University of California, Santa Barbara

An Exploration of School Belonging Among Primary and Secondary School Students

by

Rhea Esha Wagle

A dissertation submitted in partial satisfaction of the requirements for the degree of Doctor of Philosophy in Counseling, Clinical, and School Psychology

Committee in charge:

Professor Erin Dowdy, Chair

Professor Jill Sharkey

Professor Karen Nylund-Gibson

September 2021

The dissertation of Rhea Esha Wagle is approved.

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Erin Dowdy, Committee Chair

June 2020

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Curriculum Vitae
RHEA WAGLE

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EDUCATION

2016 – 2021 (expected)	**University of California, Santa Barbara** *Counseling, Clinical, School Psychology* Ph.D. in Counseling, Clinical, and School Psychology Emphasis in School Psychology Advisor: Erin Dowdy, Ph.D.
2010 – 2014	**University of California, Berkeley** *College of Letters and Sciences* B.A. in Psychology and Media Studies

RESEARCH EXPERIENCE

Dissertation Research September 2016 – June 2020

Title: *An Exploration of School Belonging Among Primary and Secondary School Students*

- Collected longitudinal schoolwide social emotional screening data for primary school students grades 4-5 (2018-2019) and secondary school students grades 9-12 (2016-2018)
- Facilitated onsite data collection through electronic survey administration for approximately 2,000 secondary school students each school year
- Collaborated with a Northern California school district to manage data collection across multiple primary schools each school year
- Designed research questions and data analysis procedures
- Conducted data cleaning and data management for two longitudinal datasets
- Performed advanced structural equation analyses, including latent profile analysis
- Results to be presented in two integrated dissertation manuscripts

Chair: Erin Dowdy, Ph.D.
Committee Members: Jill Sharkey, Ph.D., Karen Nylund-Gibson, Ph.D.

Graduate Student Researcher September 2016 – June 2020
Center for School Based Youth Development *(Approximately 10 Hours/Week)*
University of California, Santa Barbara

- Facilitate implementation and evaluation of a four-year U.S. Department of Education, Institute of Education Sciences grant to evaluate the psychometric properties of the Social Emotional Health Survey – Secondary
- Maintain four-year longitudinal database of schoolwide mental health screening data

- Aid in administering and proctoring school-wide mental health screening of secondary school students
- Conduct literature reviews to create flyers with evidence-based interventions for students
- Provide survey results and feedback to schools to support at-risk students
- Participate in weekly project meetings to track progress towards project goals

Advisors: Erin Dowdy, Ph.D. & Michael Furlong, Ph.D.

Project Coordinator September 2016 – June 2019
Check, Connect, & Respect Mentoring Program *(Approximately 10 Hours/Week)*
University of California, Santa Barbara & Santa Barbara Unified School District

- Trained undergraduate student mentors and provided weekly training, instruction, and supervision
- Coordinated high school student referrals to the program through screening measures and teacher/counselor referral
- Developed and organized measures for data collection and program evaluation
- Evaluated implementation and success of intervention on participants' social-emotional and academic well-being
- Managed university human subjects research approval
- Trained and supervised undergraduate research assistants

Advisor: Erin Dowdy, Ph.D.

Graduate Student Researcher September 2016 – June 2017
Project Act Early *(Approximately 5 Hours/Week)*
University of California, Santa Barbara

- Assisted with U.S. Department of Education, Institute for Education Sciences grant to evaluate the psychometric properties of the BASC-3 Behavioral Emotional Screening System
- Aided with teacher and family recruitment and data collection
- Devised data entry system on SPSS

Advisor: Erin Dowdy, Ph.D., & Randy W. Kamphaus, Ph.D.

Undergraduate Research Assistant June 2012 – May 2014
Gopnik Cognitive Development Lab *(Approximately 8 Hours/Week)*

University of California, Berkeley

- Led data collection and experimentation for cognitive development studies with children of various ages

Advisor: Anna Waismeyer, Ph.D., & Caren Walker, Ph.D.

Undergraduate Research Assistant August 2011 – May 2012
Berkeley Social and Personality Lab *(Approximately 8 Hours/Week)*
University of California, Berkeley

- Facilitated data collection for various social psychology studies

Advisor: Alice Moon, Ph.D.

PUBLICATIONS

Stifel, S.W.F., Feinberg, D.K., Zhang, Y., Chan, M., & **Wagle, R.** (revise and resubmit). Assessment during the COVID-19 pandemic: Ethical, legal, and safety considerations for moving forward. *School Psychology Review*.

Hinton, T., Dowdy, E., Furlong, M.J., Nylund-Gibson, K., Carter, D., & **Wagle, R**. (revise and resubmit). Examining the Social Emotional Health Survey – Secondary for use with Latinx youth. *Journal of Psychoeducational Assessment.*

Wagle, R., Dowdy, E., Furlong, M.J., Nylund-Gibson, K., Carter, D., & Hinton, T. (revise and resubmit). Anonymous vs. self-identified response formats: Implications for mental health screening in schools. *Assessment for Effective Intervention*.

Wagle, R., & Dowdy, E. (2020). Legal and ethical considerations for family-school engagement with undocumented families. *Contemporary School Psychology.* doi:1010017/s46088-020-00278-w

Moffa, K., **Wagle, R.**, Dowdy, E., Palikara, O., Ortega, S., Dougherty, D., & Furlong, M. (2019). The Me & My School Questionnaire: Examining the cross-cultural validity of a children's self-report mental health measure. *International Journal of School & Educational Psychology*. doi:10.1080/21683603.2019.1650858

Wagle, R., Dowdy, E., Yang, C., Palikara, O., Castro, S., & Furlong, M. (2018). Preliminary investigation of the Psychological Sense of School Membership scale with primary school students in a cross-cultural context. *School Psychology International, 39*, 1 - 19. doi:10.1177/0143034318803670

Bertone, A., Moffa, K., **Wagle, R.**, Fleury, I., & Dowdy, E. (2018). Considerations for mental health screening with Latinx dual language learners. *Contemporary School Psychology, 11*, 20 - 30. doi:10.1007/s40688-018-0205-y

Dowdy, E., & **Wagle, R.** (2018). Friendships – lacking a friend and feeling lonely: Helping handout for school and home. In K. Minke & G. Bear (Eds.), *Helping children handouts: Prevention and intervention strategies for common concerns at school and at home.* Bethesda, MD: National Association of School Psychologists.

Kim, E., Mayworm, A., **Wagle, R.**, & Dowdy, E. (2018). Home-school assessment. In S.A. Garbacz (Ed.), *Implementing family-school partnerships: Student success in school psychology research and practice*. NY, New York: Taylor & Francis/Routledge.

Technical Reports

Wagle, R. & Dowdy, E. (2019). Evaluation of the Check, Connect, and Respect Mentoring Program at San Marcos High School. Report submitted to San Marcos High School.

Moore, S., **Wagle, R.,** & Dowdy, E. (2018). Evaluation of the Check, Connect, and Respect Mentoring Program at San Marcos High School. Report submitted to San Marcos High School.

CONFERENCE PRESENTATIONS

Wagle, R., Dowdy, E., Yang, C., Moffa, K., & Furlong, M. (February 2019). Psychological Sense of School Membership scale with cross-cultural pre-adolescent students. Poster presented at National Association of School Psychologists Annual Convention. Atlanta, GA.

Wagle R., Moffa, K, Dowdy, E., Furlong, M., & Nylund-Gibson, K. (August 2018). Initial validation of the Me & My School questionnaire for use in complete mental health screening. Poster presented at American Psychological Association Annual Convention. San Francisco, CA.

Kim, E., Mayworm, A., **Wagle, R.**, & Dowdy, E. (February 2018). Implementing family-school partnerships: Emotional and behavioral screening. Paper presented at National Association of School Psychologists Annual Convention. Chicago, IL.

Moore, S., Moffa, K., Bertone, A., & **Wagle, R.** (February 2018). Dual-factor mental health in adolescence: Longitudinal trends to inform screening. Paper presented at National Association of School Psychologists Annual Convention. Chicago, IL.

Stein, R., Mayworm, A., Moore, S., & **Wagle, R.** (February 2018). Sustaining tier 1 and tier 2 interventions through school-university partnerships. Practitioner conversation at National Association of School Psychologists Annual Convention. Chicago, IL.

Wagle, R., Bertone, A., Moffa, K., & Edyburn, K. (February 2018). Mental health screening in a culturally responsive way. Practitioner conversation at National Association of School Psychologists Annual Convention. Chicago, IL.

CLINICAL/PRACTICUM EXPERIENCE

Psychological Assistant September 2019 – June 2020
Child Abuse Listening Mediation, Santa Barbara, CA *(Approximately 20 Hours/Week)*

- Provide 1:1 individual and family psychotherapy with children (ages 4-17) and parents who have experienced trauma and abuse
- Conduct intake sessions with families and children to discuss presenting problems and therapeutic goals
- Lead group therapy with pre-adolescent children (ages 11-13) who are domestic abuse survivors
- Conduct Parent-Child Interaction Therapy for children who are experiencing behavioral difficulties
- Maintain cases through writing progress notes, creating treatment plans, monitoring progress towards goals, and administering periodic assessments

Supervisor: Rachel Hopsicker, Ph.D.

Psychological Assistant September 2018 – September 2019
Lifespan Development Center, Carpinteria, CA *(Approximately 10 Hours/Week)*

- Administered, scored, and interpreted comprehensive psychodiagnostic evaluations, including intellectual, neuropsychological, cognitive processing, social-emotional, and achievement assessments with children ages 8-17
- Conducted intake sessions with families to discuss presenting problems and appropriate tools for psychodiagnostic evaluations
- Wrote comprehensive psychodiagnostic reports and presented results to families during feedback sessions
- Provided information regarding appropriate interventions and supports for children
- Primary diagnoses included attention-deficit/hyperactivity disorder, specific learning disorder, depression, and anxiety disorders

Supervisor: Roland Rotz, Ph.D.

Advanced Practicum Student August 2018 – June 2019
Foothill Elementary School, Goleta, CA *(Approximately 10 Hours/Week)*

- Provided individual psychotherapy to students in grades 1-6 with presenting problems related to anxiety, obsessive-compulsive disorder, attention-deficit/hyperactivity disorder, autism spectrum disorder, conduct, and learning difficulties. Targeted goals included reducing anxiety symptoms, promoting positive self-assessments and esteem, promoting resiliency and efficacy in school-work completion, building social skills, building coping skills, and self-management
- Utilized cognitive-behavioral and solution-focused approaches in counseling
- Monitored progress toward counseling goals using youth self-report measures, teacher report measures, and observation
- Administered, scored, and interpreted comprehensive psychoeducational evaluations, including intelligence, cognitive processing, achievement, and social-emotional measures; classroom and playground observations; and student, teacher, and parent interviews
- Wrote comprehensive reports and presented results at Individualized Education Program (IEP) meetings
- Consulted with parents and teachers to support students in the classroom and at home
- Consulted with school staff during Student Study Team meetings to determine appropriate mental health and academic interventions for at-risk students

Supervisors: Amanda Fox, M.Ed., PPS, & Erin Dowdy, Ph.D.

Advanced Practicum Student March 2019 – June 2019
Learning Tree Preschool, Goleta, CA *(Approximately 5 Hours/Week)*

- Administered, scored, and interpreted comprehensive psychoeducational assessments, including intelligence, neuropsychological, cognitive processing, social-emotional, and adaptive behavior measures for preschool-age children to determine kindergarten readiness and educational placement in elementary school settings

- Consulted with learning specialists, teachers, and parents to determine appropriate IEP goals
- Wrote comprehensive reports and presented results and recommendations at IEP meetings

Supervisors: Kimberlee Grant, M.Ed., PPS, & Erin Dowdy, Ph.D.

Practicum Student August 2017 – June 2018
Ellwood Elementary School, Goleta, CA *(Approximately 15 Hours/Week)*

- Provided individual psychotherapy to students in grades K-6 with anxiety, depression, autism spectrum disorder, and attention-deficit/hyperactivity disorder
- Provided group psychotherapy to two Center for Therapeutic Education (CTE) classrooms including students with emotional disturbances
- Provided behavioral and social-emotional consultation for teachers and parents regarding student and classroom difficulties
- Conducted psychoeducational assessments, including intellectual, cognitive processing, achievement, and social-emotional assessments; behavioral observations; and student, teacher, and parent interviews to determine special education eligibility
- Wrote psychoeducational reports and presented results at IEP meetings to discuss student special education eligibility or 504 plan eligibility
- Wrote IEP academic and social-emotional student goals and progress monitored to determine student progress towards IEP goals
- Designed and administered curriculum for 6th grade students regarding managing anxiety and utilizing appropriate coping tools
- Assisted in implementation of school-wide universal mental health screening

Supervisors: Joe Isaacson, M.Ed., PPS & Jill Sharkey, Ph.D., NCSP

Preschool Social Emotional Learning Instructor January 2017 – June 2017
Santa Barbara Unified School District *(Varied Hours)*

- Devised evidence-based social-emotional learning interventions for preschool aged children
- Administered class-wide interventions to children at various preschools

Supervisor: Erin Dowdy, Ph.D.

Psychology Practicum January 2017 – June 2017
Hosford Clinic, Santa Barbara, CA *(Approximately 10 Hours/Week)*

- Provided individual psychotherapy to college-aged students, including administration of self-report rating scales
- Participated in weekly supervision during which videotaped sessions were reviewed
- Attended monthly clinical training workshops

Supervisor: Heidi Zetzer, Ph. D.

Behavior Technician July 2014 – May 2016
Gateway Learning Group, San Francisco, CA *(Approximately 30 Hours/Week)*

- Conducted 1:1 behavioral therapy for children (ages 2-11) with autism spectrum disorder and developmental delays in schools and homes

Supervisors: Behaviorists with BCBAs (varied per case)

Social Skills Guide July 2014 – May 2016
Seesaw, San Francisco, CA *(Approximately 10 Hours/Week)*

- Provided 1:1 and group social skills support to children (ages 3-10)
- Created and conducted multiple one-hour social-emotional learning classes

Supervisor: Sabrina Gabel, Ph.D.

