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An Adaptation of the Questionnaire for Social Anxiety and Social Competence Deficits (SASKO) for Adolescents and its Evaluation in a German Student Sample

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Abstract

In the diagnostics of social phobia in adults the SASKO self-report questionnaire serves as an instrument that measures social anxiety and social deficits as two separate dimensions. This paper describes the development of an adaptation of the SASKO for adolescents (SASKO-J) and verifies its applicability, factor structure, and psychometric properties. The factor structure and reliability of the SASKO-J were evaluated in an unselected sample of 228 German students from grades 7 to 11 (M = 14.77 years, SD = 1.33; 50% girls). In a second sample of 115 students the validity was examined (M = 15.84, SD = 1.65; 61% girls). Confirmatory factor analysis confirmed the five-factor structure of the SASKO (two anxiety and two deficit related factors and an additional factor "loneliness"). With the exception of the subscale "information-processing deficits", the internal consistencies were satisfactory to good ($0.77 \leq \alpha \leq 0.88$). The results regarding convergent and divergent validity were also good. Students from different types of school differed in their levels of social anxiety, girls reported significantly more fear of rejection than boys, and the youngest students had the highest level of symptoms. Future research should address the optimizing of the subscale "information-processing deficits" and should examine the psychometric properties of the SASKO-J in a clinical sample.

Keywords: Social phobia; Social anxiety; Social competence deficits; Adolescents, questionnaire; Diagnostics

Introduction

Shyness and social anxiety in childhood and adolescence is increasingly gaining importance as a topic both in the scientific literature and in the media [1]. Based on the DSM-IV [2], one key feature of social phobia is the pronounced fear of social or achievement situations and the related avoidance of such situations. The central fear of patients with social phobia is to behave in an embarrassing way, to make a mistake, or to show visible somatic symptoms (e.g., rubescence, tremor) and that these aspects will be evaluated negatively by others [1]. The symptoms of social phobia most often start in adolescence [3,4] and the 12-month prevalence as well as the lifetime prevalence for this age-group is of a clinically and socially meaningful size [5-7]. General risk factors for the development of social phobia are dispositional factors (e.g., shyness or behavioral inhibition) and social factors (e.g., adverse social experiences) [7]. The reasons for the increasing incidence of social anxiety in adolescence can be explained by the emotional, social, and biological challenges that youths are confronted with during this developmental period [8]. The increasing importance of peers, higher academic requirements, and the intensive confrontation with self-esteem, identity, and autonomy can result in high insecurity regarding the self and social relationships [9,10]. Further, the cognitive capacities during adolescence change towards a higher self-awareness, more critical self-evaluations, and increasing reflections about interpersonal perception and relationships [11,12]. On the basis of evaluation anxiety this cognitive development can add to a higher vulnerability for social anxiety.

The symptoms of social anxiety in youth predominantly are present in the peer and school context [13]. They can result in social withdrawal, social and academic impairments, and in a higher risk of other psychological symptoms or mental disorders [14-19]. Moreover, symptoms often persist into adulthood [20]. On the basis of these potentially extensive consequences the early and adequate identification of social phobia in adolescents is of great importance.

Only a comprehensive understanding of the constellation of symptoms as well as the maintaining factors of social anxiety can allow for an adequate prevention and intervention [21].

In this context, the assessment of symptoms should not only focus on the key symptoms of social anxiety –fear and avoidance of social situations– but also on potential associations with other problems, for example social competence deficits. Social competence deficits include a range of observable (e.g., gestures, eye contact, initialization of conversation) and unobservable (e.g., deficits in social cognition, decoding of information, regulation of attention, empathy) difficulties during social interactions [22]. The developmental tasks during adolescence require a high amount of social interactions [8,10]. Since social skills are important to establish and maintain friendships and romantic relationships [23] deficits in social competences can interfere with the healthy psychosocial development of youths [24]. These aspects underline the importance of an adequate assessment of social deficits especially in adolescence.

