Impact of Peer and Teacher Relations on Deaf Early Adolescents’ Well-being: Comparisons Before and After a Major School Transition

Nina Wolters*1, Harry Knoors1,2, Antonius H. N. Cillessen1, Ludo Verhoeven1
1Radboud University
2Royal Dutch Kentalis

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This study focused on the peer and teacher relationships of deaf children and the effects of these relationships on well-being in school during the transition from elementary school to junior high school. Differences due to gender and educational context were also considered. In Study 1, the predictive effects of peer acceptance, popularity, and teacher support on well-being were examined cross-sectionally for early adolescents in Grade 6 (N = 759, 87 deaf) and Grade 7 (N = 840, 104 deaf). Study 2 examined the effects of the same predictors on well-being in school longitudinally during the transition to secondary school on a subsample of participants from Study 1 (n = 105). Well-being in school was stable during the transition for mainstreamed hearing children, but not for deaf children. In mainstream schools, school well-being increased for deaf boys but decreased for deaf girls. In contrast, in special education schools, school well-being increased for deaf girls but decreased for deaf boys. Peer acceptance, popularity, and relationship with the teacher had different effects on well-being for deaf early adolescents in mainstream schools compared to the effects on those in special education schools. Moderation by gender was also found.

Social experiences have a crucial impact on a person’s well-being in the short and long term (e.g., Parke et al., 1997; Parker & Asher, 1987; Roff & Wirth, 1984, in Östberg, 2003; Rubin, Bukowski, & Parker, 2006; Shaffer, 2005). In early adolescence, the school—in particular, the classroom—are important contexts for social experiences with peers who spend increasing amounts of time together (Rubin et al., 2006), especially after the transition to junior high school. Membership of a classroom is forced and not based on personal preferences. The peer relationships of a class are embedded in a group with defined boundaries (Rubin et al., 2006), and participation in this group is vital for integration (Östberg, 2003).

In addition to peer relationships, the teacher–student relationship has been found to affect well-being in the classroom (e.g., Hamre & Pianta, 2001). For deaf children, their communication skills have major implications for the quantity and quality of interactions with hearing peers and teachers (Antia, Kreimeyer, Metz, & Spolsky, 2011) and, thus, for their relationships and social experiences (Stinson & Kluwin, 2011; Stinson & Liu, 1999). Deaf children increasingly attend mainstream schools (Antia, Kreimeyer, & Reed, 2010; Stinson & Antia, 1999), and often, this child is the only deaf one in a classroom of hearing peers, because deafness is a relatively low-incidence disability (Stinson & Antia, 1999). Deaf peers in special education schools can also encounter hearing teachers and hearing classmates who have other disabilities, such as specific language impairment (SLI).

Hearing loss affects social experiences, which threatens deaf early adolescents’ well-being in school, along with their academic progress (Hamre & Pianta, 2001). Bearing in mind gender differences in peer relations (Rose & Smith, 2009), the current study focused on social predictors of well-being in the class-

*Correspondence should be sent to Nina Wolters, Behavioural Science Institute, Radboud University, Montessorilaan 3, 6525 HR Nijmegen, The Netherlands (e-mail: N.Wolters@pwo.ru.nl).
Deaf Early Adolescents’ Well-being

The term well-being is sometimes used interchangeably with happiness and represents a “positive affect, absence of negative affect, and a cognitive judgment of satisfaction with life as a whole” (Natvig, Albrektsen, & Qvarnström, 2003). Constructs related to well-being are mental health and health-related quality of life (QoL). A few studies have focused on well-being as a function of hearing status. Moeller (2007) concluded in a review that deaf children’s well-being (health-related QoL) was poorer than that of hearing peers. The same was found for 85 Australian 7- to 8-year-old deaf children, whose QoL was judged by their parents (Wake, Hughes, Collins, & Poulakis, 2004a; Wake, Hughes, Poulakis, Collins, & Rickards, 2004b). In a Dutch study, 238 deaf 4- to 18-year-old students had higher parent-reported emotional problems than their hearing peers (Van Eldik, Treffers, Veerman, & Verhulst, 2004). In the same study, deaf 12- to 18-year-old children also reported more anxiety and depression than the 4- to 11-year-old ones. Interestingly, deaf 11- to 18-year-old Dutch children reported more mental health problems than hearing youth (Van Eldik, 2005).

Support for differences in self-reported well-being as a function of educational setting has also been found. In a German study with 6- to 11-year-old deaf children, the children in mainstream schools reported higher well-being than those in segregated special education schools (Keilman, Limberger, & Mann, 2007). Interestingly, the older deaf mainstream children in this study reported less well-being than the younger deaf children. This is supported by the finding that deaf (early) adolescents probably experience more problems with feeling secure and making friends than younger deaf children (Antia et al., 2010). Similar results have been found in studies where deaf 11- to 18-year-old children in segregated special settings self-reported more mental health problems than did deaf mainstream peers in The Netherlands (Van Eldik, 2005) and deaf youth in special schools for the hard of hearing in Sweden (Mejstad, Heiling, & Sweden, 2009).

Gender effects on well-being seem apparent for hearing children, with girls being at higher risk for depression than boys (e.g., Hirsch & Rapkin, 1987). These studies point to the role of same-gender relational aspects, specifically social connectedness among girls, which can be a protective—but also a risk—factor for adolescent girls (Nolen-Hoeksema & Girgus, 1994). Girls are more communication and socially oriented than boys, for whom competition is important (Rose & Smith, 2009). This orientation is said to make girls more vulnerable to the social challenges of adolescence. Other studies, however, suggest an overall increase in depression with age for both boys and girls, with differences by gender appearing later in adolescence (Reddy, Rhodes, & Mulhall, 2003). Thus far, few studies have investigated gender differences in deaf children’s well-being. In one study, Swedish deaf 11- to 18-year-old boys had more mental health problems than deaf girls (Mejstad et al., 2009). In contrast, Van Eldik and colleagues found no gender difference (Van Eldik, 2005; Van Eldik et al., 2004).

A potential final and important factor for children’s well-being is the transition from elementary school to junior high school. Children move to an unfamiliar school at a time when they are also dealing with adolescent developmental issues, in particular pubertal changes and the search for identity (Reddy et al., 2003). The transition from elementary school to junior high is also marked by shifts from one primary teacher to multiple teachers and, often, larger classrooms. Increases in depression during the school transition have been found for hearing early adolescents (Hirsch & Rapkin, 1987; Reddy et al., 2003), though no transition-related studies have focused on deaf peers.

