and sociability (Qualter & Munn, 2002).

Although many definitions of loneliness have been formed so far, literally all of them cover the negative emotional experience stemming from perceived inadequacy in interpersonal relationships (Weeks & Asher, 2012). Parkhurst and Hopmeyer (1999) defined 4 key components of loneliness: negative affectivity manifested through feeling of sadness and pain, self-perception of being left-apart or isolated, lack of closeness, contact or bound with others (which may even lead to deprivation) and a variety of hypothesized causes or antecedents.

The first conception of loneliness resulted from qualitative psychoanalytic approaches (Fromm-Reichman, 1959), followed by phenomenologically and existentially oriented descriptive studies, still based on no empirical evidence (Moustakas, 1961; Rogers, 1961; see Cacciopo & Hawkley, 2009). The first endeavour trying to define loneliness as a measurable construct began in 1970s. Following Bowlby's work (1970), sociologist Robert S. Weiss formed the theory of social needs (1973), which later served as a basis for the cognitive approach to understanding loneliness.

Weiss (1973) provided the first attempt to describe conceptually distinct facets of loneliness: emotional loneliness and social loneliness, both stemming from different causes. Emotional loneliness results from absence of a bound with a significant other. On the other hand, feelings of social loneliness develop when people are unable to integrate themselves as a part of a certain social group. Although those people do not necessarily lack a bound with a significant other, they may still feel lonely in the social context and vice versa. Weiss considers the two facets of loneliness conceptually independent, although following studies revealed that the domains are correlated (např. Russel, Peplau, & Cutrona, 1980; Shaver a Buhrmester, 1983).

A method created solely according to the theory of social needs (Weiss, 1973) would only present a person a set of situations, assuming that they will all evoke feelings of loneliness of equal strenght in different people. On the other hand, cognitive theory of loneliness highlights a cognitive appraisal of situation. Based on this approach, two people may experience different levels of loneliness even when exposed to similar situations. This approach can be seen either as an extension of the theory of social needs (Weeks & Asher, 2012), or a unique conceptualisation of loneliness (Terrel-Deutch, 1999).

Assesment of loneliness in young children

Although much had been written concerning loneliness in adulthood, it was not until 1980s when children's' loneliness started to attract researchers' attention. Weiss (1973) claimed that it is not until adolescence when the perception of loneliness is formed, disclaiming the possibility of loneliness being present in children. Many researchers contradicted this belief, some of them even claiming that a new-born can experience loneliness (Parkhust & Hopmeyer, 1999).

However, the construct should cover the specific inner experience which is highly subjective. We can measure how a child behaves when his or her parents are not present as well

as the number of friends he or she possesses. None of those operational definitions is able to cover the inner feeling, which is the reason why we need to ask in which developmental stage are children able to reflect it and refer to it.

According to Cassidy & Asher (1992), children in age from 5-7 years demonstrated the ability to comprehend the term "loneliness". 93% of their sample defined the word as a painful, sad experience which emerges when no other person is present around, the rest omitted the emotional experience and only referred to the fact of being alone. Based on subsequent interviews the authors also claim that the vast majority of children in the sample did not think that it would be possible to experience loneliness once they are able to engage in peer games on a regular basis.

Findings of Qualter and Munn (2002) partially contradict those of Cassidy & Asher (1992), suggesting that even very young children can differentiate between loneliness and peer exclusion. The aim of their study was to identify whether there is a distinction between subjectively experienced loneliness and exclusion from the peer group in children aged 4-9 years old. 4 clusters of children were identified: lonely ones, those who were either lonely either excluded from their group, excluded ones and those who did not met any of previously mentioned conditions. The authors also found a correlation between loneliness experienced in peer relationships and loneliness experienced towards parents. This relationship was only significant in children who were classified as lonely yet not excluded, suggesting that loneliness and peer exclusion really are conceptually different constructs.

Even though some researchers (Asher & Paquette, 2003) claim that cognitive capability of children this young is not sufficient enough for capturing the uniqueness of both constructs, findings of Qualter and Munn (2002) support the hypothesis, being in agreement with results of other studies which describe the ability of children from nursery schools to name particular emotions connected with loneliness (e. g. sadness) and even talk about situations in which a person could experience loneliness, which was replicated by other researchers working with young children (Cassidy & Berlin, 1999). But it may not be reasonable to consider children's' loneliness within the same boundaries as the one experienced by adults. A more meaningful approach is to examine its differences through lifespan. It seems reasonable that the ability to identify the presence of loneliness in children is highly affected by a form of method used for its assessment. The Child Puppet Interview method has been used for assessment of various emotional states in children 4-8 years old. The method is based on a comparison of two

contradictory statements presented by a pair of puppets and has been validly used in many studies (see Measelle, Ablow, Cowan, & Cowan,1998; Ringoot et al., 2013 for review).

Until today, there has been no theoretical agreement concerning the conceptualization of children's loneliness and only one factor-analytical study of the construct has been published. We cannot be sure if the emotional loneliness is only experienced in the family context and the social form in the peer group or if both facets are context-independent. Goosens a Beyers (2002) administered 6 methods for loneliness assessment to children from 5th and 6th grades and identified the model with two correlated factors of family-related and peer-related loneliness as best fitting, suggesting that loneliness in children may be context-dependent and that its emotional and social facet somehow overlap.

