

Emotional and Behavioral Risk Configurations, Students With Disabilities, and Perceptions of the Middle School Ecology

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Abstract

Perceptions of the ecology and middle school transition are examined in relation to interpersonal competence patterns (ICPs) of approximately 3,000 sixth graders (46.2% boys) including 415 students with disabilities from 26 metropolitan schools. Teacher ratings of students' academic competence, externalizing and internalizing behavior, popularity, physical attractiveness/athletic ability, and friendliness are used to determine students' ICPs. Using latent profile analyses, distinct ICPs are identified, including Model (high adaptive), Average, Tough (popular-aggressive), Passive (shy, withdrawn), and Troubled (low adaptive) for boys and girls, respectively. Although students with disabilities are overrepresented in Passive and Troubled ICPs and underrepresented in the Model ICP, 804 students without disabilities (367 boys) were identified in risk ICPs (i.e., Passive, Tough, Troubled) compared with 197 students with disabilities (128 boys). Risk ICPs are differentially associated with students' perceptions of the school ecology and the transition experience of students with disabilities. Implications for Multitiered Systems of Support and the tailoring of interventions are considered.

Keywords

students with disabilities, middle school, transition, correlated constraints, interpersonal competence configurations, school belonging

Early adolescence is a time of developmental opportunity and vulnerability. During the first year of middle school, many students experience a stage–environment mismatch (Eccles & Roeser, 2011). This occurs as students transition from a supportive familiar environment, primarily within the context of a single classroom with a single teacher, to a more complex ecology that involves interactions with many more adults and students as well as increased academic, behavioral, and social demands (Anderman & Maehr, 1994; Evans & Eder, 1993; Midgley & Edelin, 1998). Yet, person-oriented analyses that identify subgroups of youth with similar configurations (i.e., patterns) of adaptation on key aspects of school functioning (including academic, behavioral, and social) indicate that there is considerable variability in early adolescents' school adjustment. Studies using person-oriented approaches suggest that some early adolescents thrive during the middle level years, whereas others experience academic, behavioral, and/or social difficulties (Pellegrini & Bartini, 2000; Roeser, Eccles, & Sameroff, 2000; Seidman, Allen, Aber, Mitchell, & Feinman, 1994). Furthermore, students who struggle across the academic,

behavioral, and social domains are at increased risk of school disengagement, academic failure, and dropout (Cairns & Cairns, 1994; Olivier, Archambault, & Dupere, 2018; Roeser & Peck, 2003).

Few studies have used person-oriented approaches to examine patterns of academic, behavioral, and social adjustment of early adolescents with disabilities or their adaptation during the transition to middle school. Person-oriented investigations using teacher ratings of students' adaptation in elementary (Farmer, Rodkin, Pearl, & Van Acker, 1999) and high school (Farmer et al., 2011) have identified subtypes of

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students, including youth with disabilities, who reflect distinct configurations for a range of interpersonal competence factors including academic, behavioral, social, popularity, and physical attractiveness/athletic ability. Across multiple studies, five configurations have been generated that reflect distinct interpersonal competence patterns (ICPs). These configurations include the following: Model (high ratings for positive characteristics, low ratings for negative), Average (near the class mean for all factors), Tough (high aggression, above the mean for attractive/athletic and popular, below the mean for shy/internalizing), Passive (high shy/internalizing, low for popular and aggression), and Troubled (high ratings for all negative factors, low ratings for all positive factors).

In both elementary and high school, students with disabilities were underrepresented in Model configurations and overrepresented in Troubled and Passive configurations compared with classmates without disabilities (Farmer et al., 1999, 2011). Furthermore, students with disabilities in low-adjustment configurations tended to have negative perceptions of the school context and were less likely to feel supported. These findings in elementary and high school are consistent with studies of students without disabilities in middle school (e.g., Roeser et al., 2000; Seidman et al., 1994) and suggest it is possible that ICPs could distinguish middle school students with disabilities who experience adjustment problems from those who do not. If so, person-oriented research could enhance the identification of at-risk students, including students with disabilities, and help clarify the types of supports they may need to promote their middle school adaptation.

School Adjustment of Middle School Students With Disabilities

There is a small but compelling body of studies which indicate that many students with disabilities experience adjustment difficulties in middle school. The difficulties early adolescents with disabilities experience may put them at risk of school disengagement, failure, and dropout (Lane et al., 2018; Pijl, Frostad, & Mjaavatn, 2014; Rangvid, 2018; Talbott & Fleming, 2003). Because early adolescence and the transition to middle school can be pivotal in the long-term adaptation and educational attainment of youth (Eccles & Roeser, 2011), there is a need to better understand the adjustment difficulties of middle school students with disabilities.

Many middle school students with disabilities express concerns about academic struggles and pressures (Sullivan et al., 2015). Although the transition from elementary to middle school tends to be marked by a decrease in academic achievement (Alspaugh, 1998), this phenomenon may be particularly pronounced for some students with disabilities (Lane, Oakes, Carter, & Messenger, 2015). In addition, middle school students with disabilities report elevated

levels of social stress, a lack of support from peers, and a greater likelihood of social isolation and involvement in bullying both as a victim and as a perpetrator (Chen, Hamm, Farmer, Lambert, & Mehtaji, 2015; Evans & Eder, 1993; Rose & Gage, 2017). Similarly, middle school students with disabilities experience a range of behavior problems (Lane, Oakes, Lusk, Cantwell, & Schatschneider, 2016; Sullivan et al., 2015) and have elevated and increasing rates of chronic truancy compared with students without disabilities (Chen, Culhane, Metraux, Park, & Venable, 2016). These patterns suggest a need to further research subtypes of middle school students with disabilities who experience a variety of academic, social, and behavioral challenges.

A key concern for promoting the middle school adjustment of students with disabilities may not only involve addressing their academic, behavioral, and social risks but also how these risks influence and are influenced by students' sense of belonging in school. As they transition to middle school, youth with disabilities may disengage in school because they feel like they do not belong and do not have supportive relationships with adults and peers (Talbott & Cushing, 2011; Vaz et al., 2014). There is a need to better understand the transition experiences of middle school students with disabilities, their perceptions of the school ecology, and factors that differentiate students who experience adjustment difficulties from those who do not.

