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Staff-perceived social status and social skills of students with intellectual disabilities in special needs schools

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ABSTRACT

An individuals' social status in the classroom is of major concern in students' social and academic development. The present study attempted to examine the staff-perceived proportion of students with intellectual disabilities (ID) in special needs schools classified sociometrically as accepted, rejected, neglected, controversial, or average, and the ways in which students with ID in different sociometric status groups differ in terms of their social skills. School staff reported on the social skills and social status of 1,068 students with ID (M = 11.98 years, SD = 3.74; 31.5% female) in special needs schools. While some results mirrored those seen among typically developing students in studies using peer nominations, school staff reports suggest that there appear to be many students with ID in special needs schools who are considered neglected. Moreover, students classified as accepted and rejected had significantly higher and lower social skills, respectively, than average students. These results provide an initial exploration of the role of staff-perceived sociometric status groups and their association with social skills in special needs schools.

1. Introduction

Social or sociometric status expresses how individuals are perceived by the members of a group to which they belong. Specifically, it tells whether students are liked or disliked by their peers in social settings like classrooms (Cillessen & Bukowski, 2018). Students' social status is of major concern in their development. Students who are highly liked by their peers have a greater chance of positively developing their social or academic skills. In contrast, the experience of being disliked by peers can be a risk factor for further adverse social and academic development (e.g., Ollendick et al., 1992; Prinstein & La Greca, 2004).

Students' social skills can affect whether they are more likely to be liked or disliked by their peers and thus assigned to different sociometric status groups (*accepted, rejected, neglected, controversial, average,* see also Cillessen & Bukowski, 2018). Students with more social skills have been found to have higher social status than students with lower social skills (e.g., Newcomb et al., 1993). The literature contains numerous definitions of social skills (Merrell & Gimpel, 2014). This study defines social skills as the skills needed to perform competently in social situations (Grover et al., 2020). Social skills include, for example, using language in a conversation, expressing emotions, perspective-taking in a social situation, and deciding on a course of action in a social situation (Grover et al., 2020; Harrison & Oakland, 2015).

While social skills and their association with sociometric status groups are well studied for typically developing students, studies in students with intellectual disabilities (ID) are rare. Children and adolescents are considered to have an ID when they are significantly limited in both intellectual functioning (IQ < 70) and adaptive behaviour, which covers everyday social, conceptual, and practical skills (Schalock et al., 2021). The spectrum of the severity of the disability ranges from 'mild' (IQ range 50–69) to 'profound' (IQ < 20) ID, which manifests itself in different abilities and needs for support (World Health Organization [WHO], 2019). When examining the social status of students with ID, it is important to note that in many European countries, a large proportion of these students attend special needs schools (e.g., 89.7% in Germany, Kultusministerkonferenz, 2018; 80–99.4% in the Netherlands, Smits & Schoonheim, 2016). Special needs schools are characterised by small classroom sizes and more adults (e.g., teachers, therapists, pedagogical staff, or long-term interns) to supervise students than in regular schools. Smaller classrooms could lead to fewer opportunities to build relationships with similar peers as the heterogeneity of students in terms of adaptive and problem behaviour in these schools is high (see also McPherson et al., 2001; Müller et al., 2020;). A great number of school staff in the classroom could furthermore lead to fewer peer interactions (e.g., Spörer et al., 2021). It is not clear to what extent individual (e.g., low social skills) and contextual (e.g., small classroom sizes) charac-

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teristics of students with ID in special needs schools affect the relative proportion of sociometric status groups.

This study aims to investigate how many students with ID in special needs schools are classified as sociometrically accepted, rejected, neglected, controversial, or average, and to examine how different social skills level of students with ID in special needs schools are associated with belonging to different status groups. These questions were examined from the perspective of school staff. Increased knowledge on this issue has the potential to generate insights that might improve students' social situation among their peers and, consequently, their social and academic development.