Disadvantages of methods currently used for loneliness assessment

Although many methods for measuring loneliness in children have been created, none of them combines the crucial aspects needed to be covered:

1. formulation of items which are free from presumed causes of loneliness, yet cover the verbal content describing the affective nature of loneliness
2. wording of items understandable for young children
3. inclusion of both peer and family context

The debate about inclusion of antecedents of loneliness into its measures is of eminent importance (Weeks, & Asher, 2012). Adding these items may increase the overall explained variance, yet combined in one scale with “pure” loneliness items they make the decision of whether the outcome is caused by loneliness itself or its causes impossible. Even Weiss (1982) himself amplified the need of a method covering pure loneliness which would allow us to explain its relationship with correlates with higher level of certainty. Surprisingly, there is no method for measurement of the family-related loneliness itself, although all of those being accessible up to date cover the peer context, some even exclusively.

METHOD

Sample

100 children aged 4-8 years were examined, based on informed consent of their parents - 55 girls and 45 boys. The children visited either nursery (62%) or elementary school (28%).

Item creation

Items were created according Weeks's and Asher's (2012, s. 19–20) guidelines for „pure" loneliness items (see Introduction for explanation):

a) such item either contains one of expressions „lonely", „lone", „alone" in its wording, or

b) describes two essential components of loneliness in mutual interaction: being alone while experiencing negative emotions stemming from this state.

14 family related (emotional) and 16 peer-related (social) items were created. Reverse-scored items were included, as well as several filler items to desensibilise the child during the interview. The whole set of items was administered individually with an average duration of 20 minutes. Before the pilot testing 2 cognitive interviews were carried with children 5 years old, who understood all items with no constraints.

Child Puppet Interview

Child Puppet Interview, also known as Berkeley Puppet Interview (BPI, Measelle, Ablow, Cowan, & Cowan, 1998), is a method based on a structured interview and observation of child's reactions, which simulates peer dialogue using two similarly looking puppets. The method was formerly used for self-concept assessment in children aged 4-8 years, yet its usefulness has been proved also with other constructs measured in children (Ringoot et al., 2013). Exposed to two contradictory statements, each presented by one puppet, the child is asked about his or her opinion, usually by the „And how about you?" formula, which can be expressed either verbally or nonverbally (Measelle, Ablow, Cowan, & Cowan, 1998). The child can also add an additional comment. Based on child's answers the administrator scores to one of the 7 categories on a Likert-type scale. The overall score is a sum of all item-scores in a scale. Table 1 shows the scoring system used in this study, developed by Ringoot et al. (2013).

TABLE 1: THE SCORING SYSTEM

Reaction on hypothetical item *„I am a lonely child.“*	Score
I am never lonely, immediate answer	1
I am not lonely, without longer hesitation	2
Adds further description, not very confident about the answer	3
It is sometimes true, the child does not know which answer to choose	4
Adds further description, not very confident about the answer	5
I am lonely, without longer hesitation	6
I am always lonely, immediate answer	7

10 interviews were rated by another rater in order to obtain a two-way random ICC, an index of inter-rater reliability.

Strengths and Difficulties Questionnaire

SDQ is a screening method for children 3-16 years old containing several behavioural assessment scales (Goodman, 1997). It includes 25 items grouped in 5 subscales: emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. Each item is rated either by the child or his or her parent and teacher on a 3-point scale, reporting the frequency of symptoms described. The overall score of behavioural difficulties can also by computed by addition of 4 subscales, prosocial behaviour excluded. Internal consistencies (Cronbach's α) of the SDQ subscales are presented in Table 2.

TABLE 2: INTERNAL CONSISTENCIES OF THE SDQ SUBSCALES

	parent	teacher
Emotional symptoms	0,43	0,77
Conduct problems	0,44	0,63
Hyperactivity/inattention	0,74	0,87
Peer relationship problems	0,58	0,55
Prosocial behaviour	0,70	0,64
Overall score	0,73	0,86

RESULTS

Exploratory factor analysis

Exploratory factor analysis as well as subsequential analyses were computed using robust estimators based on polychoric correlations as the items were not normally distributed. Parallel analysis identified presence of 2 factors. The scree-plot can be seen in Figure 1. Items n. 5, 9, 26,

11 and 1 were excluded from further analyses due to crossloading and low factor loadings. There was a moderate correlation between factors (r = 0,48). The model explained 32 % of variance in data. Some items showed affiliation to the other scale than which had been expected. Factor loadings and communalities can be seen in Table 3.

FIGURE 1: SCREE PLOT

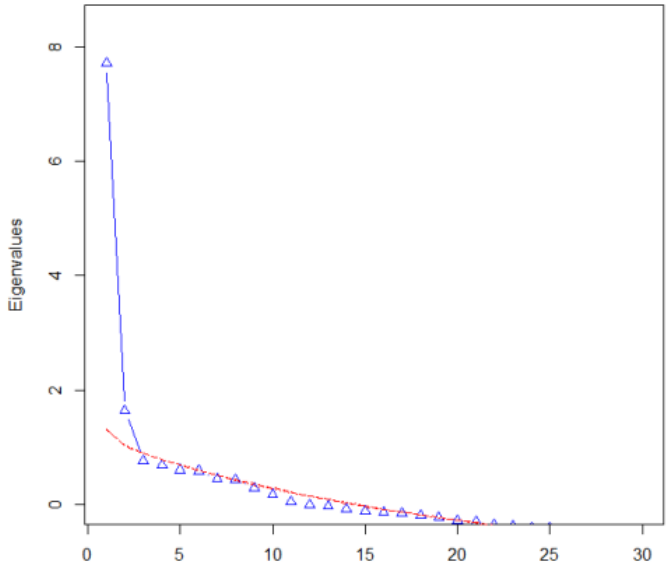

TABLE 3: FACTOR LOADINGS AND COMMUNALITIES (ROTATED)