TEACHING AND SUPERVISION EXPERIENCE

Teaching Assistant **University of California, Barbara**

- Assessment and Data Based Decision Making in the Schools: School Psychology Practicum; *Counseling, Clinical, and School Psychology Department* (CNCSP); Fall 2019, Winter 2020, Spring 2020
  - Provide weekly supervision to 2nd year school psychologist practicum students
  - Read students' weekly logs to determine areas in which supervision is needed
  - Create and present course lectures
  - Observe practicum students in session with clients and provide feedback
  - Meet with on-site supervisors to discuss course policies and expectations

- Advanced Fieldwork: School Based Mental Health Theories and Interventions; *Counseling, Clinical, and School Psychology Department* (CNCSP); Fall 2019, Winter 2020, Spring 2020
  - Provide weekly supervision to 3rd year school psychologist practicum students
  - Read and provide feedback for students' weekly client case notes
  - Create and present course lectures
  - Observe practicum students in session with clients and provide feedback
  - Meet with on-site supervisors to discuss course policies and expectations

Mentorship Course Supervisor **University of California, Santa Barbara**

- Check Connect, Respect Course; *Counseling, Clinical, and School Psychology Department* (CNCSP); Fall, Winter, Spring 2016-17, 2017-18, 2018-19
  - Led course to facilitate mentorship program between undergraduate students and local high school students
  - Provided weekly training and instruction to undergraduate mentors, in the form of didactic presentations, and supervision regarding high-school student mentees
  - Created and conduct multiple one-hour lectures
  - Designed course content and quarterly syllabi
  - Graded assignments and provided feedback to students

PROFESSIONAL SERVICE

Co-reviewer, *Journal of School Psychology* May 2019 – Present
Co-reviewer, *Assessment for Effective Intervention* January 2018 – Present
Co-reviewer, *School Mental Health* April 2017 – Present
Co-reviewer, *Journal of Psychoeducational Assessment* October 2016 – Present
Blend Committee Member, Associated Students, Department of Counseling, Clinical, School Psychology, UCSB October 2016 – Present

HONORS AND AWARDS

International Center for School-Based Youth Development's Award for Student Leadership in School-Based Research, University of California, Santa Barbara — April 2019

Counseling, Clinical, and School Psychology Travel Grant, University of California, Santa Barbara — February 2019

Counseling, Clinical, and School Psychology Travel Grant, University of California, Santa Barbara — February 2018

Gevirtz Graduate School of Education Dean's Travel Grant, University of California, Santa Barbara — March 2018

UC Regents Four-Year Fellowship, University of California, Santa Barbara — March 2016

PROFESSIONAL AFFILIATIONS

American Psychological Association, Student Member
California Association of School Psychologists, Student Member
Central Coast Association of School Psychologists, Student Member
International School Psychology Association, Student Member
National Association of School Psychologists, Student Member

ABSTRACT

An Exploration of School Belonging Among Primary and Secondary School Students

by

Rhea Wagle

School belonging has been shown to have several critical associations for children, inclusive of psychological distress, academic success, long-term career success, and physical health. As such, it has become increasingly important to fully understand the construct of school belonging and how it impacts students. The literature on school belonging has consistently focused on secondary school students and the associations with mental health have almost exclusively fixated on psychological distress, rather than complete mental health (i.e., both psychological strengths and psychological distress). This dissertation aims to better understand school belonging in both primary and secondary school students through addressing these gaps in the literature. In Study 1, the constellation of school belonging experiences in primary school students were assessed through Latent Profile Analysis (LPA). Results found support for a three-class solution: *High*, *Moderate*, and *Low School Belonging* classes, with the majority of students falling in the *Moderate* and *Low* classes. Proximal outcomes of complete mental health were examined and results were in expected directions. For example, students in the *High School Belonging* class self-reported high psychological strengths and low psychological distress. In Study 2, school belonging was examined as a protective and promotive factor within the relation between complete mental health and academic achievement in secondary school students through a moderated path analysis.

Results indicated that school belonging acted as both a protective and promotive factor within the context of psychological strengths and academic achievement. Taken together, the findings from both studies further support the continued need for investigating and understanding school belonging and how it impacts all students in various contexts.

Keywords*: school belonging, complete mental health, latent profile analysis (LPA), moderation, academic achievement*

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Integrated Introduction: An Exploration of School Belonging Among Primary and Secondary School Students

There is a recognized understanding of school belonging's influence on students' psychological and academic well-being (Anderman & Anderman, 1999; Frydenberg et al., 2009; Millings et al., 2012; Tinto, 1997). While school belonging, which is often described using various terms such as school connectedness, school bonding, school membership, and school attachment, is a well-researched construct in the field, there are still major gaps in the literature. One major gap in the literature is the lack of focus on primary school populations. School belonging has been widely studied among secondary school populations (Fletcher et al., 2008; McLeod & Kaiser, 2004; Needham, 2009) and has even been researched among post-secondary school populations (Pittman & Richmond, 2007). Despite abundant research on primary school students' teacher and peer relationships (Baker, 2006; Drake et al., 2014; Spilt et al., 2012), there is a lack of understanding about how the entire construct of school belonging affects primary school students. Meta-analyses of school belonging tend to show studies focused on older student populations (Allen et al., 2016; Fredericks et al., 2004; Wood & Mayo-Wilson, 2012), indicating that it is difficult to find substantial research on school belonging on primary school students. Understanding primary school students' school belonging experiences is critical due to the known importance of prevention and early intervention. Students begin to construct their identities within the school community at an early age and these identities can persist for several years (Altenbaugh et al., 1995). Therefore, schools must expand their understanding of how younger students can improve their sense of school belonging, thus improving their mental health and academic well-being.

Additionally, while school belonging is known to have strong associations with both mental health and academics, its role as a potential moderator within the relation between mental health and academics has not been researched as robustly. This gap in the literature is unfortunate, given school belonging's known roles as a protective and promotive factor in several contexts. Understanding for whom a high sense of school belonging is most influential can have an effect on which populations can be targeted for school-based interventions. These students could be more successful if interventions were targeted directly towards them, rather than making use of universal interventions, which may not be as effective.

Lastly, the dual-continua model of mental health, or complete mental health (Furlong et al., 2014), continues to be under-explored, even within school belonging research. This lack of attention to positive indicators of well-being is another significant gap in the school belonging literature. The modern view of mental health includes both psychological strengths/well-being and psychological distress and is based on the work of several researchers (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008; Wilkinson & Walford, 1992). School belonging has been researched and known to have several strong associations with mental health. However, these associations are largely based on the deficit-model of mental health, which solely focuses on psychological distress. By excluding psychological strengths, these studies are missing a critical aspect of students' psychological experiences.

This dissertation aims to investigate school belonging in both primary and secondary school students. Specifically, this dissertation seeks to make several contributions to the field by providing a more thorough understanding of the constellation of school belonging experiences among primary school students and informing interventions aimed at enhancing

school belonging for both primary and secondary school students. Additionally, this dissertation expects to clarify school belonging's role within mental health and academics in secondary school students and identify which populations benefit the most from higher levels of school belonging. Both studies in this dissertation use a dual-continua model of mental health in order to understand students' experiences from a complete mental health perspective.

Study 1: Exploring Latent Class Membership of School Belonging Within a Primary School Context

In Study 1, a latent profile analysis (LPA) was conducted to analyze school belonging profiles of 619 fourth and fifth grade students from one school district in Northern California. These profiles provide insight into the constellations of school belonging experiences in primary school students. The indicators were composed of mean scores taken from the Psychological Sense of School Membership scale (PSSM; Goodenow, 1993). More specifically, items from the PSSM were categorized into five areas of school belonging based on face validity and existing research on the school belonging construct: 1) general sense of acceptance, 2) general sense of rejection, 3) sense of affective belonging, 4) sense of peer support, and 5) sense of teacher support, and each of these five areas formed five continuous indicators in the LPA. Proximal complete mental health outcomes were examined for all students using items from the Social Emotional Health Survey – Primary (SEHS-P; Furlong et al., 2013) and the Me & My School Questionnaire (M&MS; Deighton et al., 2013).

Analyzing proximal mental health outcomes serves two purposes: 1) to validate the classes created in the LPA and 2) to inform practitioners and researchers about associations of specific school belonging experiences on mental health in youth. Furthermore, this study

incorporates multiple known aspects of school belonging, such as teacher support and peer support, to better understand how each of these aspects contributes to students' overall sense of school belonging and whether students can experience differing levels of each area at once. For example, is it possible for a student to feel high teacher support, low peer support, and high rejection? This nuanced view of school belonging is lacking in the literature today, particularly among primary school students. With more information about how each area of school belonging forms students' belonging experiences and how these profiles are associated with proximal mental health outcomes, schools will be able to better understand which areas are most influential in complete mental health. Therefore, some school belonging areas may be considered more explicitly when developing school-based interventions.

Study 2: Exploring School Belonging's Impact on Mental Health and Achievement in Secondary School Students

In Study 2, a moderation model was computed to investigate the relations between school belonging, complete mental health, and academic achievement among 1,038 students from a high school in Central California, Grades 9-12. More specifically, school belonging was examined as a potential moderator to understand its role within psychological well-being/distress and academic achievement (i.e., GPA). Thus, a moderation model was analyzed using a moderated path analysis in MPlus version 7.4 (Muthén & Muthén, 1998-2015). The measures utilized include the School Connectedness Scale (SCS; Resnick et al., 1997), the Social Emotional Health Survey – Secondary (SEHS-S; Furlong et al., 2014), and the Social Emotional Distress Survey – Secondary (SEDS-S; Dowdy et al., 2018).

The justification for this study is that school belonging is a known protective and promotive factor within several contexts. However, its role within complete mental health and academic achievement is largely unknown, with one known study analyzing this relation from a deficit-based mental health model. Given the importance of psychological and academic development in adolescence due to important transitions during this time, it is crucial to better understand how school belonging can form a protective or promotive role to buffer against the negative effects of mental health problems. While mental health improvements can be difficult to target among adolescents, school belonging levels are more malleable and are more in control by school administrators, such as through interventions aimed at enhancing belonging levels (Byrnes, 2003). Interventions aimed at improving school belonging levels can be better informed once it is understood which student populations benefit the most from them.

Conclusion

This dissertation seeks to contribute to the field of school belonging in multiple ways. The results from Study 1 enhance researchers' and practitioners' understanding of primary school students' constellations of experiences of school belonging, including how each of five aspects of school belonging is connected. By analyzing the mental health proximal outcomes, practitioners can further recognize how different experiences and aspects of school belonging correspond to mental health outcomes in students. This study aims to enhance school-based interventions by pinpointing which aspects of school belonging are most influential in mental health. Similarly, the results from Study 2 provide a more robust view of school belonging's protective and promotive roles within mental health and academic achievement. It is expected that school belonging will influence certain students' GPA levels

more strongly, thus providing more information for which students should be targeted by interventions. Due to school belonging's strongly held associations with mental health and academic achievement, these studies seek to further develop the field by answering advanced and nuanced questions.

References

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Dowdy, E., Furlong, M.J., Nylund-Gibson, K., & Moffa, K. (2018). Initial validation of the Social Emotional Distress Survey—Secondary to support complete mental health

screening. *Assessment for Effective Intervention, 43,* 241—248. https://doi.org/10.1177/1534508417749871

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Furlong, M.J., Dowdy, E., Carnazzo, J., Bovery, B.L., & Kim, E. (2014). Covitality: Fostering the building blocks of complete mental health. *Communique, 42,* 28—29.

Furlong, M. J., You, S., Renshaw, T. L., O'Malley, M. D., & Rebelez, J. (2013). Preliminary development of the Positive Experiences at School Scale for elementary school children**.** *Child Indicators Research, 6,* 753–775. https://doi.org/10.1007/s12187-013-9193-7

Furlong, M. J., You, S., Renshaw, T. L., Smith, D. C., & O'Malley, M. D. (2014). Preliminary development and validation of the Social and Emotional Health Survey for secondary students. *Social Indicators Research, 117,* 1011–1032. https://doi.org/10.1007/s11205-013-03730

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Study 1: Exploring Latent Class Membership of School Belonging Within a Primary School Context

Abstract

School belonging is a critical construct for investigation due to its significant associations with mental health outcomes, academic achievement, and risky behaviors. The current study aims to further explore the experiences of school belonging in upper elementary school students through latent profile analysis. The population in this analysis includes 619 fourth and fifth grade students (N = 619) from seven elementary schools from Northern California. The analyses revealed best fit for a three-class solution: *Low School Belonging*, *Moderate School Belonging*, and *High School Belonging*, with the majority of students classifying in the *Low* and *Moderate School Belonging* classes. Demographic covariates of gender indicated that female students were more likely to experience high school belonging levels that male students. Similarly, covariates of race/ethnicity suggested that Latinx students were more likely to experience high school belonging levels than non-Latinx students. Proximal outcomes of psychological strengths and psychological distress are examined for each identified group. Practical implications include assessing and treating school belonging more effectively in students given the small percentage of students who perceive high levels of school belonging.

Keywords: *school belonging, latent profile analysis, primary school students*

Exploring Latent Class Membership of School Belonging Within a Primary School Context

Research over the past several decades has repeatedly shown that school belonging influences students' psychological and academic well-being. School belonging has been associated with increased general adjustment and well-being in a school context (Frydenberg et al., 2009), an increased overall quality of life (Gillison et al., 2008), increased academic motivation and persistence (Anderman & Anderman, 1999; Tinto, 1997), higher prosocial behavior (Solomon et al., 1996), lower rates of delinquency and dropout (Finn & Rock, 1997), and less frequent negative emotions, such as depression (Millings et al., 2012). In fact, studies have found that students are more likely to become depressed when their needs of belonging at school are unmet (Millings et al., 2012; Ross et al., 2010).

School belonging has generally been defined as "the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993, p.80). However, the construct of school belonging is nebulous and is often used interchangeably with various terms, including school membership, school connectedness, student engagement, and school attachment. For example, *school connectedness* refers to the "belief by students that adults and peers in the school care about their learning as well as them as individuals" (Center for Disease Control, p.3). Similarly, *school membership* "means that students have established a social bond between themselves, the adults in the school, and the norms governing the institution" (Wehlage et al., 1989, p.10). Regardless of the term used, the meaning relates to students' mindsets about how they fit in and have a connection to the broader school community. In

the context of this study, the term *school belonging* will be used to encompass students' sense of connection and community within the school context.

