Social Integration and Students' Perceptions of the Transition to Middle School

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Abstract

Aspects of students' social integration early in the middle school transition year were examined in relation to their perceptions of their overall transition experience at the end of 6th grade. Participants included 898 students (56.2% female, 29.2% minority) enrolled in 15 rural middle schools across the United States who were affiliated with a peer group. Perceptions of the transition and indicators of students' social integration were collected through survey and peer nomination procedures. Most students rated their transition positively. Results of the two-level hierarchical linear modeling analysis with cumulative proportional odds models indicated that students who were female, had greater school belonging, and were affiliated with a central peer group were more likely to view the transition favorably after controlling for fifth grade risk of adjustment difficulties. Examination of an interaction effect indicated that White male students were the most likely to perceive an easy transition. Implications for future study are discussed.

Keywords: middle school transition, early adolescence, peer affiliations, belonging

1. Introduction

For several decades, researchers have established that school transitions are difficult for early adolescents (Anderman & Mueller, 2010; Eccles et al., 1993). Contemporary research, focused primarily on students' transition at the sixth grade into middle schools configured as grades 6-8, continues to document adjustment difficulties for students in the transition year. For instance, concomitant with the middle school transition, sixth-graders experienced declines to academic achievement (Stanley, Comello, Edwards, & Marquart, 2008), to sense of school belonging (Hamm & Faircloth, 2005; Witherspoon & Ennett, 2011), and increased problems with peers (Karriker-Jaffe, Foshee, Ennett, & Suchindran, 2011) and school misbehaviors (Witherspoon & Ennett, 2011).

Although these findings point to adjustment difficulties for many students, less attention has been granted to the extent to which students themselves perceive the middle school transition year to be difficult. Findings from a handful of past studies reported that students perceived the middle school transition year to be challenging (Akos, 2002; Akos & Galassi, 2004; Elias et al., 1992). Results of a recent study indicated that significant proportions of students rated the middle school transition year as somewhat or very difficult at both the fall and spring of the sixth grade (Hamm, Dadisman, Day, Agger, & Farmer, 2013). Moreover, there was suggestion in these studies that social relationships weigh prominently in students' appraisal of the middle school transition year. In one study, students' perceptions of difficulties with peer relationships were inversely related to a positive evaluation of their middle school experience (Elias et al., 1992). Even more specifically, in a survey of sixth-graders during their middle school transition year, students described how spending time with friends, finding ways to "fit in", and ignoring adversarial or aggressive peers made the transition easier (Akos & Galassi, 2004). Students who were successfully navigating the middle school transition, as evidenced by passing grades, good behavior, and good attendance early in the transition, reflected that establishing peer relationships was one of the more challenging aspects of the middle school transition (Akos, 2002).

In the present study, we expand on these findings to investigate, systematically, the extent to which multiple aspects of social integration early in the transition are associated with students' perceptions of the difficulty of the middle school transition. Social integration is the process of becoming embedded into the school's social context by creating relationships with peers and teachers and establishing position, or social status, with classmates (Rodkin & Ryan, 2012). We specifically focus on students who are affiliated with a peer group early in the transition year in order to assess how other aspects of students' social integration, like status, impact transition experiences beyond that of simply forming peer relationships. We first summarize some of the challenges that the middle school transition introduces for peer relationships, then draw on the construct of relatedness from Self-Determination theory (Ryan & Deci, 2000) to conceptualize how sixth-grade students' sense of school belonging, their experience of peer acceptance, and their involvement within the peer group system are associated with their perceptions of the middle school transition year. Understanding how peer relationships affect students' perceptions of the transition can help researchers and practitioners identify factors and develop programs that can help to make a traditionally difficult educational period easier for students.

1.1 Disruption of Relationships during the Transition

For rising middle school students, the transition represents more than simply a change in location, or to academic and procedural expectations. The transition also challenges students' social relationships (Eccles & Midgley, 1989). Social relationships, especially with peers, are particularly salient for early adolescents and strongly contribute to their development and maintenance of positive well-being (Rodkin & Ryan, 2012). However, the middle school transition threatens students' relationships with peers and, subsequently, their overall adjustment.

During the middle school transition, students often move from smaller, more intimate elementary schools to a larger middle school with many unfamiliar peers, which disrupts their established peer relationships from elementary school (Juvonen, 2007). Moreover, in the presence of an increased number of unfamiliar peers, students' social status and acceptance can be disrupted (Davidson, Gest, & Welsh, 2010; Hardy, Bukowski, & Sippola, 2002). Thus, students must renegotiate their peer relationships as well as their social status within the peer network early in the middle school transition. However, as many middle schools operate under a revolving classroom structure in which different teachers and classmates are experienced during each period of the school day; it may be more challenging for students to establish stable, close relationships (Hardy et al., 2002). As a result of the disruptions to students' relationships and challenges present in constructing new social ties, students may feel isolated (Akos & Galassi, 2004); students who do not establish connections to others early in the transition year may be at risk for adjustment difficulties throughout the sixth grade year and beyond (Juvonen, 2007; Niehaus, Rudasill, & Rakes 2012; Wentzel, Barry, & Caldwell, 2004). Thus, students who can construct positive relationships early in the transition year will likely cultivate feelings of *relatedness* to school, and perceive an easier and more favorable transition experience.