Item	F1	F2	communality
item2	**0,75**	-0,19	0,46
item8	**0,72**	-0,15	0,44
item10	**0,68**	0,10	0,54
item20	**0,67**	0,04	0,48
item16	**0,67**	-0,01	0,44
item27	**0,62**	-0,08	0,35
item29	**0,61**	0,19	0,53
item21	**0,59**	0,02	0,36
item4	**0,58**	0,14	0,44
item6	**0,56**	0,09	0,37
item24	**0,51**	0,29	0,48
item3	**0,42**	0,11	0,24
item14	**0,41**	0,25	0,33
item25	**0,39**	-0,19	0,12
item28	**0,36**	0,25	0,28
item17	-0,06	**0,70**	0,46
item22	0,05	**0,63**	0,43
item23	-0,04	**0,62**	0,36
item12	-0,05	**0,57**	0,30
item19	0,11	**0,56**	0,38
item13	0,14	**0,54**	0,38
item7	0,16	**0,43**	0,28
item15	0,04	**0,37**	0,15
item30	0,19	**0,35**	0,23
item18	0,25	**0,33**	0,24
item5	0,28	0,28	0,23
item9	0,09	0,10	0,10
item26	-0,17	0,18	0,03
item11	0,14	0,17	0,07
item1	0,09	0,13	0,04

KMO = 0,78; TLI = 0,828; RMSEA = 0,003

Item analysis

The aim of the item analysis was to examine the ability of items to discriminate between children with different levels of loneliness, their correlation with the overall score and their contribution to internal consistency of the scale. Based on the item analysis, two versions of the method were created – a shorter one (suitable for immediate use) and the longer one (on which further pilot testing is intended). Even though the items on which the item analysis was supposed to be conducted had been preselected by EFA, we decided to include some items considered insufficient by EFA due to their supposedly high content validity. The items which had been preselected by EFA, and therefore served as a base for the short version of method, are highlighted. Some items showed affiliation to the other scale than had been previously intended (marked by asterisk).

TABLE 4: PSYCHOMETRIC PROPERTIES OF PEER-RELATED LONELINESS ITEMS

item	M	SD^2	SD	p	r*	α**
2 It's cool that other children play with me	2,27	2,22	1,49	0,32	0,59	0,88
3 Mommy and daddy don't pay me much attention (at home). *	2,53	3,73	1,93	0,36	0,4	0,89
4 When other children play together, I am sad and alone	2,42	1,88	1,37	0,35	0,60	0,88
6 I miss being with other children	2,5	2,82	1,69	0,36	0,58	0,88
8 In the classroom I feel sad and alone.	2,11	2,24	1,50	0,30	0,59	0,88
10 I play with other children when I want.	2,21	2,11	1,45	0,32	0,68	0,88
14 When I am alone, other children don't care.	2,76	3,11	1,76	0,39	0,51	0,88
16 Even when I play with other children, I feel sad and alone.	1,93	1,90	1,38	0,27	0,61	0,88
20 I am happy as I have a lot of friends.	2,33	3,33	1,82	0,33	0,65	0,88
21 When Ms. Teacher wants us to get in groups, other children want me.	2,32	2,02	1,42	0,33	0,58	0,88
24 When I feel sad at home, there's somebody to cheer me up.*	2,44	3,06	1,75	0,35	0,63	0,88
25 I am looking forward to being with other children at school.	2,6	3,21	1,79	0,37	0,26	0,89
27 I am happy that I have friends.	1,8	1,30	1,14	0,26	0,55	0,88
28 At home I feel sad and alone.*	2,25	2,01	1,42	0,32	0,47	0,88
29 When Ms. Teacher wants us to be in pairs, the other children want me.	2,26	2,13	1,460	0,32	0,70	0,88
30 I am happy that I play with other children in the playground.	2,29	2,59	1,61	0,33	0,33	0,88

*item created for the scale of family.related loneliness
** item-total correlation
*** Cronbach's α if item excluded

At first, 3 items affiliated to the other domain were excluded (n 3, 24 and 28). Items 16 and 27 displayed poor discrimination ability together with higher overall score in the group of children who scored 4 *(„I don't know.")* on these items, and were therefore excluded as well. Finally, item n. 2 was excluded, as it showed the lowest discrimination ability from the group of 3 items (the other being n. 4 and 10) with similar wording. Internal consistencies (McDonald's ω) of the shorter, resp. longer scale reached 0.85, 0.88, ICC approaching 1.

TABLE 5: PSYCHOMETRIC PROPERTIES OF FAMILY-RELATED LONELINESS ITEMS

item	M	SD^2	SD	p	r**	α***
1 I feel alone at home.	2,52	2,86	1,69	0,36	0,47	0,77
3 Mommy and daddy don't pay me much attention (at home).	2,53	3,73	1,93	0,36	0,42	0,75
7 When I want to be with mommy or daddy, they don't have time.	3,55	3,97	1,99	0,51	0,56	0,80
12 I miss my friends after school. *	3,42	3,64	1,91	0,49	0,53	0,78
13 When I want to play and mommy or daddy are busy, I can play with somebody else.	2,95	3,77	1,94	0,42	0,53	0,77
15 I am happy that mommy and daddy put me to sleep.	1,92	1,99	1,41	0,27	0,38	0,81
17 When I play alone at home, I am sad.	3,14	4,47	2,11	0,45	0,58	0,78
18 I want to spend more time with other kids. *	3,17	2,71	1,65	0,45	0,40	0,81
19 I am happy that we do a lot of things together at home.	2,53	2,39	1,55	0,36	0,17	0,76
22 I am sad as mommy and daddy don't have enough time for me.	3,41	4,30	2,07	0,49	0,37	0,76
23 When I play alone at school, I am sad.*	3,28	4,18	2,05	0,47	0,53	0,79
24 When I feel sad at home, there's somebody to cheer me up	2,44	3,06	1,75	0,35	0,52	0,76
28 At home I feel sad and alone	2,25	2,01	1,42	0,32	0,45	0,77
30 I am happy that I play with other children in the playground.*	2,29	2,59	1,61	0,33	0,41	0,80

*item created for the scale of peer-related loneliness
** item-total correlation
*** Cronbach's α if item excluded

Again, 3 items affiliated to the other scale were excluded (n. 18, 23 and 30), however, item n. 12 was kept (reasons are described later). Item 15 was excluded as well, as it lacked variability. Internal consistencies reached 0.81, resp. 0.79, ICC approaching 1.