1.1. Social skills in different sociometric status groups

To assess students' social status among their peers, sociometric procedures like peer nominations are typically used. Other methods include peer ratings, and self-, parents-, or teacher reports (Cillessen & Bukowski, 2018). Peer nominations provide unique insight into peer relationships in classrooms, by asking students who they like most and like least Cillessen & Bukowski, 2018). Students are assigned to sociometric status groups by the following procedures (Coie et al., 1982; Coie & Dodge, 1983; Newcomb & Bukowski, 1983). To compute scores for social status, for each student the number of liked most (i.e., acceptance) and liked least (i.e., rejection) nominations they received are counted, standardised within the classroom, and then combined to calculate social preference- and social impact-scores. Social preference can be described as a student's relative likability in a group. Social impact refers to a students' social visibility in their peer group (Newcomb & Bukowski, 1983). Based on social preference, social impact, acceptance, and rejection, students can be assigned to one of five sociometric status group: Accepted (many positive, few negative nominations), rejected (few positive, many negative nominations), neglected (few positive or negative nominations), controversial (many positive and negative nominations), and average status group (all remaining students who do not appear in the previous categories; Coie et al., 1982; Coie & Dodge, 1983; Newcomb & Bukowski, 1983). The relative proportion of students in a classroom who are considered accepted, rejected, neglected, controversial, or average using peer nominations is not consistent across studies, and depends on the reference group, as well as whether unlimited or limited nominations were used. On average, about 15% of the students in a regular classroom are classified as accepted or rejected, between 5 and 10% as neglected or controversial, and about 55% of the students as average (Cillessen & Bukowski, 2018).

Research using peer nominations suggests that social skills can affect whether students tend to be more or less liked by their peers, which in turn affects the sociometric status groups to which they are assigned (e.g., Newcomb et al., 1993). Numerous factors may influence whether or not a student likes a given peer, such as: Do they help me achieve my goals? Are they trustworthy? Are they similar to me? Behind these questions lie different needs, such as the need for companionship, trust in their surroundings, autonomy, efficiency, and the need for connection among peers (Asher & McDonald, 2011). Students seem to be more likely to like other peers about whom they can answer the above questions positively and who satisfy these needs. In studies using peer reports, students classified as accepted have been characterised as having higher social skills compared to students in the average sociometric status group. Rejected and neglected students tend to have less social skills than average students. Students who are classified as controversial seem to have a similar level of social skills as accepted students, but also exhibit a similar level of aggressive behaviours found in rejected students (e.g., Coie et al., 1982; Coie & Dodge, 1983; Nelson et al., 2016; Newcomb et al., 1993; for an overview, see Cillessen & Mayeux, 2005). Students considered to be average are generally used as a comparison group when assessing the behavioural correlates of the more extreme sociometric status groups (Cillessen & Bukowski, 2018).

1.2. Sociometric status groups in students with ID in special needs schools

To date the social status of students with ID in special needs schools has been poorly studied (for an overview, see Schoop-Kasteler & Müller, 2020). For instance, it is not clear what proportion of students with ID are considered accepted, rejected, neglected, controversial, and average in special needs schools. Some studies with small sample sizes (range 7 – 124) have shown varying results regarding the sociometric status of students with ID in special needs classrooms: 0-43% accepted, 0-37.5% rejected, and 0-19% neglected (calculations by author based on provided numbers; Laing, 1972; Laing & Chazan, 1966; Male, 2002; Siperstein & Bak, 1989). The classification to different sociometric status groups was not always consistent across studies, which makes it difficult to generalise. In addition, figures for controversial and average students are missing.

Several contextual and individual factors can influence the social status of the students with ID in special needs schools. One contextual factor is the school setting itself. Classrooms in special needs schools are often attended by fewer students (typically 5–10) and more adults who supervise the students, compared to regular schools. Accordingly, there are fewer opportunities to interact with peers, build relationships with a variety of peers or to find someone similar to like, compared to classrooms with more students (see also, McPherson et al., 2001; Siperstein & Bak, 1989; Spörer et al., 2021).

Individual factors include, for example, students' problem behaviour. In previous studies, students with ID in special needs schools with more problem behaviours were more likely to be rejected and less likely to be accepted (e.g., MacMillan & Morrison, 1980; Schoop-Kasteler et al., 2022;). Less is known on the association between social skills and social status of students with ID in special needs schools. The social skills of students with ID in special needs schools can be considered as generally low (e.g., Schalock et al., 2021). One study (n = 32) explicitly examined the association between social skills and social status in students with ID in special needs classrooms (Santich & Kavanagh, 1997). This study showed that a student was more likely to be chosen as a best friend (peer nomination measure for social status) if their teacher rated the child's social skills as appropriate, and more self-reported inappropriate social skills were associated with fewer nominations as best friend. Thus, little is known about the relative proportion of students with ID in special needs schools who are accepted, rejected, neglected, controversial, or average, nor is much known about which social skills contribute to that social status.