Multitiered Systems of Support (MTSS) and Correlated Constraints

The concept of MTSS has emerged with efforts to provide services to meet the needs of all students in general education settings and involves distinct tiers that represent different levels of intensity in instruction and supports (Sailor, 2015). Generally, there are three tiers with Tier 1 providing *universal* supports to benefit all students, Tier 2 involving *selected* supports to enhance the adaptation of students with elevated risk whose needs are not adequately met with universal approaches, and Tier 3 centering on *targeted* strategies that are individualized to support students who experience significant difficulties and who are not responsive to universal and selected interventions (Lane et al., 2016; Sutherland, Farmer, Kunemund, & Sterrett, 2018).

There are three important features of MTSS that are relevant for understanding and supporting the adjustment of students with disabilities as they transition to middle school. First, MTSS focuses on students' response to intervention and requires a range of comprehensive and successively intensive strategies that should encompass the broad needs of all students (Lewis, 2016; Sailor, 2015). Second, MTSS is an integrative framework and recognizes the need to address the interplay of academic, behavioral, and social aspects of students' functioning and adaptation in the classroom (Lane, Carter, Jenkins, Dwiggin, & Germer, 2015;

Sailor, 2015; Sutherland et al., 2018). Third, there is a preventive aspect of the MTSS approach that involves the early identification and provision of services before adjustment problems are fully manifested and are expressed as a disorder in a student's functioning (Conroy, 2016; Sailor, 2015).

The prevention and early intervention of adjustment difficulties is a critical component of the MTSS framework. Yet, the provision of services within this framework is driven by students' response to intervention and centers on the movement to an adjacent but more intensive strategy (Sutherland et al., 2018). Because the focus is often on intervention intensity and not potential factors that contribute to a student's adaptation, this approach does not necessarily result in the student receiving the supports that best align with a given context and the developmental needs of the student (Farmer, Sutherland, et al., 2016). Frequent, comprehensive screening that bridges the academic, behavioral, and social features of students' functioning can help to address this need (Lane et al., 2016). Assessments must go beyond identifying students who have difficulty and should generate information about contextual-developmental factors that contribute to their adjustment difficulties as well as strengths that can be leveraged during intervention (Maggin, Wehby, Farmer, & Brooks, 2016). Information about contextual-developmental factors and processes can be used to better align interventions to students' individual needs and can support efforts to monitor and promote students' ongoing adaptation (Farmer, Sutherland, et al., 2016).

The concept of correlated constraints may be useful for aligning MTSS with students' contextual-developmental experiences and intervention support needs. The term *correlated constraints* reflects the fact that youth tend to develop as an integrative whole in relation to contextual and ecological factors and demands (Cairns & Cairns, 1994). This means a student's competencies in the academic, behavioral, and social domains all influence and are influenced by each other and the various contexts in which he or she is embedded (Hosp, 2008; Sutherland et al., 2018). Our understanding of correlated constraints is grounded in developmental systems theory (DST) and person-oriented approaches to the study of youth development and adaptation (Farmer, Gatzke-Kopp, Lee, Dawes, & Talbott, 2016). Because MTSS is integrative and spans the academic, behavioral, and social domains, DST and person-oriented approaches may complement the response to intervention component of the MTSS framework and may support efforts to better align and monitor interventions to support students' adaptation.

DST and ICPs

DST is grounded in the application of dynamic systems perspectives to the study of human development (Sameroff, 2000; Smith & Thelen, 2003). The DST framework involves

clarifying how multiple factors both within and outside the individual coactively operate to contribute to functioning and adaptation across the life course (Cairns & Cairns, 1994; Farmer, Gatzke-Kopp, et al., 2016). This includes biophysical, cognitive, emotional, and psychological factors, as well as behavioral, cultural, ecological, and sociological processes and variables. The DST framework involves situating the person in context and determining the alignment of various factors that operate together as an interconnected system (Bronfenbrenner, 1979). These processes of alignment are transactional, which means that developmental factors may both change and constrain each other (Cairns & Cairns, 1994). Efforts to address one domain of a student's functioning should take into consideration how the student's functioning in other domains may impact and be impacted by the intervention (Farmer, Sutherland, et al., 2016). When a student does not respond to a strategy, it does not necessarily mean the intervention is not needed or is ineffective. Rather, it is possible that correlated factors constrain the impact of the strategy and should be systematically addressed in the intervention process (Farmer, Gatzke-Kopp, et al., 2016; Lee, 2018). For example, an intervention to address an academic skill deficit may be impacted by performance or skill deficits in the behavioral and/or social domains.

Person-oriented analysis has been used in DST research to identify subtypes of youth and associated differences in their developmental patterns and adaptation (Bergman, Magnusson, El-Khoury, 2003; Cairns & Cairns, 1994). Rather than focusing on the general impact of a particular variable, person-oriented approaches identify youth who have similar patterns of features or attributes and examines whether they differ from other youth in terms of their developmental experiences and outcomes (Bergman & Trost, 2006; Cairns & Cairns, 1994). In essence, person-oriented approaches can be used to identify distinct correlated constraints or ICPs to clarify risk and resilience factors and to identify developmental process variables that promote change in these patterns, students' developmental trajectories, and their long-term outcomes (Farmer et al., 1999; Olivier et al., 2018; Roeser & Peck, 2003). The concept of correlated constraints and the identification of distinct ICPs may facilitate the assessment of students' risk and support needs, including students with disabilities, and may also generate information about intervention leverage points to better align and monitor specific intervention strategies in relation to student's developmental needs and adaptation.

Purpose of This Study and Guiding Research Questions

The goal of this study is to examine whether person-oriented approaches can yield insights into the adjustment of students with disabilities that may guide intervention efforts

to enhance their adaptation during the transition to middle school. Person-oriented analysis (i.e., Latent Profile Analysis [LPA]) of teacher ratings of students' interpersonal competence is used to identify students with distinct ICPs, and students' self-reports of their experiences in the school context are used to examine their perceptions of their adjustment during the first year of middle school. These data are used to address two research aims and corresponding research questions.