Confirmatory factor analysis

Both versions of method were assessed by confirmatory factor analysis. Items included in those analyses can be found in Attachments. Two-factor models ($\omega_P = 0.85$, $\omega_F = 0.79$ a $\omega_{total} = 0.88$; 41% of explained variance for the short scale). showed excellent fit statistics Kombinace obou faktorů vysvětlila 41 % rozptylu v datech., however, it must be noted that the $\chi 2$-based indexes may be somehow biased due to the small sample size. There was a reasonably high correlation between factors which lead us to examination of alternative models. One-factor models were not able to describe the data in a reasonable way. A bifactor solution (see Chen, West, & Sousa, 2006) containing one general factor of loneliness and two specific factors of peer-related and family-related loneliness ($\omega_P = 0.42$, $\omega_F = 0.17$, $\omega_g = 0.64$; 44 % variance explained). Graficky je model prezentován v grafu 3. fitted the data even better, yet we cannot consider the solution presented by this study to be reliable, mainly due to its high computational demandingness, which is impossible to be covered by the present sample size. Fit indexes and internal consistencies are presented in Table 6. All structure diagrams can be found in Attachments.

TABLE 6: FIT-INDEXES OF TESTED MODELS

	χ2	df	p	χ2/df	CLI	TLI	RMSEA	CI 90 %
Short scale								
2 factors	102,24	74	0,02	1,38	0,98	0,98	0,06	(0,02; 0,09)
bifactor	73,88	64	0,19	1,15	0,99	0,99	0,04	(0;0,08)
long scale								
2 factors	272,73	208	0	1,31	0,98	0,98	0,06	(0,04;0,07)
bifactor	184,73	187	0,53	0,98	1	1	0	(0;0,04)

CFI = comparative fit index, TLI = Tucker-Lewis Index, RMSEA = root mean square error of approximation

Comparison with external criteria

Nonparametric correlations (Spearman's ρ) between SDQ (Goodman, 1997) and two scales of loneliness can be seen in Table 7. There was a significant positive relationship between peer-related loneliness and conduct problems rated by both teachers and parents. Teachers' reports of prosocial behaviour correlated negatively with both loneliness scales.

TABLE 7: NONPARAMETRIC CORRELATIONS BETWEEN SDQ AND CHILD PUPPET LONELINESS SCALE

	Emotional symptoms	**Conduct problems**	**Hyperactivity**	**Peer problems**	**Prosocial behaviour**	**Overall score**
Parent						
Family	-0,04	0,10	0,08	0,23	-0,06	0,14
Peer	-0,10	**0,32***	-0,02	0,22	-0,20	0,13
Teacher						
Family	0,05	0,21	0,11	0,12	**-0,38****	0,14
Peer	0,15	**0,35****	0,16	0,02	**-0,33***	0,19

*p <0,05
** p <0,01

DISCUSSION

The aim of this study was to create a new method for assessment of children's loneliness based on pure loneliness items. It is the first assessment tool for children as young as 4-8 years old. Two newly developed scales of peer-related and family-related loneliness displayed good reliability in terms of internal consistency and excellent inter-rater reliability. CFA showed excellent fit of models with data. Comparison with external criteria demonstrated correlations of the new scale with conduct problems and prosocial behaviour (-). The results are consistent with those of Devi, Verma & Shekhar (2013), the only study which correlated loneliness scores with SDQ (Goodman, 1997), and being in agreement with findings of Coplan, Closson & Arbeaue (2007), Qualter & Munn (2002) and Asher et al. (1984) - children who experienced higher levels of loneliness

exhibited less prosocial behaviour and more conduct problems. The researchers also found a relationship between loneliness and peer problems, which was not revealed in this study, probably due to the low reliability of the SDQ scale.

Despite the method's length, which exceeds the number of items suggested by the authors of Child Puppet Interview (Measelle, Ablow, Cowan, & Cowan, 1998), all children reacted positively and none of them showed any signs of distress or anxiety. We will now mention some reasons which lead us to item exclusion.

Some of the items lacked variance which resulted in their low correlations with the rest of the scale and their low factor loadings. This constraint was present e. g. with items n. 11,15 and 25. It is possible that even lonely children do not necessarily experience situations described by these items. As for item 11, the vast majority of children is probably asked by their parents about their day at school on a daily basis, and even lonely children are probably put to sleep.

Analogously, some of the low factor loadings can be explained by unclear and confusing item wording. e.g. n. 5, 9 and 26. Let us use item n. 5 as an example of this problem. When the children are asked if there is somebody at home to play with, he or she may not necessarily think of his or her parents or siblings, but of friends, who can pay a visit at their home, instead. This unclear instruction may also be responsible for this item's cross-loading. Some items could even have measured a different construct, e. g. item n. 9 which is more a reflection of openness or maybe a situational fear.

Some items showed affiliation to the other scale than had been expected. This may have been caused by a random computational error stemming from small sample size and instability of correlational matrix (see Schönbrodt & Perugini, 2013). Alternatively, there may have been some noise present in children's answers, caused by their tendency to remain contextually framed by the wording of the preceding item. The third possible explanation lies within the factor structure, which may suggest that loneliness in children is more context-related construct than the theory of social needs (Weiss, 1973) claims.