1.3. Assessing Sociometric Status of Students with ID in Special Needs Schools

The aforementioned studies that are available on sociometric status groups and their association with social skills of students with ID in special needs classrooms used classic peer nominations (Laing, 1972; Laing & Chazan, 1966), both peer nominations and ratings (Santich & Kavanagh, 1997) or adjusted peer nominations (i.e., individual interviews with students; Male, 2002) to assess social status. Although initial results could be generated, methodological questions still remain. First, the described studies used rather small samples (e.g., n = 87 Laing & Chazan, 1966; n = 124 Laing, 1972; n = 32 Santich & Kavanagh, 1997; n = 7 Male, 2002). Second, they examined, with a few exceptions, mainly students with mild or moderate intellectual disabilities. To generalise the findings to the entire population of students with ID in special needs schools, studies with larger samples and from the whole spectrum of ID would be needed.

While some individuals with an ID in the mild or moderate range may be able to fill out peer nominations with adequate help, many students with ID have severe cognitive, linguistic, and social difficulties that make the valid use of peer nominations impossible (see also, Finlay & Lyons, 2001). Further, the assessment of social status with peer nominations ideally includes data from all students in a group (i.e.,

a classroom), which can pose significant challenges for studies conducted in special needs schools for students with ID attended by students with a wide range of competences (see also, Müller et al., 2020). Thus, alternative methods such as school staff reports must be considered (e.g., Cillessen & Marks, 2017). One possibility are teacher rating techniques, where teachers rate the social status of each of their students (e.g., *'is actively rejected by peers'*; Andrade et al., 2005). Other procedures are teacher- or staff-reported nominations. In comparison to teachers' single judgments of students' status, this latter approach can be expected to have greater reliability because information on individual acceptance and rejection is derived from multiple judgments from the teacher's or school staffs' view, which is also an advantage of peer nominations compared to a judgment of a single individual (see also, van den Berg, 2018). Staff-reported nomination procedures were already used in earlier research among typically developing students in regular classrooms (e.g., Harks & Hannover, 2017, 2020; Wu et al., 2001; Schoop-Kasteler & Müller, 2021). In these studies teachers who observed the students on a daily basis in their classroom filled out peer nominations from the perspective of each student. This research showed moderate to low agreement between teachers and students, with greater agreement in smaller classrooms, and suggests that the social status derived from staff-reported nominations is not exactly the same as the social status derived from peer nominations. Rather, staff-reported nominations provide an important approach to capture the social status of students in situations, when students' difficulties make it impossible to assess the perspective of children and adolescents in a valid way, such as in the case of students with severe and profound levels of ID. Moreover, since school staff typically derive their classroom interventions from their own perceptions of social relations in class, their view of peer relationships is particularly important in daily school life. Finally, staff-reported peer nominations allow to assess the social status of all students in special needs schools (i.e., complete student samples without exclusion of student with profound ID) and therefore the inclusion of large student samples for research.

1.4. The current study

The current study sought to address two main questions. *Research question 1* examined how many students with ID in special needs schools are classified as accepted, rejected, neglected, controversial, or average, using staff-reported nominations. The approach to answer *research question 1* was exploratory and served to obtain systematically collected descriptive data given the limited state of research. *Research question 2* investigated the ways in which students with ID in different staff-perceived sociometric status groups differ in terms of their social skills. Based on the available literature (e.g., Newcomb et al., 1993), I expected that students with ID classified as accepted (*Hypothesis 1*) or controversial (*Hypothesis 2*) have higher social skills than students with ID who are considered average. Students with ID who are assigned to the rejected (*Hypothesis 3*) and neglected (*Hypothesis 4*) status group were expected to have lower social skills than the students with ID in the average group. Furthermore, other factors associated with social status or social skills, such as students' *age* (e.g., Newman Kingery et al., 2020; Siperstein & Bak, 1989), *sex* (e.g., Abdi, 2010; Begley, 1999), and *conceptual skills* (e.g., Harrison & Oakland, 2015) were controlled for in the analyses.

2. Materials and methods

2.1. Participants

The present study was part of the research project 'KomPeers' (Müller et al., 2020) conducted in 16 Swiss special needs schools for students with ID. In Switzerland, these schools are only attended by students with a clinical diagnosis of ID (although a few exceptions may be possible) who are documented beneficiaries of intensive support measures based on a national standardised classification procedure (Erziehungsdirektorenkonferenz [EDK], 2007). ID is typically diagnosed according to ICD-10 criteria, namely an IQ below 70 and limited adaptive behaviour (WHO, 2019). As all participating schools are designed as day schools, most students spend the entire day at school among their peers. A large part of the activities take place in the classroom among classmates, but the students also spend time with other peers outside the classroom (e.g., sports, music, breaks, lunchtime). For the present analyses, data from one assessment in spring 2019 was used. Of the sixteen participating schools, eleven were in urban areas, two in peri urban, and three in rural communities. The average school size was 73.75 students (SD = 26.9, range 28–121) and the mean number of students per class was 6.34 (SD = 1.34, range 4–15).