In summary, although previous cross-sectional studies on well-being in the Deaf population differ in the operationalization of well-being, sample size, age group, informants, and country, they consistently suggest less favorable well-being status for deaf children and adolescents than for hearing youths. Deaf children in special education schools seem to have lower levels of well-being or QoL. Gender differences are inconclusive. Finally, these studies have not
focused on the school as a relational context for child and adolescent well-being. Differences in well-being between deaf children and hearing children may be explained by the fact that children with disabilities do not experience the relational context of school in the same way as hearing children do (Murray & Greenberg, 2001). Considering the gaps in the literature, there is a need for a longitudinal study on school well-being and its predictors among youth as a function of hearing status, educational setting, and gender.

Well-being and Classroom Relationships

In studying predictors of well-being during early adolescence, it is important to first realize that in early adolescence (ages 10–14), the nature of personal relationships changes. Relations become more important, deep, and dyadic in nature, and increase the sense of well-being (Bukowski, Hoza, & Boivin, 1993). For early adolescents, the classroom is a very important context in which they spend a large part of their daily life (Rubin et al., 2006); and is a critical context for feelings of well-being. This is supported by the finding that high levels of stress in school reduce well-being (Natvig et al., 2003), as well as the consistent impact of school connectedness on emotional health (Resnick et al., 1997). In a study on social relations in more than 500 classes from Grades 3 to 7, Östberg (2003) found that the more accepted a student is in the classroom, the less common is depression (i.e., being worried, miserable, or distressed). This effect appeared regardless of gender, number of friends, grade, type of school, and class size. Adolescence is a period in which children want to fit in and not be different, for example, due to their hearing loss.

The importance of relationships in the classroom for early adolescents’ well-being seems apparent. Deaf children increasingly attend mainstream schools (Antia et al., 2010; Stinson & Antia, 1999) where they share classrooms with hearing peers and hearing teachers. Deaf children in special settings may also encounter this situation because many teachers of the deaf are hearing enabled. Moreover, hard-of-hearing children are sometimes taught in a mixed-ability group (Knoors & Hermans, 2010), where they share classrooms with hearing children with Autism Spectrum Disorders (ASD) or SLI. In addition, relatively little is known about communication between deaf peers. Thus, generally, for deaf children, this means that their well-being in school will be affected by their relationships in the classroom with hearing peers and teachers. This places high demands on their communication skills, as is the case too when it comes to communication among deaf children, who vary widely in use and proficiency of spoken and sign languages.

Deaf children’s spoken language and communication skills, such as pragmatics, are often less well developed compared to the skills in hearing peers (Antia et al., 2011; Stinson & Antia, 1999; Suárez, 2000; Wolters, Knoors, Cillessen, & Verhoeven, 2011), though the same has also been found for the use of pragmatics in sign communication (Jeanes, Nienhuys, & Rickards, 2000). The communication barrier between deaf and hearing peers significantly affects social experiences. For example, during formal classroom instructions, communication access for deaf children might be relatively good, whereas in other day-to-day school situations, such as lunch and classroom discussions, which are multitalker situations, problems arise. Even children with a mild hearing loss may have extreme difficulties with rapid turn taking and interruptions that are normal features of interactions in groups (Stinson & Kluwin, 2011; Stinson & Liu, 1999). Hearing children indeed mention communication difficulties as a serious problem in forming friendships with deaf children (Brown & Foster, 1991; Hung & Paul, 2006; Nunes, Pretzlik, & Olsson, 2001), and some think that the communication barrier cannot be overcome (Nunes et al., 2001). Considering the above, differences in social relationships in the classroom as a function of hearing status can be expected.

Classroom Relationships: Peers

Two types of relationships seem to be important predictors of well-being in the classroom. The first is the relationship with the classmates. During the years of early adolescence, the structure of peer groups changes from a relatively unified whole to a structure with cliques and social groups (Rubin et al., 2006). One’s position in this hierarchy is directly related to well-being; but it is also indirectly related because social status is related to
social support, number of friends, self-confidence, and buffers against stress (Bukowski et al., 1993; Östberg, 2003). Peer relations are relations among equals as compared to child–adult relationships, which are unequal. In early adolescence, peer relationships are a person’s first true experience with dyadic relationships, acceptance, and closeness. The importance of peer relations increases in early adolescence and profoundly contributes to well-being (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996) as status concerns rise sharply during these years (Rubin et al., 2006).

Acceptance and popularity are unique dimensions of peer status (Cillessen, 2011). Both are typically measured with peer nominations or ratings. Acceptance is a measure for likability and social preference and thus reflects dyadic relationships in the class (e.g., Gest, Graham-Bermann, & Hartup, 2001). Popularity reflects the vision of a group toward an individual and is, thus, a reputation or measure of visibility and social impact (e.g., Cillessen & Marks, 2011).

A few reviews considering deaf children’s peer acceptance have been conducted (Antia et al., 2010; Kluwin, Stinson, & Colarossi, 2002; Stinson & Antia, 1999; Stinson & Kluwin, 2011); the overall conclusion from these reviews is that in some studies mainstreamed deaf children were accepted by hearing peers, though other studies found them to be rejected and neglected. Thus, inconclusive results have been found regarding deaf children’s peer acceptance. Contradicting results by earlier studies were possibly obtained because not all studies considered gender and educational setting as potential moderators of acceptance. The importance of gender is supported by two studies that found a hearing status by gender interaction for acceptance in mainstream education: deaf boys were less accepted than deaf girls (Coyner, 1994, in Kluwin et al., 2002; Wolters et al., 2011). Differences in acceptance as a function of educational setting appear, but findings are inconclusive because deaf students in segregated special education schools seem more accepted than deaf children in mainstream education (Brands, Elsendoorn, & Coninx, 2000; Stinson & Kluwin, 2011), although this is not so not in all studies (Wolters et al., 2011). Findings concerning popularity of deaf students have generally been lacking. In one study, mainstream deaf Grade 6 children were less popular than their hearing classmates and their deaf peers in special education schools (Wolters et al., 2011).

Some studies have addressed the stability of acceptance and popularity in hearing children. One review showed that (a) popularity is more stable than acceptance, (b) acceptance is more stable for boys, and (c) popularity is more stable for girls (Mayeux, Houser, & Dyches, 2011). A meta-analysis showed the effects of age and time on stability of acceptance, with higher stability for older than younger children and lower stability over a longer period of time (Jiang & Cillessen, 2005). Wauters and Knoors (2007) found acceptance in 18 first- to fifth-grade deaf children to be relatively stable over a period of a year. Specific findings concerning school transitions are not available. Thus, deaf children seem less accepted and popular than hearing peers, although there is support for a relevant role of gender in this context. Deaf children in special segregated settings have generally been found to be more accepted and popular than mainstreamed deaf peers. The effects of school transition on the acceptance and popularity of deaf children are unknown.