Recent research documented that children and adolescents with social phobia often behave less adequately in social situations than non-anxious peers [12,25,26]. Social phobic youths were not only rated more incompetent by independent others but the youths themselves also

evaluated their own behavior worse than that of peers. For example, they showed less self-confidence and assertiveness during role play [27] and seldom initialized social interactions [28]. Miers et al. [26] found that peers rated high socially anxious adolescents poor in facial expression, posture or body movement, and way of speaking. In addition, social phobic youths reported difficulties in recognition and interpretation of facial expressions and in empathy [12,29,30]. Thus, adolescents themselves are an important source of information especially regarding their inner processes. However, some studies showed that social phobia is not inevitably accompanied by social deficits [31-33].

Many psychotherapists for children and adolescents routinely offer training in social competence for those youths who suffer from social phobia. The question in this context is on which diagnostic basis this is done. Since various studies indicate that the incidence of social deficits in social phobic youths differs and since a significant relationship between the constellation of symptoms and the severity of the disorder must be assumed, an appropriate clarification about individually relevant symptoms previous to the therapy seems to be reasonable [34].

To date, there has been a lack of an adequate diagnostic measurement that can economically assess the disorder-related social deficits in adolescents with social phobia. There are some well-established self-report measurements of social phobia in youths available, for example the Social Phobia and Anxiety Inventory for Children (SPAI-C) [35], the Social Anxiety Scale for Adolescents (SAS-A) [36], and the Social Anxiety and Avoidance Scale for Adolescents (SAASA) [37]. However, these conventional scales focus on symptoms of fear and avoidance but do not explicitly consider disorder-related social deficits [38]. In contrast, for adults a self-report instrument exists that separately measures both social anxiety and social competence deficits (SASKO) [22]. On the basis of empirical findings regarding the role of social competence deficits in social phobic youths, the adaptation of that questionnaire for use with adolescents seems to be of great importance. It could offer more information about symptoms than conventional questionnaires do and thus could serve as a valuable addition to existing measures of social phobia in youths. Most important, it could allow for insight into observable and unobservable problems of social skills which represent a crucial competence for developmental tasks in adolescence. A differential clinical diagnostics would not only support a specific indication but also the therapy with regard to the focus, duration, and intensity of therapy.

The aim of the present study was the adaptation of the SASKO for German adolescents aged 12 to 19 years (SASKO-J). In a second step the questionnaire was evaluated with regard to its applicability, item characteristics, factor structure, internal consistency, temporal stability, and validity as well as with regard to group-specific differences in a sample of German students.

Methods

Measures

SASKO and SASKO-J

The SASKO [22] represents a self-report measure for adults. It was developed for the clinical diagnostics of social phobia and the differential measurement of social anxiety and social deficits. The underlying factor structure of the SASKO consists of two anxiety ("fear of talking and fear of being in the focus of attention", "fear of rejection") and two deficit scales ("interaction deficits", "information-processing deficits") as well as one additional scale ("loneliness"). During the process of adapting the SASKO for use with adolescents, it was revised

with regard to language and content (e.g., removal of inappropriate foreign words and orientation on adolescent language, simplification of sentence construction, reference to academic and peer environment). All changes were carried out after consulting the authors of the original SASKO. In a pilot study, the first version of the SASKO-J was presented to seven adolescents (four males) aged 12 to 19 years. They were asked to mark incomprehensible words or sentences and to provide suggestions for a revised version. In consequence, some items were changed again and one item was entirely reworded ("Small talk is not my scene").

Like the SASKO, the SASKO-J consists of 44 items, however the majority of items (n=33) differ from the original version for adults. The order and the response scale (four-point scale; 0 = "never" to 3 = "always") were not modified.

Convergent measure

For the evaluation of the convergent validity an established self-report measurement for the assessment of social anxiety in childhood and adolescence was used: The German version of the *Social Phobia and Anxiety Inventory for Children* (SPAIK) [39]. It consists of 26 items that measure cognitive, behavioral, and somatic symptoms in the context of social anxiety (three-point scale; 0 = "never" to 2 = "always"). The items mainly focus on interaction and achievement situations. It showed good psychometric properties [39, 40]. For the purpose of analyses the mean score of the total scale was used.