A total of 397 members of the school staff responded to questionnaires about the social status and competencies of the students they taught in their classroom (more detailed information, please see Measures section). School staff (M_{age} = 46.46 years, SD = 12.53, range 17–64, 86.6% female) had an average work experience of 16.34 years (SD = 11.74, range 0–43). They had been employed at their school for M = 10.91 years (SD = 9.73, range 0–39) and had been working for M = 18.63 months (SD = 13.16, range 0–120) with the students they reported on. Of the surveyed staff members, 48.2% were special education teachers; others were regular teachers who taught specific subjects, therapists, social pedagogues, pedagogical staff, or long-term interns. The student sample included in the analyses comprised 1,068 children and adolescents (90.51% of all students attending the participating schools; n = 1,180). Data was not available for the remaining students due to a decision by parents or staff to decline participation. Students were on average 11.98 years old (SD = 3.74, range 4.83–19.67) and 69.5% were male.

2.2. Measures

2.2.1. Staff-perceived sociometric status groups

Studies among typically developing students usually use peer nominations to assess social status (Cillessen & Bukowski, 2018). As pointed out before, due to their disability (e.g., limited reading and/or writing abilities, difficulties understanding the question, response biases; for a review see Finlay & Lyons, 2001), many students with ID are not able to complete such peer reports. Therefore, school staff members who observed the students on a daily basis filled out peer nominations from the perspective of each student (see also e.g., Harks & Hannover, 2020). For each student, staff members were asked to nominate which peers from the entire school they assumed the student would report as liking the most (LM; '*Who does this student like especially in school?*') and least (LL; *'Who does this student not like very much in school?'*). For each question, they could nominate as many students as they considered appropriate. Although students in special needs schools spend a large part of their time in the classroom, they often also participate in activities outside the classroom with peers others than classmates which is why also peers from the entire schools could be nominated. Since the focus of this study is on social status in the classroom, only nominations received from classmates were included, and nominations from students from other classrooms were disregarded.

To classify students into sociometric status groups, the following common procedure was applied (Cillessen & Bukowski, 2018; Coie et al., 1982; Coie & Dodge, 1983). First, the number of LM- and LL-nominations each student received were counted. To control for differences in classroom sizes, the number of LM- and LL-nominations were then standardised within each classroom by transforming them into z-scores (standard score method; Cillessen & Bukowski, 2018; Coie et al., 1982; Coie & Dodge, 1983). Afterwards, social preference (SP) scores were calculated by subtracting the standardised LL-nomination scores from the standardised LM-nomination scores. Furthermore, social impact scores (SI) were calculated by summing the standardised LM- and LL-nomination scores. These preference and impact scores were again standardised within each classroom. Each student was classified into

one of five staff-perceived sociometric status groups according to the following criteria: accepted (SP > 1; LM > 0; LL < 0), rejected (SP < -1; LM < 0; LL > 0), neglected (SI < -1; LM < 0; LL < 0), controversial (SI > 1; LM > 0; LM > 0), and average (not in previous categories).

2.2.2. Social skills

Students' social skills were assessed by staff using the 'Social' subscale of the German version of the Adaptive Behaviour Assessment System-3 for teachers (ABAS-3; Bienstein et al., 2017; Harrison & Oakland, 2015). This instrument is based on the US-version of the ABAS-3, which was extensively evaluated and standardised with reference to a representative population-based sample of 1,896 individuals with and without disabilities from the USA (Harrison & Oakland, 2015). The 'Social' subscale consists of 22 items that describe the skills needed to interact socially and get along with other people (e.g., *'says "please" when asking for something', 'shows sympathy for others when they are sad or upset', 'shows good judgment in selecting friends'*). Staff members rated each student's performance on specific behaviours (0 = *is not able to do this behaviour,* 1 = *never [or almost never],* 2 = *sometimes,* 3 = *always [or almost always]*). For the 'Social' subscale, an internal consistency of $\alpha = .95$ (in the current data set $\alpha = .96$) has been reported (Harrison & Oakland, 2015). As a descriptive measure, the percentile rank (reference: general population) indicating social skills relative to age was reported. For the main analyses, the mean raw score of the subscale social was used.

2.2.3. Demographics

Students' age (in month) and sex were reported by staff members.