1.2 The Role of Relatedness in Students' Perceived Transition Experiences

As a dimension of Self Determination Theory, relatedness reflects individuals' experiences of supportive, stable, and satisfying relationships with others (Deci, Vallerand, Pelletier, & Ryan, 1991; Ryan & Deci, 2000). When students feel supported by and connected to others, they were more likely to feel positively toward school, which facilitates their engagement in academic tasks and activities (Juvonen, 2007; Niehaus et al., 2012). Middle schools are multifaceted social settings that present diverse opportunities for students to experience social connectedness. Students develop a sense of belonging, which reflects their general feelings of being valued, accepted, safe, and connected to others within the school community (Goodenow & Grady, 1993; Osterman, 2000). While sense of school belonging is the affective tie that students maintain to their schools on the whole, students also have relational experiences that connect them socially to the school, including acceptance from peers and integration into the peer group system of the sixth grade.

1.2.1 Sense of School Belonging

Students who report a more positive sense of school belonging tend to experience more favorable school adjustment (Juvonen, 2006). Results of numerous studies indicate that a more favorable sense of school belonging was associated with greater achievement, task valuing, and positive classroom goal orientations (Anderman, 2003; Davidson et al., 2010; Roeser, Midgley, & Urdan, 1996). In other research, greater bonding to school has been associated with increased social and emotional functioning (Murray & Greenberg, 2001), while a decreased sense of connection to school has been associated with greater behavioral difficulty (Chapman, Buckley, Sheehan, Shochet, & Romaniuk, 2011; Loukas, Ripperger-Suhler, & Horton, 2009; Loukas, Suzuki, & Horton, 2006). Conceptually, it is assumed that these associations occur because a sense of school belonging

promotes a feeling of relatedness in students, including an impression that they "fit in" in their school (Goodenow & Grady, 1993; Niehaus et al., 2012). That is, students who feel a sense of belonging perceive a sense of security, support, and an importance to others within the school, which encourages greater participation and engagement and a more positive attitude toward school (Goodenow & Grady, 1993; Hamm & Faircloth, 2005).

1.2.2 Peer Acceptance

Peer acceptance describes the level of likeability of students by their peers and signifies positive reception by classmates (Cillessen & Rose, 2005; Coie, Dodge, & Coppotelli, 1982). Students who were less accepted by peers may have fewer opportunities to interact positively with other classmates, which may contribute to feelings of alienation and disassociation from middle school (Wentzel, 2003). On the other hand, students who were accepted by peers were more likely to be recognized by their peers (Cillesen & Rose, 2005; Wentzel, 2003) and were more likely to experience higher quality friendships (Rubin, Bukowski, & Parker, 2006). Being accepted by peers may allow for increased psychological support that encourages students to engage more readily in school (Kingery, Erdley, & Marshall, 2011). Subsequently, students who are accepted may be more likely to experience greater camaraderie with their classmates, which may contribute to positive feelings of relatedness and the perception of a more favorable school transition.

At the middle school transition, however, peer acceptance may become disrupted as all students renegotiate their social status within a sixth grade that represents students from multiple elementary schools (Hardy et al., 2002). Research findings indicate that peer acceptance can be unstable during middle school (Cillessen & Mayeux, 2004), particularly during the transition year (Hardy et al., 2002). Experiencing acceptance from peers early in the transition increases the likelihood that students will feel that they are known by and have a place among their new classmates.

1.2.3 Peer Group Affiliations

Peer groups are self-selected collectives of students who often share similar values, behaviors, beliefs, and interests (Cairns, Xie, & Leung, 1998; Rodkin & Ahn, 2009). Members of peer groups also spend time together and share activities (Gest, Davidson, Rulison, Moody, & Welsh, 2007). The combination of shared characteristics and time together contributes to a sense of companionship and connectedness among members (Kindermann, 1993). New peer groups were established during the middle school transition, as students' elementary peer groups were disrupted and they come in contact with unfamiliar peers (Hardy et al., 2002). Students who affiliate with a peer group early in sixth grade may experience feelings of companionship that help to ease the difficulty of the middle school transition.

However, affiliation with a peer group may not be enough to ensure a positive middle school experience. Peer groups are distinguished by their structural and normative features (Kindermann, 1996; Rubin et al., 2006), which have been associated with differential adjustment outcomes for middle school students following the transition. Structural features of peer groups reflect the patterns of relational ties between peer group members while normative features describe the characteristic beliefs or values of a group (Gest, Osborne, Feinberg, Bierman, & Moody, 2011). The ways in which peer group affiliation related to students' adjustment likely depends on structural and normative characteristics of the peer group that students experience early in the transition year.

1.2.3.1 Structural Characteristics of Peer Groups

Peer groups are defined structurally by the status of their group within the broader system of peer groups. Peer groups that were *central* were more prominent and held higher status than other groups (Ellis & Zarbatany, 2007; Gest et al., 2007; Wilson, Karimpour, & Rodkin, 2011). Similarly, individual students who were more recognized by peers as being a member of a peer group were considered to be *central* and held higher status among their peers (Wilson et al., 2011). Individual centrality and membership in a peer group with centrality may provide students with recognition and social power with peers that promotes a greater sense of integration and connectedness within the peer context.

Within a given peer group, members may differ in their level of centrality, which results in an imbalance of status among peer group members (Gest et al., 2007; Wilson et al., 2011). Groups with a high imbalance in status between members were considered to be *hierarchical* while groups with members of similar status were *egalitarian*. The presence or lack of hierarchy in peer groups can affect individual peer group members' social experiences in middle school. Members of hierarchical groups tended to be more aggressive, particularly

members who were particularly prominent (Pellegrini & Bartini, 2000). Students in egalitarian groups, on the other hand, tended to experience more positive student outcomes including increased academic achievement (Wilson et al., 2011) and greater endorsement of academic effort and achievement (Hamm, Lambert, Agger, & Farmer, 2013). Therefore, egalitarian peer groups may offer students more supportive experiences with peers and greater potential for academic success in middle school and, thus, may promote more positive feelings of relatedness.