Divergent measure

For the examination of the divergent validity the German version of the *Youth Self Report* (YSR) [41] was used. It is a well-established self-report questionnaire and measures emotional and behavioral problems, somatic complaints, and social desired behavior in youths. The 112 items (three-point scale; 0 = "not true" to 2 = "usual true") can be grouped into eight syndrome scales. These scales can be integrated into three groups: internalizing symptoms (social withdrawal, depressive and anxiety symptoms, somatic complaints), externalizing symptoms (dissocial behavior, aggressive behavior), and mixed symptoms (social problems, attentional problems, schizoid and obsessive symptoms). The aggregated scales as well as the total scale showed good internal consistencies [42] and satisfying to good validity [43]. In the present study the mean score of the total scale as well as of the internalizing and externalizing scales were used.

Participants and Procedure

The present study was realized in two steps. In the first part of the study the applicability, factor structure, and reliability of the SASKO-J were evaluated in a large sample. To keep the work load preferably low for the first sample, the evaluation of validity was conducted with a different, smaller sample in a second step. Both study parts were accepted by the Ethic Commission of the Psychological Department of the University of Göttingen and by the school authority of Lower Saxony (Germany).

Sample 1: For the recruitment of the first sample the headmasters of eight schools (grammar schools[1], secondary general schools and secondary modern schools) in different cities of Lower Saxony were

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[1]In Germany, students attend grammar school from fifth to twelfth grade and finish with qualification for university admission or matriculation. Students who attend a secondary general school do so from fifth to tenth grade and finish with the General Certificate of Secondary Education which qualifies them for further education or job training. Graduation from a secondary modern school (grade 5 to grade 9) results in the Certificate of Secondary Education that allows for job training. A comprehensive school combines these types of schooling.

asked for participation in the study. Schools were chosen on the basis of former research cooperation and personal contacts. Finally, four schools (14 classes, grades seven to eleven) of two different regions in Lower Saxony agreed to participate. The other schools refused participation because of high work load or temporal and structural difficulties. Previous to the study the teachers and students from participating classes were informed about the research project by the research assistant. At this date the students also received the information and consent forms for them and their parents which were recollected from all parents or full age adolescents prior to the study. A sample of N = 228 students (50% girls, M = 14.77 years, SD = 1.33, range 12–19 years) finally participated in our study and filled in the SASKO-J during a lesson. The majority of participants attended a grammar school (44%), one third (36%) a secondary general school, and 20% a secondary modern school. For the purpose of re-testing, 23 students (10% of the original sample; 70% girls, M = 14.39 years, SD = 0.72) filled in the questionnaire again after four weeks. This subsample was originally expected to be larger but due to unpredictable cancellation of lessons it was reduced. Since the second measurement was conducted shortly before the long summer vacation, it unfortunately was not possible to expand the re-test sample.

Sample 2: The assessment procedure for the second sample was comparable to that of the first one with the exception that the students had to fill in three questionnaires (SASKO-J, SPAIK, YSR). Six classes (grades seven to eleven) from two large school centers in different regions in the northern part of Germany cooperated in the study. All students who had a signed consent form (n = 118) got the package of three questionnaires one week later from their teacher. They filled in the questionnaires at home which were then recollected by the teacher. The return rate was 100%, however, three students were excluded as one of them was out of the age range and two questionnaires were rated as invalid. The final sample consisted of N = 115 students (mean age 15.84, SD = 1.65, range 12-19 years, 61% girls). The majority of students attended a grammar school (46%) or a comprehensive school (44.3%), whereas about 10% visited a secondary general or a secondary modern school.

The two samples were similar regarding the proportion of sexes (p = .07) but the second sample had a higher mean age than the first one (p < .01). It was not possible to compare the types of school because a comprehensive school was only available in the second sample. There were no significant differences in the means of the SASKO-J total scale ($M_1 = 0.75$, $M_2 = 0.74$; t(341)= 0.22, p = .82).