2.2.4. Conceptual skills

To control for conceptual skills, the percentile rank of the Conceptual domain ($\alpha = .97$) of the ABAS-3 (described above; Bienstein et al., 2017; Harrison & Oakland, 2015), indicating conceptual skills relative to age (reference: general population), was used. The Conceptual domain score is calculated from the subscales 'Communication' (e.g., *'uses sentences with a noun and a verb'*), 'Functional Academics' (e.g., *'reads his or her name when printed'*), and 'Self Direction' (e.g., *'completes routine classroom tasks within a reasonable amount of time'*). The Conceptual domain comprises behaviours needed to communicate with others, apply academic skills, and manage and accomplish tasks (Harrison & Oakland, 2015; Schalock et al., 2021).

2.3. Procedure

The current study was approved by the institutional research commission of the Department of Special Education of the University of Fribourg in terms of scientific and ethical conduct (Müller et al., 2020). Outreach to schools first occurred by phone, followed by written information about the study and a personal meeting with the school headmasters. The assessments were completely anonymous. Participants' names were never provided, meaning researchers never had access to student, parent, or staff names, with anonymous codes used for data analyses. Prior to the start of the study, parents received a letter informing them about the nature of the study, that anonymity was guaranteed for themselves and their child, and that no medical diagnoses of students would be assessed. Parents were assured that participation was voluntary and that they could inform their child's teacher if they wanted to decline participation (in this case staff did not fill out questionnaires on this student). The letter was distributed in nine languages and also delivered in a simple language version. Research assistants informed school staff in a personal meeting of the study goals and provided a detailed introduction to the questionnaire.

2.4. Statistical analyses

Answering *research question 1*, the number of students classified as accepted, rejected, neglected, controversial, and average was derived from school staff reports, as described in the Measures section. When answering *research question 2* about staff-perceived sociometric status group differences regarding social skills in students with ID, the hierarchical data structure was considered and multilevel analyses were conducted (Raudenbush & Bryk, 2002). The statistical program Mplus Version 8 was used, which accounts for missing values of unbalanced data by using a full information maximum likelihood estimation (Muthén & Muthén, 2017). Students (Level 1) were nested within classrooms (Level 2). Five models with maximum likelihood estimations were applied, in which parameters were added stepwise. First, an unconditional model (Model 1) was estimated to determine the variances on both levels and the intraclass correlation (ICC) before any predictors were added. Second, staff-perceived sociometric status groups were added as fixed effects (Model 2) to examine the extent to which sociometric status groups differ in terms of social skills. Staff-perceived sociometric status groups were entered as dummy variables, with the average students serving as the reference category. This means the social skills of students in the average status group were compared with the social skills of the other sociometric status groups. Third, age (Model 3), conceptual skills (Model 4), and students' sex (Model 5) were added in a stepwise fashion, to adjust for their effect. The models were first interpreted, followed by the calculation of the model fit improvement and the selection of the final model to answer *research question 2*. Testing model fit improvement was made using a chi-square difference test based on loglikelihood values.

3. Results

3.1. Descriptive statistics

Table 1 presents descriptive data for the social skills (mean raw score and percentile rank) of students in each sociometric status group, and for the total sample. Students classified as accepted as derived from school staff reports had a mean social skill score of $M = 2.2$ ($SD = .65$), rejected students $M = 1.59$ ($SD = .73$), neglected students $M = 1.83$ ($SD = .77$), controversial students $M = 1.92$ ($SD = .68$), and average students $M = 1.98$ ($SD = .69$). The mean social skill score of the total sample was $M = 1.93$ ($SD = .72$). The percentile rank of social skills scores resulted in a median of 9.12 (range .13–90.88). This result indicates students in the total sample had a low average level of social skills. The median percentile rank of the conceptual domain was 1 (range 0-84), suggesting overall extremely low levels of conceptual skills in the study sample (Harrison & Oakland, 2015).

3.2. Results on research question 1

Students were assigned to different staff-perceived sociometric status groups. In total, 37 (from 176 in total) of the classrooms either had no LM-nominations ($n = 3$), no LL-nominations ($n = 31$), no nominations at all ($n = 2$), or all students received the same amount of positive or negative nominations ($n = 1$). Thus, the *SD* of nominations received were equal to 0 and no *z*-scores could be calculated for these classrooms. Students in those classrooms could not be assigned to any staff-perceived sociometric status group, therefore these classrooms ($n = 202$ students) were excluded from further analyses. In response to *research question 1*, of 866 remaining students, approximately 14.3% were classified as accepted, 14.5% as rejected, 14.0% as neglected, 4.6% as controversial, and 52.5% were assigned to the average sociometric status group.