1.2.3.2 Normative Characteristics of Peer Groups

Peer groups are also defined by their norms. Injunctive norms reflect peer group members' perceptions of the accepted and expected behaviors and values endorsed by the peer group (Hamm, Schmid, Farmer, & Locke, 2011). Hamm, Schmid and colleagues (2011) found that sixth-graders in peer groups with injunctive norms that endorsed academic effort and achievement early in the school year experienced more favorable academic adjustment and increased school valuing at the end of the school year. Thus, students in peer groups that favor effort and achievement may feel supported and encouraged by their peers to engage fully with the schooling process from the beginning of the transition, which may promote more favorable perception of the middle school transition.

1.3 The Current Study

Perceptions of transition experiences are an important aspect of students' adjustment to middle school (Elias et al., 1992). Drawing on the construct of relatedness (Deci et al., 1991; Ryan & Deci, 2000), we proposed that aspects of students' social integration in early in the sixth-grade may set the tone for more favorable perceptions of the transition at the end of the transition year. We predicted that students who experienced a more favorable sense of school belonging, greater peer acceptance, and centrality within the peer group system early in the school year, would perceive a more favorable middle school transition at the end of sixth grade. We also predicted that early affiliation with a central peer group, an egalitarian peer group, and a peer group characterized by more favorable norms for effort and achievement would promote more favorable evaluations of the middle school transition at the end of the school year. In examining these relationships, we considered the possibility that students' previous adjustment patterns could differentiate their perceptions of their middle school transition experiences; thus, we controlled for students' academic, behavioral, and social adjustment at the end of 5th grade, as rated by teachers.

Finally, we accounted for the possibility that our hypothesized relationships differed by students' gender and ethnic minority status. Past studies have presented mixed findings regarding the extent to which there were gender differences in students' relational experiences during the middle school transition. Niehaus et al. (2012) found that compared to boys, girls had increased feelings of connection to school upon entering sixth grade; however, Davidson et al. (2010) found no gender differences in students' connection to school at the transition. Research on peer relationships at the transition suggests that girls showed greater instability in their peer affiliations as compared to boys (Hardy et al., 2002), but boys and girls have not been found to differ in peer acceptance at the middle school transition (Hardy et al., 2002; Kingery et al., 2011). Gender differences have not been found in the structural and normative features of boys' and girls' peer groups following the transition to middle school (Ellis & Zarbatany, 2007; Hamm, Schmid et al., 2011; Wilson et al., 2011).

Research on differences in adjustment and peer relational experiences by ethnic minority group status has been less prevalent; there was little evidence of ethnic group differences. Hamm & Faircloth (2005) found no differences in African American and White sixth-graders' sense of belonging in relation to students' peer contextual variables. Ryan (2001) also found no differences by ethnicity in relationships among students' motivation and achievement and their peer group affiliations. Other researchers have also reported a lack of difference between ethnic minority and White students in the relationship between structural and normative features of peer groups and their subsequent adjustment (Hamm, Schmid et al., 2011; Wilson et al., 2011). Given the potential for, and limited attention to group differences by gender and ethnicity, we examined differences in the relationship of these aspects of social integration to students' perceptions of their transition experience by both students' gender and ethnic minority status.

2. Methods

The current study was part of a larger study, Project X, designed to test the efficacy of a professional development program for promoting student adjustment in early adolescence. Project X included matched pairs of schools, in which one school in each pair was randomly assigned to receive the professional development

program and the other was assigned as a control school. In the larger study, participating schools represented both k-8/k-12 and 6-8 (middle school) grade configurations (see Authors, 2013, for more information about the larger intervention study). The present study includes data from 15 intervention and control schools that had a middle school grade configuration.

2.1 Schools

All schools were designated as rural according to urban-centric locale codes established by the National Center for Education Statistics (NCES). Schools included in the present study were located in 8 states in the Appalachian (n = 5 schools), Southwestern (n = 4 schools), Far Western (n = 3 schools), Southeastern (n = 1 schools), and Midwestern (n = 2 schools) regions of the United States. The average sixth grade included 102 students (SD = 70.83). Schools that served low-wealth rural communities were intentionally invited to participate; on average 51% (SD = 25.02%) of the students in the schools were eligible for free/reduced lunch. Additional details about the schools can be found in Authors, 2013.

2.2 Participants

As the study explored students' integration into peer groups, students were only included in the present study if they affiliated with a peer group early in the sixth grade transition year. Eleven percent of students from the original sample were identified through the procedures described below, as not being affiliated with a peer group. These students were eliminated from the sample, resulting in a final sample of 898 sixth graders (56.2% female). The majority of students were identified by school records as White (71%); 11% were African American/Black, 11% were Hispanic/Latino, and the remaining 7% were identified as another ethnic minority group or their ethnicity was unknown. Reflecting the ethnic composition of the communities in which schools were located, Hispanic/Latino students were concentrated in schools in the Southwest and African American/Black students were concentrated in schools in the Southeast. Because students from particular ethnic minority groups were not distributed across schools, African American/Black, Hispanic/Latino, and students from other ethnic minority groups were combined into a single category of "ethnic minority" students.

2.3 Procedures

Project staff visited 5th grade classrooms for the feeder elementary schools associated with each participating middle school, to explain the study to students and to distribute informed consent forms to be sent home to parents/guardians. Students returned their signed forms to their homeroom teacher, to be returned to project staff. Students with parental consent to participate also signed assent forms prior to participating in the study. Consent rates at the fall of sixth grade ranged from 66% to 100%, with an average consent rate of 80% (SD = 9.6) across the 15 schools.