First, we explore whether students with disabilities are more likely to have difficulties in the first year of middle school compared with peers without disabilities. Are students with disabilities underrepresented by ICPs that reflect positive adjustment and overrepresented by ICPs linked to difficulties? Are perceptions of the school ecology (i.e., academic and bullying context) and transition different for students with disabilities compared with students without disabilities? If so, are there difficulties that are common for students with disabilities?

Our second aim is to examine whether students with disabilities with different teacher-rated ICPs also differ in self-reports of their middle school adjustment. Two research questions address this aim. Do students with disabilities with distinct ICPs differ in their perceptions of the middle school ecology (i.e., academic and bullying context)? Do students with disabilities with distinct ICPs have different views of the transition to middle school?

Method

Participants and Design

This study was part of an intervention study that examined school adjustment for middle school students. The overall sample consisted of approximately 3,000 sixth graders (46.2% boys) from 26 schools. The participating students were 53.7% White, 20.8% Black, 19.2% Hispanic, and 6.3% Asian or other. Of the participants, 13.8% were students with disabilities ($n = 415$). Of the students with disabilities, 63.6% were boys; other demographic data were representative of the larger sample (52.8% White, 25.5% Black, 17.8% Hispanic, and 3.8% Asian or other). Students with disabilities were school-identified and served in general education settings for the majority of the school day; data on disability designations were obtained from school record data. A multi-method survey design was used to assess student ICPs and perceptions of the school ecology. Surveys were administered to both teachers and students in the fall of sixth grade, which was the beginning of the intervention phase. Teacher ratings of students' academic, social, and behavioral characteristics were used to identify student ICPs. Students' perceptions of the school ecology and transition were collected via self-reports of their school experiences. The data were then analyzed to find whether students

with disabilities in specific ICP configurations differed in their perceptions of the school ecology and transition.

Measures

Interpersonal competence. The *Interpersonal Competence Scale–Teacher Report* (ICS-T; Cairns, Leung, Gest, & Cairns, 1995) composed 18 items with a 7-point Likert-type scale that asks teachers to assess each student's academic, social, and behavioral adjustment, including aggression (always argues, gets in trouble, always fights), academic competence (good at spelling, good at math), affiliation (always smiles, always friendly), popularity (popular with boys, popular with girls, lots of friends), Olympian (good looking, good at sports, wins a lot), and internalizing behavior (very shy, always sad, always worries). Prior research has established moderately high test–retest reliability ($\alpha = .80-.92$; Cairns et al., 1995) and has convergent validity with direct observation, student records, and peer nominations (Cairns & Cairns, 1994; Rodkin, Farmer, Pearl, & Van Acker, 2000). The ICS-T scores were standardized by classroom and gender.

The perceptions of the school ecology. Several measures were used to assess students' perceptions of the school ecology, which encompasses academic and bullying contexts. *The Peer Norms for Effort and Achievement* (Hamm, Malloy, & Meece, 2006) is an 11-item scale that measures the perceptions of the acceptance of academic effort and achievement in school among peer affiliates. In response to the prompt "The kids I hang around with in school think it is good to:" students rated, on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*), items such as "offer to help other students if you know the answer or how to solve a problem." Students' responses to the 11 items were averaged, with higher scores indicating higher levels of peer acceptance of academic effort and achievement. School valuing was measured by seven items adapted from the *Identification with School Questionnaire* (Voelkl, 1996) that assesses students' belief in the value of schoolwork. Students rated, on a 5-point scale (1 = *strongly agree*, 5 = *strongly disagree*), items such as, "Many of the things we learn in class are useless," and "Dropping out of school would be a huge mistake for me." Students' responses to the seven items were averaged, with higher scores representing higher value placed on school. The *Psychological Sense of School Membership–Brief Scale* includes 11 items that focus on students' sense of belonging or psychological membership in the school or classroom (Hagborg, 1998). Students rated, on a 5-point scale (1 = *completely false*, 5 = *completely true*), items such as "I am treated with as much respect as other students." Students' responses to the 11 items were averaged, with higher scores indicating greater sense of school belonging. Emotional risk was measured by six items that reflect student perceptions of

Table 1. Teacher-Assessed Interpersonal Competence Patterns.

| ICS-T | Boy ^a | | | | | Girl ^b | | | | |
|---------------|------------------|-------------|-------------|------------|-------------|-------------------|-------------|-------------|-------------|------------|
| | Model | Tough | Average | Passive | Troubled | Model | Tough | Average | Passive | Troubled |
| Aggressive | -0.56 | 1.17 | -0.41 | -0.48 | 1.37 | -0.43 | 1.39 | -0.44 | -0.42 | 2.02 |
| Academic | 0.75 | -0.23 | 0.03 | -0.58 | -0.60 | 0.62 | -0.18 | -0.08 | -0.52 | -0.93 |
| Affiliative | 0.87 | 0.21 | 0.12 | -1.10 | -1.01 | 0.70 | -0.29 | 0.15 | -1.13 | -1.33 |
| Popularity | 1.03 | 0.84 | -0.15 | -1.34 | -0.81 | 0.97 | 0.29 | -0.27 | -1.24 | -1.11 |
| Olympian | 1.05 | 0.60 | -0.17 | -1.17 | -0.70 | 0.87 | 0.18 | -0.21 | -1.13 | -0.99 |
| Internalizing | -0.90 | -0.65 | 0.20 | 1.44 | 0.27 | -0.71 | -0.43 | 0.26 | 1.28 | 0.33 |
| <i>n</i> (%) | 305 (21.79) | 152 (10.86) | 595 (42.50) | 136 (9.71) | 212 (15.14) | 468 (28.71) | 237 (14.54) | 648 (39.76) | 164 (10.06) | 113 (6.93) |

Note. ICS-T = *Interpersonal Competence Scale-Teacher Report*. Use ± 0.30 as a cutoff point to describe the ICS-T scores above or below the average. The modeling used the entire sample and *N* was approximately 3,000.

^a*n* = 1,400. ^b*n* = 1,630.

the emotional risk of academic participation (Hamm & Faircloth, 2005). In response to the prompt "If I give a wrong answer to a question in my classes, the following happens:" students rated, on a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*), items such as "other students will think I'm not smart." Students' responses to the six items were averaged, with higher scores indicating higher perception of emotional risk while participating in academic activities.