Please insert Table 1 about here

3.3. Results on research question 2

Research question 2 sought to examine staff-perceived sociometric status group differences in social skills. The intraclass correlation (ICC) for social skills was 0.356 in the unconditional model (Model 1), indicating that 35.6% of the variance in social skills was explained by differences between classrooms (Table 2). Students who were classified

Table 1
Descriptive Levels of Social Skills for Five Staff-perceived Sociometric Status Groups (n = 866).

Variable	N (%)	Mean Social Skills (*SD*)[a]	Median Social Skills (range)[b]
Accepted	124 (14.3%)	2.2 (.65)	15.87 (.13–74.75)
Rejected	126 (14.5%)	1.59 (.73)	2.28 (.13–63.06)
Neglected	121 (14.0%)	1.83 (.77)	9.12 (.13–74.75)
Controversial	40 (4.6%)	1.92 (.68)	9.12 (.13–63.06)
Average	455 (52.5%)	1.98 (.69)	9.12 (.13–90.88)
Total	1068 (100%)	1.93 (.72)	9.12 (.13–90.88)

[a] Raw score (0 = is not able, 1 = never [or almost never] when needed, 2 = sometimes when needed, 3 = always [or almost always] when needed).
[b] Percentile rank of Social Skills.

Table 2
Staff-perceived Sociometric Status Group Differences in Social Skills, Controlling for Age, Conceptual Skills, and Sex.

	Unconditional Model 1 *B (SE)*	Model 2 *B (SE)*	Model 3 *B (SE)*	Model 4 *B (SE)*[c]	Model 5 *B (SE)*
Accepted[a]		.212 (.060)***	.198 (.061)**	.145 (.056)**	.144 (.056)*
Rejected[a]		-.405 (.059)***	-.394 (.060)***	-.334 (.056)***	-.330 (.056)***
Neglected[a]		-.158 (.063)*	-.110 (.064)	-.101 (.059)	-.101 (059)
Controversial[a]		.023 (.099)	.013 (.099)	-.036 (.093)	-.033 (.093)
Age			.059 (.009)***	.051 (.008)***	.051 (.008)***
Conceptual skills				.024 (.002)***	.024 (.002)***
Sex[b]					-.034 (.043)
Variance level 1	.349 (.017)***	.314 (.017)***	.322 (.017)***	.268 (.015)***	.268 (.015)***
Variance level 2	.192 (.027)***	.181 (.028)***	.098 (.020)***	.064 (.014)***	.064 (.014)***

*p < .05, ** p < .01; *** p < .001.
[a] 1 = accepted, 2 = rejected, 3 = neglected, 4 = controversial, 5 = average (reference category).
[b] 1 = boy, 0 = girl.
[c] Final model.

Table 3
Tests of Improvement of the Model Fit.

Model	- 2Loglikelihood	Comparison		
		df	χ^2Difference	p
1 Unconditional Model	2112.83	-	-	-
2 + Staff-perceived sociometric status groups	1631.896	4	480.934	<.001
3 +Age	1557.62	5	74.276	<.001
4 +Conceptual skills	1354.58	6	203.036	<.001
5 +Sex	1353.96	7	0.624	.43

as accepted, rejected, or neglected differed significantly from students in the average group in terms of their social skills when staff-perceived sociometric status group was added as a fixed effect (Model 2). Students in the accepted group had significantly higher social skills, and students in the rejected and neglected group significantly lower social skills, than students in the average group. Students in the controversial group did not significantly differ from students classified as average in their social skills. The effects found in Model 2 remained significant for accepted and rejected students when the control variable age was added as a fixed effect (Model 3). However, students considered neglected were no longer significantly different in their social skills from students in the average group. Students' age had a significant effect on social skills, suggesting that older students with ID had better social skills. In Model 4, students in the accepted and rejected groups remained significantly different from students in the average group in terms of their social skills after adding conceptual skills as a control variable. Furthermore, students' conceptual skills had a significant effect on social skills, indicating students with ID with higher conceptual skills had better social skills. After adding sex as a control variable, students in the accepted and rejected group remained significantly different from students in the average group in terms of their social skills. Sex had no significant effect on social skills in this model (Model 5).

Model 4, which included staff-perceived sociometric status group and the control variables age and conceptual skills as fixed effects, fit the data best ($\chi^2(6) = 203.036$, p < .001, Table 3). Although the literature suggests social skills and sex are related, adding sex as a further control variable (Model 5) did not improve the model fit and sex had no significant effect on social skills when controlling for all other covariates. Based on these findings, Model 4, as the most parsimonious model, was chosen (without the control variable sex) to test the hypotheses formulated to answer *research question 2*.