Factor structure

Factor structure exploration and its subsequent confirmation shows results which cannot be interpreted in a straightforward way. We can be reasonably sure about children's loneliness being a multidimensional construct. The model examined in this study shows a correlation between the 2 domains of peer and family-related loneliness, which is in agreement with Goossens & Beyers (2002) and Qualter & Munn (2002). However, the correlation in our model is stronger in comparison with the previous findings. This may be caused by the selected method of extraction

(see Li, 2006, for review) and/or by the fact that there is not such a sharp distinction between experienced loneliness in children this young. The results also need to be interpreted cautiously as some of the fit indexes may be biased due to the small sample size.

An alternative may be offered taking bifactor models into consideration. This study is the first to examine this possibility in loneliness research. In a bifactor model, there is a general factor of overall loneliness present and the percent of explained variance is incrementally increased by the variance of specific factors of other two domains. Although the bifactor solution fits the data even better, its interpretation on the item level is rather impossible, which may be caused by extensive computational demandingness. The bifactor solution validity is therefore on further examination.

Although the items were developed according to the theory of social needs (Weiss, 1973), in which parent would act as responsible for emotional loneliness, whereas peers for its social facet, the factor structure may suggest that the construct in children is more context-related – covering both mentioned facets in both the family environment and the peer-group.

Limitations

Some limitations have already been discussed, e.g. the small sample size, which does not provide enough stability for the correlational matrices on which further analyses are based (see Schönbrodt & Perugini, 2013 for review). Also the characteristics of children from the sample size are somehow specific. The majority of examined children does not experience high levels of loneliness, which can be seen on item distribution being positively skewed. Once we want to draw less biased conclusions about item functioning, it is necessary to examine children from risk samples as well (see Ptáček, Kuželová & Čeleďová, 2011).

The sample was not balanced in terms of age, with only 28 school-children included. This made the invariance analysis impossible and may have brought some noise into item functioning, as the items can work differently in different groups of children. The validation study does not provide reliable enough results due to the lack of reliability of the SDQ scales (Goodman, 1997). It may have been reasonable to correlate the scores with other method for loneliness assessment seeking for more comprehensive results, yet this has been refused in connection with ethical constraints.

Conclusion and further study

In order to gain a more complex understanding of children's loneliness, further research is needed. This is the first study to cover the specific topic of loneliness assessment in young children. It suggests several important ideas worth to be interested in, as is the still unclear factor structure

of the construct or the age differences in experienced loneliness. It also allows us to examine the correlates of loneliness in a more meaningful way, which has been impossible due to the lack of a proper method for this age group. With this knowledge, we may be able to detect experienced loneliness in a very young age and create intervention programmes which would aim to reduce the unpleasant developmental consequences.

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ATTACHMENTS:

LIST OF ITEMS:

*reversely coded item
Filler item

I like playing with teddy bears.
I don't like playing with teddy bears.

1) F: I feel alone at home.
   I don't feel alone at home.

2) P: It's cool that other children play with me. *
   I'm sad as other children don't play with me.

3) F: Mommy and daddy don't pay me much attention (at home).
   Mommy and daddy pay me a lot of attention (at home).

4) P: When other children play together, I am sad and alone.
   When other children play together, I am with them.

5) F: There is somebody to play with at home. *
   I must play alone at home..

I like vanilla ice-cream..
I don't like vanilla ice-cream.

6) P: I miss being with other children
   I am happy that I am with other children often.

7) F: When I want to be with mommy or daddy, they don't have time.
   When I want to be with mommy or daddy, they always have time.

8) P: In the classroom I feel sad and alone.
   In the classroom I don't feel sad and alone.

9) F: When I'm sad, mommy or daddy sooths me. *
   When I'm sad, mommy or daddy doesn't sooth me.

10) P: I play with other children when I want. *
    Even I want to play with other children, they don't want to.

I like watching fairytales.
I don't like watching fairytales..

11) F: I am happy that mommy and daddy talk about me about what happened in the kindergarten.*
    I am sad that mommy and daddy are not interested in about what happened in the kindergarten.

12) P: I miss my friends after school.
    When I want to see my friends after shool, I can.

13) F: When I want to play and mommy or daddy are busy, I can play with somebody else. *
When I want to play and mommy or daddy are busy, I can‘t play with anybody else.

14) P: When I am alone, other children don’t care.
When I am alone, other children approach me.

15) F: I am happy that mommy and daddy put me to sleep. *
I am sad that mommy and daddy don’t put me to sleep.

I like playing with a ball.
I don’t like playing with a ball.

16) P: Even when I play with other children, I feel sad and alone.
When I play with other children, I feel happy.

17) F: When I play alone at home, I am sad.
When I play alone at home, I am not sad.

18) P: I want to spend more time with other kids.
When I want I am with other kids.

19) F: I am happy that we do a lot of things together at home. *
I am sad that we don’t do a lot of things together at home.

20) P: I am happy as I have a lot of friends. *
I am sad, as I don’t have many friends.

I like chocolate.
I don’t like chocolate.

21) P: When Ms. Teacher wants us to get in groups, other children want me.
When Ms. Teacher wants us to get in groups, other children don’t want me.

22) F: I am sad as mommy and daddy don’t have enough time for me.
I am happy because mommy and daddy have enough time for me.

23) P: When I play alone at school, I am sad.
When I play alone at school, I‘m not sad.

24) F: When I feel sad at home, there’s somebody to cheer me up. *
When I feel sad at home, there’s nobody to cheer me up

25) P: I am looking forward to being with other children at school. *
I don’t care about being with other children at school

I like watching cartoons.
I don’t like watching cartoons.

26) F: When I go back from school, I‘m looking forward to being back home. *
When I go back from school, I‘m not looking forward to being back home.