Students' perceptions of the bullying context were assessed using *The Protective Peer Ecology Scale* (Song, 2005), which consists of three subscales including peer protector, peer protection, and peer encouragement of bullying, on a 5-point Likert-type scale (1 = *never*, 5 = *always*). The Peer Protector subscale contains five items that assesses students' willingness to protect others from bullying (e.g., "I would stick up for them"). The Peer Protection subscale contains eight items that evaluate the extent to which students feel that peers would intervene if they are being bullied (e.g., "My peers would tell others to stop the bullying"). The Peer Encouragement subscale comprises five items that assesses the extent to which students feel that their peers would encourage the bully (e.g., "My peers would laugh"). Item scores were averaged to create an overall score for each subscale.

The perceptions of transition. Students' perceptions of their adaption to tasks in their transition to middle school were assessed using the *Survey of Adaptational Tasks of Middle School* (SAT-MS; Elias et al., 1992), which consists of items clustered into four categories: substance abuse, peer relationships, conflicts with authorities and older students, and academic pressures, on a 4-point Likert-type scale (1 = *no problem*, 4 = *large problem*). This study adapted the original SAT-MS measure, and three subscales were yielded from factor analysis of 20 items, including the following: procedural (e.g., having to change classes, understanding new rules), academic (e.g., having to do harder school work, getting too much homework), and social (e.g., having

troubled making new friends, other kids teasing you). Item scores were averaged to create an overall score for each subscale.

Student demographic characteristics. Minority status (minority = 1; Black, Hispanic, Asian, or other) and free/reduced-cost lunch were obtained from school records.

Data Reduction

LPA was conducted using the Mplus software program to identify distinct teacher-rated ICPs based on six ICS-T factors (i.e., aggressive, academic, affiliative, popularity, Olympian, internalizing; Muthén & Muthén, 2008). Analyses were performed separately for boys and girls. The optimal number of classes was determined according to fit indices including log-likelihood, Akaike information criterion (AIC), Bayesian information criterion (BIC), and adjusted BIC (Nylund, Asparouhov, & Muthén, 2007). In addition, the adjusted Lo-Mendell-Rubin likelihood ratio test (ALMR; Lo, Mendell, & Rubin, 2001) and the Vuong-Lo-Mendell-Rubin likelihood ratio test (VLMR) were used to compare relative model fit, with a *p* value less than .05 indicating support for the *k* class model over the *k*-1 class model. Finally, entropy (ranges from 0 to 1) was used to evaluate classification accuracy of the number of classes. Higher values of entropy indicate better accuracy.

Five distinct types of configurations, including Model, Tough, Average, Passive, and Troubled, were identified separately for boys and girls (see Table 1). The model fits showed greater improvement as the number of classes was increased (boys: log-likelihood = -10,693.04, AIC = 21,466.07, BIC = 21,675.84, adjusted BIC = 21,548.77, entropy = 0.79; girls: log-likelihood = -12,463.48, AIC = 25,006.95, BIC = 25,222.80, adjusted BIC = 25,095.73, entropy = 0.80). According to the ALMR and the VLMR, the addition of a fifth class improved model fit significantly

Table 2. Distribution of Configurations Among Students With/Without Disabilities.

| Disability/ configuration | Boy | | | | | | Girl | | | | | |
|------------------------------|------------------|-------|---------|-----------------|------------------|-------|------------------|-------|---------|------------------|-----------------|-------|
| | Model | Tough | Average | Passive | Troubled | Total | Model | Tough | Average | Passive | Troubled | Total |
| Students w/o disabilities | | | | | | | | | | | | |
| <i>n</i> | 276 ⁺ | 127 | 477 | 88 ⁻ | 152 ⁻ | 1,120 | 443 ⁺ | 213 | 580 | 131 ⁻ | 93 ⁻ | 1,460 |
| % | 24.64 | 11.34 | 42.59 | 7.86 | 13.57 | 100 | 30.34 | 14.59 | 39.73 | 8.97 | 6.37 | 100 |
| Students w disabilities | | | | | | | | | | | | |
| <i>n</i> | 26 ⁻ | 24 | 110 | 45 ⁺ | 59 ⁺ | 264 | 21 ⁻ | 17 | 61 | 32 ⁺ | 20 ⁺ | 151 |
| % | 9.85 | 9.09 | 41.67 | 17.05 | 22.35 | 100 | 13.91 | 11.26 | 40.4 | 21.19 | 13.25 | 100 |
| Total | | | | | | | | | | | | |
| <i>n</i> | 302 | 151 | 587 | 133 | 211 | 1,384 | 464 | 230 | 641 | 163 | 113 | 1,611 |
| % | 21.82 | 10.91 | 42.41 | 9.61 | 15.25 | 100 | 28.8 | 14.28 | 39.79 | 10.12 | 7.01 | 100 |

Note. Observed frequencies and column percentages are shown in the table above. "Students w/o disabilities" = Students without disabilities; "Students w disabilities" = Students with disabilities; "+" = observed frequency > expected frequency; "-" = observed frequency < expected frequency. The configural analysis was limited to students with disability information included; therefore, the total *N* was varied slightly.

compared with a four-class model for boys and girls, respectively.

Table 1 shows the mean ICS-T scores for each configuration for the entire sample of boys and girls, respectively, using ± 30 as a cutoff point to describe the ICS-T scores above or below the average (Farmer et al., 1999). Boys' configurations featured (a) *Model* (21.79%): above-average scores on academic competence, affiliation, popularity, and Olympian; and below-average scores on aggression and internalizing problem behavior; (b) *Tough* (10.86%): above-average scores on aggression, popularity, and Olympian; below-average scores on internalizing problem behavior; and average scores on academic competence and affiliation; (c) *Average* (42.50%): below-average scores on aggression; and average scores on academic competence, affiliation, popularity, Olympian, and internalizing problem behavior; (d) *Passive* (9.71%): above-average scores on internalizing problem behavior; and below-average scores on aggression, academic competence, affiliation, popularity, and Olympian; and (e) *Troubled* (15.14%): above-average scores on aggression; below-average scores on academic competence, affiliation, popularity, and Olympian; and average scores on internalizing problem behavior.