From the perspective of the school staff and in line with *Hypotheses 1* and *3*, students classified as accepted had significantly higher social skills and students classified as rejected had significantly lower social skills than average students. Standardised regression coefficients suggested very small (accepted β = .077) to small (rejected β = -.177) effect sizes. Students in the other groups (neglected and controversial) did not significantly differ in their social skills from average students. Therefore, *Hypotheses 2* and *4* were not accepted. Students' age (β = .281, low effect size) and conceptual skills (β = .435, medium effect size) had significant effects on social skills, suggesting that older students with ID and students with ID with higher conceptual skills had better social skills.

4. Discussion

This study examined the social skills of students with ID in special needs schools classified as having accepted, rejected, neglected, controversial, or average sociometric status. The results presented are from a school staffs' perspective. First, the study showed the distribution of students with ID among various staff-perceived sociometric status groups in special needs schools in a large sample. Second, using staff-reports, stu-

dents considered accepted and rejected were found to have significantly higher and lower social skills, respectively, than students classified as average. There was no difference in social skills between students in the neglected and controversial status groups and average students.

Research question 1 sought to examine exploratively how many students with ID in special needs schools are classified as accepted, rejected, neglected, controversial, or average, using staff-reported nominations. When nominated by staff members, about 14% of the students was classified as accepted and 15% as rejected, a proportion similar to those found in regular classrooms attended by typically developing students in studies using peer nominations (e.g., 15%; Cillessen & Bukowski, 2018). About 14% of the students with ID were considered neglected, which is higher than it is reported from the peer perspective in classrooms attended by typically developing students (between 5 and 10%; Cillessen & Bukowski, 2018). Approximately 5% of students with ID were assigned to the controversial sociometric status group, again comparable to studies of typically developing students, (between 5 and 10%; Cillessen & Bukowski, 2018), and about half of the students with ID were considered average, which also resembled the numbers in classrooms attended by typically developing students using peer nominations (55%; Cillessen & Bukowski, 2018).

Taken together, these findings indicate that overall prevalence rates for these staff-perceived sociometric groups fall within a similar range as with typically developing students in studies using peer nominations, except for the neglected status group. According to the staff-perspective there appear to be many students who are neither particularly liked nor disliked and have a low social impact in special needs schools. However, it should be noted that the comparison between the present study and studies conducted in regular schools is generally limited. The current study used data assessed from the staff perspective, while the studies referenced by Cillessen & Bukowski (2018) used peer nominations in regular schools. Moreover, the small classroom sizes in special needs schools in contrast to regular schools could also have played a role. In large classrooms like in regular schools, students are more likely to meet other peers who are similar to them on the relevant characteristics so that the chance of being neglected becomes smaller (e.g., Hallinan, 1979; McPherson et al., 2001). In addition, in some classrooms school staff did not nominate any students and no status group membership could be calculated. Therefore the current study is missing information on staff-perceived sociometric status groups for approximately one fifth of the sample, which also limits direct comparison with other school settings. In the literature on regular classrooms, missing data like this rarely arises as an issue in studies that examine sociometric status groups, as it can be assumed that most classrooms have children who are nominated as liked most or least, which allows assignment to a status group. The reasons this issue occurred in the present study can only be speculated upon, and no final interpretation can be made. While students with ID in special needs schools indeed appear to have fewer relationships with peers (see also, Schoop-Kasteler & Müller, 2020), it is possible that school staff may have been not sufficiently aware of peer relationships in some classrooms and therefore did not make nominations within the classroom.

In *research question 2*, I examined how students with ID in different staff-perceived sociometric status groups differ in terms of their social skills. As expected, using staff-reports, students classified as accepted had more social skills than average students with ID. Students in the rejected status group had fewer. This finding is consistent with studies of typically developing students in studies using peer nominations (e.g., Newcomb et al., 1993). The social skills of neglected and controversial students with ID did not differ from those of average students with ID, which contrasts with studies on typically developing students. Since it can be assumed that most students with ID in special need schools tend to lack social skills (Schalock et al., 2021), it could be that in students with ID, other characteristics may play a more important role in whether a student is neither liked nor disliked (neglected) or liked by some and disliked by others (controversial) than in typically developing students.