The lack of clarity in terminology has led to differences in measurement and a lack of consensus regarding what makes up the concept of school belonging. Some scales include items measuring rejection, or the negative aspect of belonging (i.e., "It is hard for students like me to be socially accepted at school"), while others only measure the positive aspect of belonging (i.e., "I feel like a real part of my school") (Goodenow, 1993; Resnick et al., 1997). One measure, the *Psychological Sense of School Membership* Scale (PSSM; Goodenow, 1993) was originally intended to be unidimensional, with one *membership* construct including both acceptance and rejection items. However, subsequent studies have found varied factor structures, including a bidimensional factor structure with acceptance items forming one factor and rejection items forming a second factor (Gaete et al., 2016; Hagborg, 1994; Ye & Wallace, 2014; You et al., 2011). Similarly, O'Farrell and Morrison (2003) further analyzed school belonging by conducting a factor analysis of students' responses to several measures of school belonging and found evidence for five separate factors: students' relationships at school, students' perceived levels of competence in school subjects, students' sense of acceptance by adults at school, students' attitudes about academic tasks, and students' expectations about future academics and vocational endeavors. However, their findings did not include a rejection factor, further validating a need for additional exploration of the school belonging construct.

These varied findings across measures of school belonging may be due to a method effect (i.e., methodological differences in using positively versus negatively worded items; DiStefano & Motl, 2009). However, the varied findings may also provide evidence that

belongingness is a more complicated construct than how it has often been conceptualized. As such, this study aims to further understand the construct of school belonging to analyze the constellations of primary school students' experiences of belonging. More specifically, this study will examine students' experiences with well-known aspects of school belonging (i.e., general feeling of acceptance at school, general feeling of rejection at school, affective sense of belonging at school, peer support, teacher support) to better understand how these aspects fit together and connect with each other to form school belonging experiences. Results will help provide a more nuanced view of how school belonging is experiences in younger students.

In addition, school belonging has been widely researched in secondary school settings, including both middle and high schools, yet the research is lacking within primary school contexts. Research in elementary schools has focused on the importance of student-teacher and peer relationships (Baker, 2006; Drake et al., 2014; Spilt et al., 2012). While these are both important aspects of school belonging, the overarching construct of school belonging, inclusive of several aspects, has not been widely studied with younger students. A few studies have focused on primary school students with one study finding that increased school belonging is related to decreased internalizing and externalizing behaviors in primary school students (Murray & Greenberg, 2000) and another study suggesting that primary school students are generally known to have high levels of school belonging due to logistical variables such as smaller class sizes and having one main classroom teacher (Fredericks et al., 2005). Yet, meta-analyses on school belonging and related terms have focused on research with middle and high school students (Allen et al., 2016; Fredericks et al., 2004; Wood & Mayo-Wilson, 2012), indicating that more research on school belonging is needed

with a younger population. This is especially important given that primary schools provide the foundation for formal education and students at this age are beginning to view themselves as part of the educational institution within a social context. Concurrently, students in primary schools remain impressionable and early intervention targeting school belonging can have a noteworthy impact, suggesting that it is a crucial age to study, particularly when exploring school belonging, mental health, and psychological outcomes (Dadds et al., 1997; Neil & Christensen, 2009). In addition to gaining clarity on the constellations, or groupings, of experiences of school belonging in primary school students, this study will analyze the proximal mental health outcomes of students as students' mental health is known to have important associations with academic success, feelings of distress, and self-harm or suicidality (Fergusson & Woodward, 2002). Results are expected to provide more information for targeted interventions aimed at improving school belonging.

Conceptual Models of School Belonging

Understanding the school belonging construct is the first step in creating tools or interventions to support students' levels of school belonging and, thus, improve students' psychological and academic functioning. School belonging is often viewed as a unidimensional construct with acceptance and rejection on two ends of the same dimension (Goodenow, 1993). Yet, models of the school belonging construct encompass several concepts, including teacher support, peer support, sense of affective belonging, and perceptions of general acceptance and rejection. Using this approach, students could feel high acceptance from teachers and may also experience rejection from peers.

Teacher Support

Teacher support has been found to be a critical component of school belonging (Chiu et al., 2016; Sakiz et al., 2012). For example, Chiu and colleagues (2016) conducted a large-scale international study with 193,073 15-year-old students from 41 countries to examine the construct of school belonging. Findings indicated that teacher-student relationships had the strongest association with a sense of school belonging (Chiu et al., 2016). Similarly, a study conducted by Sakiz and colleagues (2012) confirmed that positive teacher affective support significantly influences school belonging levels. More specifically, school belonging was found to be related to teachers who "care for, value, and support them [students], whether students feel respected, encouraged, and listened to by their teacher, and whether students feel that their teacher is fair and holds high expectations" (Sakiz et al., 2012, p. 238). This study indicated that students desire a specific level of teacher-student interaction and quality of relationships with teachers in order to feel a heightened sense of belonging. Findings from these studies suggest that there is strong evidence to include teacher support within the construct of school belonging.

Peer Support

In addition to teacher support, peer acceptance or support has also been found to be associated with school belonging (Booker, 2012; Dotterer et al., 2007; Wallace et al., 2012). Wallace et al. (2012) conducted a study with students aged 14-20 across the United States. Using focus groups and factor analysis, they found that, in addition to teacher support, perceptions of fitting in with peers, or peer support, was an influential factor of school belonging (Wallace et al., 2012). Booker (2004) provided support for these findings. In a study examining survey data from 61 African American students to examine the relation

between school belongingness and academic achievement, Booker (2004) found that perceived peer relationships was one of the most significant influences on school belonging. Additional research conducted by Blomfield and Barber (2010) found that peer support through participation in extracurricular activities was a strong predictor of school belonging. These findings were replicated by Dotterer and colleagues (2007). Lastly, Shin and colleagues (2007) conducted a study to analyze the relations between school engagement and peer norms, peer support, and ethnic identity. From a sample of 132 seventh- and eighth-grade students, study findings indicated that peer norms are a strong predictor of school engagement. Overall, these studies indicate that peer support is an important factor to include within the school belonging construct.

Affective Sense of Belonging

An additional factor of school belonging has been found to be a general sense of inclusion within the school community. This can be observed as the affective nature of belonging. A review of the belonging literature posits that belonging can be viewed as a "sense of reciprocity or exchange of feelings or beliefs between the individual and the group of interest…" (Mahar et al., 2012, p. 1029). As such, measures of school belonging usually include items such as "I feel like a real part of this school" and "I feel proud of belonging to this school" (PSSM; Goodenow, 1993). Sakiz et al. (2012) found that a positive affective climate in schools significantly promoted academic enjoyment, self-efficacy, and effort. Feeling a sense of belongingness and inclusion within a community is critical within the school belonging construct.

Acceptance and Rejection

Given that school belonging is affected by peer relationships, including both peer acceptance and rejection, it is critical to understand the sociometric and peer nomination literature. Sociometric and peer nomination research has been studied for the past several decades, providing a plethora of insight into social acceptance and rejection of students within the school system. Newcomb and colleagues (1993) constructed an in-depth meta-analysis of the findings within this area of research. Among other findings, it is clear that a general consensus of a two-dimensional sociometric model exists, with social preference, or social likability, forming the first dimension and social impact, or the degree to which children are noticed by their peers, forming the second dimension (Newcomb et al., 1993).

Using sociometric methods, Coie and Dodge (1983) found that there are four distinct groups of children: popular, rejected, neglected, and controversial. Popular children are those who are most liked by peers as well as most noticed, indicating that they are generally fully accepted (Newcomb et al., 1993). These children are often highly socially skilled and have low levels of aggressive or anti-social behaviors (Dodge et al., 1986). Rejected children tend to be least liked and most noticed (Newcomb et al., 1993) with significant behavioral and aggressive concerns (Coie et al., 1990). Neglected children were low on both social likability as well as social impact, suggesting that they are not liked or noticed by peers (Newcomb et al., 1993). These children tend to be less aggressive than their rejected counterparts, yet less socially skilled than their popular counterparts. These are children who are not visible in their peer group (Newcomb & Bukowski, 1983). Lastly, controversial children's behavior represents a combination of that found in both popular and rejected children (Newcomb et al., 1993). Like popular children, controversial children possess high social skills in addition

to engaging in high aggressive behaviors (Newcomb et al., 1993), leading to both high and low social likability levels in addition to high social impact levels. These findings indicate that rejection and acceptance may form two separate dimensions within the school belonging construct; thus, this study will examine the role that rejection plays within the construct of school belonging.

Theoretical Underpinnings

Belongingness is a well-known psychological construct outside of the school context and has important implications including wellbeing, positive mood, reduced stress, and reduced mortality (Begen & Turner-Cobb, 2015; Holt-Lunstad et al., 2010; Newman et al., 2007). The theoretical framework of belonging (including belonging within a school setting) is rooted in seminal psychological theories including Maslow's hierarchy of needs (Maslow, 1943) and self-determination theory (Ryan & Deci, 2000), both of which provide a foundation for school belonging as a basic human need rather than a desire. Attachment theory (Bowlby, 1969) provides a conceptual framework for how the basic needs of school belonging are met through relationships within the school setting, which impact the psychological and academic well-being of all students.

Maslow's Hierarchy of Needs

Belonging was noted in Maslow's *hierarchy of needs* through his theory of human motivation (Maslow, 1943). His theory suggests that humans have five hierarchical and basic needs that must be met in order to drive motivation. These needs are arranged in order from those essential for survival to those essential for happiness: physiological (e.g., sleep, hunger thirst), safety (e.g., secure, loving, warm environment), social (e.g., sense of belongingness), esteem (e.g., self-worth, self-confidence), and self-actualization (e.g., growth, fulfillment).

Maslow conflated social needs with a need to belong to a greater community, or experiencing an emotional or social connection with others (Maslow, 1943).

For the purposes of the school context, it is suggested that if a person's social needs are unmet, there is an inability to move on to higher needs, such as academic learning or growth. This assertion is supported by research documenting the importance of school belonging in educational outcomes, such as increased class effort and higher grades (Goodenow, 1993), as well as lower dropout rates (Finn & Rock, 1997). Furthermore, Pittman and Richmond (2010) showed that students' reports of school belonging significantly predicted academic adjustment, even after controlling for demographic and relationship factors.

Self-determination Theory

Self-determination theory (Ryan & Deci, 2000) posits that motivation, engagement, and interest in learning only occur after the basic needs of autonomy, competence, and relatedness have been met. Similar to Maslow's hierarchy of needs (Maslow, 1943), this theory exerts that relatedness to others, or belongingness, is one of our basic psychological needs that must be met in order for motivation and drive to increase (Deci et al., 1991; Ryan, 1995). In an educational context, students' motivation levels are influenced by a sense of belongingness and having meaningful connections with others, in addition to experiencing autonomy and competence in pursuing educational goals. Deci and colleagues (1991) believe that if these needs are not satisfied in a student's educational setting, the student may experience diminished motivation, impaired development, isolation, and poor academic performance.

This theory is supported by research asserting that school belonging significantly

predicts academic performance and motivation (Neel & Fuligni, 2012; Sirin & Rogers-Sirin, 2004). Similarly, school belonging is seen as a critical factor in reducing drop-out rates in schools (Finn & Rock, 1997; Wehlage, 1989). These research findings, coupled with Maslow's hierarchy of needs (Maslow, 1943) and self-determination theory (Ryan & Deci, 2000), assert that school belonging is a need, rather than a desire.

Attachment Theory

As *school attachment* is a related term to *school belonging*, it is expected that attachment theory would also provide a theoretical framework for school belonging. Attachment within important relationships, such as teachers and peers play a crucial role in school belonging. Attachment theory was first generated by Bowlby (1969), who asserted that all infants attach to caregivers based on a caregiver's parenting style and form their own attachment styles. Ainsworth and Bell (1970)'s research findings indicate that three attachment styles exist based on the level of care provided to the infant: secure, insecure, or disorganized. These attachment styles manifest in patterns of social engagement which then extend to other close relationships. Longitudinal studies have found significant associations between insecure attachment and externalizing and internalizing symptoms, such as aggression, depression, and withdrawal (Wood et a., 2004). Similarly, studies have found associations between secure attachment and high social, emotional, and academic outcomes (Kennedy & Kennedy, 2004).

Although attachment theory emphasizes infant and caregiver relationships, it can also be seen in early relationships between students and teachers. Hamre and Pianta (2001) researched attachment theory within the school context, specifically student-teacher attachment. According to Hamre and Pianta (2001), student-teacher attachment is an

extension of parent-child attachment such that student and teacher relationships greatly influence students' social, emotional, and behavioral regulation at school. Similar to the three attachment styles seen in parent-child relationships, student-teacher relationships exhibit three attachment styles: emotional closeness, conflict, and dependency (Davis, 2003).

The healthiest student-teacher attachment style is emotional closeness, characterized by increased warmth and open communication and decreased conflict or dependency (Hamre & Pianta, 2001). Students who experience secure attachment (or emotional closeness) with their teachers demonstrate fewer behavioral problems and higher achievements in the classroom (Kennedy & Kennedy, 2004). As expected, Hamre and Pianta (2001) found that teacher-student negative attachment styles (i.e., teacher rejection) were associated with poor behavioral and academic outcomes. Furthermore, evaluation studies of young students who participated in nurture groups (Bennathan & Boxall, 2000), defined as small supportive groups in primary schools providing secure and empathic attachment for students, showed improved cognitive engagement in learning and academic tasks (Cooper, 2004). These findings implicate the importance of teacher and student connections in the classroom and on school campus. While Maslow's Hierarchy (Maslow, 1943) and self-determination theory (Ryan and Deci, 2000) posit that belonging is a basic human need rather than a privilege, attachment theory (Bowlby, 1969) provides a foundation for how school belonging needs can be met through teacher and student relationships.

School Belonging in Primary Levels

As the concept of belonging to an educational institution begins at an early age, it is important to begin assessing and studying school belonging in primary school settings. A study by Gest and colleagues (2005) showed that school belonging levels decreased for a

sample of 383 students across six months, from the fall of Grade 3 to the spring of Grade 5. Results indicated that school belonging levels begin declining far before the transition to middle school (Gest et al., 2005). Further, one of the earliest longitudinal studies analyzing school belonging looked at students from kindergarten through completion of Grade 6; results showed that students who participated in an intervention aimed at boosting school belonging levels increased their levels of motivation as compared to a control group (Solomon et al., 1996). These results indicate that school belonging interventions are efficacious during elementary school. Studies have also shown the association between school belonging and mental health in elementary school students. In a study sampling urban elementary school students, results suggested that students exhibiting low school belonging levels were more likely to have increased internalizing and externalizing behaviors and less social competence compared to students with high belonging levels (Murray & Greenberg, 2000).

Research focusing on teacher and peer perceptions of students show that students receive their "status indicator" and develop their self-concept based on how they are perceived and liked by students and teachers during early elementary school (Anderman & Maehr, 1994). Students remain in these "track placements" for years, often internalizing these messages from their teachers and peers well into high school (Altenbaugh et al., 1995), which affect their perception of school belonging levels, and, in turn, their mental health and school performance. These findings continue to highlight the importance of closely understanding the constellations of school belonging experiences in primary school students and how these experiences may correspond to mental health outcomes.