Girls' configurations were characterized by (a) *Model* (28.71%): above-average scores on academic competence, affiliation, popularity, and Olympian; and below-average scores on aggression and internalizing; (b) *Tough* (14.54%): above-average scores on aggression; below-average scores on internalizing; and average scores on academic competence, affiliation, popularity, and Olympian; (c) *Average* (39.76%): below-average scores on aggression; and average scores on academic competence, affiliation, popularity, Olympian, and internalizing; (d) *Passive* (10.06%): above-average scores on internalizing; and below-average scores on aggression, academic competence, affiliation, popularity, and Olympian; and (e) *Troubled* (6.93%): above-average

scores on aggression and internalizing; and below-average scores on academic competence, affiliation, popularity, and Olympian.

Even though the labels of the configurations were similar across gender, they were only used to characterize the students' school adjustment descriptively. Configurations in boys and girls should not be considered as parallels, as teachers' ratings of students' academic competence, externalizing and internalizing behavior, friendliness, popularity, and physical attractiveness/athletic ability vary by gender. Rather, the configurations differentiate the profiles of school adjustment relatively within the same gender.

Data Analysis

Chi-square analysis was conducted to determine differences between students with and without disabilities in terms of their representation among the identified teacher-rated ICPs for boys and girls, respectively. Furthermore, we conducted configural frequency analysis (CFA) using von Eye's (1990) basic program to test whether observed frequencies of boys and/or girls with and without disabilities exceeded the expected frequencies in each ICP. Two analysis patterns were reported, with types (denoted "+" in Table 2) showing observed patterns which occur significantly more than expected and antitypes (denoted "-" in Table 2) showing observed patterns which occur significantly less than expected. We controlled for overall error rates using a Bonferroni-adjusted alpha of .005.

Multilevel mixed-effects linear regression analyses were conducted to examine whether students with disabilities differed from students without disabilities in terms of their perceptions of the school ecology and transition, controlling for ethnic minority status and free/reduced lunch status (see Table 3). Multilevel mixed-effects linear regression analyses were also conducted to investigate whether students with

Table 3. Differences in the Perceptions of School Ecology (Academic and Bullying Context) and Transition for Students With/Without Disabilities.

| Variable/ coefficient | Academic context | | | | Bullying context | | | Transition | | |
|-----------------------------|------------------------------------|--------------------------------|---------------------|--------------------------------|--------------------|--------------------|--------------------------------|-------------------|-------------------|--------------------|
| | Peer norm of academic effort | Perceived school valuing | School belonging | Perceived emotional risk | Peer protector | Peer protection | Peers encourage bullying | Procedural | Academic | Social |
| Disability | -0.05 (0.05) | -0.13*** (0.03) | -0.16*** (0.04) | 0.15*** (0.05) | -0.13*** (0.05) | -0.11** (0.05) | 0.15*** (0.04) | 0.11*** (0.03) | 0.04 (0.05) | 0.11*** (0.03) |
| Gender | -0.20*** (0.03) | -0.08*** (0.02) | -0.01 (0.03) | -0.17*** (0.04) | -0.14*** (0.03) | -0.34*** (0.03) | 0.13*** (0.03) | -0.02 (0.02) | -0.02 (0.03) | -0.07*** (0.02) |
| Minority | -0.03 (0.04) | 0.05** (0.03) | 0.06** (0.03) | -0.17*** (0.04) | -0.18*** (0.04) | 0.02 (0.04) | 0.06** (0.03) | 0.08*** (0.02) | 0.05 (0.04) | -0.06** (0.02) |
| Free/reduced- cost lunch | -0.06 (0.04) | -0.04 (0.03) | -0.15*** (0.03) | 0.02 (0.04) | 0.01 (0.04) | 0.01 (0.04) | 0.07** (0.03) | 0.05** (0.02) | 0.07** (0.04) | 0.04* (0.03) |
| Constant | 4.20*** (0.04) | 4.32*** (0.02) | 3.87*** (0.03) | 2.74*** (0.04) | 4.25*** (0.04) | 4.06*** (0.03) | 1.33*** (0.03) | 1.36*** (0.02) | 2.12*** (0.03) | 1.66*** (0.02) |

Note. Standard errors in parentheses.

** $p < .05$. *** $p < .01$.

Table 4. Perceptions of School Ecology (Academic and Bullying Context) and Transition Experiences for Students With Disabilities in Distinct Interpersonal Competence Patterns.

| Variable/mean | Boy | | | | | Girl | | | | |
|--------------------------------|---------------------|---------------------|---------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------------------|
| | Model | Tough | Average | Passive | Troubled | Model | Tough | Average | Passive | Troubled |
| Academic context | | | | | | | | | | |
| Peer norm of academic effort | 3.80 _{b,c} | 4.31 _a | 4.04 _{a,b} | 3.91 _{a,b,c} | 3.66 _c | 3.70 | 3.84 | 4.06 | 4.20 | 4.00 |
| Perceived school valuing | 4.05 | 4.23 _a | 4.16 _{a,b} | 4.20 _{a,b,c} | 4.00 _c | 4.17 _{a,b} | 3.86 _b | 4.27 _a | 3.87 _b | 4.30 _a |
| School belonging | 4.04 _a | 3.74 _{a,b} | 3.72 _b | 3.54 _{b,c} | 3.27 _c | 3.82 _{a,b} | 3.56 _b | 3.69 _a | 3.50 _b | 3.44 _a |
| Perceived emotional risk | 2.65 _{a,b} | 2.58 _{a,b} | 2.41 _b | 2.84 _a | 2.88 _a | 2.81 | 2.63 | 2.90 | 2.90 | 3.04 |
| Bullying context | | | | | | | | | | |
| Peer protector | 3.79 _{a,b} | 4.10 _{a,b} | 4.01 _a | 3.99 _{a,b} | 3.70 _b | 3.93 | 3.82 | 4.09 | 4.06 | 4.19 |
| Peer protection | 3.82 _{a,b} | 3.92 _{a,b} | 3.75 _a | 3.40 _{b,c} | 3.35 _b | 4.15 | 3.77 | 4.03 | 3.80 | 4.13 |
| Peer encouragement of bullying | 1.43 _{a,b} | 1.61 _a | 1.68 _a | 1.64 _{b,c} | 1.77 _c | 1.19 _b | 1.60 _{a,b} | 1.51 _{a,b} | 1.84 _a | 1.78 _a |
| Transition | | | | | | | | | | |
| Procedural | 1.31 _c | 1.32 _{b,c} | 1.53 _{a,b} | 1.62 _a | 1.63 _a | 1.45 | 1.70 | 1.58 | 1.59 | 1.51 |
| Academic | 2.04 _{a,b} | 1.89 _b | 2.11 _{a,b} | 2.27 _{a,b} | 2.37 _a | 2.12 _{a,b} | 1.95 _b | 2.47 _a | 2.22 _{a,b} | 2.66 _a |
| Social | 1.44 _c | 1.41 _c | 1.63 _{b,c} | 1.93 _a | 1.79 _{a,b} | 1.56 _{a,b} | 1.91 _b | 1.75 _a | 1.91 _{a,b} | 1.96 _a |