Statistical Analyses

The statistical analyses were conducted using SPSS 21 for Windows. One exception was the confirmatory factor analysis (CFA) which was conducted via AMOS 18. In all analyses, missing values were replaced by means.

First, an exploratory factor analyses (EFA) was computed to assess the factor structure of the SASKO-J. In a second step, using CFA, we tested whether the underlying model of the SASKO fits with our data from adolescents. Comparable to the procedure of Kolbeck [34] the subscale "loneliness" was not included during the computation of the characteristics of the total scale. She found that this scale was not consistent, however, it was kept as an additional scale in the questionnaire with regard to content.

The internal consistencies of the total scale and of all subscales of the SASKO-J were assessed by Cronbach's alpha. The retest reliabilities were analyzed via Pearson correlation or Spearman rang correlation.

For the evaluation of convergent and divergent validity the total scale of the SASKO-J was correlated with the SPAIK and the YSR, respectively (Pearson correlation or Spearman-Rho correlation).

RESULTS[2]

Item characteristics

The item "I suffer from having little contact with others" yielded the lowest mean (M = .20, SD = 0.60). The highest mean (M = 1.58, SD = 0.97) belonged to the item "For me it is hard to make a fool of myself". All items showed a minimum of zero and a maximum of three. The majority of items were distributed left skewed and leptokurtic.

With the exception of five items, all difficulties were located in a range between $.20 \leq p \leq .80$. The item "I suffer from having little contact with others" proved to be very difficult (p = .13). Very few students answered this item with "sometimes", "often", or "always". In contrast, the items "I get nervous when I am the focus of attention" (p =.82), "I don't know how others see my behavior" (p = .86), "For me it is hard to make a fool of myself" (p = .89), and "I am not sure how I can approach other people that I don't know well" (p = .84) proved to be very easy.

The indices of selectivity varied between $.21 \leq r_{it} \leq .69$. Two of the items showed unsatisfying indices ($r_{it} \leq .30$); "I don't know how others see my behavior", "When I am together with others I am more concerned with my own behavior (e.g., what I can say or do and how I appear) than with the behavior of the others". In contrast, all of the other items had sufficient to good selectivity.

Exploratory Factor Analysis (EFA)

During the EFA the factor structure of the SASKO-J was explored via a principal component analysis (PCA). During this process, ten factors showed an eigenvalue of > 1. The screeplot suggested a solution with four factors. Thus, a PCA with four factors to be extracted was conducted. Since Kolbeck [34] documented an inter-correlation between all factors, based on considerations of theory and content, we also assumed that the factors are not fully independent. Hence, an oblique rotation was performed [44]. The four factors explained 45% of the variance in which the first factor already explained 30%. On this factor mainly loaded items from the subscales LONELY[3] (scale "loneliness") and INTERAC (scale "interaction deficits"). With one exception, on the second factor only items from the scale REJECT (scale "fear of rejection") loaded. The third factor was determined by items from the scale TALK (scale "fear of talking and fear of being in the focus of attention"). On the fourth factor loaded only four items. All of these items were from the scale INFORMAT (scale "information-processing deficits"). Six items of the SASKO-J did not load on any factor with ≥ .40.

Confirmatory factor analysis (CFA)

The model of the SASKO assumed that four inter-correlated factors (two anxiety and two deficit factors) as well as one additional factor ("loneliness") best represent the items. The items (indicators) were defined so that they loaded on those factors that correspond to their particular subscale. To define the metric of the latent variables (factors), for each factor one loading was fixed to the value 1 [45]. In the present sample of adolescents the global model test of the CFA for the testing of the null hypothesis yielded the rejection of the five-factor model (χ^2 =

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[2]The results of item characteristics, EFA, CFA, reliability, and group-specific differences are based on the first student sample whereas the results of validity were examined in the second sample.

[3]The descriptions of the subscales were adopted from the SASKO.