Students considered neglected could be those with severe ID who tend to require additional care and who are thus more likely to spend time with adults (e.g., care assistants). Consequently, they would receive little attention from peers and therefore be neglected. Nevertheless, these students probably also have low social skills, which is why this line of reasoning may not fully explain the results found in this study.

Moreover, it remains open whether students with ID, who have been classified as controversial, exhibit similar or other behaviours as the same group of typically developing students. Typically developing students classified as controversial have more social skills but are also often found to be more aggressive than average students (Newcomb et al., 1993). In addition, in typically developing students, controversial status overlaps to some degree with perceived popularity. Students classified as controversial, are, like perceived popular individuals, liked by some peers and disliked by others and show a combination of positive and negative behaviours (Cillessen & Marks, 2011; Cillessen & Rose, 2005; Newcomb et al., 1993; but see LaFontana & Cillessen, 1999). Students, who are perceived as popular often have high social skills, but use aggressive behaviours at the same time to gain a high social position in the classroom. It is not clear whether this kind of behaviour also occurs in students with ID, as it requires some social skills (Cillessen & Rose, 2005) that students with ID possibly may not have (Schalock et al., 2021). It could also be that the behavioural problems of students with ID not considered here and occur frequently (Nicholls et al., 2019), are perceived differently by students with ID (e.g., more positive or negative polarising) than by typically developing students and could contribute more to the explanation of the controversial status group in this population. Ultimately, these explanations could not be tested in the present study. Further research is needed to describe sociometric status groups in special needs schools for students with ID and to understand exactly how sociometric status group membership is formed in this context.

4.1. Implications

The present study confirmed that staff-perceived sociometric structures exist among students with ID in special needs schools. Considering that students with ID are highly heterogeneous in terms of intellectual abilities, behaviour difficulties, and skills, this nontrivial result shows the urgency of paying attention to peer relationships in such settings. Regarding sociometric status groups, the results suggest that the prevalence of students in different staff-perceived sociometric status groups is similar to those found in typically developing students derived from peer nominations. Moreover, from the perspective of the school staff, students with ID with less social skills have a lower social status than students with more social skills. Teachers should be aware of these peer dynamics within their classrooms, as knowledge of those with higher risk of low social status can enable support through targeted interventions (Audley-Piotrowski et al., 2015). Of note, the results of the present study showed that there tends to be a higher relative proportion of students in special needs schools that can be classified as neglected. This points to an even greater urgency in improving these students' social situation. Teachers can use specific strategies to manage social relationships, for example by targeting individual students to promote their social skills, which would in turn elevate their social status (e.g., Bierman, 2004). Although this approach may help improve social status (but see Hoza et al., 2005; Moote et al., 1999), it typically does not take into account a classroom's naturally occurring social dynamics. Classroom social dynamics include peer group processes and structures that have the potential to promote or constrain students' social experiences (Farmer et al., 2018). Thus, the entire classroom should be targeted through classroom management techniques such as seating arrangements (van den Berg & Stoltz, 2018). While it is not yet clear how these interventions support students with ID, it will be worthwhile to investigate interventions tailored to these students.

4.2. Limitations and future research directions

Due to the difficulties related to data collection and ID, and given the aim of collecting as much information as possible for all students in special needs schools, this study used school staff reports rather than student reports on social status. Social status reported by school staff can be considered as an alternative measure assessing the external view by professionals in settings, where students' difficulties make it very challenging to assess the perspective of children and adolescents in a valid way. Future research should extend the results by adding information from students who possess the skills to report peer nominations. Further, direct observations of the interactions between students would add important information on the mechanisms underlying the present findings. In the present study, only the effect of social skills on social status was investigated. It may be assumed that an interaction between social skills and other individual characteristics, such as problem behaviour, on social status might exist (see also, *Authors*). For example, future research could investigate the extent to which social skills might buffer the effect of problem behaviour. Finally, the focus on students with ID in special needs schools did not allow for the inclusion of other types of special needs and inclusive settings, which would have provided the possibility of directly comparing the results between different school settings for students with ID. Hence, the present study may be extended by future research that assesses social status in students with and without ID in other settings.

4.3. Conclusion

In conclusion, this study provided new insights into how students with ID are distributed across different staff-perceived sociometric status groups in special needs schools. While many results were similar to those seen among typically developing students in studies using peer nominations, there appears to be a higher proportion of students in these schools who can be described as neglected. Furthermore, students who are considered accepted seem to have more social skills, and rejected students have fewer social skills, than students who are classified as average. The presented results improve the to date still poor understanding of the peer situations of students from the whole spectrum of ID in special needs schools and their associated conditions.

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