Data were collected at three time points: spring of 5th grade, fall of 6th grade, and spring of 6th grade. At each time point, participating students were gathered in available spaces in their schools (i.e., cafeterias, libraries) during school hours to complete the survey. At each administration, trained staff members followed an established protocol to guide students through the survey items, answering questions as needed. Students were given a school supply for their participation upon completion of the survey at each time point. Classroom teachers completed a survey that included adjustment ratings of each participating student. Teachers were given financial compensation for their participation.

2.4 Measures

As the current study focuses on the middle school transition, data were taken from all three waves of the study to fully represent the transition year. Teacher ratings of students' pre-transition adjustment were taken from the spring of 5th grade; data regarding students' sense of belonging and peer relations were taken from the fall of 6th grade; and students' perceptions of their transition experience were taken from the spring of their 6th grade year.

2.4.1 Perception of the Transition to Middle School

Students were asked to reflect on their middle school transition experience by responding to the question, "How do you think the move from elementary school to middle school was for you?" Students answered on a four-point, Likert-type scale (1 = *Difficult*, 2 = *Somewhat Difficult*, 3 = *Somewhat Easy*, 4 = *Easy*).

2.4.2 Pre-Transition Adjustment

Fifth-grade teachers completed the 18-item Interpersonal Competence Scale – Teacher (ICS-T; Cairns, Leung, Buchanan, & Cairns, 1995). Teachers rated descriptors of students' social, behavioral, and academic adjustment on a seven-point, Likert-type scale with three anchors that ranged from *never/very good at* to *always/not very*

good at with a third, middle anchor, *sometimes* or *so-so*, depending on the item. Examples of items included, [child] "argues" (behavior), "is friendly" (social), or "is good at math" (academic). Students' scores were averaged to create a total score, $\alpha = .74$. This score was used to characterize students' potential risk for adjustment difficulties in the middle school transition. Students who scored a .5 standard deviation or more below the mean were classified as *at-risk* for transition year adjustment difficulties.

2.4.3 Sense of School Belonging

Hagborg's (1998) widely used Psychological Sense of School Membership-Brief (PSSM-B) was used to measure students' sense of belonging to their school. Students rated their agreement to 11 statements such as, "Other students like the way I am" and "I feel like a real part of my school" on a 5-point, Likert-type scale that ranged from 1 = *completely false* to 5 = *completely true*. Students' scores were averaged across items to create a total score; higher scores indicated a more positive sense of belonging. Cronbach's alpha for this scale was .85.

2.4.4 Peer Acceptance

Students were asked to nominate up to three classmates whom they "liked most" and up to three classmates whom they "liked least" within the sixth-grade. *Liked most* and *liked least* nomination scores were tallied for each participant and then standardized within each school. Peer acceptance scores were calculated then calculated as the difference between students' standardized *liked most* and *liked least* scores (Coie et al., 1982). Higher scores indicated greater peer acceptance among grade-mates within the school.

2.4.5 Demographic Variables

Students' gender and race/ethnicity were collected from school records. Gender was dummy-coded so that 1 = female. Ethnic minority status was coded so that 1 = ethnic minority students and 0 = White students.

2.4.6 Peer Group Memberships

Social Cognitive Mapping (SCM) procedures were used to identify peer groups within the sixth grade, as well as individual centrality, group centrality, and group hierarchy (Cairns, Gariépy, Kindermann, & Leung, 1996). In survey format, students were asked, "Are there some kids in your grade who hang around together a lot? Who are they?" (Cairns et al., 1995). "Yes" responses were prompted to recall, by memory, the names of the members for each group. The underlying principle of the SCM procedure is that students will be unlikely to remember each group perfectly but that by aggregating the recollections of the majority of students within the social system (i.e., grade level), the overall structure of peer groups that exist within the system can be constructed.

Social-cognitive mapping procedures were followed, as reported in Hamm, Schmid, et al. (2011). Validity of this measure has been established in past observational studies reporting that students are four times more likely to interact with members of their groups than those who were not members of their peer group (Cairns, Perrin, & Cairns, 1985). Completion of SCM procedures led to the identification of 277 peer groups across the 15 schools. Group size ranged from two to fourteen members, $M = 3.46$, $SD = 2.15$. Peer groups tended to be homogenous in terms of gender and ethnicity of members: 86% were composed of members of the same gender members and 86% of peer groups were composed of members of the same ethnic group.

Individual and group centrality scores were calculated from data collected as part of the SCM procedures (Cairns et al., 1996). First, for each student, nomination scores were calculated that indicated each student's individual nomination score, group nomination score, and as well network nominations score. Individual nomination scores represented the frequency with which each student was nominated into a group by peers, reflecting the total number of nominations each student received. Group nomination scores were calculated using the two students who received the most individual nominations within their group. The nominations for the two students were averaged; the mean number then represents the group nomination score. Network nomination scores were calculated as the mean of the group nomination scores from the two groups with the highest scores. The group nomination score divided by the network nomination score determines groups' network centrality, reflecting the placement of the group within the social system. Groups' network centrality scores were classified using predetermined cut scores and subsequently coded as nuclear (1) secondary (2) and peripheral (3) to reflect their network centrality status (Cairns et al., 1995). For the purposes of this study, *group network centrality* was recoded as central (1) or not (0) (Hamm, Lambert et al., 2013).