Classroom Relationships: Teachers

The second type of relationship predictive of well-being in the classroom is, potentially, the teacher–student relationship. The relationship a student has with the teacher is an adult–child relationship and creates unique experiences for early adolescents. It can have a healthy emotional dimension, can open communication and instructional support, which is comparable with a caregiver–child attachment, and can affect a child’s emotional, behavioral, and mental health (Murray & Pianta, 2007; Natvig et al., 2003; Roeser, Eccles, & Sameroff, 2000). There is even support for the relationship with the teacher in kindergarten affecting academic and behavioral outcomes through eighth grade (Hamre & Pianta, 2001). Moreover, Reddy et al. (2003) found that an increase in the quality of the teacher–student relation for boys and girls from Grades 6 to 8 corresponded with decreases in levels of depression.

The relationship with the teacher is potentially especially important for the well-being of students with disabilities (i.e., emotional or learning disability, mild
mental retardation; Murray & Greenberg, 2001; Murray & Pianta, 2007). For students in special education, Murray and Pianta (2007) state that there is a heightened risk for mental health problems such as depression, which stresses the importance of a supportive teacher. This is of great concern because students with disabilities have been found to have a greater dissatisfaction with their teacher relationship than students without disabilities (Murray & Greenberg, 2001). This has also been found for deaf children in segregated special and co-enrollment settings, in comparison to hearing children (Knoors & Hermans, 2010). Co-enrollment refers to “classrooms that include both deaf and hearing students, ideally in equal numbers, and a curriculum taught in both sign language and the vernacular” (Stinson & Kluwin, 2011).

Reddy and colleagues (2003) concluded that previous studies reported no consistent gender differences in the importance of the relationship a pupil has with the teacher. In a hearing-population sample, they found that Grade 6 girls experienced a better relationship with the teacher than did boys. In two studies, the quality of the relationship with the teacher decreased after a school transition (Midgley & Edelin, 1998; Reddy et al., 2003). However, when extra attention is given to the teacher-student relationship, fewer adjustment problems occur during a school transition (Midgley & Edelin, 1998).

The teacher-student relationship is thus a potentially important relationship in the classroom for the well-being of early adolescents, both with and without hearing loss, with lower levels of satisfaction being observed in this relationship for children in special education schools. This is also supported by the finding that the quality of the relationship with the teacher tends to decline after school transition. The role of pupils’ gender remains unclear in this regard.

In summary, questions thus arise about how deaf children’s classroom peer and teacher relationships are associated with well-being in school and what the role of school transition is. Thus, the research questions were (a) How are deaf early adolescents’ classroom peer and teacher relationships associated with well-being in school, and how are these effects further qualified by gender and educational context during school transition? and (b) What are the differences in both well-being in school and its predictors (acceptance, popularity, and relationship with the teacher) as a function of time (before and after school transition), hearing status, educational setting, and gender?

Methodology

To address the research questions, two studies were conducted, one in Grade 6 and one in Grade 7. Grade 6 was the final grade of elementary school, and Grade 7, the first grade of junior high school. Grade 6 children often spent several years as classmates, whereas Grade 7 children were unfamiliar peers at the start of the school year. Children with a hearing loss in special education schools in The Netherlands are typically educated in two different segregated settings. Those with profound losses are in schools for the deaf, whereas those with severe losses and better speech perception are in schools for hard-of-hearing children. In our study, special education schools thus refer to segregated schools for either the deaf or hard of hearing. In the special education schools for the hard of hearing, children with a hearing loss are often educated together with SLI children, some of whom also display autistic characteristics. Most teachers are trained as teachers of the deaf, and some as teachers for special education schools. The latter category is most frequently found in schools for hard-of-hearing children. With reference to primary and secondary education, children go through six grades of elementary school (Grades 1–6, ages 6–12) and then, in line with their academic abilities, to one high school that contains all subsequent grades, typically for ages 12–18. Grade 7 thus corresponds with the first grade of junior high in the American system, and at the start of Grade 7, classmates are unfamiliar with each other.

Study 1 aimed to identify predictors of well-being in school in both grades, addressing the effects of peer (acceptance, popularity) and teacher relationships on well-being in school in a normative sample of early adolescents. The moderating effects of hearing status, gender, and educational setting were also tested. It was expected that acceptance, popularity, and relationship with the teacher affect well-being in Grades 6 and 7. The moderating roles of hearing status, educational setting, and gender were explored without specific
predictions for them. Study 1 revealed the predictors that should be focused on in the second study.

In Study 2, comparisons of well-being in school and its predictors (acceptance, popularity, and relationship with the teacher) before and after school transition were conducted as a function of time (Grade 6 to Grade 7, thus during school transition), hearing status (deaf or hearing), educational setting (mainstream or special), and gender. The independent variables in Study 1 (acceptance, popularity, and relationship with the teacher) became dependent variables in the repeated measures ANOVA in Study 2. Participants were a subset of the participants in Study 1, namely, hearing and deaf early adolescents who participated both before and after school transition. We expected deaf mainstream children to score lower on well-being than their hearing classmates; and deaf children in special education schools to score lower than deaf mainstreamed peers. It was also expected that deaf mainstream children were less popular than both their hearing classmates and deaf peers in special education schools. Regarding acceptance, an earlier study (Coyner, 1994) showed that gender effects seem important. Finally, we expected hearing children to experience a more positive relationship with the teacher than deaf mainstream children and deaf mainstream children to have a more positive teacher–student relationship than deaf peers in special education schools. No expected longitudinal or gender effects were formulated.

Study 1

Method

Sample. Participants were 759 Grade 6 (672 hearing, 87 deaf or hard of hearing) and 840 Grade 7 (736 hearing, 104 deaf or hard of hearing) children (Table 1). In the remainder of the study, deaf and hard-of-hearing children will be referred to as deaf children.

In mainstream education, six deaf participants in Grade 6 and four in Grade 7 had additional disabilities (dyslexia, ADHD, dyscalculia, hemiphrasphasia, mild motor disability, Treacher Collins syndrome, spasm). In the special education schools, eight deaf children in Grades 6 and 7 had an additional disability (i.e., dyslexia, language-learning problem, attention deficit hyperactivity disorder (ADHD), epilepsy, Treacher Collins syndrome, SLI). Forty-nine out of the 672 hearing participants in mainstream education Grade 6 and 85 out of 736 in Grade 7 had additional disabilities (i.e., dyslexia, ADHD, attention deficit disorder, visual