Note. Control for minority status and free/reduced-cost lunch. Adjusted means within the same rows that share subscripts are not significantly different at $p < .05$.

disabilities in distinct configurations had differentiated perceptions of the school ecology and transition. A multiple comparisons procedure was conducted and the results were summarized to indicate whether the comparisons were significantly different among students in distinct configurations (see Table 4). If adjusted means of students in distinct configurations (i.e., Model, Tough, Average, Passive, Troubled) share the same subscript, they are not significantly different from each other ($p < .05$). Standard errors were adjusted for clustering in schools. Studies in middle school have shown differences between boys and girls in terms of their social and behavioral characteristics, which could be related to

gender-specific learning experience (Farmer et al., 1999, 2011). Therefore, this study conducted separate analyses for boys and girls.

Results

Distribution of Configurations and Representation

Table 2 shows the distribution of students with and without disabilities across the identified teacher-rated ICPs. There were statistically significant differences between students

with and without disabilities in the distributions of the configurations for boys, $\chi^2(4, N = 1,384) = 52.03; p < .001$; and girls, $\chi^2(4, N = 1,611) = 43.33; p < .001$. Among boys, CFA revealed that boys without disabilities were more likely to be classified as Model (24.64%), but less likely to be classified as Passive (7.86%) and Troubled (13.57%) than expected by chance ($ps < .001$). In contrast, boys with disabilities were less likely to be classified as Model (9.85%), but were more likely to be classified as Passive (17.05%) and Troubled (22.35%) than expected by chance ($ps < .001$). Turning to girls, similar results were found. CFA revealed that girls without disabilities were more likely to be classified as Model (30.34%), but less likely to be Passive (8.97%) and Troubled (6.37%) than expected by chance ($ps < .001$). In contrast, girls with disabilities were less likely to be identified as Model (13.91%), but more likely to be classified as Passive (21.19%) and Troubled (13.25%) than expected by chance ($ps < .001$).

Disabilities and the Perceptions of the School Ecology and Transition

As shown in Table 3, significant differences were found in the perceptions of the school ecology (academic and bullying context) and school transition between students with and without disabilities. For the perceptions of the academic context, students with disabilities tended to place lower value in schoolwork ($-0.13, p < .01$), have a lower sense of school belonging ($-0.16, p < .01$), and perceive greater emotional risk in academic engagement ($0.15, p < .01$) compared with students without disabilities. For the perceptions of bullying context, students with disabilities were less willing to protect others from bullying ($-0.13, p < .01$), perceived lower likelihood that peers would intervene if they were being bullied ($-0.11, p < .05$), and perceived greater peer encouragement for bullying ($0.15, p < .01$) compared with students without disabilities. For the perceptions of school transition, students with disabilities tended to have higher procedural and social difficulties than those without disabilities ($0.11, p < .01$).

Perceptions of the Academic Context for Student With Disabilities in Distinct ICPs

Table 4 shows that configuration membership differentiated students' perceptions of the academic context for boys and girls with disabilities. Adjusted means and differences were presented for boys and girls with disabilities in distinct ICPs. Troubled boys with disabilities perceived the lowest peer acceptance of academic effort ($M = 3.66$), school valuing ($M = 4.00$), and school belonging ($M = 3.27$), but had the highest emotional risk when attending academic activities ($M = 2.88$). Troubled ($M = 3.66$) boys with disabilities perceived lower peer acceptance of academic effort than

Tough ($M = 4.31$) and Average ($M = 4.04$) boys with disabilities, but did not differ from Passive ($M = 3.91$) and Model ($M = 3.80$) boys with disabilities. The means of the perceptions of peer acceptance of academic effort of boys with disabilities in Model, Average, Tough, and Passive configurations were not significantly different from one another, except that Tough boys with disabilities ($M = 4.31$) had significantly higher perceptions of peer acceptance of academic effort than Model boys with disabilities ($M = 3.80$). No significant differences were found in the perceptions of school valuing for boys with disabilities across configurations. Troubled ($M = 3.27$) boys with disabilities had lower perceptions of school belonging than Model ($M = 4.04$), Tough ($M = 3.74$), and Average ($M = 3.72$) boys with disabilities, but did not differ from Passive ($M = 3.54$) boys with disabilities. Passive boys with disabilities were similar to Troubled, Tough, and Average boys with disabilities on the perceptions of school belonging, but their perceptions were lower than Model boys with disabilities. On perceived emotional risk, Troubled ($M = 2.88$) and Passive ($M = 2.84$) were higher than Average boys with disabilities ($M = 2.41$), but did not differ from Model ($M = 2.65$) and Tough ($M = 2.58$) boys with disabilities.

Girls with disabilities in distinct ICPs did not differ from one another regarding their perceptions of peer norm of academic effort, school belonging, and emotional risk. However, Troubled ($M = 4.30$) and Average ($M = 4.27$) girls with disabilities tended to perceive school value as higher than Tough ($M = 3.86$) and Passive ($M = 3.87$) girls with disabilities. Model girls with disabilities' perceptions of school valuing did not differ from girls with disabilities in other configurations.