Individual social network centrality was determined for each student by dividing students' individual nominations by their group nomination score and then dividing this score by their group's network centrality as described in the previous paragraph (Cairns et al., 1995). Individual network centrality was also primarily coded

as nuclear (1), secondary (2), and peripheral (3) using predetermined cut scores, and was recoded as central (1) and not (0) in the present study (Hamm, Lambert et al., 2013). Finally, group hierarchy was determined by comparing group members' individual overall social network centrality scores. Groups were classified as having low hierarchy or egalitarian (1) groups if all members were of the same individual overall network centrality. Groups were classified as having medium hierarchy (2) if there were two levels of individual overall network centrality present within the group and high hierarchy (3) if at least three levels were present within a group (Wilson et al., 2011). For this study, network hierarchy was recoded as 1 (egalitarian) and 0 (hierarchical) (Hamm, Lambert et al., 2013).

2.4.7 Peer Group Norms for Effort and Achievement

Students completed an 11-item scale that assessed their perception of the acceptability of effort and achievement among their peers (α = .84) (Hamm, Schmid et al., 2011). Each item began with the prompt, "The kids I hang around with at school think it is good to…"; sample items included "volunteer to answer questions or work problems on the board" and "really like learning." Students rated their agreement with each statement on a 6-point, Likert type scale that ranged from 1 = *strongly disagree* to 6 = *strongly agree*. Scale items were averaged to create a single scale, with higher scores representing perceptions of more favorable norms for effort and achievement. Following the procedure from Hamm, Schmid et al. (2011), a norms score was calculated for each peer group using the average of group members' total scores for this scale. Subsequently, groups' collective acceptability for academic effort and achievement was able to be differentiated, with higher scores indicating greater acceptance by the group.

3. Plan of Analyses

The aim of this study was to analyze how specific types of peer connections upon entering middle school in the fall of sixth grade were associated with their perceptions of their transition experiences at the end of sixth grade, after accounting for students' previous schooling adjustment in fifth grade. Examination of the distribution of students' responses to the perceptions of middle school transition experience question indicated a non-normal distribution. This is a common occurrence with ordinal scales with a small number of scale points (O'Connell, 2010). A log-odds transformation of the dependent variable did not alter the distribution. Thus, we used a cumulative proportional odds model to estimate the relationships hypothesized in the study. A cumulative proportional odds model is an expansion of the logistic regression model for dichotomous data. A logistic model for dichotomous data produces the probability that the response of interest occurs or not. A cumulative proportional odds model divides the data by cut-points or thresholds that are proportional (Hedeker & Gibbons, 1994). Then, the descending cumulative proportional odds model, such as the models estimated in the present study, produces cumulative logits that can be exponentiated to provide the log-odds of falling into or higher than a category created by the thresholds for a one unit increase in an independent variable, holding other variables constant (O'Connell, 2006).

We estimated cumulative proportional odds models using SAS 9.3 software. Given the nested nature of the data (i.e., students in peer groups in schools), we first tested for between-school differences and intervention effects on students' perceptions of the middle school transition. A three-level model (students, in peer groups, in schools) was estimated that yielded no between-school differences in, and no intervention effects on students' perceptions of the middle school transition (results are available from the first author). Thus, two-level hierarchical generalized linear models (HGLM) (students in peer groups) were estimated in this study for parsimony.

Intra-class correlations were calculated to determine the extent to which there was significant variance in the dependent variable by peer group. The proportional nature of the distribution of transition perceptions was verified prior to estimating the models. Independent variables were entered into the model in blocks; model fit was compared for each progressive model. Order of entry of the independent variable blocks was: control variables (gender, minority status, adjustment risk), student-level variables (individual centrality, peer acceptance, and sense of belonging), and peer group-level variables (peer group centrality, hierarchy, and norms for effort and achievement). In a final model, we tested for interactions between the substantive independent variables and students' level of risk, gender, and minority status.

4. Results

4.1 Descriptive Statistics

Means and standard deviations for variables (see Table 1) as well as bivariate correlations were calculated.

Table 1. Means and standard deviations for all variables

Variable	M (SD)
Perception of Transition Adjustment – End of Sixth Grade	3.24 (.93)
Teacher Rated Risk for Adjustment Difficulties	.27 (.45)
Centrality (Individual)	2.40 (.71)
Acceptance (Individual)	.26 (1.5)
School Belonging (Individual)	3.76 (.76)
Centrality (Group)	.34 (.47)
Hierarchy (Group)	2.38 (.68)
Norms for Effort and Achievement (Group)	3.84 (.56)

Bivariate correlations between student-level variables were in the low to moderate range (See Table 2). The correlation between students' acceptance by peers and their teacher-rated level of risk was the strongest correlation within the student-level variables.

Table 2. Bivariate correlations among student-level variables

Measure	1	2	3	4	5
1. Risk	–				
2. Gender	.08*	–			
3. Minority Status	.00	.02	–		
4. Individual Centrality	-.04	-.11***	.01	–	
5. Individual Acceptance	-.33***	-.14***	-.04	.17***	–
6. School Belonging	-.19***	-.12***	-.04	.07*	.15***

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

Analysis of bivariate correlations between peer group variables indicated significant, but weak correlations between peer group centrality and hierarchy ($r = -.13$, $p < .0001$) and peer group centrality and norms for effort and achievement ($r = .11$, $p = .0003$). The correlation between peer group hierarchy and norms for effort and achievement was very small in magnitude and not significant ($r = -.05$, $p = .14$).