1852.87, df = 892, p = .000). However, since the interpretation of the χ^2-value is problematic, it is common to determine the ratio of the χ^2-value and the degrees of freedom. This procedure resulted in a value of 2.08 in which values of ≤ 2.5 indicate a good model fit [45].

To test for the goodness of model fit, several fit indices were estimated. The Root-Mean-Square-Error of Approximation (RMSEA) and the Standardized Root Mean Square Residuals (SRMR) were both 0.07. The Goodness-of-Fit Index (GFI) as well as the Adjusted-Goodness-of-Fit Index (AGFI) was 0.96 and the Normed Fit Index (NFI) showed a value of 0.95. All of the estimated fit indices indicated an acceptable to good model fit [45].

Scale indices, reliability, and scale inter-correlations

The means and standard deviations, the mean difficulties and indices of selectivity as well as the internal consistencies and retest reliabilities of the subscales and the total scale are presented in Table 1. The internal consistencies of the subscales, with the exception of INFORMAT (α = .67), showed satisfactory to good values (.77 ≤ α ≤ .88). For the total scale a Cronbach's alpha of .94 was found. The retest reliabilities of the subscales varied between r_{tt} = .56 and r_{tt} = .75 in which the coefficients of the anxiety scales were higher than those of the deficit scales. The highest retest reliability was found for the total scale (r_{tt} = .87). From the first to the second measurement a non-significant decrease (all p ≥ .06) in the means of all scales was observable. Moderate relationships between the subscales were found (.31 ≤ r ≤ .50, see Table 2). The correlations of the subscales with the total scale were somewhat higher (.40 ≤ r ≤ .74).

Convergent and divergent validity

The total scale and all subscales of the SASKO-J were significantly

scale	M	SD	p	$r_{it\,(i)}$	α	r_{tt}
TALK	.82	.47	62.04	.52	.85	.75**a
REJECT	.91	.53	70.19	.53	.84	.74**a
INTERAC	.46	.48	35	.60	.88	.56**b
INFORMAT	.81	.38	65.45	.37	.67	.62**a
LONELY	.35	.52	24.53	.58	.77	.71**b
TOTAL	.75	.40	58.17	.51	.94	.87**a

** p < .01.
a= Pearson product-moment correlation (5% level, two-sided).
b= Spearman rang correlation (5% level, two-sided).
Note. M = mean; SD = standard deviation; p = mean item difficulty; r_{it} (i) = mean selectivity (part-whole corrected); α = Cronbach's Alpha; r_{tt} = test-retest correlation (interval: 4 weeks); TALK = scale „fear of talking and fear of being in the focus of attention"; REJECT = scale "fear of rejection"; INTERAC = scale "interaction deficits"; INFORMAT = scale "information-processing deficits"; LONELY = scale "loneliness"; TOTAL = total scale.
Table 1: Characteristics and Reliabilities of the Subscales and the Total Scale.

	REJECT	INTERAC	INFORMAT	LONELY	TOTAL
TALK	.504**	.485**	.423**	.347**	.741**
REJECT		.380**	.326**	.309**	.661**
INTERAC			.412**	.433**	.624**
INFORMAT				.309**	.562**
LONELY					.405**

Note. Correlation by Kendall (5% level, two-sided). TALK = scale „fear of talking and fear of being in the focus of attention"; REJECT = scale "fear of rejection"; INTERAC = scale "interaction deficits"; INFORMAT = scale "information-processing deficits"; LONELY = scale "loneliness"; TOTAL = total scale.
** p < .01.
Table 2: Correlations between the Subscales and Correlations with the Total Scale.