School Belonging and its Relation to Mental Health

Dual-continua Model of Mental Health

Due to school belonging's strong associations with mental health (Gratis, 2013; Pittman & Richmond, 2007; Vieno et al., 2005), this study utilizes mental health as proximal outcomes to further understand how students' school belonging experiences impact both their well-being and distress. As such, it is critical to understand the dual-continua model of mental health. The conceptualization of mental health has transitioned from a traditional deficit-based perspective to include a more positive strength-based perspective. Traditionally, mental health has been viewed as the absence of psychopathology or disorders, such as externalizing or internalizing disorders (Suldo & Shaffer, 2008). Psychopathology and well-being were conceptualized to be two ends of the same continuum. Greenspoon and Saklofske (2001) credit this view on mental health to the medical model that psychology was originally rooted in: "We search for pathological entities so that we can excise them…assuming that their destruction will result in a relative return to normalcy or health" (p. 81).

This unidimensional view of mental health is outdated, as recent research has shown that mental health is made up of co-occurring positive and negative indicators, and that this dual-continua model yields a more comprehensive view of mental health (Huebner et al., 2007). Well-being and distress are not opposite ends of a continuum (Suldo & Shaffer, 2008). Rather, they are two separate yet related constructs that, together, conceptualize mental health. Using this approach, a person may feel neither in distress, nor a particularly high sense of well-being. This new view of mental health has been termed "complete mental health" by Furlong and colleagues (2014) and is supported by research that showed the

formation of multiple complete mental health groups encompassing both psychological strengths and distress (Greenspoon & Salofske, 2001; Suldo & Shaffer, 2008).

Considerations of Well-being and Distress in Relation to School Belonging

Given extensive research supporting the dual-continua model of mental health, it is important to consider both psychological distress and strengths (i.e., well-being) in relation to school belonging. Research findings have shown school belonging to be a protective factor against psychological distress (Gratis, 2013; Pittman & Richmond, 2007; Sargent et al., 2002) as well as significantly associated with psychological strengths, or positive psychological outcomes (Allen & Bowles, 2012; Pittman & Richmond, 2007; Vieno et al., 2005). More specifically, school belonging has been linked to youths' increased happiness, self-esteem, social skills, as well as reduced loneliness, depression, and anxiety (Lester et al.; Vieno et al., 2005).

Multiple longitudinal studies have examined the impact of school belonging on youths' psychological distress across time. For example, Resnick (1997) analyzed results from the National Longitudinal Study on Adolescent Health (Add Health) in a sample of 3,130 students in grades 7 – 12. Findings suggested that levels of school connectedness were associated with decreased emotional distress and suicidality across age groups (Resnick, 1997). Similarly, Shochet and colleagues (2006) studied a longitudinal sample of students aged 12-14 in Australia and found that school connectedness was significantly correlated with depression and anxiety. Results indicated that school connectedness predicted depressive symptoms one year later for both boys and girls, anxiety symptoms for girls, and general functioning for boys, even after controlling for prior mental health symptoms. Lastly,

Anderman (2002) also examined data from the Add Health study, providing further support for school belonging's inverse relation to depression and social rejection.

While research surrounding the positive psychological effects of school belonging exists, it is not as robust as research analyzing school belonging and psychological distress. However, Tian and colleagues (2015) conducted a cross-lagged structural equation model to explore the longitudinal relation between school belonging and subjective well-being among elementary school students in China. The study examined school belonging and subjective well-being at both time points, six weeks apart. Findings confirmed a significant bidirectional association between school belonging and subjective well-being, indicating that school belonging predicted subjective well-being, which, in turn, enhanced school belonging (Tian et al., 2015). Similar studies have found results implicating relations between school belonging and school satisfaction (McMahon et al., 2008).

These research findings provide support for the theoretical underpinnings discussed above, indicating that school belonging is a need that significantly impacts both well-being and distress in youth. Additionally, the lack of research exploring school belonging's impact on positive psychological indicators is crucial, given the field's move to adopting a dual-continua model of mental health. Current and future research is needed to explore both psychological strengths and psychological distress when considering mental health in order to present a holistic understanding of the construct.

The Current Study

School belonging is influential in students' mental health and well-being (Gillison et al., 2008; Milling et al., 2012) in addition to being viewed as a basic human need (Maslow, 1943; Ryan & Deci, 2000). Researchers have focused their efforts on analyzing school

belonging levels and their outcomes on secondary school students, yet the understanding about school belonging and its mental health associations within upper elementary school students remains unclear. This understanding is needed, due to the fact that students begin to view themselves as part of a school community starting at a young age. Understanding how different constellations of school belonging experiences in upper elementary school students correspond to proximal mental health outcomes would allow both researchers and practitioners to better support students at this critical age. This knowledge would provide information about which constellations of school belonging are associated with poorer mental health outcomes and which lead to greater mental health outcomes, which could help inform interventions for improving school belonging.

Based on the current understanding of school belonging and sociometrics, the school belonging construct is believed to encompass several areas, including acceptance and rejection, teacher relationships, peer relationships, and affective levels of belonging within the school community. Yet, students' experiences in each of these areas within school belonging is relatively unknown. How do students perceive peer support in relation to teacher support and general acceptance at school? Are students able to perceive differing levels of belonging within each of these areas? Exploring these constellations of experiences among students will further refine the school belonging construct, including how it is measured, and, thus, interventions targeted to improve school belonging.

This study aims to classify groups of fourth and fifth grade students based on their responses to items measuring school belonging. Specifically, this study identifies profiles of school belonging in students based on their perceived teacher support, peer support, affective sense of belonging, and sense of acceptance and rejection in the school community. This

analysis provides information on the conceptualization and experiences of school belonging among upper elementary school students, which helps further inform school-based interventions. Subsequently, the current study analyzes the proximal mental health outcomes for the resulting profiles of students through students' responses to items measuring both psychological strengths and psychological distress. These proximal outcomes provide support for the school belonging profiles and provide additional information on the importance of school belonging within the primary school context. Additionally, the proximal outcomes are crucial in exploring how specific classes of school belonging correspond to complete mental health, which provide clarity on the focus of school belonging interventions. The current study aims to answer the following research questions:

1. What constellations of school belonging do fourth and fifth grade students experience?
2. How do constellations of students' school belonging experiences correspond to their concurrent self-reported psychological strengths and psychological distress?

Method

Participants

The sample consisted of 619 fourth and fifth grade students (N = 619) from seven public schools in one school district in Northern California across two years: 2017-2018 and 2019-2020. Part of the data were collected in fall 2017 and the remaining data were collected in fall 2019. Demographics for the sample indicate that gender is split evenly between boys (49.3%) and girls (50.4%). Students were also split relatively evenly between Grade 4 (52.8%) and Grade 5 (47.2%). The ethnicity breakdown is as follows: 38% identify as Caucasian/White, 20.2% identify as Hispanic/Latino/a/Mexican, 5.5% identify as Asian

American, 8.6% identify as Native American or American Indian, 3.6% identify as Black or African American, 1.3% identify as Pacific Islander, 20.4% identify as other (including multiracial), and 2.6% declined to respond. For the purposes of this study, the race/ethnicity variable was dichotomized into two variables because they accounted for the largest percentage of students: (1) White and non-White and (2) Latinx and non-Latinx.

Measures

School Belonging

For the current study, items from a modified version of the *Psychological Sense of School Membership Scale* (PSSM; Goodenow, 1993) were used to measure students' levels of school belonging. The original PSSM is an 18-item self-report questionnaire with a five-point response scale (1 = *not at all* and 5 = *completely true*) and is intended for secondary school students. The original version consists of 13 positively worded items and five negatively worded items. The items were initially validated on one suburban and two urban populations and were found to be positively correlated with academic success and motivation (Goodenow, 1993). Other studies have found that the PSSM is negatively correlated with emotional distress and behavioral problems (Shochet et al., 2006).

Prior to data collection for the study, two modifications were made to the scale to be more developmentally appropriate for the younger students in this study. First, the original five-point response scale was modified to a simplified six-point response scale in a yes/no format (1 = *no, never*, 2 = *no, almost never*, 3 = *yes, sometimes*, 4 = *yes, often*, 5 = *yes, very often*, and 6 = *yes, always*) to reduce the cognitive burden for primary school students. This modification is consistent with another PSSM study which also used a six-point response scale for primary school students (Cheung & Hui, 2003; Wagle et al., 2018). Second, the

items were modified into question form rather than the original statement form. Questions as opposed to statements are considered more developmentally appropriate (Woolfolk, 2004). This change in format did not change the content of the original items: (e.g., original item = "People at this school are friendly to me"; modified item = "Are people at this school friendly to you?").

In the current study, average scores were created within each area of school belonging (i.e., general sense of acceptance, general sense of rejection, sense of affective belonging, sense of peer support, sense of teacher support), as determined by face validity. These areas were constructed based on the current research and understanding of school belonging, including its theoretical foundations, such as the importance of caregiver relationships in attachment theory. These five variables comprise the five key aspects of school belonging and, thus, were included in the analysis. While these variables were all correlated, the highest correlation coefficient was .781, indicating that the items did not display multicollinearity (Berry & Feldman, 1985). This selection of variables is consistent with best practices of conducting latent profile analysis so that the input variables are theoretically meaningful, thus avoiding "garbage in/garbage out" issues (Stanley et al., 2017). Internal consistency for the current sample was measured by Cronbach's alpha and was .796.

Psychological Strengths

In the current study, the cross-sectional outcomes of students' self-reported psychological strengths were measured by the *Social Emotional Health Survey – Primary* (SEHS-P; Furlong et al., 2013). The SEHS-P is a 24-item self-report survey on a six-point response scale: (1 = *no, never*, 2 = *no, almost never*, 3 = *yes, sometimes*, 4 = *yes, often*, 5 = *yes, very often*, 6 = *yes, always*) that measures primary students' self-reported social

emotional strengths. The factor structure is comprised of five separate factors: *Gratitude, Optimism, Zest, Persistence,* and *Prosocial Behavior* (Furlong et al., 2013). The first four factors form an overall *Covitality* score. Covitality is defined as the co-occurrence of psychological strengths. Studies measuring the psychometric properties of the SEHS-P have found adequate internal consistency and good model fit for the factor structure (Furlong et al., 2013; Wang et al., 2016; Wilkins et al., 2015). For this study, a mean Covitality score was computed for each participant in the cross-sectional sample to comprise the overall psychological strengths outcome variable. As measured by Cronbach's alpha, internal consistency for the current sample is .906.

Psychological Distress

The Me & My School Questionnaire (M&MS; Deighton et al., 2013) was used as the cross-sectional outcome measure for students' psychological distress. The M&MS is a 16-item self-report distress measure for use with children ages 8-12 years old. It has a 10-item *emotional difficulties* scale (e.g., "I feel lonely") and a six-item *behavioral difficulties* scale (e.g., "I break things on purpose") on a three-item response scale: 1 = *never*, 2 = *sometimes*, and 3 = *always*. Deighton et al. (2013) found good internal consistency for the emotional difficulties and behavioral difficulties scales and high external validity as measured by correlations with the Strengths and Difficulties Questionnaire (SDQ; Goodman & Bailey, 1998). The measure was also found to have a two-factor solution in England: emotional difficulties and behavioral difficulties (Deighton et al., 2013). For the current study, a mean emotional difficulties score (Cronbach's alpha = .768) and a mean behavioral difficulties score (Cronbach's alpha = .667) were computed for each participant to comprise the psychological distress outcome variables.

Procedure

In the fall of 2017 and 2019, data were collected from four elementary schools in a Northern California school district as part of a longitudinal grant investigating a social-emotional health survey (Institute of Educational Sciences #R305A160157). While all students in these grades were selected for participation (N = 1,380), the schools employed the use of active parental consent (i.e., parental response was necessary for consent), which was offered in English and Spanish. Additionally, all students were asked for their assent prior to beginning the survey. All students who had parental consent completed the survey via computers or tablets. Both the student assent form and the student survey were offered in English and Spanish. Classroom teachers proctored the survey administration and were provided with a script to read, explaining the nature of the survey to all students. Teachers were available to answer questions. As part of the survey, students were asked about gender and race/ethnicity. More specifically, students were asked: "I am a ____", with response options: "boy" and "girl", and "What is your cultural group or ethnicity?" to measure gender and race/ethnicity, respectively.

Statistical Analyses

Data cleaning

Data cleaning procedures included removing students who did not provide assent, had duplicate survey submissions, and included several missing items. 114 cases were excluded for providing invalid student IDs or providing duplicate survey responses, 65 cases were excluded for not responding to the assent question, and 16 cases were excluded for missing items.

Latent Profile Analysis

In order to explore the underlying latent classes of school belonging in fourth and fifth grade students, latent profile analysis (LPA) with Full Information Maximum Likelihood (FIML; Enders, 2001) using MPlus version 7.4 (Muthén & Muthén, 1998-2015) was conducted on the sample. One advantage of LPA with FIML is that it allows for the inclusion of all participants with missing data (Masyn, 2013), assuming that data are missing at random (MAR). The model building process is iterative; thus, a series of LPAs was conducted in order to evaluate the best fitting model through comparing the model fit information and substantive interpretation of each model (Nylund, 2007). Finally, the proximal outcomes of psychological strengths and psychological distress were measured, after controlling for the direct effects of self-reported variables of gender and race/ethnicity.

Specify variance-covariance structure. Since classes in LPA can vary with respect to their indicator means, indicator variances, and indicator covariances (Masyn, 2013), the variance-covariance model structure was specified prior to analyses. Whether the indicator variances and covariances are held equal or are allowed to be freely estimated may impact class enumeration and interpretability (Masyn, 2013). Thus, two model structures were examined in the analyses: (1) Model 1, in which indicator variances are constrained to be equal across classes with covariances between indicators fixed to zero (i.e., *class-invariant, diagonal*) and (2) Model 2, in which indicator variances are allowed to be freely estimated and are not constrained to be equal with covariances between indicators fixed to zero (*class-varying, diagonal*). Since it is assumed that the underlying classes account for all of the shared variance between indicators, both structures hold covariances between indicators fixed to zero.