4.2 Perceptions of the Transition

The distribution of responses suggested that, at the end of sixth grade, most students viewed their transition experience as being a positive experience; 51.56% of students perceived their transition to be easy and 27.95% of students perceived their transition to be *somewhat easy*. Conversely, 13.9% of students rated their transition into middle school as *somewhat difficult* and 6.57% of students perceived their experience to be *difficult*. Thus, at the end of the transition year, over 80% of students reported that they thought that their transition into middle school had been s*omewhat easy* to *easy*. Consequently, students' reports indicated that the students perceived a favorable experience during a time that is often thought to be one of the most challenging educational periods (Barber & Olsen, 2004).

4.3 Students Social Integration and Subsequent Perceptions

Models were estimated as descending cumulative proportional odds models (Hedeker & Gibbons, 1994; O'Connell, 2006; Raudenbush & Bryk, 2002). The score test for the proportional odds assumption confirmed the assumption of proportional odds ($\chi^2_{20} = 0.54$). This indicated that covariates acted similarly within each threshold of the dependent variable (O'Connell, 2006). An intraclass correlation (ICC) of .14 was calculated from the unconditional, two-level model (students nested in peer groups), indicating that 14% of the proportion

of the variance in students' transition perceptions was between peer groups. This ICC was consistent with past research that has calculated between-peer group variance for educational outcomes (Ryan, 2001).

Model fit and between-model comparisons were examined after each variable block and interaction terms were estimated (See Table 3). Model fit statistics, including the Likelihood Ratio Test ($\chi^2_{10} < .001$) and the Wald test ($\chi^2_{10} < .001$) indicated good model fit for the final model. Lower AIC values signified that the full model was a better fit than all other models, while differences between the -2 log likelihood values indicated that there was not a significant difference in the final model and the model containing all variables except the significant interaction term. However, we retained the interaction term as other statistics indicated good fit for the final model containing the interaction term and the R^2 increased slightly in the final model.

Table 3. Fit values for models and between model comparisons

Model Fit Statistic	Control Model	Student-level Model	Peer Group-level Model	Full Model with Interaction Effect
-2 Log Likelihood (-2LL)	1779.28	1688.60	1672.13	1667.63
Likelihood Ratio Test (df)	12.46 (3)***	46.60(6)***	57.91(9)***	62.40(10)***
Wald Test (df)	12.79 (3)***	47.14 (6)***	57.32(9)***	62.04 (10)***
R^2	.02	.06	.07	.08
Nested Model Comparison Statistics				
Δ -2LL (vs previous model)	χ^2(2)=288.29***	χ^2(2)=90.68***	χ^2(2)=16.47***	χ^2(2)=4.5
AIC		1791.282	1706.593	1696.13

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

The final model produced an R^2 value of .08, indicating approximately eight percent of the variance in students' perceptions of their middle school transition was accounted for by the predictor variables. The final model returned an ICC of .03, indicating that much of the variance between groups was accounted for by the variables entered into the model. Analysis of the residuals did not indicate any issues with normality or heteroskedasticity for the final model.

Table 4 includes the parameter estimates for the final model as well as the odds-ratios. Higher levels of school belonging at the beginning of sixth grade were significantly related to the likelihood that students perceived an easier transition into middle school. Peer group-level centrality was also significantly related to the likelihood that students would rate themselves higher on the perceptions scale. In addition, students' gender and minority status interactively were associated with a decreased likelihood that students would perceive that they had an easier transition into middle school. Gender was also significant with the addition of the interaction variable for gender and minority status. No other significant interactions were found between independent variables and students' level of risk, gender, and minority status.

Table 4. Effects of social integration experiences on perceptions of the transition: Final model

	Coefficient	Standard Error	Odds Ratio
Intercept 4	-1.47*	0.61	0.23*
Intercept 3	-0.08	0.61	0.92
Intercept 2	1.30*	0.62	3.65
Student Level Variables			
Risk	-0.25	0.17	.78

Female	0.47**	0.17	1.59**
Minority	0.25	0.21	1.29
Centrality	0.12	0.15	1.13
Acceptance	0.04	0.05	1.04
Sense of Belonging	0.53***	0.09	1.71***
Group Level Variables			
Peer Group Centrality	0.48**	0.16	1.62**
Peer Group Hierarchy	-0.20	0.23	0.82
Peer Group Norms for Effort and Achievement	-0.21	0.13	.81
Interaction Effect			
Female*Minority	-0.69*	0.32	.50*

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

After taking the exponent of the coefficients, the results indicated that controlling for all other factors, a unit increase in students' sense of school belonging increased the likelihood that a student would move up a category on the perceptions item by a factor of 1.71 ($p = .0001$). A unit increase in students' peer group centrality increased the odds that a student would move up a category on the perceptions item by a factor of 1.62 ($p = .003$). In the presence of the significant interaction effect, being female was also associated with an increased likelihood of moving up a category on the perceptions item by a factor of 1.59 ($p = .006$). Odds ratios for independent variables that were not significant are in Table 4. To interpret the significant interaction effect of gender and minority status ($p = .03$), we organized students' responses on the perceptions of the transition item according to their gender and minority status (see Table 5).

Table 5. Results of analysis of the gender X minority effect on students' perceptions of the transition

Perception of Transition Experience	Gender	White	Minority	Ratio Difference
Difficult	Female	23 (2.5%)	10 (1.1%)	2.27x
	Male	17 (1.8%)	9 (1%)	1.89x
Somewhat Difficult	Female	53 (5.9%)	21 (2.3%)	2.52x
	Male	30 (3.3%)	21 (2.3%)	1.4x
Somewhat Easy	Female	109 (12.1%)	35 (3.9%)	3.11x
	Male	72 (8.0%)	35 (3.9%)	2.05x
Easy	Female	176 (19.6%)	78 (8.7%)	2.25x
	Male	156 (17.3%)	53 (5.9%)	2.94x

Description: Distribution of participants' ratings of their transition experiences, as well as ratio differences between ethnic groups by gender for each perception category.