Scale	DIMENSION	SPAIK	YSR	YSR-INT	YSR-EXT
TALK[a]	Anxiety	.737**	.255**	.417**	-.043
REJECT[a]	Anxiety	.785**	.273**	.429**	.026
INTERAC[b]	Deficit	.386**	.262**	.391**	.056
INFORMAT[a]	Deficit	.569**	.263**	.298**	.071
LONELY[b]	Additional scale	.295**	.187	.257	.056
TOTAL[a]	Anxiety/Deficit	.799**	.305**	.462**	-.005

[b] Correlation by Spearman-Rho (5% level, two-sided).
[a] Correlation by Pearson (5% level, two-sided). ** p < .01.
Note. TALK = scale „fear of talking and fear of being in the focus of attention"; REJECT = scale "fear of rejection"; INTERAC = scale "interaction deficits"; INFORMAT = scale "information-processing deficits"; LONELY = scale "loneliness"; TOTAL = total scale; SPAIK = Social Phobia and Anxiety Inventory for Kids; YSR = Youth Self Report; YSR-INT = Youth Self Report Internalizing Scale; YSR-EXT = Youth Self Report Externalizing Scale.
Table 3: Correlations between the SASKO-J Subscales and the Validation Instruments.

associated with the SPAIK total score (all p ≤ .01, see Table 3). The two anxiety scales TALK (r = .74) and REJECT (r = .79) showed higher correlations with the SPAIK than the two deficit scales INTERAC (r = .39) and INFORMAT (r = .57). To test if these differences in correlations were significant Fisher-Z-Transformations were calculated. For all comparisons significant differences were found with higher values for the anxiety scales (TALK-SPAIK vs. INTERAC-SPAIK: z = 3.722, p = .000; TALK-SPAIK vs. INFORMAT-SPAIK: z = 2.086, p = .036; REJECT-SPAIK vs. INTERAC-SPAIK: z = 4.523, p = .000; REJECT-SPAIK vs. INFORMAT-SPAIK: z = 2.902, p = .003). The two anxiety scales and the total scale showed values above the recommended value of r = .60 for convergent relationships [46] whereas the two deficit scales and the additional scale LONELY scored below this critical value.

For the evaluation of the divergent validity the relationship with the YSR was examined. The total scale and all subscales of the SASKO-J –with the exception of LONELY– were significantly associated with the total scale of the YSR (.19 ≤ r ≤ .31, see Table 3) but all correlations were below the critical value of r = .40 for divergent correlations [47]. Regarding the internalizing scale (INT) of the YSR the correlations with the deficit scales also were below the critical value (r = .30 and r = .39) whereas the relationships with the total scale and the anxiety scales were slightly above it (.42 ≤ r ≤ .46). The correlations of the SASKO-J with the externalizing scale (EXT) of the YSR were non-significant and very low (-.01 ≤ r ≤ .07).

The convergent correlation with the SASKO-J total scale differed significantly from the divergent correlation with a higher value for the convergent relationship (SASKO-J-SPAIK vs. SASKO-J-YSR: z = 5.420, p = .000).

Group-specific differences

Girls scored higher on the SASKO-J total scale than boys but this difference was not significant (Z = -1.74; p = .081). The Mann-Whitney tests showed that gender only significantly influenced the subscale REJECT (Z = -4.55; p = .000, r = -.30) in which girls tended to report more anxiety than boys. To examine the influence of age three categories were generated (12–13, 14–15, and ≥ 16 years). This was done because some cohorts were represented by a comparatively small number of students. The Kruskal-Wallis tests demonstrated that the subscale LONELY and the total scale was influenced by age (LONELY: χ^2 = 9.89, p = .007; TOTAL: χ^2 = 6.77, p = .034). Post-hoc tests showed that the youngest students reached significantly higher values than the middle and the oldest age group. These differences showed small effects (r = -.17 to -.24). The middle and the oldest group did

not differ significantly from each other. Depending on the school type, different results were identified in the total scale (χ^2 = 7.70, p = .021) as well as in the subscales TALK (χ^2 = 6.52, p = .038), INTERAC (χ^2 = 13.13, p = .001), INFORMAT (χ^2 = 8.48, p = .008), and LONELY (χ^2 = 7.70, p = .014). Post hoc tests yielded that students from secondary modern schools showed significantly higher values than students from secondary general or grammar schools, but students from secondary general and grammar schools did not differ significantly from each other. Moderate effects were found for the scale INTERAC (r = -.30 to -.27) whereas for the other scales only small effect sizes (r = -.18 to -.25) were identified.