Perceptions of the Bullying Context for Student With Disabilities in Distinct ICPs

Table 4 also shows the perceptions of the bullying context for students with disabilities in distinct ICPs. Troubled boys with disabilities reported the lowest willingness to protect others from being bullied ($M = 3.70$), perceived that peers were less willing to protect them from being bullied ($M = 3.35$), and had the highest perceptions of peer encouragement of bullying ($M = 1.77$). No differentiated perceptions of peer protector were found among Troubled ($M = 3.70$), Model ($M = 3.79$), Passive ($M = 3.99$), and Tough ($M = 4.10$) boys with disabilities. The perceptions of peer protector of Average boys with disabilities were very similar to Model, Tough, and Passive boys but Average boys were more willing to protect others being bullied than Troubled boys with disabilities. As for expectations for peer protection, Troubled ($M = 3.35$) boys with disabilities expected less protection from peers if they were being bullied compared with Model ($M = 3.82$), Tough ($M = 3.92$), and Average ($M = 3.75$) boys with disabilities, but their

perceptions did not differ from Passive ($M = 3.40$) boys with disabilities. No differentiated perceptions of peer encouragement of bullying were found among boys in distinct ICPs.

No differentiated perceptions of peer protector and peer protection were found among girls with disabilities in distinct ICPs, whereas Troubled ($M = 1.78$) and Passive ($M = 1.84$) girls with disabilities perceived higher peer encouragement of bullying than Model ($M = 1.19$) girls with disabilities, but their perceptions were not significantly different from Tough ($M = 1.60$) and Average ($M = 1.51$) girls with disabilities.

School Transition for Student With Disabilities in Distinct ICPs

Table 4 also shows the differentiated perceptions of school transition for students with disabilities in distinct ICPs. Troubled boys with disabilities had the highest perceptions of procedural difficulties ($M = 1.63$), which were very similar to Passive ($M = 1.62$) and Average ($M = 1.53$) boys. Model ($M = 1.31$) and Tough ($M = 1.32$) boys with disabilities perceived lower procedural difficulties than Passive and Troubled boys with disabilities. Although Troubled ($M = 2.37$) boys with disabilities perceived the highest academic difficulties, their perceptions did not differ from Model, Average, and Passive boys with disabilities, but were higher than Tough ($M = 1.89$) boys with disabilities. Passive ($M = 1.93$) boys with disabilities perceived the highest social difficulties, but their perceptions were very similar to Troubled boys. Both Passive and Troubled boys with disabilities appeared to have higher social difficulties than Model and Tough boys with disabilities.

However, no differentiated self-perceptions of procedural and social difficulties were found among girls with disabilities in distinct ICPs. Troubled ($M = 2.66$) girls with disabilities had the highest academic difficulties but their perceptions were very similar to Model, Average, and Passive girls with disabilities. They perceived more academic difficulties than Tough ($M = 1.95$) girls with disabilities.

Discussion

The results of this study provide new insights on students with disabilities' adaptation as they transition to middle school. Compared with peers without disabilities, students with disabilities were more likely to be identified in multi-risk ICPs (i.e., Troubled, Passive) that reflect risks in multiple domains shown to predict school disengagement, academic failure, and dropout (Cairns & Cairns, 1994; Olivier et al., 2018; Pijl et al., 2014; Roeser et al., 2000). Students with disabilities were more likely to report they do not fit in school, they endorsed greater feelings of emotional

risk for academic participation, they were more likely to perceive the context supports bullying and peer victimization, and they were more likely to indicate they have difficulty during the transition to middle school and struggled with procedural and social demands.

Although students with disabilities have elevated rates of adjustment difficulties as reflected by teacher ratings and their own perceptions of their middle school experiences, there was considerable variability within the overall sample of students with disabilities. In fact, slightly more than 50% of boys and girls with disabilities were in Model and Average configurations, which suggests that many students with disabilities may not experience increased levels of adjustment difficulties. Furthermore, consistent with prior research (e.g., Anderman & Maehr, 1994; Eccles & Roeser, 2011; Seidman et al., 1994), many general education students also experience adjustment difficulties during the first year of middle school. Nearly 14% (152) of general education boys were in the low-adaptive ICP, 11% (127) were in the popular-aggressive ICP, and 8% (88) were in the passive ICP. For general education girls, 15% (213) were identified in the popular-aggressive ICP, 131 (9%) were in the passive ICP, and 93 (6%) were in the low-adaptive ICP. In sum, there were 4 times as many general education students (803: 367 boys) in risk ICPs compared with 197 (128 boys) students with disabilities. Therefore, although a higher proportion (47%) of students with disabilities were identified in risk configurations compared with general education students (31%), only a fifth of the students in general education classrooms who were identified by teachers as experiencing interpersonal risks were students with disabilities. This is an important finding for the MTSS framework and suggests that it is critical to have a continuum of supports for all students in the middle school setting.

What differentiates middle school students with disabilities who have elevated levels of teacher-rated school adjustment difficulties from those who do not? As reflected by differences in perceptions of the school context and the transition to middle school, it appears that a focus on ICPs may yield important insights into differential school experiences for subtypes of youth with disabilities and their risk for school adjustment problems. Troubled boys appear to perceive a host of school context and transition difficulties that distinguish them from boys with disabilities in lower risk ICPs. These difficulties include lack of peer support for academic effort, low school belonging, elevated emotional risk for academic participation, problems negotiating the dynamics of bullying, and concerns with the middle school transition across procedural, social, and academic domains. Similarly, Passive boys appear to experience emotional risk for academic effort, feelings of not belonging, difficulties with bullying, and pervasive problems with the transition to middle school with particularly pronounced concerns in the social domain. Clearly, these results suggest that both

Troubled and Passive boys are not adjusting well in middle school and their teachers can see that they are struggling in this context. Average boys with disabilities tended to have more positive perceptions of the school context and transition than Troubled and Passive boys, but generally less favorable perceptions than Model and Tough boys. Although Tough boys are identified by teachers as having very elevated levels of aggressive and problematic behavior, they have positive perceptions of the school context and appear to feel well supported by peers even in terms of academic effort and achievement and with regard to protection from peer victimization. These results may highlight the importance of peer support in early adolescents' sense of belonging (Talbot & Cushing, 2011; Vaz et al., 2014).