27) P: I am happy that I have friends. *
I am sad that I don’t have friends.

28) F: At home I feel sad and alone.

At home I don’t feel sad and alone.

29) P: When Ms. Teacher wants us to be in pairs, the other children want me.
When Ms. Teacher wants us to be in pairs, the other children don’t want me.

30) P: I am happy that I play with other children in the playground. *
I am sad that I don’t play with other children in the playground.

I like playing with puppets.
I don’t like playing with puppets.

CHILD PUPPET LONELINESS SCALE – SHORTER, FOR IMMEDIATE USE

I like playing with teddy bears.
I don't like playing with teddy bears.

P: When other children play together, I am sad and alone.
When other children play together, I am with them.

P: I miss being with other children
I am happy that I am with other children often.

F: When I want to be with mommy or daddy, they don't have time.
When I want to be with mommy or daddy, they always have time.

P: In the classroom I feel sad and alone.
In the classroom I don't feel sad and alone.

P: I play with other children when I want. *
Even I want to play with other children, they don't want to.

I like vanilla ice-cream.
I don't like vanilla ice-cream.

F: I miss my friends after school.
When I want to see my friends after school, I can.

F: When I want to play and mommy or daddy are busy, I can play with somebody else. *
When I want to play and mommy or daddy are busy, I can't play with anybody else and I am sad.

P: When I am alone, other children don't care.
When I am alone, other children approach me.

I like playing with a ball.
I don't like playing with a ball.

F: When I play alone at home, I am sad.
When I play alone at home, I am not sad.

F: I am happy that we do a lot of things together at home. *
I am sad that we don't do a lot of things together at home.

P: I am happy as I have a lot of friends. *
I am sad, as I don't have many friends.

I like chocolate.
I don't like chocolate.

P: When Ms. Teacher wants us to get in groups, other children want me.
When Ms. Teacher wants us to get in groups, other children don't want me.

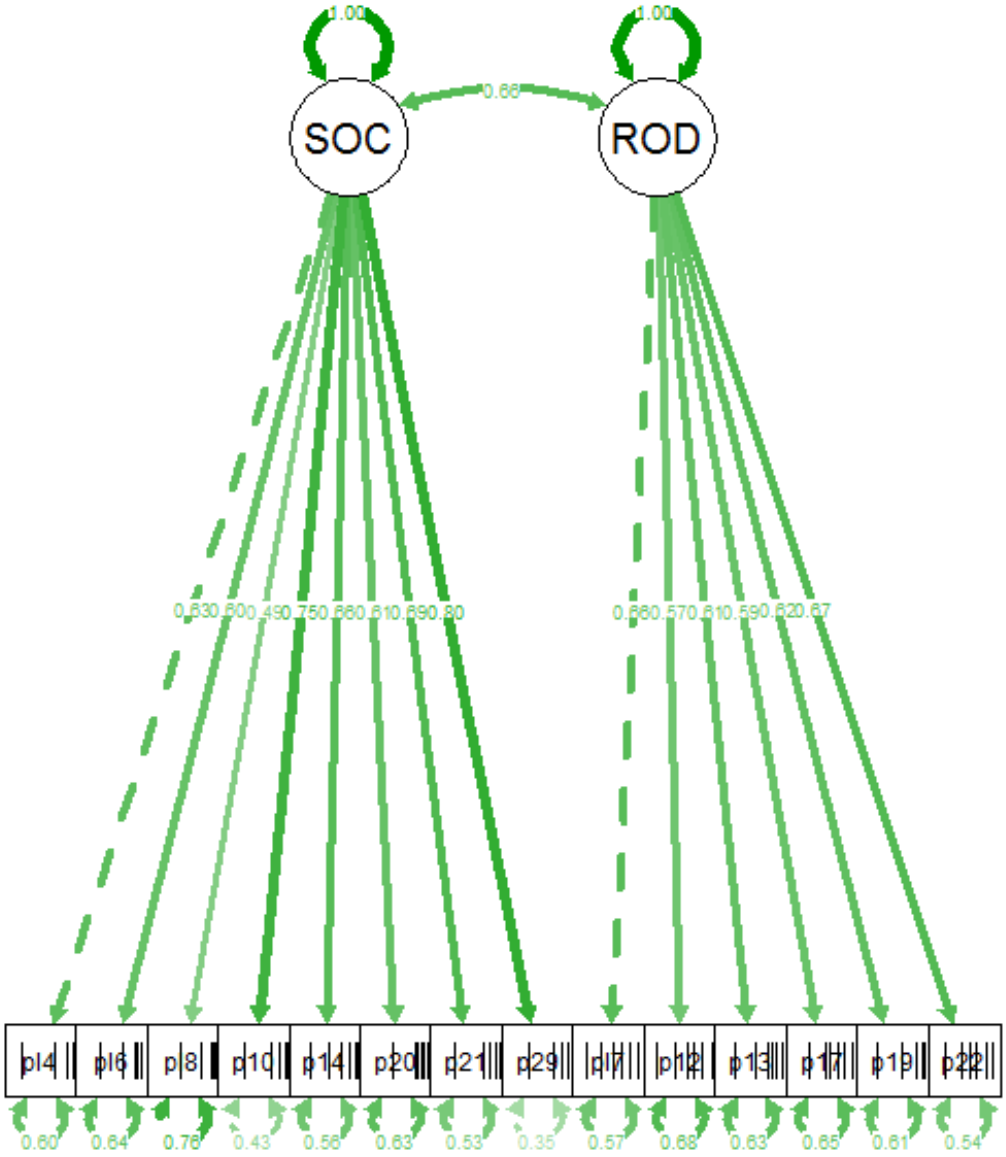
F: I am sad as mommy and daddy don't have enough time for me.
I am happy because mommy and daddy have enough time for me.