Class enumeration and retention. During the model building process, a series of LPA models were analyzed by systematically increasing the number of latent classes by one and examining the fit statistics for one through six classes. This process should allow for the identification of the model that best describes the heterogeneity in the indicators (Masyn, 2013; Nylund, 2007). Model fit was determined by examining fit statistics and substantive meaning. The *K*-classes (i.e., alternative model) and *K-1* classes (i.e., null model) were compared based on Bayesian Information Criterion (BIC), Adjusted BIC (ABIC), Bayes Factor (BF), correct model probability (cmP), Lo-Mendell-Rubic likelihood ratio test (LMR-LRT) and Bootstrap Likelihood Ratio Test (BLRT). More specifically, lower values of BIC and AIC indicate better model fit; significant *p*-values for LMR-LRT and BLRT indicate better model fit for the *K-1* model rather than the *K-class* model; and a cmP value greater than .10 indicates the best fitting model. In addition to the fit statistics, the final model supports the theoretical framework of school belonging and holds substantive meaning such that it provides clarity regarding the construct of school belonging (Muthen, 2003).

Demographic covariates and proximal outcomes. After the final model was selected, covariates (i.e., gender and race/ethnicity) and proximal outcomes (i.e., psychological strengths as measured by SEHS-P and psychological distress as measured by M&MS) were added to the model through the manual three-step approach (Nylund-Gibson & Masyn, 2016). The three steps are as follows: Step 1 in which the latent class indicator is regressed onto the demographic covariates, Step 2 in which the proximal outcomes are regressed onto the latent class indicator, and Step 3 in which the proximal outcomes are regressed onto the covariates. This approach controls for the direct effects of the demographic variables on the proximal outcomes and allows the model to remain stable so

that the covariates and proximal outcomes do not change the latent classes (Nylund-Gibson et al., 2014; Vermunt, 2010).

Results

Latent Profile Analyses

LPA models were run iteratively starting with a one-class model and ending with a six-class model using the school belonging items as indicators. Both the class-invariant, diagonal (Model 1) and class-varying, diagonal (Model 2) model structures were estimated. Table 1 presents information on the average responses on the school belonging indicators, covariates, and proximal outcomes of complete mental health. Table 2 presents the fit statistics used to evaluate the best fitting model, specifically the log likelihood, BIC, BF, cmP, and *p*-values for the LMRT and BLRT, entropy values, and class prevalence proportions. After examining the results, it was determined that the three-class class-varying solution, diagonal model fits best based on the BIC (4914.35), cmP (.998) and BF (407.483). While the five-class class-invariant, diagonal model had a minimally lower BIC value (4912.13) and support for the BF (37.338) and cmP (1.000) values, examination of the class prevalence proportions suggested that the additional two classes explained variance in a small percentage of students (6%, n =38 and 9%, n = 58). Additionally, class-invariant, diagonal models are highly restrictive, which often forces additional classes than are necessary to explain the model. In this case, the two additional classes did not appear to be meaningful. Thus, the three-class class-varying, diagonal model appeared to be the most parsimonious model; additionally, the observed entropy value for this model yielded a high entropy value, with a value of .82, suggesting that individuals were correctly classified into latent classes with high precision (Clark & Muthén, 2009).

Results from the best fitting model produced ordered classes and, after examining the profile plots of the estimated mean values for each school belonging indicator (see Figure 1), the following labels were created for the three emerging classes: *high school belonging* (16.10%), *moderate school belonging* (50.33%), and *low school belonging* (33.57%). The *high school belonging* class exhibited the highest mean values on affective sense of belonging, general acceptance, peer support, and teacher support and the lowest mean value on general sense of rejection. Likewise, the *moderate school belonging* class exhibited moderate mean values of each positive belonging indicator and a low mean value of general sense of rejection. Lastly, the *low school belonging* class exhibited the lowest levels of each positive indicator of belonging and a moderate level of general sense of rejection. Mean values of each indicator based on class can be seen in Table 3. When examining class sizes, the largest percentage of students (i.e., 50.33%) appear to fall into the *moderate school belonging* class, while a substantial number of students appear to fit in the *low school belonging* class (i.e., 33.57%). Interestingly, the lowest percentage of students are seen to fit in the *high school belonging* class (i.e., 16.10%).

The average posterior class probability (Masyn, 2013) of students being classified into each school belonging class, given their membership into an existing class can be seen in Table 3. More specifically, the probability of students in the *high school belonging* class being classified in the *moderate school belonging* class is .01 or 1%.

Inclusion of Covariates: Gender and Ethnic Differences in Group Classification

The manual three-step approach was utilized to examine the effects of gender and ethnicity as covariates using the optimal three-class class-varying, diagonal model. In the manual three-step approach, the logit values of each indicator are fixed to the values

produced during the initial model enumeration process. Fixing the logits prevents major changes in latent profiles due to the inclusion of the covariates. Then, the dichotomous gender and ethnicity covariates were regressed onto the latent class variable using the *high school belonging* class as the normative comparison group. More specifically, two covariate comparisons were analyzed: (1) the likelihood of being in the *moderate school belonging* class as compared to the *high school belonging class* and (2) the likelihood of being in the *low school belonging* class as compared to the *high school belonging* class.

As compared to the *high school belonging* class, female students were significantly less likely to be in the *low school belonging* class than were male students (logit = -.623; p = .024). Similarly, compared to the *high school belonging* class, female students were significantly less likely to be in the *moderate school belonging* class than were male students (logit = -.542; p = .046). No significant differences were seen for White students and non-White students when comparing all classes. However, for the Latinx v. non-Latinx dichotomized variable, Latinx students were significantly less likely to belong to the *moderate school belonging* class than were non-Latinx students, when compared to the *high school* belonging class (p = .010). No other significant differences were found for gender or ethnicity. Table 4 includes the logits, standard errors (SEs), p-values, and odds ratios for each gender and ethnicity covariate included in the model.

Proximal Outcomes: Complete Mental Health Differences in Group Classification

Proximal outcomes were examined to provide predictive validity of the optimal class-solution found through the LPA and to inform researchers and practitioners of the associations found based on varying profiles of school belonging. In order to measure complete mental health, two separate measures assessing psychological strengths (i.e.,

engaged living) and psychological distress (i.e., emotional difficulties and behavioral difficulties) were used. Including the proximal outcomes was the final step in the three-step method, in which a class-specific mean of the proximal outcomes was estimated for each of the latent classes, at the average of the gender and ethnicity covariates. This approach controls for the direct relation between proximal outcomes, gender, and ethnicity when estimating class-specific distal outcome means.

First, a Wald Test was conducted for all between-group comparisons on each proximal outcome to test for significant differences. All of the Wald Tests yielded a significant *p*-value, indicating that there were significant differences between classes with respect to psychological strengths and both aspects of psychological distress: emotional difficulties and behavioral difficulties. More specifically, students in the *high school belonging* class reported higher levels of psychological strengths than students in the *moderate school belonging* and *low school belonging* classes. Similarly, students in the *moderate school belonging* class reported higher levels of psychological strengths than students in *low school belonging* class. With regard to psychological distress, the results were similar in that students in the *high school belonging* class reported both lower emotional difficulties and behavioral difficulties than students in the *moderate* and *low school belonging* classes. As expected, students in the *moderate school belonging* class reported lower emotional difficulties and behavioral difficulties than students in the *low school belonging* class. For students in all classes, emotional behavioral difficulties were slightly higher than behavioral difficulties.

Differences in proximal outcomes can also be seen based on gender and ethnic identification. For example, female students reported both higher psychological strengths (*p*

= .008) and emotional difficulties ($p < .001$) than male students. The gender differences for behavioral difficulties were non-significant ($p = .165$). Additionally, White students reported lower emotional difficulties than non-White students, though this difference only trended towards significance ($p = .069$). Latinx students did not significantly differ on self-reported outcomes than non-Latinx students. Table 5 summarizes the means, standard errors, and *p*-values for each proximal outcome for all classes after controlling for the direct relations between the outcomes and the gender and ethnicity covariates. Table 6 presents the class specific means, standard errors, and *p*-values for each latent class with all demographic covariates held constant.

Discussion

The current study aimed to examine latent profiles of school belonging in fourth and fifth grade students in an effort to better understand the constellation of school belonging experiences and how these experiences correspond to proximal outcomes of mental health. A series of LPAs using five school belonging indicators were conducted to evaluate the best fitting model. Once the optimal model was selected, demographic covariates of gender and ethnicity were included and, finally, proximal outcomes of psychological strengths and psychological distress (i.e., emotional difficulties and behavioral difficulties) were examined. The proximal outcomes of these classes were examined to provide validity evidence for the school belonging groups and to inform researchers and practitioners about the associations of common experiences of school belonging on mental health in youth.

Latent Class Profiles

Previous school belonging research has showcased the nebulous understanding of the school belonging construct, including what factors underlie the construct, such as teacher

support or peer support (Gaete et al., 2016; Hagborg, 1994). Similarly, the current literature base on school belonging often focuses on older students (i.e., secondary school students) and utilizes deficit-focused assessments to test for mental health associations (Allen et al., 2016). The current study results indicated support for a three-class solution of ordered school belonging classes: *High School Belonging* (i.e., high levels of affective sense of belonging, peer support, teacher support, general acceptance; low level of general rejection), *Moderate School Belonging* (i.e., moderate levels of affective sense of belonging, peer support, teacher support, general acceptance; low level of general rejection), and *Low School Belonging* (i.e., low levels of affective sense of belonging, peer support, teacher support, general acceptance; moderate level of general rejection). The smallest number of students (16%) were classified into the *High School Belonging* class, suggesting that most students tended to experience *Moderate School Belonging* (51%) and *Low School Belonging* (33%). Unfortunately, a third of students experienced low levels of school belonging, which contradicts the literature that primary school students tend to experience higher levels of school belonging due to increased perceived teacher support (Fredericks et al., 2005). This finding suggests that primary school students often feel a lack of acceptance and tend to feel low to moderate levels of acceptance and moderate levels of rejection.

By examining the profiles in more detail (see Figure 1), it can be seen that students in all classes presented a relatively higher experience of affective belonging and teacher support as compared to the other positive indicators (i.e., general sense of acceptance and peer support). Sense of affective belonging is conceptualized as a general sense of inclusion within the school community, or a "sense of reciprocity or exchange of feelings or beliefs between the individual and the group of interest…" (Mahar et al., 2012, p. 1029). It is

particularly noteworthy that the sense of affective belonging indicator was reported higher across all classes than was the general sense of acceptance indicator, which focuses less on affect and emotion. However, these difference are subtle and warrant additional research to understand whether students can feel significantly higher levels of affective sense of belonging than other school belonging indicators. Additionally, students across all classes appeared to experience high levels of teacher belonging as compared to other indicators. This finding is consistent with previous research that has found that primary school students tend to experience high levels of teacher belonging, due to being with the same teacher throughout the school day and engaging in experiential learning (Fredericks et al., 2005). Peer belonging was notably lower for the *Low School Belonging* class, indicating that these students felt less support from their peers than they did from their teachers. For these students, teacher support may have acted as a buffer, leading to less detrimental effects for the proximal outcomes than would have been seen if teacher support had been lower. This finding is consistent with previous research, which has found teacher support to be a buffer or moderating effect against negative outcomes (Sakiz et al., 2012).

General sense of rejection was low for students in the *High School Belonging* and *Moderate School Belonging* classes. More specifically, the averages for the indicator in each of these classes (1.53 and 1.64, respectively) were very similar and only in the *Low School Belonging* class, was there a large difference (M = 2.22) for this indicator. These results suggest that students who experience moderate to high levels of school belonging tend to be students who experience low levels of rejection from peers. Alternatively, students who experience low levels of school belonging across varying indicators tend to be those who experience moderate levels of rejection from their peers. These findings are similar to the

sociometric literature, which has stated that students who experience rejection are often those who are not liked or noticed by peers (i.e., do not feel a sense of belonging). It is unclear whether this is a causal relationship (i.e., students feel rejected *because* they feel a low sense of belonging) and the current literature would benefit from further analysis into rejection within the construct of school belonging.

In general, these profiles suggest that students who are classified in a particular class tend to experience relatively constant levels of each positive indicator of school belonging and an opposing level of rejection. Rather, there is less variation in each profile than expected, particularly for the positive indicators of school belonging, and students who perceive low levels of peer belonging tend to experience low levels of sense of affective belonging, general acceptance, and teacher belonging as well. Further research is needed to replicate these findings with other, larger samples to determine whether school belonging profiles are generally ordered with similar experiences of each factor across each class.

Inclusion of Demographic Covariates in Final Model

Demographic dichotomous covariates of gender (i.e., female v. male) and race/ethnicity (i.e., White v. non-White and Latinx v. non-Latinx) were included in the final model to further understand their effects on the latent profiles. Using the *High School Belonging* class as a reference group, the gender and race/ethnic effects were analyzed for each class. Results indicated that female students were less likely to be in the *Low School Belonging* and *Moderate School Belonging* classes as compared to the *High School Belonging* class than were male students. In other words, female students had a greater likelihood of belonging to the *High School Belonging* class. This finding has been replicated in other studies, which found that girls consistently reported higher levels of school

belonging that did boys in middle and high school (Hughes et al., 2015; Pittman & Richmond, 2007).

In consideration of racial/ethnic differences, results indicated that, in reference to the *High School Belonging* class, Latinx students were less likely to be classified in the *Moderate School Belonging* class than were non-Latinx students. More specifically, when compared to the *Moderate* class, Latinx students experienced a greater likelihood of being classified in the *High School Belonging* class. However, there were no significant differences for Latinx students in the *Low School Belonging* and *Moderate School Belonging* classes or the *Low School Belonging* and *High School Belonging* classes. This indicates that Latinx students may have experienced polarization, where they fell disproportionately into either the *Low School Belonging* or *High School Belonging* classes than non-Latinx students. Previous studies have found that Latinx students tend to experience perceived discrimination from both peers and teachers, contributing to a poorer sense of school belonging (Brown & Tam, 2019), which may explain why Latinx students were classified into the *Low School Belonging* classes. Other research has found that teachers can contribute to Latinx students' increased school belonging by presenting a sense of authentic caring (Newcomer, 2017). Perhaps the Latinx students who were classified into the *High School Belonging* class perceived authentic caring from their teachers. The polarization of Latinx students may have been due to other factors, such as Socio-Economic Status (SES) and English Language Learner (ELL) status (Mello et al., 2012; Shi & Watkinson, 2019). As the findings from this study indicated differences based on demographic variables, it would be beneficial for future studies to consider multiple gender and ethnic groups in order to gain further information on how culture and identification affect school belonging.