The distribution of scores indicated that the interaction effect seemed to occur for students who rated their transition experiences as *easy*. As displayed in Table 5, for students who rated their experiences as *difficult*, *somewhat difficult*, or *somewhat easy*, the difference in the proportion of White females to minority females was greater than the proportion of white males to minority males. However, for students who perceived their

transition experience to be *easy*, there was a greater ratio of White to minority males than White to minority females; the opposite pattern was found in the lower categories on the perceptions scale.

5. Discussion

Students who experience *relatedness*, or experiences of supportive, stable, and satisfying relationships with others (Deci et al., 1991; Ryan & Deci, 2000), are more likely to feel positively towards school and engage in school-related activities (Davidson et al., 2010; Hardy et al., 2002; Juvonen, 2007). During the middle school transition, however, students' feelings of relatedness may be threatened, given that their existing peer relationships are disrupted and that they have to establish a sense of connectedness to their new school (Davidson et al., 2010; Hardy et al., 2002; Juvonen, 2007). Students who are able to successfully integrate into the social context of middle school early in the sixth grade transition year are more likely to experience a positive middle school transition (Elias et al., 1992).

In this study, we examined the relationship between students' perceptions of their transition experience and aspects of their social integration that were likely to reinforce a positive middle school transition experience, including sense of school belonging, peer acceptance, and structural and normative aspects of peer group affiliations. Results of the current study indicated that students varied in their perceptions of their transition experiences, and that aspects of their social connectedness at both individual and peer group levels supported more favorable perceptions of the transition.

5.1 Positive Perceptions of the Middle School Transition

The middle school transition has been, historically, a difficult period in students' education experience (Anderman & Mueller, 2010, Eccles et al., 1993). In the present study, the majority of students perceived their transition experiences to be positive. Following the introduction of strategies to promote middle school adjustment, such as middle school tours for fifth grade students, summer orientations, and models that groups 6th grade students into smaller team units within the grade level, research suggests that, overall, students seem to be having positive experiences (Midgley & Edelin, 1998). However, general trends in middle schools continue to show that students continue to experience decreases in academic achievement (Stanley et al., 2008), increases in behavioral difficulties (Witherspoon & Ennett, 2011), and increased feelings of isolation and alienation (Juvonen, 2007). Thus, although positive, the finding that most students had favorable perceptions of the transition in the current study suggests questions for future research, such as how students' transition perceptions relate to other measures of their overall middle school adjustment.

In addition, although perceptions overall tended to be positive, not all students viewed the transition favorably. Students' perceptions were differentiated by their gender and ethnicity, such that girls were more likely to view their transition experiences as more positive than boys, and minority males were the least likely to perceive an easy transition. These students' subjective acknowledgment of difficult with the middle school transition reinforces and extends long-standing patterns of adjustment disparities for minority students and males in middle school (Becker & Luthar, 2002; Cauley & Jovanovich, 2006; McGill, Hughes, Alicea, & Way, 2011; Niehaus et al., 2012). Peer support and acceptance has been related to positive middle school adjustment for minority male youth (Becker & Luthar, 2002). Increasing peer support for minority youth in middle school may require educators to target social issues of peer acceptance for these students. Minority students may experience discrimination from peers in middle school (Berkel et al., 2009). Additionally, Hamm, Lambert et al. (2013) found that African American male students who affiliated with peer groups with norms favoring effort and achievement were less admired by peers at the end of the school year than at the beginning of the year. Thus, facilitating positive, promotive peer relationships for minority students may also entail increasing the overall acceptance of minority students within the peer network and also specifically for those minority students oriented towards academic effort and success in middle school.

5.2 Social Integration and Students' Transition Experiences

Past research has suggested that students' experiences within the social context of middle school strongly contribute to their perceptions of the difficulty of the transition (Akos, 2002; Akos & Galassi, 2004; Elias et al., 1992). In the present study, we found that the social experiences that mattered to students' perceptions of their transition experience were their feelings of school belonging and their affiliation with a more central, or prominent, peer group early in the sixth grade year. Sense of school belonging reflects students' feelings that they are accepted, supported, and valued by others within the school environment and contributes to the perception that students "fit it" at school (Goodenow & Grady, 1993). Peer group centrality represents peer

groups' status and prominence within the overall peer group system (Ellis & Zarbatany, 2007; Gest et al., 2007; Wilson et al., 2011). Prominence and high status among peer groups also signifies a sense of fitting in as these groups are more recognizable and, thus, more integrated within the peer system (Wilson et al., 2011). Subsequently, the relationships of students' feelings of school belonging and peer group centrality to their subsequent perceptions of their transition suggest that perceiving that one "fits in", both to the broader school environment and to the peer group system, early in the middle school transition is important to creating a positive transition experience.

Many studies have demonstrated the connection between students' sense of school belonging, or feeling socially supported and accepted in school, and positive middle school adjustment (Goodenow & Grady, 1993; Juvonen, 2006; Osterman, 2000). Transitioning middle school students begin school with familiar and unfamiliar peers as well as new rules, expectations, and teachers (Hardy et al., 2002). With all its novel features, feeling as if one is supported by those within the school environment and "belongs" early in the transition year is likely to be especially important to easing the transition into middle school (Juvonen, 2007). Students' feelings of school belonging reportedly decline during the middle school transition and throughout the transition year (Niehaus et al., 2012). Yet, as the present study demonstrates, early feelings of school belonging seem to make long lasting impacts on students' transition experiences. Positive relationships with peers and teachers are integral to building a sense of school belonging (Hamm & Faircloth, 2005; Niehaus et al., 2012). Thus, concentrating on developing supportive, accepting student-student and teacher-student relationships early in the sixth grade year, as well as creating a school context that encourages respect, effort, and support is integral to students' transition experiences.