Discussion

The aim of the present study was to evaluate the applicability and the psychometric qualities of the SASKO-J in a German student sample. In particular, we explored whether the factor structure –and with this the distinction of social anxiety and social deficits– of the SASKO for adults can be replicated in a sample of adolescents.

The model evaluation during the CFA confirmed the fit between the postulated five-factor model of the SASKO and our empirical data. Thus, the data is well represented through the four subscales and the additional scale. The satisfying model fit not only suggests that in adolescents the same factors are relevant as in adults but also that the psychometric distinction of social anxiety and social deficits could be held. However, in contrast to the CFA, the EFA yielded only four factors. The items of INTERAC and LONELY formed a common factor whereas the other three factors were mainly characterized through items which were part of only one of the subscales in the SASKO. Kolbeck and Maß [22] already pointed to the fact that interaction deficits and loneliness are highly related and can influence each other. In addition, the two subscales are similar regarding their content: The scale INTERAC, amongst other things, describes the lack of allegiance, the distance to other persons, and being a loner, whereas the items of the scale LONELY represent a lack of social contacts and related psychological strain. Our result suggests that the association between those scales might be even more important in adolescents than in adults. On the basis of the different results of the CFA and the EFA the relationship between LONELY and INTERAC should be evaluated in a clinical sample of adolescents to finally allow for a conclusion about the factor structure of the SASKO-J. Nevertheless it can already be concluded that the items predominantly were grouped into the same factors as in the SASKO for adults.

The item characteristics as well as the internal consistencies of the subscales and the total scale designate the SASKO-J as a reliable measure. The scale inter-correlations are moderate, suggesting that the scales are sufficiently independent from each other. The majority of item difficulties and indices of selectivity were in the satisfying to good range. However, the subscale INFORMAT was striking in showing an unsatisfactory internal consistency and a low mean selectivity. In contrast to our results, this scale reached higher values in the adult version of the questionnaire [34]. Since the modifications of items that were carried out during the adaptation for adolescents were not that serious, the unsatisfactory reliability of this scale cannot be due to these changes. However, it cannot be excluded that some items of the INFORMAT scale are not appropriate for assessing deficits in information processing in adolescents. The items describe uncertainty regarding the ability to evaluate other persons and to know which expectations are assumed to be fulfilled. These items perhaps reflect feelings that are part of puberty and thus do not only represent social phobia-related deficits in information processing.

The test-retest correlations indicate that the measured constructs show quite good temporal stability. The two anxiety scales and the total scale achieved good to very good retest reliabilities [48] while the deficit scales were characterized by lower temporal stability. Notably, the retest reliability of the additional scale LONELY was comparatively high (r_{tt} =. 71) while Kolbeck [34] found a non-significant association of r_{tt} =. 20 in her sample of adults. She reasoned that loneliness is a changeable attribute (state) that differs qualitatively from the other characteristics (anxiety and deficits as traits). This assumption does not seem to be true for our sample of adolescents.

The convergent validity of the SASKO-J was proved by high correlations with the SPAIK. The higher correlations of the anxiety scales with the SPAIK than those of the deficit scales support the assumption of different dimensions of social phobia. However, it should be considered that there are no adequate measures available to evaluate the convergent validity of the deficit scales. The results also support a good divergent validity of the questionnaire. An especially low correlation was found for the externalizing scale of the YSR whereas the association with the internalizing scale of the YSR was moderate. This can be explained with the fact that this scale also measures aspects of anxiety, social withdrawal, and depression. Moreover, high comorbidity of social phobia and other internalizing disorders is documented [49,50].