The findings for girls were somewhat similar to those of the boys, yet there are also clear differences for boys and girls in terms of their middle school adjustment. Unlike boys, girls with disabilities in distinct ICPs did not differ from each other in terms of peer norms for academic effort, school belonging, or perceived emotional risk, but they did differ in school valuing with Troubled, Average, and Model girls having higher school valuing than Tough and Passive girls. Similarly, girls with disabilities in distinct ICPs did not differ on their perceptions of whether they would protect peers from bullying or whether peers would protect them from bullying, but they did differ on whether they thought peers would encourage others to bully them. Passive and Troubled girls had the most elevated levels of perceiving that peers would encourage the bully, whereas Tough and Average girls did not differ from girls in any other configuration, and Model girls had levels that were significantly lower than those of Passive and Troubled girls. Average and Troubled girls had very elevated levels of difficulty with the middle school transition in terms of the academic domain, whereas Tough girls had the least difficulty. There were no differences in the perceptions of the procedural and social aspects of the transition for girls with disabilities in distinct ICPs.

These findings demonstrate the importance of person-oriented approaches and the potential value of identifying subtypes of students with disabilities as we work to clarify their intervention support needs. Overall, Troubled and Passive students are more likely to experience difficulties in middle school with specific domains and intensity of these difficulties moderated by gender. The value of the person-oriented approach and the identification of subtypes come into strongest focus when comparing Tables 3 and 4. The variable-oriented approach presented in Table 3 shows that, compared with students without disabilities, students with disabilities were more likely to have negative perceptions of their middle school experiences in eight of the 10 domains examined. Table 4 shows these experiences are differentially distributed across ICPs for students with disabilities and tend to be concentrated in two or three

subtypes rather than uniformly experienced by all students with disabilities. The most instructive findings may be for the two domains (i.e., peer norms for academic effort, academic transition) not identified in Table 3 as being different for students with and without disabilities. Although there is no general difference in these domains as demonstrated by a variable-oriented approach, there is extreme variability within boys with disabilities for perceptions of peer norms of academic effort and within both boys and girls with disabilities for difficulties in the transition to middle school within the academic domain. This critical information is lost with a variable-oriented approach but comes into focus with person-oriented analyses and may help guide multifaceted systems-oriented interventions that are tailored to the needs and experiences of subtypes of students.

Implications for Intervention

Two critical but somewhat elusive issues for special education involve the identification of students' intervention needs early in the developmental process and clarification of what works for whom (Conroy, 2016; Ludlow, 2014; Maggin et al., 2016). Considerable progress has been made with regard to the development of screening instruments to identify middle school students who experience adjustment difficulties in the academic, behavioral, and social domains (Lane et al., 2016, 2018). Although these approaches center on a variable-oriented framework, they could easily be adapted to include or be complemented by a person-oriented approach. Such efforts may make it possible to telescope in on an individual student's specific needs and move the field closer to addressing the "what works for whom" question.

The current findings indicate that early in the first year of middle school, teachers are able to identify youth with disabilities who are experiencing adjustment difficulties. Consistent with a DST framework, students who have the most pronounced and pervasive difficulties tend to have problems across multiple domains of school functioning (i.e., correlated constraints). It is likely that effective intervention efforts to support positive and sustained adaptation for students who experience multiple risks are cognizant of these factors operating as a system and use a dynamic approach that centers on the organization of these factors operating in an interconnected fashion (Eccles & Roeser, 2011; Farmer, Gatzke-Kopp, et al., 2016). Teachers should be aware that as they intervene with a student in one domain of school functioning, other domains may influence or be influenced by the intervention (Farmer, Sutherland, et al., 2016). From this perspective, interventions within an MTSS framework should focus on students' response to an intervention not only with regard to the focal target behavior but also with regard to the impact on other key developmental process variables (e.g., school belonging, bullying involvement, perceptions of the

academic, and peer ecology) and the organization of critical variables operating as a system (Farmer et al., 2018; Sutherland et al., 2018). This is likely to be beyond the understanding, training, and skill sets of many general educators. Therefore, special educators may need to work as intervention specialists who conduct screening and progress monitoring assessments, clarify various factors that contribute to students' adjustment difficulties, and work with general educators to provide carefully coordinated and targeted interventions that are tailored to the needs of subtypes of youth (Farmer, Sutherland, et al., 2016; Sutherland et al., 2018).

Limitations and Future Research Needs

This study has several strengths including a relatively large sample of both students with disabilities and students without disabilities. Yet, even with 415 students with disabilities, the sample at the subtype level becomes much smaller, particularly when it is separated for boys and girls. There is a need for replication studies with larger samples. Second, this study was limited to a single time point. We examined students' adaptation in the first few weeks of their first year of middle school and focused on patterns among variables but not over time. To clarify processes of students' adaptation in middle school, there is a need for short-term examinations (e.g., daily assessments over several success weeks) of how different ICPs are sustained or reorganize over time in relation to stability and change in different developmental process factors. There is also a need for long-term longitudinal studies that look at the predictive power of the ICPs over a school year, across school years, and into early adulthood. This information is needed to clarify the degree to which person-oriented approaches can help identify youth who are at risk of difficulties, as well as the processes related to the maintenance and change of these difficulties. Third, the focus of this study centered on students with disabilities. Although students with disabilities had elevated percentages of youth in high or multi-risk ICPs, the majority of youth within each of the ICPs were students without disabilities. There is a need to examine and clarify the risks of these students as well, because they should also receive services within MTSS.

Conclusion

This study provides a new lens for considering the support to address the needs of students with disabilities as they transition to middle school. Although students with disabilities are identified in configurations at elevated risk levels based on teachers' ratings of their school adjustment, over half appear to be adjusting relatively well at the beginning of middle school. Students with disabilities who are identified in multi-risk ICPs are more likely to report that they experience the school context in less favorable ways. This is

important for two reasons. First, it indicates that teachers can identify students who experience adjustment difficulties early on. Second, it suggests that consistent with a DST framework and correlated constraints perspective that students in multi-risk ICPs experience risk across multiple domains that are likely to be contributing to adjustment difficulties. This suggests that a person-oriented approach may complement and support MTSS and response to intervention approaches as special and general educators work together to support the needs and adaptation of all students.

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