Affiliating with a recognizable peer group affords students with reinforcement that they have a place within the peer network and are socially valued. Central peer groups, specifically, are readily identifiable within the overall peer network; feelings of relatedness for members of these groups are heightened from increased social attention and recognition from peers (Ellis & Zarbatany, 2007; Gest et al., 2007; Wilson et al., 2011). Social recognition early in the school year may contribute to a more favorable perception of the overall transition experience. Furthermore, as the status of central peer groups resides within the group level, not all members of the group must be socially prominent individually to experience benefits of central status. Rather, membership in a central peer group early in the school year distributes the benefits of being highly recognized and visible within the overall peer network to all members of central peer groups. The factors that contributed to the early centrality status for peer groups were not addressed within the present study. Researchers have reported that central groups were more likely to be high achieving (Wilson et al., 2011) or to favor academic effort and achievement (Hamm, Lambert et al., 2013); in other studies of early adolescents, central groups were characterized by both positive and negative behaviors (Ellis & Zarbatany, 2007). Subsequently, future research should explore what factors contributed to central peer groups' status early within the transition year.

Given that students who are central in their own peer group receive similar social benefits as central peer groups (Wilson et al., 2011), it would be expected that central individuals would have had a greater likelihood of perceiving a favorable transition. The results of the present study, however, did not find a relationship between individual student centrality and perceptions of the transition. It may be that individual students may not be well established as central early on in the transition year as all students are jockeying for status among familiar and unfamiliar peers (Hardy et al., 2002). Moreover, individual peer acceptance, which also represents a level of notoriety and positive recognition within the social context, has been found to be particularly unstable early in the transition year (Hardy et al., 2002). The results of the present study did not indicate a relationship between peer acceptance and students' transition perceptions, as was the case for individual centrality. Markers of students' individual status within the peer network, like individual centrality and peer acceptance, may be too transient in the beginning of the transition year to have a substantial effect on their experiences with relatedness and their subsequent perceptions of their transition experiences.

Peer groups as a whole, however, may establish their place within the overall peer network more quickly. Results from past studies have reported that the number of peer groups present early on in the year were similar to the number of groups present at the end of the school year, though membership within groups may have fluctuated over time (Cairns et al., 1985; Faircloth & Hamm, 2011; Hamm, Lambert et al., 2013). Thus, peer groups seem able to solidify a place within the peer network early in the transition. As a consequence, members of central peer groups may be more likely to experience early benefits from their position within the peer network. Therefore, as indicated by the results of the current study, early membership in a central peer group may play a larger role in students' transition experiences than individual status.

Although centrality of the peer group seemed to influence students' transition experiences, we did not find any significant associations among peer group hierarchy or norms for effort and achievement. As hierarchy within a group also depends on individual students being more central than others within their same group (Gest et al., 2007; Wilson et al., 2011) and individual students' statuses may be unstable early in the school year (Hardy et al., 2002); students within hierarchical groups may still be establishing which individuals will remain at the top of their group hierarchies early in the school year. Thus, like peer acceptance and centrality, early affiliation with a hierarchical peer group in the transition year may be less related to students' subjective experiences than the hierarchical nature of peer group affiliations later in the school year after students have had time to experience the influence of the dominance present or lacking in their peer group. Similarly, the lack of association between peer group norms for effort and achievement and students' perceptions also may be related to changes in the group members' individual status. The recent study by Hamm, Lambert and colleagues (2013) on rural adolescent African American male peer groups found that members of peer groups with more favorable norms for effort and achievement valued school more and were more likeable at the end of the school year, but peers' admiration for members of these groups declined over time. Accordingly, though affiliation in peer groups with norms favoring effort and achievement may improve students' overall ties to school (Hamm, Lambert et al., 2013); it may be that the effects of affiliating with such peer groups on their subsequent feelings of relatedness and subjective experiences during the transition are undermined if individual social status is compromised.

5.3 Limitations

There are a few limitations of this study that are important to note. As mentioned previously, we intentionally included only students who were affiliated with a peer group early in their sixth grade year. Students who did not make any peer connections may have had more negative perceptions of their middle school integration experience (Wentzel, 2003). However, given that students who lacked a connection to peers would be less likely to view their transition favorably, the results of this study demonstrate that simply affiliating with a peer group early on in middle school may not be enough to promote positive transition experiences. Rather, being in a central peer group, in particular, was important to students' transition experience as well as establishing a sense of belonging early in the school year.

A second limitation was that the measure of students' transition experiences in their first year of middle school included only a single item that tapped into students' global perceptions of the transition. Information about students' perceptions of specific aspects of their transition experience, like navigating their new schedule, behavioral and academic expectations, as well as relationships, was limited. Future use of a multidimensional survey with a large sample of students would provide more information regarding students' transition experiences.

6. Conclusion

The middle school transition entails more than simply a change in location or even academic and behavioral expectations; it involves a disruption to students' social connections that may threaten their overall adjustment in middle school (Anderman & Mueller, 2010; Hardy et al., 2002). Results of the present study underscore the importance of social ties to students' experiences of the middle school transition. Moreover, the present study calls attention to the need for students to feel as if they "fit in" early in the school year; both to the broader school environment as well as within recognized peer groups. Focus on the development of positive school relationships and the characteristics of the peer group affiliations for struggling students early in the sixth grade year may help to ease future students' experiences in a historically difficult period in education.

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