Table 1 Participants in Study 1

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<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
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<td>Age in years</td>
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<tr>
<td>Mean</td>
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<td>SD</td>
<td>.68</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Boy</td>
<td>332</td>
</tr>
<tr>
<td>Girl</td>
<td>340</td>
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<tr>
<td>Hearing status*</td>
<td></td>
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<tr>
<td>Hearing</td>
<td>672</td>
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<tr>
<td>Hard of hearing</td>
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<tr>
<td>Deaf</td>
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<td>Hearing equipment</td>
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<td>CI</td>
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<td>Hearing aid*</td>
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<td>None</td>
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<td>Total</td>
<td>672</td>
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*Hard of hearing: 25–80 dB hearing loss in the better unaided ear; deaf: >80 dB hearing loss in the better unaided ear.
*In Grades 6 and 7, two children with two CIs, one child with BAHA, one child with both CI and hearing aid.
*In Grade 6: nine children with additional induction loop system; in Grade 7: 11 children.
Deaf children in Grade 6 in mainstream education shared classrooms with 23 hearing classmates on average, and with the exception of two deaf children, were the only deaf child in their classroom. In Grade 7, the average classroom size in mainstream education was 21, and in five cases, there were two deaf children in one classroom. Classroom size in special education schools was, on average, 11 and 7 children in Grades 6 and 7, respectively. In Grade 6, the participating children were enrolled in 17 classrooms in 11 special education schools and 35 classrooms in 34 mainstream education schools in The Netherlands. In Grade 7, the children were enrolled in 16 classrooms in 10 special education schools and 39 classrooms in 37 mainstream education schools. In both Grades 6 and 7, the majority of the children were Caucasian. Children from ethnic minority groups were mainly Turkish or Moroccan.

Procedure. For the deaf children, peer data were obtained from their hearing classmates in the mainstream classrooms, and from their deaf or hearing classmates with ASD or SLI in the segregated special-education classrooms. Peer judgments of classmates with ASD and SLI, who were able to complete the questionnaires themselves or with a little help from a trained research assistant, were used in the analyses. Classmates' judgments concerning children with ASD and hearing SLI children were excluded from the analyses, resulting in an analysis sample of 759 out of the 816 original participants in Grade 6, and 840 out of 901 children in Grade 7.

All data were obtained during the final three months of the school year from children, and parents provided background information. When background information questionnaires were incomplete, teachers were asked to complete the questionnaires where possible. Approval for participation was received from the school directors, teachers, and parents consistent with the requirements of each school; 86% of all children in Grade 6 and 95% of all children in Grade 7 consented to participate in the study. The peer nomination and rating questionnaires were administered under the supervision of the principal investigator and/or a trained research assistant in the children’s classrooms during regular lessons. Children who did not participate were asked to work quietly at their own desk. Deaf children who required a sign-language interpreter to assist them to complete the questionnaires worked with the interpreter in small groups of one to three children. Children with ASD or SLI also received extra assistance with completing the questionnaires, to assure understanding of the questionnaires. Confidentiality of the questionnaires was explained. Additionally, children were asked to cover their answers when finishing a questionnaire. Children’s desks were situated so that they could not see each other’s answers.

Instruments. All the reported internal consistency data (Cronbach’s $\alpha$) represent information from the scales in the current study. Well-being and teacher–student relationship were measured with several rating scales. Children rated their feelings in school, happiness in school, and relationship with their teacher on three 6-item scales with a 3-point response format (1 = true for me, 2 = sometimes/I don’t know, 3 = not true for me). The scales were taken from the Dutch School Questionnaire (Smiths & Vorst, 1990). The original scales had eight items each. Two long items were removed from each scale and some other items were simplified considering possible reading difficulties among some children (i.e., deaf children in special education schools). Six items measured feeling acknowledged in the classroom (e.g., “I am often bullied by classmates”; $\alpha = .80$ and .76 in Grades 6 and 7, respectively). Six items measured happiness in school (e.g., “I am happy to be in this school”; $\alpha = .74$ and .65, respectively). Together, these 12 items measured well-being in school ($\alpha = .78$ and .68, respectively). Six items measured relationship with the teacher (e.g., “My teacher is nicer to classmates than to me”; $\alpha = .76$ and .68, respectively). In Grade 6, one classroom teacher was required to be rated. In Grade 7, the children were in rotating classes (same classmates, different teachers), and they rated their experience with all teachers as a whole. Composite scores for well-being in school and relationship with the teacher were computed by averaging the items.

Acceptance and popularity were measured with sociometric nominations. An unlimited choice procedure was used with classroom as the reference group. Four questions were asked: (a) liked most (“Who are the kids in your class you like the most?”); (b)
liked least ("Who are the kids in your class you like the least?"); (c) most popular ("Who are the most popular kids in your class?"); and (d) least popular ("Who are the least popular kids in your class?"). Children were allowed to name an unlimited number of same-sex and different-sex classmates. Deaf mainstream children were rated by hearing classmates. Deaf peers in special education schools were rated by deaf classmates or hearing classmates with ASD or SLI. In special education schools, classmates’ names were written on top of the questionnaire, such that children could easily see which names they could choose from. The nature of the nominations in mainstream schools and special education schools is not different, because in both settings, classmates are the true judges of acceptance and popularity; classmates’ vision and opinion determines one’s social status, regardless of the school type one attends. Classmates’ sociometric judgments reflect their daily judgments of each other during a normal school day (Cillessen, 2009).

The number of nominations received was counted for each question and standardized to z-scores within classrooms to control for differences in classroom size. A score for acceptance was computed by subtracting the standardized liked-most and liked-least choices received and subsequently standardizing the resulting difference scores to z-scores within classrooms (Coie, Dodge, & Coppotelli, 1982). A score for popularity was computed by subtracting the standardized most-popular and least-popular choices received and standardizing the resulting scores (e.g., Cillessen & Marks, 2011).

Results

Correlational analyses. Table 2 presents the correlations between the main study variables in Grades 6 and 7. In both grades, well-being correlated positively with acceptance and popularity, although the correlation between well-being and popularity was less strong in Grade 7. From all aspects of classroom social relations, well-being correlated the strongest with relationship with the teacher in both grades. Acceptance and popularity were significantly and positively related in both grades. Acceptance correlated positively, but popularity correlated negatively, with relationship with the teacher in both grades. These correlations were small for acceptance; and the correlation for popularity in Grade 7, but not in Grade 6, reached significance.

Regression analyses. Two hierarchical regressions were run for each grade, one focusing on the contrast between hearing and deaf mainstream children (contrasting hearing status), and one focusing on the contrast between deaf children in mainstream education and deaf children in special education schools (contrasting educational setting). In all four regressions, well-being in school was the dependent variable. Step 1 of each regression included the group contrast and gender. Step 2 included the main effects of acceptance, popularity, and relationship with the teacher. Step 3 examined whether group and gender moderated the effects of acceptance, popularity, and relationship with teacher by including the six interactions of group and gender with acceptance, popularity, and relationship with the teacher. Variables that were not already centered were centered prior to the computation of interaction terms and the analyses. Tables 3 and 4 present the results for these hierarchical regression analyses.

Predicting Grade 6 well-being moderated by hearing status. The overall model for the prediction of well-being was significant: \( F(11, 686) = 33.61, p < .001, \) and \( R^2 = .35. \) In Step 1, the group predicted well-being: \( \beta = -.11, p < .01; \) but gender did not. Deaf mainstream children scored lower on well-being in school than hearing classmates. In Step 2, acceptance, popularity, and relationship with the teacher predicted well-being (\( \beta = .19, .17, \) and .49, respectively, all \( p < .001). No interaction effects were found.