In accordance with earlier studies [39,51] the results of the group-specific analyses showed that on average girls scored higher on the anxiety scales than boys. The difference, however, only was significant for the subscale REJECT. To get a better insight into gender differences they should be further examined in a clinical sample. Concerning age, the results indicate that the scores of all scales tended to decrease with increasing age. A possible explanation for this finding could be that in healthy youths subclinical social uncertainty and social anxiety diminish during the normal development of personality, while simultaneously social competences are established. Moreover, the results clearly show that the type of school was associated with the scores: With the exception of the scale REJECT, students from secondary modern schools reported significantly more anxiety, more deficits, and greater loneliness than students from a secondary general or grammar school, who did not differ significantly from each other. Perhaps the higher mean scores of those adolescents who attended secondary modern schools in the subscale TALK are associated with a lower self-esteem on the basis of their educational level. Furthermore, the cognitive ability of students could have acted as a moderating variable and thus could have influenced the scores of the deficit scales. However, this assumption was not tested in our study. Finally, in secondary modern schools it is less practiced to give a talk in front of others than in other school types. Thus, those students might have more problems and might feel more uncertain in such situations.

Strengths and Limitations

This study has several strengths. To our knowledge the SASKO-J is the first questionnaire that explicitly focusses on social deficits in the diagnostics of adolescents with social phobia. As the constellation of symptoms might influence the maintenance of problems, the clarification of their existence is indispensable at the beginning of therapy [31,26]. The importance of this aspect becomes especially relevant when considering the fact that cognitive deficits (e.g., social perception, information processing) are less observable than performance deficits. Only a self-report measure can offer information

about these hidden but important social skills. The SASKO-J was adapted from a version already evaluated for adults. Since the factor structure and the psychometric properties are comparable to those of the original version, our results designate it as a suitable and valuable instrument, and also support the assumption that social anxiety and social deficits can be separated psychometrically. The separate analyses of girls and boys, different ages, and different school types allow for deeper insight into the variety of social anxiety and social deficits.

Despite these strengths, this study also has some limitations. First, the maximum likelihood method was used during the CFA. Since our sample was not normally distributed the results regarding χ^2 and RMSEA must be interpreted with caution [52]. However, to limit these problems we also estimated some parameters of model fit by the unweighted-least-square method. Second, during a CFA the model test can confirm the postulated model but it cannot be decided if the model is the one that best represents the data. It is possible that an alternative model could better describe the data. As a consequence, it should be examined in another sample if the model from the EFA, which found the items of the subscales LONELY and INTERAC to represent a common factor, can describe the data as well as the existing five-factor model from the SASKO. Third, it would have been desirable for the inter-correlations to be somewhat lower in order to show that the scales assess different aspects. However, the relationships found reflect that all characteristics express one underlying disorder and document the homogeneity of the total scale. Fourth, the retest-sample was very small and consequently it cannot be deemed representative. Thus, these results should only be understood as an indication of retest reliability. In addition, although the participating schools were located in different regions in the northern part of Germany, the external validity of results is limited since the number of cities does not represent all parts of Germany. This aspect as well as the fact of a significant difference in age between the two samples should be considered in future studies.

Conclusion and Future Research

Our results show that the SASKO-J is appropriate for use with adolescents. Most important, the psychometric differentiation of social anxiety and social deficits –which has already been documented in the SASKO for adults– could be kept. Thus, in future the SASKO-J can represent a reasonable and necessary addition to clinical diagnostics at the beginning of treatment as well as for the preparation of the therapy. It allows for valuable information about the possible focus of therapy beyond that of social anxiety (e.g., social performance and/or knowledge about interaction strategies) as well as for information about the expected duration and intensity of therapy. The SASKO-J also emphasizes the importance of cognitive social deficits in adolescents with social phobia. As most of the intervention strategies focus on the training of social competence, the consideration of cognitive skill problems is rather new [53,54].

The results of the present study are very promising. However, since the questionnaire was designed for use in clinical diagnostics, the factor structure, the item and scale characteristics, and the psychometric properties should be also tested in a clinical sample. During that process the subscale INFORMAT should critically be examined. In addition, the comparison of scores from a population sample with those from a clinical sample is desirable to allow for the evaluation of the sensitivity and specificity of the SASKO-J. These aspects should be implemented in future studies.

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