Inclusion of Complete Mental Health Proximal Outcomes in Final Model

In order to analyze the predictive validity of the final model, proximal outcomes of psychological strengths and psychological distress (i.e., complete mental health) were analyzed. Results were as expected and showed the *High School Belonging* class corresponding to the highest level of psychological strengths and lowest level of psychological distress (both emotional and behavioral difficulties). Similarly, the *Moderate School Belonging* class corresponded to a medium level of psychological strengths and distress and the *Low School Belonging* classes to corresponded to the lowest level of psychological strengths and highest level of psychological distress. However, the range for psychological strengths and psychological distress was limited, indicating that students in all classes experienced moderate to high levels of psychological strengths and moderate to low levels of psychological distress. More specifically, students did not tend to experience extremely high levels of distress or extremely low levels of strengths regardless of their school belonging profile.

Analyses also examined the demographic effects on proximal outcomes, finding interesting results. Findings suggested that female students tended to report higher psychological strengths and emotional difficulties across all classes as compared to male students. These findings have been seen in other studies which indicate that females tended to report higher levels of morbidity as compared to males, and, particularly, report more mental health difficulties (Hibbard & Pope, 1983, 1986). However, it is interesting that, in the current study, female students are reporting both higher distress and strengths. These results may be due to female students experiencing the expectations of gender roles, including being more emotional and perceiving more acceptance in disclosing emotions

(Toussignant et al., 2009). Future studies may further analyze gender effects on self-reporting mental health symptoms, particularly positive indicators of mental health.

Additional results suggest that White students experience lower emotional difficulties across all classes than do non-White students, though these findings only trended towards significance. Again, this finding has been replicated in previous research, which has shown the White population to experience less psychological distress than minority populations (Bratter & Eschbach, 2005; Brown et al., 2007). White students experiencing lower levels of psychological distress may be due to lower levels of perceived discrimination (Brown & Tam, 2019; Cassidy et al., 2004). Similarly, research has shown that Latinx and other minority students often experience greater acculturative stress than their White counterparts, leading to higher risk for depression and suicidal ideation (Hovey & King, 1996). Further analysis is warranted to fully understand why White students experience lower levels of psychological distress than non-White students.

Implications for Research and Practice

The present study contributes to a growing body of research aimed at understanding school belonging and its associations for all students. Creating profiles of school belonging for fourth and fifth grade students based on several indicators helps researchers and educators better understand the constellations of school belonging experiences and how they correspond to mental health outcomes. These findings contribute to the understanding of the construct of school belonging in addition to interventions and practices aimed at improving students' levels of school belonging.

Results of the current study indicate that students experience school belonging across three different profiles: *High School Belonging*, *Moderate School Belonging*, and *Low School*

Belonging. However, the resulting class sizes indicate that the largest number of students fall into the *Moderate* and *Low School Belonging* classes, which correspond to moderate to low levels of psychological strengths and moderate to high levels of psychological distress. These are important findings, indicating that only a small percentage of primary school students experience high school belonging levels. This further supports the need for additional school belonging research to understand why and how primary school students can begin to increase their perceived school belonging levels. Furthermore, these findings provide increased support for utilizing effective school belonging interventions in elementary school and indicate that more work is necessary to increase students' levels of school belonging through universal and targeted interventions.

The current study also sought to understand whether certain indicators of school belonging were more important or more likely to vary than others. The profiles resulting in ordered classes that were relatively constant across indicators suggest that all indicators of school belonging may be equally important, meaning school belonging interventions may focus on several aspects of school belonging inclusive of teacher support, peer support, or a general sense of acceptance. In fact, researchers and educators may utilize these findings to design school belonging interventions which focus on several aspects of school belonging simultaneously. Furthermore, researchers may utilize the findings from this study to design school belonging measures which assess for each of these indicators. It is critical that school belonging measures assess for school belonging holistically, rather than just evaluating students' perceptions of peer or teacher support.

Overall, the current study calls for further analysis of school belonging in primary school students. The results highlight the need to boost students' levels of school belonging

through first assessing for need and then providing treatment and intervention. In order to ensure effective assessment and treatment of school belonging levels, it is critical that researchers and practitioners attend to each indicator of school belonging given the results that showed that all positive indicators of school belonging were perceived at a similar level. Additionally, it may be important for educators and researchers to focus on peer rejection, as this indicator showed a significant increase from the *High* and *Moderate School Belonging* classes as compared to the *Low School Belonging* class, which suggests that peer rejection contributes to students' low perceived levels of school belonging and may be causing a downward spiraling effect

Limitations and Future Directions

It is important to acknowledge several limitations of this study. First, the sample size for the current analyses was relatively small and was geographically limited, limiting the generalizability of the findings. Students came from one area of Northern California, from one school district. Future studies should take care to examine a larger sample of students from varying geographic regions, attending to increased diversity in gender and racial/ethnic backgrounds. In addition, due to the large number of racial/ethnic categories, the two majority categories were chosen and utilized to create dichotomous variables. Future studies should take care to examine multiple different racial categories and their effects on school belonging. In fact, future studies may benefit further from including a variable for socioeconomic status given the substantial inverse relation between socioeconomic status and mental health (Aneshensel & Sucoff, 1996; Yu & Williams, 1999).

Second, data was collected through self-report, which may have contributed to a mono-method bias, which occurs when both indicator and outcome variables are collected

through one method (i.e., self-report) (Podsakoff et al., 2003) and social desirability bias (Huang et al., 1998). Additionally, younger students may not always be ideal informants as research has shown that self-report tends to be more accurate for older students (Sturgess et al., 2002). Future research aimed at elementary school students may take care to include additional informants, such as parents and teachers to gain a greater understanding of students' experiences.

Third, the indicators were created based on face validity based on the authors' understanding of school belonging from the literature. Other researchers may have created different indicators through categorizing the items in other ways and/or understanding the construct of school belonging differently. Additionally, utilizing items from one unidimensional measure in an LPA can create statistical limitations and lead to ordered classes due to the indicators being designed to measure one construct. Future research may consider utilizing items from different measures which were not created to assess for one construct.

Fourth, the ethnicity covariate provided limitations due to the requirement of choosing only one ethnicity response option. If students identified as multiracial, there was no response option available except 'Other.' Thus, as the study created dummy coded race variables for White v. non-White and Latinx v. non-Latinx, students who identified as both White and Latinx may have identified as "Other" in the survey and were then incorrectly coded as "non-White" and "non-Latinx". Future studies may consider including a "Multiracial" option or allowing participants to choose multiple ethnicity response options.

Lastly, as optimal models for LPAs are based on theory and several different fit criteria, it is often impossible to determine an objective optimal class solution. As such, the

three-class solution determined to be the best fitting model might not have been chosen by other researchers. The five-class class-invariant, diagonal model showed adequate fit and may have been an alternate solution in this study. Researchers should conduct replication studies to determine whether the three-class class-varying, diagonal solution is indeed the best fitting model. Conducting additional replication studies will provide further support for the constellation of school belonging experiences for elementary school students.

Conclusion

The goal of the current study was to explore how fourth and fifth grade students experience school belonging through examining class profiles. While it was expected that there would be several classes based on student responses to teacher support, peer support, affective sense school belonging, general acceptance, and general rejection items, the optimal solution was a three-class class-varying, diagonal model with similar levels for each indicator within the classes. Findings from this study highlight that students are likely to experience high, moderate, or low levels of school belonging, which then correspond to different mental health outcomes. Specifically, students with higher levels of school belonging reported higher levels of psychological strengths and lower levels of psychological distress. Similarly, students with moderate levels of school belonging reported moderate levels of psychological strengths and low levels of psychological distress. Lastly, students who perceived low levels of school belonging reported lower levels of psychological strengths and moderate levels of psychological distress.

The results of the current study make an important contribution to the literature in terms of understanding primary school students' experiences of school belonging and how they correspond to mental health outcomes and vary based on gender and race/ethnicity.

However, future directions entail replicating the study findings, designing holistic assessments of school belonging with reliability and validity evidence, and creating effective interventions aimed at addressing all indicators of school belonging.

School belonging is a critical topic which has several important associations with youth, such as mental health, academic success, and general well-being (Fergusson & Woodward, 2002). However, the majority of the school belonging literature base includes older students, contributing to a research gap for how primary school students experience and perceive school belonging. This is unfortunate as primary school students are beginning to form their understanding of the school system, including their attachment and sense of belonging to school. Given the several critical associations to mental health and academic success and the importance of early intervention at a young age, it is important to first understand the construct of school belonging and the constellations of school belonging experiences for primary school students. Once an understanding has been formed, researchers and educators can focus on developing strong measures of and interventions for school belonging. Continuing to study school belonging in primary school students and gaining a deeper understanding of the construct and how it relates to students' experiences is critical for benefitting students in their emotional and academic well-being.

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Table 1

Means and Standard Deviations of Mental Health Indicators and Outcomes

	M	*SD*	Min	Max
PSSM				
Affective Belonging	2.52	8.22	1	4
General Acceptance	2.11	9.15	1	4
Peer Belonging	2.07	9.15	1	4
Teacher Belonging	1.82	10.81	1	4
General Rejection	0.83	9.9	1	4
SEHS-P				
Covitality	3.06	0.44	1	4
M&MS				
Emotional Difficulties	1.69	0.34	1	3
Behavioral Difficulties	1.38	0.29	1	3

Note: PSSM = Psychological Sense of School Membership; SEHS-P = Social Emotional Health Survey – Primary; M&MS = Me & My School Questionnaire.

Table 2

Fit Criteria Used to Evaluate Tested LPA Models

Model	Number of classes	Log likelihood	BIC	*p*-value of BLRT	*p*-value of LMRT	BF	cmP	Entropy	Class Prevalence
Class-Invariant, Diagonal	1	-3003.77	6071.75	-	-	<.001	<.001	-	1
	2	-2594.49	5291.72	<.001	<.001	<.001	<.001	0.80	.37, .63
	3	-2434.84	5010.95	<.001	**0.0039**	<.001	<.001	**0.82**	.12, .41, .47
	4	-2387.49	4954.79	<.001	0.0180	<.001	<.001	0.80	.06, .18, .34, .41
	5	-2346.90	4912.13	<.001	0.0249	**37.338**	**1.00**	0.80	.06, .09, .17, .30, .37
	6	-2331.25	4919.37	**<.001**	0.3799	<.001	<.001	**0.82**	.02, .05, .09, .18, .30, .36
Class-Varying, Diagonal	1	-3003.77	6071.75	-	-	<.001	<.001	-	1
	2	-2535.5	5205.86	<.001	<.001	<.001	<.001	0.80	.46, .54
	3	-2353.43	**4914.35**	<.001	**0.00005**	**407.483**	**0.998**	0.82	.16, .33, .51
	4	-2325.12	4926.37	<.001	0.2277	<.001	0.002	0.87	.01, .16, .33, .50
	5	-2354.43	5055.63	**<.001**	0.2398	<.001	<.001	**0.89**	.00, .00, .16, .33, .51
	6*	NC	NC	NC	NC	NC	NC	NC	NC

Note. Bolded values indicate best fit for that criteria. Shaded rows indicate best fitting solution for each model. *Model did not converge.

Table 3

Average Posterior Class Probability of Membership in Most Likely Class by LPA

	Classification Probability		
Most Likely Class Membership	1	2	3
1. High School Belonging	0.91	0.00	0.09
2. Moderate School Belonging	0.00	0.95	0.05
3. Low School Belonging	0.04	0.03	0.93

Note. Shaded cells indicate accuracy of classification.

Table 4

Log Odds Coefficients and Odds Ratios for the Three-Class Model with Gender and Ethnicity as Covariates Using the High School Belonging Class as a Reference Group

School Belonging Class	Effect	Logit	*SE*	*t*	Odds Ratio	*p*-value
Low School Belonging						
	Female	-0.63	0.28	-2.25	0.53	**0.024**
	Latinx	-0.46	0.34	-1.35	0.63	0.176
	White	-0.10	0.32	-0.29	0.91	0.771
Moderate School Belonging						
	Female	-0.52	0.28	-1.88	0.60	**0.060**
	Latinx	-0.88	0.35	-2.57	0.41	**0.010**
	White	0.28	0.31	0.89	1.32	0.375

Note. Bolded values denote statistical significance ($p < .05$).

Table 5

Model Results for Proximal Outcomes with Covariates for All Three Classes

Outcome Variable	Covariate Variable	Estimate	S.E.	*p*-value
Psychological Strengths				
	Female v. Male	0.07	0.03	**0.008**
	Latinx v. non-Latinx	0.06	0.04	0.14
	White v. non-White	0	0.03	0.977
Emotional Difficulties				
	Female v. Male	0.11	0.03	**<.001**
	Latinx v. non-Latinx	-0.01	0.04	0.812
	White v. non-White	-0.05	0.03	**0.069**
Behavioral Difficulties				
	Female v. Male	-0.03	0.02	0.165
	Latinx v. non-Latinx	-0.01	0.03	0.782
	White v. non-White	-0.01	0.02	0.791

Note. Bolded values denote statistical significance ($p < .05$).