Predicting Grade 6 well-being moderated by educational setting. The overall model explained 32\% (adjusted \( R^2 = .19) \) of the variance in well-being: \( F(11,
54) = 2.40, p < .05. In Step 2, relationship with the teacher predicted well-being: β = .38, p < .01. No other main or interaction effects emerged.

Predicting Grade 7 well-being moderated by hearing status. The overall model was significant: F(11, 737) = 40.18, p < .001, and R² = .38. Both group and gender predicted well-being in Step 1: β = −.07, p = .05; and β = .10, p < .01, respectively. Deaf children scored lower on well-being in school than hearing children, and mainstream boys in general scored lower than mainstream girls. In Step 2, acceptance, popularity, and relationship with the teacher each predicted well-being (β = .18, .16, and .52, respectively; all p < .001). Finally, three interaction effects emerged in Step 3. Group moderated the association of both acceptance and relationship with the teacher with well-being. Post hoc probing revealed that acceptance positively predicted well-being for mainstream deaf children in Grade 7 (b = .46, p < .01), but not for hearing children (b = .04, p = ns). In contrast, relationship with the teacher positively predicted well-being for hearing mainstream children (b = .54, p < .001), but not for mainstreamed deaf children (b = .08, p = ns). Finally, gender moderated the association of acceptance with well-being in Grade 7. Acceptance positively predicted well-being in Grade 7 for girls (b = .30, p < .001), but not for boys (b = .04, p = ns).

Predicting Grade 7 well-being moderated by educational setting. The model explained 52% of the variance in well-being: F(11, 52) = 5.08, p < .001, with an adjusted R² of .42. In Step 2, acceptance and relationship with teacher predicted well-being (β = .34, p < .05; and β = .34, p < .01, respectively). In Step 3, group moderated the association of relationship with the teacher with well-being. Post hoc probing revealed that the relationship with the teacher positively predicted well-being for deaf children in special education schools (b = 1.64, p < .001), but not for mainstreamed deaf children (b = .39, p = ns).

Conclusion
For deaf children, the relationship with the teacher is the sole predictor of well-being in Grade 6, regardless of educational setting. However, when deaf children are placed in mainstream education, with generally more classmates,
peer relations become important as well. In mainstream Grade 6, regardless of hearing status, acceptance and popularity predicted well-being in school, but the relationship with the teacher was the strongest predictor. In addition, to start with, deaf mainstream children experienced lower well-being than hearing peers.

After the transition to junior high school, deaf mainstream children still had lower levels of well-being than hearing classmates, and mainstream boys had lower levels than girls. An interesting pattern occurs regarding the importance of the relationship with the teacher for children’s well-being in school. For deaf children, regardless of educational setting, higher levels of acceptance are associated with higher levels of well-being in school. Interestingly, although the relationship with the teacher predicted well-being for deaf children in special education schools, it did not predict well-being for deaf mainstreamed children. For deaf mainstreamed children, peer relations (i.e., acceptance and popularity) predicted well-being, where acceptance was more important for girls than boys. For hearing mainstream children, both popularity and relationship with the teacher predicted well-being in Grade 7, and acceptance was important for hearing girls as well.

Thus, for deaf children in mainstream education, acceptance, popularity, and relationship with the teacher were predictors of well-being in Grade 6; and acceptance and popularity were predictors of well-being in Grade 7. For deaf children in special education schools, the relationship with the teacher predicted well-being in Grade 6, and both acceptance and relationship with the teacher were predictors of well-being in Grade 7. The next question is whether there are differences in well-being in school and its predictors (acceptance, popularity, and relationship with the teacher) before and after school transition as a function of time (Grade 6 to Grade 7), hearing status (deaf or hearing), educational setting (mainstream or special), and gender. The independent variables in Study 1 (acceptance, popularity, and relationship with the teacher) thus became dependent variables. Possible differences in these variables over time, in the course of school transition, due to hearing status or educational setting are of relevance in explaining differences in well-being. This was examined in Study 2.

**Study 2**

**Method**

**Sample.** A subgroup of the students participating in Study 1 was studied longitudinally. Participants comprised 39 hearing and 59 deaf children (Table 5)

<table>
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<th></th>
<th>HM</th>
<th>DM</th>
<th>DS</th>
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<td>.49/.49</td>
<td>.71/.69</td>
<td>.59/.58</td>
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<td>14</td>
<td>45</td>
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<td>17</td>
<td>14</td>
<td>53</td>
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<td>—</td>
<td>39</td>
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<tr>
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<td>34</td>
</tr>
<tr>
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<tr>
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<td></td>
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<tr>
<td>CI</td>
<td>—</td>
<td>7</td>
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<td>Hearing aid</td>
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<td>—</td>
<td>0</td>
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<tr>
<td>Induction loop</td>
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</tr>
<tr>
<td>Total</td>
<td>39</td>
<td>31</td>
<td>28</td>
<td>98</td>
</tr>
</tbody>
</table>


*Hard of hearing: 25–80 dB hearing loss in the better unaided ear, deaf: >80 dB hearing loss in the better unaided ear.

*Two children with two CIs, one child with Baha, one child with both CI and hearing aid.

*Eight mainstream deaf children with additional induction loop system.
who participated in both Grades 6 and 7. Six deaf children were transferred from special education schools in Grade 6 to mainstream education schools in Grade 7, and one deaf child was transferred from mainstream to special education school; data from these children were discarded from the analyses, as well as data on four children with ASD, resulting in 98 out of 109 original participants. The relatively small number of participants in the longitudinal study, compared to the cross-sectional data, is due to the Dutch school system: Grade 6 is the final class in primary education, and Grade 7 is the first class in secondary education. When graduating from Grade 6, children are transferred to different schools, according to their intellectual and emotional abilities. Grade 6 represents a classroom with familiar classmates, whereas in Grade 7, the majority, if not all, of the classmates are unfamiliar peers at the beginning of the school year due to the school-transition system in The Netherlands.

Procedure and instruments. Study 2 contains data from a subsample of participants in Study 1. The procedure and instruments (nomination and rating questionnaires) were the same as in Study 1.

Results

A repeated-measures ANOVA was conducted on early adolescent peer (acceptance, popularity) and teacher relations, and well-being in the classroom, with time as a within-participants factor (Grades 6 and 7) and hearing status (deaf or hearing) and gender as between-participants factors. The same analysis was repeated with educational setting, and not hearing status, as a between-participants factor. Levene’s test for homogeneity of variance was significant for relationship with the teacher in Grade 6 and well-being in Grade 7. For relationship with the teacher, mainstream boys showed more variance than mainstream girls and children in special education schools. For well-being, hearing mainstream girls showed less variance than other children in the study. In a repeated-measures analysis, the Levene test was not available; but because separate cross-sectional effects on these two variables were significant in either assuming or not assuming equal variances, standard repeated-measures analyses are reported.