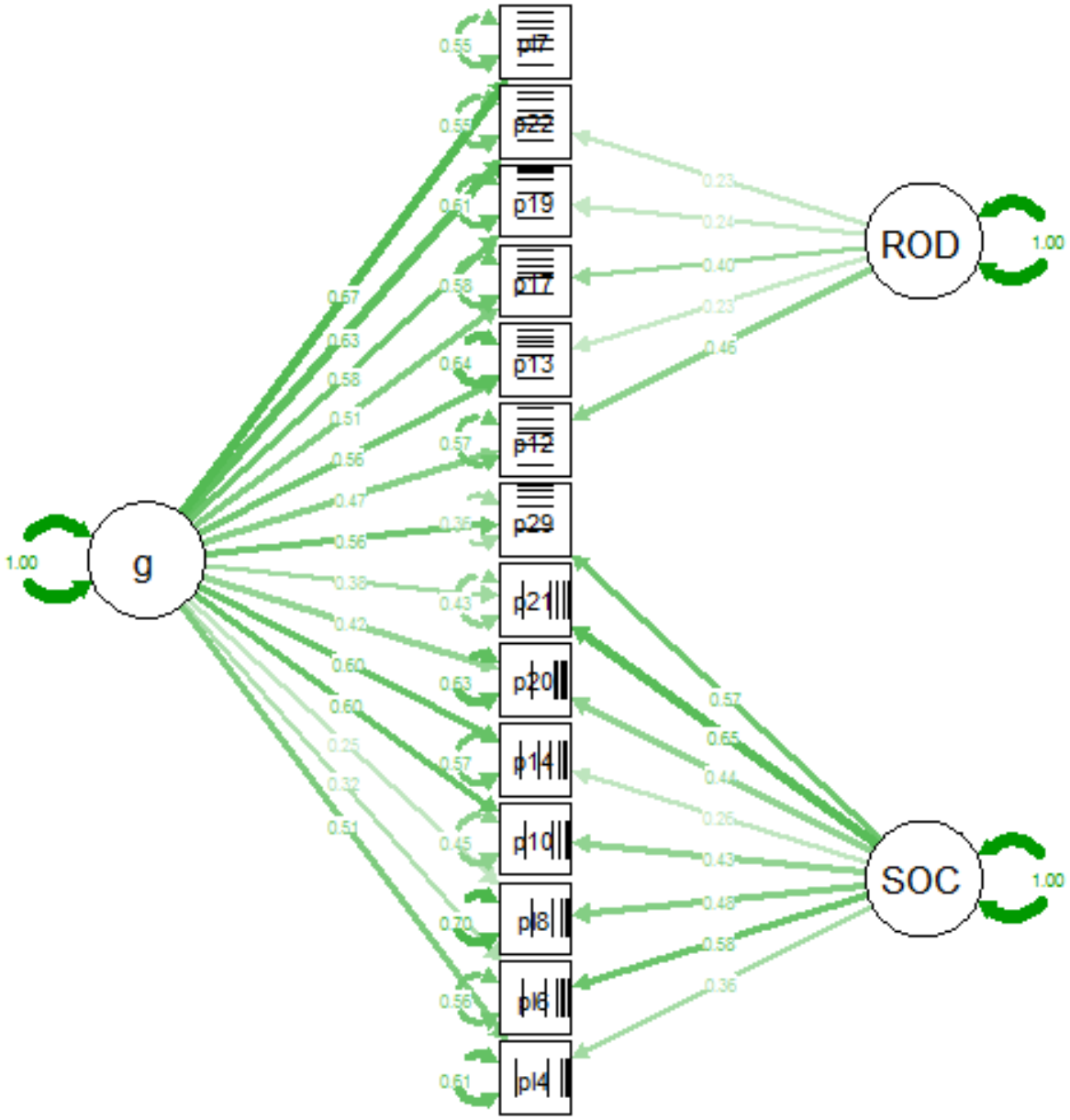
P: When Ms. Teacher wants us to be in pairs, the other children want me.
When Ms. Teacher wants us to be in pairs, the other children don't want me.

I like playing with puppets.
I don't like playing with puppets

STRUCTURAL DIAGRAMS:

Short scale

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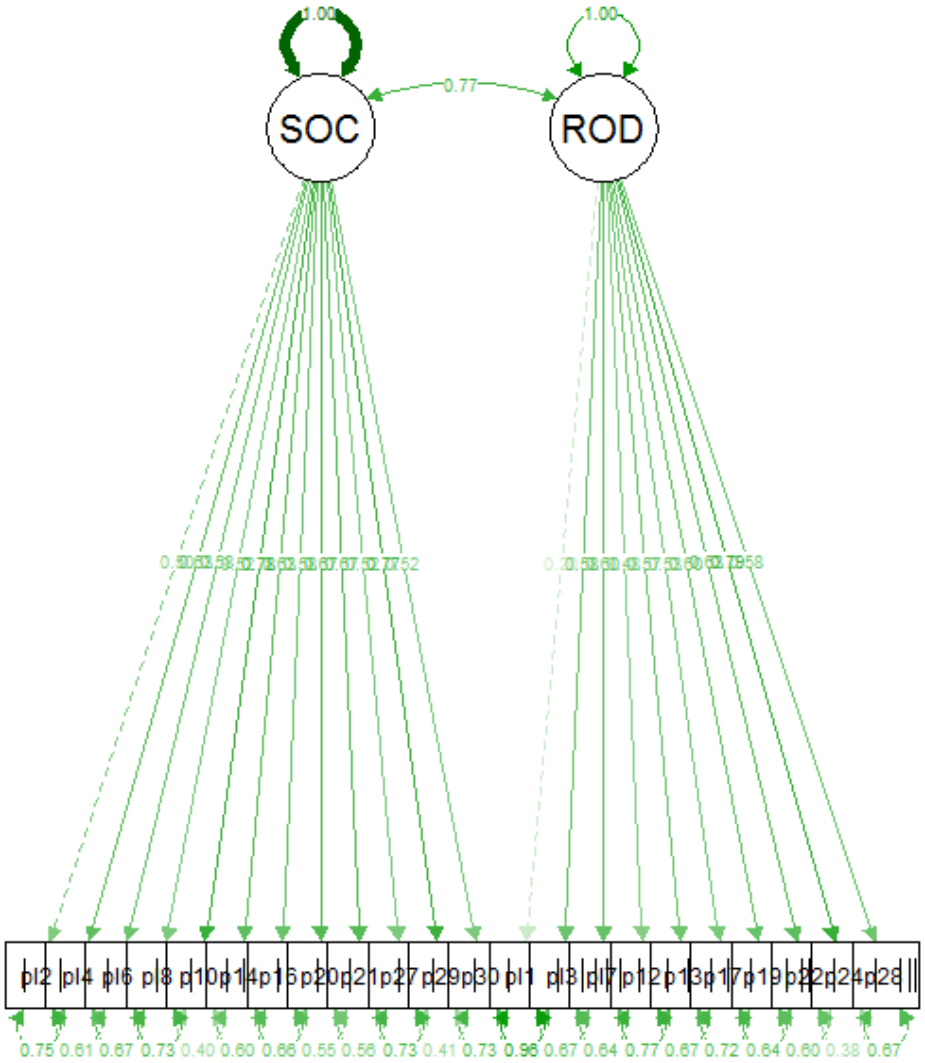
Long scale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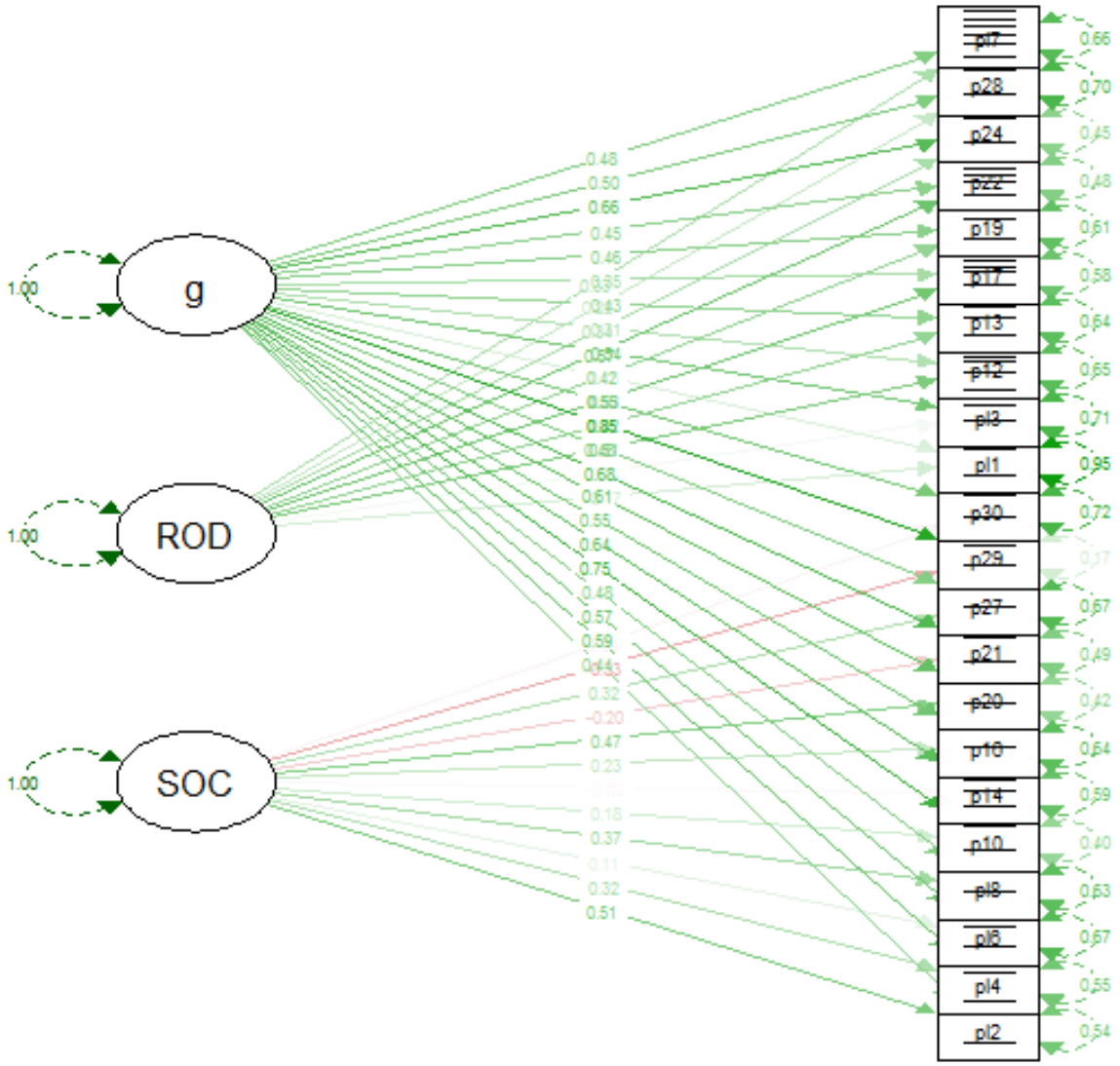
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