Table 6

Model Results for Mean Proximal Outcome Values Within Each Latent School Belonging Class

Latent Class	Intercept	Estimate	S.E.
Low School Belonging Class	Psychological Strengths	2.66	0.04
	Emotional Difficulties	1.85	0.03
	Behavioral Difficulties	1.56	0.03
Moderate School Belonging Class	Psychological Strengths	3.11	0.03
	Emotional Difficulties	1.61	0.03
	Behavioral Difficulties	1.35	0.03
High School Belonging Class	Psychological Strengths	3.51	0.05
	Emotional Difficulties	1.38	0.04
	Behavioral Difficulties	1.24	0.04

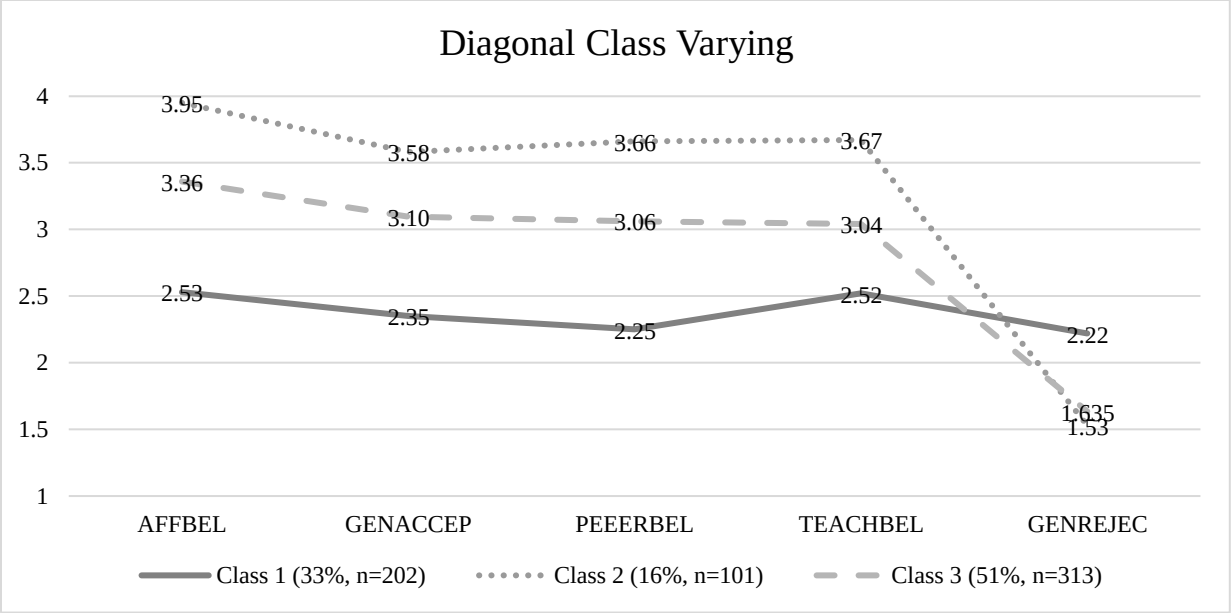

Figure 1. School belonging profile plots for the three-class class-varying, diagonal solution. Class size information is presented in the legend. (*Note*. AFFBEL = sense of affective belonging, GENACCEP = general sense of belonging, PEERBEL = peer support, TEACHBEL = teacher support, GENREJEC = general sense of rejection).

Study 2: Exploring School Belonging's Impact on Mental Health and Achievement in Secondary School Students

Abstract

Research has shown that school belonging is significantly associated with both mental health and academic achievement. Similarly, mental health has significant associations with academic achievement. While these associations are well-defined, there is no clear consensus regarding school belonging's role within the relation between mental health and academic achievement, particularly when viewing mental health through the lens of both psychological well-being and psychological distress (i.e., complete mental health). The current study examined school belonging's potential protective and/or promotive role between complete mental health and academic achievement. Using longitudinal data from 1,044 students from one public school in Central California, this study conducted a moderated path analysis using MPlus. Data were analyzed from three different time points: complete mental health (i.e., psychological well-being and psychological distress) was analyzed at the first time point, school belonging as a moderator was examined at the second time point, and academic achievement (i.e., student GPA) was investigated at the third time point. Psychological well-being was found to significantly predict academic achievement. Additionally, school belonging significantly moderated this relation, providing both a protective and promotive effect. Psychological distress was not found to significantly predict academic achievement. Implications of results are discussed.

Keywords: *school belonging*, *complete mental health*, *moderator*, *mediator*, *academic achievement*

Exploring School Belonging's Impact on Mental Health and Achievement in Secondary School Students

Adolescence is a critical time period of development characterized by psychosocial, behavioral, and biological changes (Pate et al., 2016). In addition to the potential onset of mental health problems, there is an influx of pressure to perform well both socially and academically as students begin planning for post-graduation transitions (Wiesner et al., 2003). As adolescents develop more autonomy, their interest in peers grows as does the need to perceive a strong sense of belonging (Roeser et al., 1998). Given the fact that adolescents spend the majority of their time in schools, school belonging is a crucial construct that may significantly impact their well-being. School belonging is defined as the feeling of being accepted by and a part of a school community (Goodenow, 1993). It has been linked to academic achievement (Anderman, 2002; Fletcher et al., 2008), including academic motivation and persistence (Anderman & Anderman, 1999; Tinto, 1997). Similarly, school belonging has associations with positive psychological outcomes, such as increased life satisfaction and subjective well-being (Allen & Bowles, 2012; Tian et al., 2015), in addition to negative psychological outcomes, including decreased levels of emotional distress, suicidality, and behavior problems, (Anderman, 2002; Resnick, 1997; Shochet et al., 2006).

Similar to school belonging, mental health is another important construct for consideration during adolescence. The worldwide prevalence of mental health problems in adolescence ranges from 10-20% (Kieling et al., 2011), with the majority of these mental health problems persisting into adulthood (Kessler et al., 2005; Patel et al., 2007). Mental health problems in adolescence can lead to lower academic performance, feelings of distress, increased risk for self-harm or suicide (Fergusson & Woodward, 2002), and disruption in

long-term career pathways (Wiesner et al., 2003). Given that previous research has shown that building resiliency through increased protective and promotive factors may reduce the impact of mental health problems (Davydov et al., 2010; Luthar et al., 2000), this study investigates school belonging's potential role as a protective and promotive factor against mental health difficulties.

In addition, academic achievement in secondary school is now more important than ever due to more rigorous competition within the labor force, as well as lowering admission rates into higher education institutions. In 2018, the college acceptance rate into the 50 top schools in the United States stood at 22.6% compared to 35.9% in 2006 (Steele, 2018). Academic achievement is impacted by several factors, including mental health and levels of school belonging (Pittman & Richmond, 2007), making it a critical outcome variable with several implications for success. The purpose of this study is to analyze the impact of school belonging on the relation between mental health and academic achievement. Results are expected to provide information on the importance of school belonging, a malleable construct that school districts can work towards improving (Byrnes, 2003).

School Belonging and its Related Terms

School belonging is often used interchangeably with several other terms, including *school connectedness*, *school membership*, *student engagement*, *school bonding*, or *school attachment*. The Centers for Disease Control and Prevention (2009) views *school connectedness* as a students' perceptions of being cared for by both adults and peers at school. *Student engagement* is conceptualized by feeling a perceived relevance of schoolwork, a sense of belonging and identification with school, and behaviorally complying with school expectations such as attendance and participation (Fredericks et al., 2004).

School bonding refers to the connection students feel to their school, school personnel, and academics (Maddox & Prinz, 2003). These constructs all are related to school belonging as a psychological construct; that is, students' mindsets about how they fit in and are a part of the broader school community, including among peers, teachers, and school staff. While all of these terms differ slightly in meaning, they all relate to students' attachment to school and sense of connection to the broader school community. For the purposes of this study, the term *school belonging* will be utilized to describe students' sense of connection and community within the school context.

Theoretical and Conceptual Underpinnings

The theoretical framework of this study is rooted in two psychological theories that provide a conceptual understanding of the relations examined in this study. The conceptualization of mental health is formed by the dual-continua model of mental health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008), while the nature of protective and promotive factors is understood through the lens of resiliency research (Ingram & Luxton, 2005).

Complete Mental Health

Mental health has been traditionally conceptualized as the absence of psychological distress, or deficit-based (Greenspoon & Saklofske, 2001). It is rooted in a medical model of psychology which is focused on alleviating pathological symptoms (Greenspoon & Saklofske, 2001). This historical view of mental health has transitioned to include a more positive strength-based perspective (Suldo & Shaffer, 2008), inclusive of well-being. The new bidimensional view of mental health views psychological distress and psychological well-being, or a positive perspective of one's overall quality of life (Diener et al., 2002), as

two separate dimensions or continua (Suldo & Shaffer, 2008). This new model has been coined the *dual-factor model* (Suldo & Shaffer, 2008) or the *two-continua model* (Greenspoon & Saklofske, 2001), among other names. For the purposes of this study, it will be called *complete mental health*, as termed by Furlong et al. (2014).

According to this new comprehensive view of an individual's mental health, researchers and practitioners are encouraged to assess both psychological distress and well-being (Suldo & Shaffer, 2008). Subjective well-being is described as "the scientific term for happiness" (Suldo & Shaffer, 2008, p. 53) or an individual's perspective on their life satisfaction, positive affect, and negative affect (Diener, 2000). While positive and negative affect make up the emotional component of subjective well-being, life satisfaction incorporates the cognitive component (Antaramian et al., 2010). High subjective well-being has been associated with lower anxiety and depressive symptoms (Huebner et al., 2004), and depression in adults is often preceded by low life satisfaction, which is one of the components of subjective well-being (Lewinsohn et al., 1991). Well-being can also be made up of other positive psychological traits, including engaged living (Froh et al., 2010), which often encompasses traits such as optimism, gratitude, and a zest for life (Conversano et al., 2010; Froh et al., 2008; Furlong et al., 2014; Gillham et al., 2010; Sansone & Sansone, 2010).

In order to analyze the complete mental health model, Wilkinson and Walford (1998) conducted a factor analysis examining self-reports of distress and well-being in a sample of 345 16- to 19-year old youth. Youth completed measures on life satisfaction, happiness, positive affect, anxiety, depression, and negative affect. The results produced a two-factor solution: (1) subjective well-being, which was comprised of life satisfaction, happiness, and

positive affect and (2) distress, which was made up of anxiety, depression, and negative affect. These findings support the idea of a dual-factor model of mental health with a well-being continuum and a psychological distress continuum.

Greenspoon and Sakfloske (2001) are also credited for investigating this model in a seminal study which surveyed a sample of 407 students from western Canada in grades 3-6. Measures included teacher-report and self-report scales analyzing both distress and well-being. Results showed that students were categorized into four distinct groups of mental health based on survey responses: *Well-adjusted* (high well-being and low distress), *Externally Maladjusted* (high well-being and high distress), *Dissatisfied* (low well-being and low distress), and *Distressed* (low well-being and high distress). Well-being was measured through five different dimensions of life satisfaction (i.e., family, friends, self, school, and living environment) while distress was measured through internalizing and externalizing symptomology. These findings indicate that the constructs of subjective well-being and distress are separate and that assessing for both provides a more comprehensive model of mental health.

Another study that supports the complete mental health model found similar groups when assessing for both subjective well-being and psychopathology (Suldo et al., 2016). The sample consisted of 500 students, grades 9-11, from two high schools in the United States. Measures involved both self-report and teacher-report rating scales measuring life satisfaction, positive and negative affect, and psychopathology. Additionally, researchers analyzed academic adjustment, social adjustment, identity development, and physical health for all participants. Results showed four groups of mental health: (1) *Complete mental health* (high well-being, low distress), (2) *Vulnerable* (low well-being, low distress), (3)

Symptomatic but content (high well-being, high distress), and (4) *Troubled* (low well-being, high distress). Students in Group 1 (i.e., Complete mental health group) showed the highest levels of academic adjustment, social adjustment, identity development, and physical health. Concurrently, students in Group 4 (i.e., Troubled group) showed the lowest levels of each outcome. Groups 2 (i.e., Vulnerable group) and 3 (i.e., Symptomatic but content group) made up 22.8% of the participants. These results suggest that a large percentage of students in need may be ignored without the complete mental health model. Thus, assessing solely for distress would provide an over- or under-estimation of student functioning.

This new view of mental health is seen through a positive psychology lens, where an emphasis is placed on strengths and assets in addition to deficits or psychopathology. It is a more comprehensive model of mental health, providing more information on students than a traditional deficit-based model. In studies analyzing school belonging's association with mental health, mental health has typically been viewed through the traditional, deficit-based perspective (Pate et al., 2016), suggesting a gap in research understanding school belonging's association with complete mental health. Thus, the complete mental health model will be used to discuss mental health throughout this study and will provide the basis for the measures used to analyze mental health.

Psychological Resilience

Given that school belonging is known to have a positive impact on students' well-being (Gratis, 2013; Allen & Bowles, 2012), this study is seeking clarity on school belonging's role as a protective or promotive factor. Thus, it is critical to understand the resilience literature. Psychological resilience refers to the underlying "phenomena characterized by good outcomes in spite of serious threats to adaptation or development"

(Masten, 2001, p. 228). While definitions often vary, the main aspects of resilience include adversity and positive adaptation, and both aspects must be present in order for resilience to be demonstrated (Fletcher & Sarkar, 2013). In other words, individuals cannot be considered resilient if they have not faced demonstrable risk or adversity (Masten, 2001). Luthar and Cicchetti (2000) define adversity as "negative life circumstances that are known to be statistically associated with adjustment difficulties" (p. 858). These life circumstances may include being raised by caregivers with severe mental health challenges, experiencing low socioeconomic status, and exposure to maltreatment or violence. Otherwise known as risk factors, these types of hardship increase the likelihood for maladjustment and negative outcomes.

However, it is important to note that hardship or adversity may not always lead to maladjustment or trauma. Protective factors, or influences that ameliorate a person's predisposition to maladjustment due to an environmental stressor (Rutter, 1985), hold a significant role in buffering against traumatic or maladjusted outcomes and in building resilience. Research has found that protective factors often fall into three broad sets of variables: 1) personality features, 2) family cohesion, and 3) external support systems that reinforce appropriate coping mechanisms (Masten & Garmezy, 1985). School belonging is a form of external support through peers, teachers, and school staff, indicating that it may be a protective factor in several contexts. Other examples of protective factors include positive emotions (Tugade & Fredrickson, 2004), self-efficacy (Gu & Day, 2007), self-esteem (Kidd & Shahar, 2008), and positive affect (Zautra et al., 2005). Protective factors help researchers understand why some individuals manage to achieve successful outcomes in the face of

adversity while other individuals who are exposed to the same risk factors may struggle and continue to experience trauma.

In a similar vein, promotive factors are those that yield benefits independent from the presence of risk or hardship (Masten, 2001). In other words, promotive factors benefit all individuals, regardless of whether they have experienced trauma or adversity. Both protective and promotive factors are crucial in the process of building resilience due to their power in increasing the chance of adaptive or favorable outcomes (Fletcher & Sarkar, 2013). With an interest in increasing positive outcomes for all youth, including those with prior risk, this study investigates the role of school belonging as a protective and promotive factor against mental health problems.

School Belonging as a Protective and Promotive Factor

Several studies have found associations between high school belonging levels and increased positive outcomes and reduced negative outcomes (Gratis, 2013; Sargent et al., 2002; Vieno et al., 2005). Although research supports school belonging as a protective and promotive factor in several contexts, the majority of research has solely analyzed school belonging's promotive role due to few studies incorporating known risk into the dependent variable. Thus, it is crucial to analyze school belonging's role as both a protective and promotive factor to fully understand its potential in serving all students.

Among promotive effects, school belonging has been found to be negatively associated with emotional distress, suicidality, and violence (Resnick et al., 1997). These associations were tested in the National Longitudinal Study of Adolescent Health (Add Health) with 12,118 adolescents in Grades 7-12 who completed interviews with researchers in their homes. Outcome areas assessed included emotional distress, suicidal thoughts and

behaviors, violence, substance use, age of sexual debut, and pregnancy history. Results suggested that perceived school connectedness was negatively related to every health risk behavior assessed excluding history of pregnancy (Resnick et al., 1997). Other studies have supported the associations between school belonging and reduced aggression and substance use (Brookmeyer et al., 2006; Wang et al., 2005).