Time, hearing status, and gender. Figure 1 illustrates the mean values of the main study variables (well-being, acceptance, popularity, and relationship with the teacher) as a function of time by hearing status and by gender. There was a main effect of time on acceptance: $F(1,66) = 5.05, p < .05, \eta^2 = .07$; popularity: $F(1,66) = 5.98, p < .05, \eta^2 = .08$; and relationship with the teacher: $F(1,66) = 9.35, p < .01, \eta^2 = .13$. In mainstream education, both acceptance and popularity decreased from Grade 6 to Grade 7, but the relationship with the teacher improved. A main effect of hearing status appeared on popularity: $F(1,66) = 6.99, p < .05, \eta^2 = .10$; and a marginally main effect of hearing status was found on acceptance: $F(1,66) = 3.32, p < .10, \eta^2 = .05$. Deaf mainstreamed children were less popular and somewhat less accepted than hearing classmates. Two main effects of gender appeared. Mainstream boys were less accepted than mainstream girls: $F(1,66) = 5.69, p < .05, \eta^2 = .08$; and they experienced a less positive relationship with the teacher than girls: $F(1,62) = 13.77, p < .001, \eta^2 = .18$. No other main effects emerged.

There was a significant two-way time-by-gender interaction on relationship with the teacher: $F(1,62) = 5.70, p < .05, \eta^2 = .08$. Post hoc analysis revealed that mainstream girls’ relationship with the teacher remained stable from Grade 6 to Grade 7: $F(1,62) < 1$, whereas boys’ relationship increased: $F(1,62) = 13.25, p < .01, \eta^2 = .18$. A marginal two-way hearing status-by-gender interaction on well-being emerged: $F(1,62) = 3.55, p = .06, \eta^2 = .05$; and a significant three-way time-by-hearing status-by-gender interaction was observed: $F(1,62) = 4.94, p < .05, \eta^2 = .07$. Post hoc comparisons showed that there was a significant time-by-gender effect for deaf mainstream children: $F(1,62) = 7.18, p < .01, \eta^2 = .10$; but not for hearing mainstream children: $F(1,62) < 1$. Deaf mainstream boys’ well-being in school increased from Grade 6 to Grade 7: $F(1,62) = 4.11, p < .05, \eta^2 = .06$, whereas deaf girls’ well-being somewhat decreased: $F(1,62) = 3.08, p = .08, \eta^2 = .05$. As a result, hearing classmates tended to experience more well-being than deaf classmates in Grade 6: $F(1,62) = 3.63, p = .07, \eta^2 = .05$;
but not in Grade 7: $F(1,62) < 1$, although deaf boys experienced higher well-being than deaf girls: $F(1,62) = 4.13, p < .05, \eta^2_p = .06$.

Finally, a marginal three-way interaction emerged on acceptance: $F(1,66) = 2.22, p = .07, \eta^2_p = .05$. Post hoc comparisons revealed a significant time-by-gender effect for deaf mainstream children: $F(1,66) = 3.99, p < .05, \eta^2_p = .06$; but not for hearing children: $F(1,66) < 1$. Deaf mainstream boys’ acceptance remained stable from Grade 6 to Grade 7: $F(1,66) < 1$, whereas deaf girls’ acceptance significantly decreased: $F(1,66) = 8.20, p < .01, \eta^2_p = .11$. Considering the importance of same-gender relationships in early adolescence, mainstream deaf girls’ acceptance was comparable to hearing girls’ in Grade 6: $F(1,66) < 1$; but it was significantly less in Grade 7: $F(1,66) = 8.30, p < .01, \eta^2_p = .10$. No other effects emerged.

Figure 2 presents the changes in well-being, acceptance, popularity, and relationship with the teacher by educational setting and gender. Only a main effect of time on relationship with the teacher emerged: $F(1,48) = 11.09, p < .01, \eta^2_p = .19$. The relationship with the teacher improved from Grade 6 to Grade 7. Two main effects of educational setting appeared. Deaf mainstream children were less popular than deaf peers in special education schools: $F(1,55) = 8.21, p < .01, \eta^2_p = .13$; and they experienced a better relationship with the teacher: $F(1,48) = 8.61, p < .01, \eta^2_p = .15$. No other main effects were found.

On acceptance, there was a significant time-by-gender interaction: $F(1,55) = 5.48, p < .01, \eta^2_p = .17$. Post hoc analyses revealed that acceptance was stable from Grade 6 to Grade 7 for deaf boys: $F(1,55) = 2.20,$
\( p = \text{ns}; \) but decreased for deaf girls: \( F(1,55) = 7.70, p < .01, \eta^2_p = .12. \) Although deaf boys were less accepted than deaf girls in Grade 6 \( F(1,55) = 5.49, p < .05, \eta^2_p = .09), \) they were not so in Grade 7 \( F(1,55) = 1.63, p = \text{ns}. \) Finally, there was a significant three-way interaction for well-being: \( F(1,48) = 8.62, p < .01, \eta^2_p = .17. \) Post hoc contrasts showed a significant time-by-gender effect for deaf mainstream children \( F(1,48) = 7.18, p < .01, \eta^2_p = .13), \) and a marginal time-by-gender effect for deaf peers in special education schools \( F(1,48) = 3.33, p = .07, \eta^2_p = .07. \) Deaf mainstream boys’ well-being in school increased from Grade 6 to Grade 7 \( F(1,48) = 4.11, p < .05, \eta^2_p = .08), \) whereas deaf mainstream girls’ well-being somewhat decreased \( F(1,48) = 3.08, p = .09, \eta^2_p = .06. \) For deaf children in special education schools, the change in well-being was in opposite directions, positive for girls and negative for boys, but not significant for either gender: \( F(1,48) = 2.29 \) for girls; and \( F(1,48) = 1.11 \) for boys, both \( p > .05. \)

**Conclusion**

Well-being in school was stable during the transition for hearing mainstream children, but not for deaf children, whether in mainstream or in special education schools. Deaf mainstream children tended to experience less well-being in Grade 6 compared to hearing classmates, but equal levels in Grade 7. Gender played an important role here. Deaf mainstream boys’ well-being in school increased from Grade 6 to Grade 7, whereas deaf mainstream girls’ well-being decreased to some extent, resulting in deaf boys experiencing...
better well-being in school than deaf girls in Grade 7. For deaf children in special education schools, the change in well-being was in opposite directions, positive for girls and negative for boys, but not significant for either gender. In both grades, in general, equal levels of well-being were found for deaf mainstream children compared to deaf children in special education schools.

In the context of peer relations, mainstream boys were less accepted than mainstream girls, and deaf children in mainstream education were somewhat less accepted than hearing classmates. Regardless of hearing status and gender, there was a decrease in acceptance during school transition in mainstream education. Interestingly, this could be ascribed to a strong decrease in deaf mainstream girls’ acceptance, because deaf mainstream boys’ acceptance remained stable from Grade 6 to Grade 7. Overall, for deaf children, regardless of educational setting, boys’ acceptance remained stable, but girls’ acceptance decreased. The strong decrease in acceptance of deaf mainstream girls is of importance in light of the role of same-gender relationships in early adolescence; mainstream deaf girls’ acceptance was comparable to hearing female classmates’ in Grade 6 but was significantly less in Grade 7.

With reference to popularity, in mainstream education, there was a general decrease from Grade 6 to Grade 7. In both grades, deaf mainstreamed children were less popular than hearing classmates and deaf peers in special education schools.

There was an increase in the relationship with the teacher from Grade 6 to Grade 7 for all children, regardless of hearing status and educational setting. In mainstream education, this was mainly due to an improvement in teacher support for boys, though mainstream boys experienced a less positive relationship with the teacher than girls. Concerning the teacher–student relationship for deaf peers in special education schools, despite the improvement, they still experienced a less positive relationship with the teacher than deaf peers in mainstream education.

Discussion

The present research focused on well-being in deaf early adolescents before (Grade 6) and after (Grade 7) the school transition from elementary to junior high school in The Netherlands. Study 1 aimed to predict deaf early adolescents’ well-being in school from classroom peer relationships (acceptance and popularity) and the teacher relationship, and how these predictions were qualified by gender and educational setting, in a sample of 759 Grade 6 (672 hearing, 87 deaf) and 840 Grade 7 (736 hearing, 104 deaf) early adolescents. This study identified the social predictors of well-being in school. Study 2 examined differences in school well-being and its predictors as a function of time (school transition from Grade 6 to Grade 7), hearing status (deaf or hearing), educational setting (mainstream or special), and gender, in a subsample of the participants in Study 1 (39 hearing and 59 deaf children).

In mainstream education, the relationship with the teacher was the strongest predictor of well-being in school for hearing children in both grades, which is in line with the results of Natvig and colleagues (2003). Interestingly, the relationship with the teacher was the strongest predictor of well-being in school for deaf mainstream children in Grade 6 as well, but was not important in Grade 7. Peer acceptance and popularity predicted well-being in school, regardless of hearing status, in Grade 6. In Grade 7, popularity decreased but remained important for all mainstream children. Acceptance decreased somewhat in importance for hearing girls and lost importance for hearing boys. However, it remained important for deaf girls, and also, but to a lesser extent, for deaf boys.

For deaf children in special education schools, a more positive relationship with the teacher increased well-being in school in both Grades 6 and 7. Before school transition, in a familiar school context (Grade 6), peer relations in the classroom did not predict well-being. Considering the smaller class size, it is very likely that friendships with peers outside the classroom, but within the school, are of greater importance. When new classmates came into play in Grade 7, however, being accepted increased well-being in school, but not popularity. An explanation for this may be the relatively smaller class size in special education schools. School classes with few children are less likely to have favorites (Östberg, 2003).

Regarding well-being before the school transition (Grade 6), mainstreamed deaf children seem at risk for
lower levels of well-being in school than their hearing classmates. After the transition (Grade 7), when children encounter new classmates, deaf mainstream girls are at risk for decreases in well-being, but not boys, whose well-being increased. In contrast, in special education schools, the change in well-being was in opposite directions, positive for girls and negative for boys. A gender-by-school transition effect has been found earlier in a hearing population (Hirsch & Rapkin, 1987). Of interest is which of the relevant predictors of well-being in school (i.e., peer and teacher relations) account for these contrasting changes in well-being before and after school transition.

The transition to junior high school marks the beginning of adolescence, with pubertal changes, the search for oneself, and an increase in the importance of dyadic peer relationships playing important roles in well-being (Bukowski et al., 1993; Reddy et al., 2003). Grade 6 is a well-known context with familiar classmates, but in Grade 7, the majority, if not all, of the classmates are unfamiliar peers at the beginning of the school year. Thus, new peer relations, which affect well-being, have to be formed and a place in the class hierarchy has to be conquered. This can be an extra challenge for deaf adolescents. In light of the significance of social relationships for well-being, it is important to appreciate that peer relationships at this age are mainly of the same-gender type. The relationship with the teacher can serve as a protective factor and positively affect well-being during school transition (Midgley & Edelin, 1998).

For deaf mainstream boys, the main determinant of well-being after school transition was popularity, followed by acceptance. Before the transition, the relationship with the teacher was most important, followed by popularity and acceptance. Popularity being important for boys aligns with competition being an important aspect of friendships between boys (Rose & Smith, 2009). Deaf mainstreamed boys were as equally accepted as hearing boys after the transition. For both, popularity decreased after school transition. The difference in popularity between deaf and hearing boys after school transition might be perceived as less apparent and sensitive due to the decrease in popularity for all children. Additionally, a classroom hierarchy as expressed by popularity among boys, based on striving for competition in boy–boy friendships, takes longer to settle than, for example, the acceptance hierarchy, because popularity expresses the vision of an entire group toward an individual and represents a reputation (e.g., Cillessen & Marks, 2011). These factors seem to contribute to the increase in well-being in school for deaf boys.

For deaf mainstream girls, well-being after the transition to junior high was predicted by peer acceptance and popularity, whereas the relationship with the teacher lost significance. All early adolescents face challenges in a new school context. Girls, however, generally experience more challenges than boys and have been found to be especially at risk for a decrease in well-being compared to boys (Nolen-Hoeksema & Larson, 1992, in Nolen-Hoeksema & Girgus, 1994). The gender-typical feature of relationships between girls is communication and social connectedness (Rose, Click, & Smith, 2011; Rose & Smith, 2009). A lack of social connectedness, however, is a high-risk factor for girls (Nolen-Hoeksema & Girgus, 1994). Although this risk is generally expected somewhat later in adolescence (Reddy et al., 2003), specifically deaf mainstream girls seem at higher risk for a decrease in well-being when entering adolescence. They experience communication difficulties and a communication barrier affecting interaction, and along with that, social connectedness, with female peers (Antia et al., 2011; Stinson & Kluwin, 2011; Wolters et al., 2011). The decrease in deaf mainstream girls’ well-being is associated with their strong decrease in peer acceptance, which is mainly determined by female classmates. A reasonable explanation for the decline in acceptance is that before transition, deaf mainstream girls’ communication skills may have become accepted by their classmates whom they knew for several years (Wolters et al., 2011). However, in a new classroom after a school transition, it takes longer for hearing adolescent girls to establish acceptance of girls with communication problems, either because the latter have difficulty in multitalker situations or because they have fewer communication skills (Wolters et al., 2011).

Regarding special education schools, the relationship with the teacher was a strong predictor of well-being in school. Of concern is that deaf adolescents are dissatisfied with this relationship. The latter is consist-
ent with our expectations and earlier studies on teacher relationships in deaf children (Knoors & Hermans, 2010) as well as children with disabilities, in general (Murray & Greenberg, 2001). Interestingly, a less positive relationship with the teacher in special education schools does not go hand in hand with lower levels of well-being in school than mainstream deaf peers. Here, the school context, by definition, is expected to positively affect well-being; relationships with deaf peers are essential for deaf children’s well-being (Musselman, Mootilal, & MacKay, 1996), and deaf peers in special education schools meet these deaf peers in school. Important to recognize is that deaf girls had the most to gain in the quality of the relationship with the teacher. Considering our data, for these girls, their strong improvement in their relationship with the teacher after transition was associated with the positive development of their well-being in school. For the deaf boys, however, our data seem inconclusive. The general increases in the perceived teacher–student relationship and acceptance levels were insufficient for them to report higher levels of well-being in Grade 7 than in Grade 6. Additional studies are necessary here.

Implications

This study showed the importance of three issues when considering deaf early adolescents’ well-being during school transition. The first main clinical implication is that well-being in school was stable during school transition for hearing mainstream children, but not for deaf children. Deaf mainstream boys’ well-being in school increased, whereas deaf mainstream girls’ decreased to some extent. For deaf children in special education schools, the change in well-being was in opposite directions, positive for girls and negative for boys. Second, it is important to realize that acceptance, popularity, and the relationship with the teacher have a dissimilar importance for early adolescents’ well-being in mainstream versus special education schools. In addition, an earlier study pointed to different behavioral antecedents of acceptance and popularity for deaf peers in elementary mainstream versus special education schools (Wolters et al., 2011). Both the behavioral antecedents and implications of acceptance and popularity point toward a different meaning of peer status among a relative small group of peers with disabilities or a larger group of hearing peers. Small groups are less likely to have favorites and cliques (Östberg, 2003) and there is less chance to form friendships, simply because there are fewer children available. Moreover, the teacher relationship is likely to play a different role and might affect the group hierarchy more than the situation in a large classroom; in a small setting, all interactions are likely to be noticed by all peers as well as the teacher, where the teacher–student relationship might be more personal in smaller, than in large, groups. Finally, gender is an important factor when considering well-being in school and its predictors.

For deaf early adolescents in special education schools, the relationship with the teacher is important regardless of grade. The lower level of satisfaction with the teacher–student relationship in special education schools is a concern. Factors that positively contribute to the teacher–student relationship may be related to the organization of the school, the classroom, teacher beliefs and behaviors, or teachers’ skills for developing positive relations (Murray & Pianta, 2007).

For deaf mainstreamed early adolescents, even though the relationship with the teacher did not directly predict their well-being in Grade 7, teachers can help to promote a general positive attitude toward deaf classmates (Nunes et al., 2001), especially because both deaf and hearing children prefer to interact with same hearing-status peers (Antia et al., 2011; Kluwin et al., 2002; Stinson & Kluwin, 2011). In that way, teachers continue to play the role they did in Grade 6 as a buffer against stress. Hearing classmates’ negative attitude toward deaf peers is caused by unfamiliarity and a lack of meaningful contact between deaf and hearing peers (Brown & Foster, 1991; Hung & Paul, 2006; Stinson & Liu, 1999).

Same-gender peer relations are important for adolescents. Intervention programs for deaf early adolescents should include same-gender friendships. Factors that positively affect children’s acceptance and popularity have been studied in general (e.g., Jensen-Campbell et al., 2002; LaFontana & Gillessen, 2002; Narland, 2011), and specifically for deaf children (Wolters et al., 2011). The latter study points to the importance of developing gender-related communica-
tion and behavior-intervention strategies. However, future studies should investigate how these gender-related communication and behavioral skills can be trained effectively.

Limitations and Future Studies

This study had some limitations. First, we did not account for qualitative differences between deaf children, such as differences in oral skills and hearing loss. For example, better-developed spoken-language skills have been found to positively affect relationships with hearing peers because they ease communication with their hearing peers (Antia et al., 2010; Stinson, Whitmire, & Kluwin, 1996). In the same line of reasoning, differences as a function of degree of hearing loss might play a role. The question here is whether children with different degrees of hearing loss experience the same problems in school. For example, differences in well-being as a function of degree of hearing loss, where children with milder hearing losses scored lower on well-being (Wake et al., 2004a, 2004b) and self-confidence in mainstream schools (Keilman et al., 2007), compared with children with severe hearing loss, have been reported. Even deaf mainstream children with a mild hearing loss are thus at risk for poorer well-being (Keilman et al., 2007). A possible explanation is that hearing children and teachers might underestimate the significance of this hearing loss on daily events, because a mild hearing loss is not as noticeable as a severe hearing loss. This is of relevance because there is a new generation of deaf children with cochlear implants; the social problems of these children and children with a mild hearing loss have been underestimated by professionals (Moeller, 2007).

Second, the statistical analyses from Study 2 may possibly be affected by the relatively smaller sample size, being prone to a Type 2 error. In order to find a significant effect, group differences have to be large. Third, although we assessed well-being and social predictors during the final three months of the school year, the school-transition effects should be ascribed to forming new peer and teacher relations in an unfamiliar school setting. In order to examine true school transition effects and be able to draw causal conclusions, future studies should lengthen the longitudinal study by one year, into Grade 8. In Grade 8, peers will be familiar with each other after sharing classrooms in Grade 7, representing a situation similar to that before school transition (Grade 6).

Finally, one might argue that the peer nominations for acceptance and popularity being provided by different peer groups: hearing peers in mainstream education and a relatively small group of deaf peers and peers with SLI or ASD in special education schools, is a limitation. However, in this context, classmates really are the only true and reliable judges of status (Coie, Dodge, & Kupersmidt, 1990); regardless of who they are, they are the significant peer group.

In conclusion, the current study emphasizes the importance of peer and teacher relations in the classroom for early adolescents’ well-being. Notably, for hearing early adolescents, well-being was stable during school transition; but this was not the case for deaf early adolescents. School transition during adolescence challenges all children, but this study stresses the need for supervising deaf adolescents’ school transition, in which the role of gender and school setting should be acknowledged. A guiding role by (itinerant) teachers might be of importance here, which is supported by the finding that when extra attention is given to the teacher–student relationship, fewer adjustment problems occur during a school transition (Midgley & Edelin, 1998).

Note

1. Throughout the paper, deaf is meant to be deaf and hard of hearing.

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Conflicts of Interest

No conflicts of interest were reported.

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