Additionally, Kia-Keating and Ellis (2007) investigated the relation between school belonging and psychosocial adjustment among 76 Somali refugees who settled in the United States, including students in grades 9-12. Findings indicated that high levels of school belonging were associated with reduced depression symptoms and higher self-efficacy. Lastly, school belonging has also been associated with increased academic motivation and persistence (Anderman & Anderman, 1999; Tinto 1997) and decreased delinquency and dropout (Finn & Rock, 1997).

There have been fewer findings of school belonging's protective role. One study analyzed school belonging's protective role within the relation between Native American youth, aged 9-15 years, who engaged in substance use and subsequent weapon carrying (Bearinger et al., 2010). Through a moderation analysis, findings showed that school belonging moderated the role between substance use and weapon carrying, such that higher levels of school belonging were associated with decreased weapon carrying among substance users. Huynh and Gillen-O'Neel (2013) investigated school belonging as a moderator within the relation between ethnic discrimination among ethnic minority youth and sleep quality in students grades 9-12. Findings suggest that school belonging significantly moderates this relation, such that those with higher perceived discrimination have greater sleep quality in the presence of higher levels of school belonging (Huynh & Gillen-O'Neel, 2013).

Most closely related to the current study, Pate et al. (2016) investigated the role of school belonging in the relation between emotional distress and academic achievement by examining school belonging as a moderator and a mediator. Data were used from the National Longitudinal Study of Adolescent Health (Add Health Study) and included 7,276 adolescents aged 13-16 who were interviewed in their homes at one time between 1994-2001. Emotional distress was measured by items examining depression symptomology. Academic achievement was measured by cumulative grade point average (GPA). Lastly, school belonging was measured by items encompassing affective sense of belonging, teacher support, and one school safety item. Results suggested that school belonging partially mediated and fully moderated the role between psychological distress and academic achievement (Pate et al., 2016). The results of partial mediation implied that school belonging acted as an explanatory variable within the relation between psychological distress and academic achievement. Concurrently, the full moderation results indicated that school belonging changed the relation by providing a protective effect, such that students with higher levels of distress yielded more positive academic results when they felt a higher sense of school belonging (Pate et al., 2016).

While it is widely known and accepted that school belonging has significant associations with increased positive outcomes and decreased negative outcomes, its role as a protective factor has not been researched as thoroughly. This study serves to examine the distinction between school belonging as a protective and promotive factor among adolescents. The protective-promotive distinction may serve as an aid in developing strong interventions to enhance school belonging. For example, universal (i.e., Tier 1) interventions for all students may be most appropriate if school belonging is found to hold primarily

promotive effects. In contrast, Tier 2 or Tier 3 interventions only aimed at at-risk students would be the most useful if school belonging holds primarily protective effects.

School Belonging and its Relation to Mental Health

Due to the relatively recent evidence-based development of the complete mental health model, it is important to include both psychological distress and well-being when considering mental health. Research findings indicate strong associations between school belonging and psychological distress (Gratis, 2013; Resnick et al., 1997; Shochet et al., 2006). Similarly studies have shown evidence for a link between school belonging and well-being (Allen & Bowles, 2012; Tian et al., 2015), though the number of these studies are far fewer than those investigating school belonging and distress. Thus, it is critical to investigate both distress and well-being when analyzing school belonging's relation to mental health.

In consideration of psychological distress, Markowitz (2017) conducted a longitudinal study examining school belonging's association with depressive symptoms in adolescents. The findings showed that school belonging was negatively associated with depressive symptoms, a relation that persisted well into late adolescence and adulthood, nearly 10 years later. The author suggested that the findings may be due to the experience of school belonging providing adolescents with emotion regulation or coping strategies, the ability to foster healthy relationships with others, and the skills to successfully navigate developmental tasks in adolescence. In another longitudinal study, Resnick et al. (1997) investigated results from the Add Health Study in a large sample of students in grades 7-12 (n = 3,130). Results showed school belonging's associations with decreased emotional distress and suicidality across all age groups. A similar study by Anderman (2002) supported these findings, further validating school belonging's association with psychological distress.

Unfortunately, the associations between school belonging and psychological well-being have not been examined as thoroughly. One longitudinal study examined school belonging and subjective well-being among elementary school students in China (Tian et al., 2015). School belonging was measured at Time 1 and subjective well-being was analyzed at Time 2. Results suggested a bidirectional association between school belonging and subjective well-being, indicating that school belonging predicts well-being, which then further enriches school belonging (Tian et al., 2015). Using data from the Add Health study, Anderman (2002) examined the relation between school belonging and optimism, a component of well-being. He examined data from 20,572 students (grades 7-12) and found a positive association between school belonging and optimism. These findings provide further support for school belonging's positive relations to psychological indicators of well-being.

While the research involving school belonging and negative indicators of mental health is robust, there is a need for studies investigating school belonging's impact on positive indicators of mental health. Furthermore, it would be beneficial to use indicators of both well-being and distress to investigate school belonging and complete mental health. Understanding how school belonging impacts complete mental health would provide a more holistic understanding of school belonging's potential role as a protective or promotive factor by broadening the definition of risk to include those with low well-being in addition to those with high distress. This study purports to fill this gap by including both psychological well-being and distress within the construct of mental health in the context of school belonging.

School Belonging and its Relation to Academic Achievement

Given the importance of academic achievement in adolescence and its impact on later success and career trajectories (Wiesner et al., 2003), research examining predictors of high

academic achievement is crucial. One such predictor, school belonging, is widely known to be significantly related to academic achievement, often through academic motivation and persistence pathways (Anderman & Anderman, 2002). There are several hypothesized reasons for this connection, such as underpinnings in Dewey (1958) and Vygotsky's work highlighting the importance of social relations in education such that education and learning is a collaborative process. Vygotsky argued that learning occurs through a collaborative process between teachers and students. As such, teachers and students must be members of the same group in order for higher collaboration to occur. In addition, it is believed that students perceive an increased relevance in their schoolwork due to an amplified attachment to school. This is unsurprising given that one of the related terms to school belonging is school attachment. Despite the varied theorized reasons for the relation between academic achievement and school belonging, a strong association exists and has been researched in several contexts.

For example, Reynolds et al. (2017) explored school climate's impact on academic achievement through the examination of social identity in grades 7-9. School climate is an overarching term that includes the school belonging construct. This study found that social identity, particularly school identity, mediates the positive relation between school climate and academic achievement (Reynolds et al., 2017). The implications suggest that students perform better when they feel a strong connection to school. Similarly, Parker et al. (2004) investigated social and emotional competency's impact on academic achievement in adolescence (grades 9-12), finding a significant positive relation. Social and emotional competency was investigating by items measuring intrapersonal abilities, adaptability, and stress management, such as regular class attendance, schoolwork completion, and

involvement in extracurricular activities (Parker et al., 2004). The authors stated that this finding was anticipated given the increased importance of social relationships in adolescence. Students at this age are spending more time with peers and these friendships become more connected to academics and work as adolescents transition to young adulthood (Parker et al., 2004).

Perceived school belonging in adolescence has even been found to have an effect on academic competence in college, several years later (Pittman & Richmond, 2007). Researchers examined a sample of 266 students in the second semester of their first year of college. Findings included a significant relation between current levels of perceived school belonging and academic achievement, as well as past levels (i.e., high school) of school belonging and current academic achievement. These results suggest that school belonging in adolescence has a longitudinal impact, perhaps providing influence in long-term academic or career success as well. By considering the results of all of these studies, school belonging can be seen to have a significant impact on academic achievement, implying that it is an important area of research in understanding students' academic outcomes.

Mental Health and its Relation to Academic Achievement

In addition to school belonging, mental health has also been found to hold strong associations with academic achievement, such that psychological distress is associated with lower academic achievement. The causality of this relation is unknown and it is often viewed as a reciprocal association with both variables affecting each other. The association between psychological distress and academic achievement has been tested and confirmed in elementary school (Alexander et al., 1993; Farmer & Bierman, 2002), in middle and high school (Fletcher et al., 2008; McLeod & Kaiser, 2003; Needham, 2009), and in

postsecondary development (Hunt et al., 2010; Pittman & Richmond, 2007). However, despite the plethora of research investigating this relation, most research has focused on the traditional conceptualization of mental health (i.e., emotional distress) rather than the complete mental health model (i.e., psychological well-being and psychological distress).

In Pittman and Richmond (2007)'s study, the authors found that past and current school belonging levels predicted psychological adjustment (i.e., higher self-worth and lower internalizing and externalizing problem behaviors) in college. Again, this finding implicates the long-term effect of school belonging on both academic and psychological competence. In another study, McLeod et al. (2012) examined the association of behavior problems and academic achievement and found a negative association. While behavior problems differ from mental health, the two are often linked (Ogundele, 2018), implying that mental health problems may also be related to academic achievement.

Similarly, positive indicators of mental health, such as psychological well-being, have been linked to A study conducted by Suldo et al. (2010) examined the longitudinal academic outcomes as predicted by subjective well-being, psychopathology, and mental health status within a dual-continua model of mental health. The sample included 300 middle school students (grades 6-9) with data measured one year apart. Results suggested that subjective well-being and psychopathology predicted academic achievement one year later, such that students with average to high well-being and low psychopathology performed the best, while students with high psychopathology and low well-being declined significantly in their GPAs. This study was the only one found which examined the relation between mental health and academic outcomes from a complete mental health perspective. While research analyzing the relations between negative indicators of well-being and academic outcomes are strong, there

is a need to understand the impact of complete mental health and academic achievement, particularly within adolescence, a critical time period for academic success.

Purpose of the Current Study

Significant transitions take place in adolescence as teenagers and young adults begin to consider and plan for career and college trajectories. In addition to these major changes, adolescents are often battling other transformations such as the potential onset of mental health disorders and the growing significance and complexity of peer relationships. All of these changes are influential in many aspects of an adolescent's life, including academic performance. While mental health and other internal and external factors are more difficult to control, school factors such as school belonging are more malleable and can often be enriched by school personnel (Byrnes, 2003). In addition, school belonging may be particularly important during high school due to adolescents' growing desire to feel a sense of community and acceptance by others.

School belonging has been tested and confirmed as a protective and promotive factor in a variety of contexts (Bearinger et al., 2010; Brookmeyer et al., 2006; Pate et al., 2016; Resnick et al., 1997; Wang et al., 2005). Yet, its role in the relation between complete mental health (i.e., well-being and distress) and academic achievement is largely untested. Understanding whether school belonging is a protective factor, promotive factor, or both would provide a more nuanced view of with whom to focus school interventions.

Although Pate et al. (2016) conducted a similar study investigating school belonging as a mediator or moderator within the role of emotional distress and academic achievement, the authors did not take into account complete mental health, inclusive of well-being. The current study adds to the literature by analyzing both psychological well-being and

psychological distress within the construct of mental health, a more comprehensive model of mental health with significant empirical support (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008). Attending to complete mental health will help researchers and educators understand how both well-being and distress may predict academic achievement when considering the role of school belonging.

In addition, including academic achievement as the outcome variable is crucial due to its known associations with later success. As Wiesner et al. (2002) found, a significant predictor of adult career success includes secondary school educational achievement. Academic achievement is also a known factor in improving chances of college acceptance and securing financial stability. Therefore, it is important to investigate the predictors and variables associated with higher academic achievement in secondary school students.

The utility of the current study is to further explore the associations of school belonging, complete mental health, and academic achievement within a longitudinal context. The current study aims to investigate high school students' perceived levels of school belonging as a moderator within the relation between complete mental health (i.e., well-being and distress) and academic achievement. Given the extensive literature connecting school belonging, mental health, and academic achievement, it is expected that school belonging will significantly moderate the relation between complete mental health and academic achievement, acting as both a protective and promotive factor. Thus, the following research question will be answered: Does school belonging act as a protective factor, promotive factor, or both within the relation between complete mental health and academic achievement?

Method

Participants

The sample includes 1,044 students from grades 9-12, which is a subset of participants from a larger study spanning four school years. The sample in this study participated at three time points: Time 1 data were collected during Fall 2016, Time 2 data were collected during Fall 2017, and Time 3 data were collected during Spring 2018. The study follows three cohorts of students: students who were in 9th grade at T1 matriculated into 10th grade at T2 (36.7%); students who were in 10th grade at T1 matriculated into 11th grade at T2 (31.3%) and students who were in 11th grade at T1 matriculated into 12th grade at T2 (32%). The gender breakdown is as follows: 52.4% of participants identified as female, 46.7% identified as male, and 1% identified as other. Additionally, students were required to choose one ethnicity response option to describe themselves; the ethnicity breakdown is as follows: 48.9% Latino/a or Hispanic, 38.5% White, 7.3% multiracial, 3.1% Asian, 1% Black or African American, 0.6% American Indian or Alaskan Native, and 0.5% Native Hawaiian or Pacific Islander. Based on the sample of students included in this study (n =1,044) and a sample of students who were excluded from the study because they only participated in Year 1 (n = 845), an independent samples t-test was conducted to determine whether participant demographics differed based on attrition. Results showed non-significant differences for gender (F = 1.54, p = .22) and ethnicity (F = 1.80, p = .18). Attrition analyses were not conducted on grade because several students were excluded from the longitudinal sample because they had graduated. Participant demographics and attrition can be seen in Table 1.

Measures

Psychological Well-being

Psychological well-being was measured by the *Engaged Living* factor taken from the *Social Emotional Health Survey – Secondary* (SEHS-S; Furlong et al., 2014). Froh et al. (2010) found that engaged living is significantly associated with psychological well-being, such that youth with high levels of engaged living report higher life satisfaction, increased positive affect, and decreased negative affect. Engaged living is defined as "having a passion to help others and be completely immersed in activities" (Froh et al., 2010; p. 312. The *Engaged Living* factor in the SEHS-S is comprised of three subfactors: *Optimism* (i.e., "I usually expect to have a good day)", *Gratitude* (i.e., "Since yesterday, I have felt grateful"), and *Zest* (i.e., "Since yesterday, I have felt energetic"), all of which are known aspects of psychological well-being with associations with school belonging (Anderman, 2002; Brdar & Kashdan, 2009; Conversano et al., 2010; Emmons & McCullough, 2003; Froh et al., 2008; Park & Peterson, 2006). The SEHS-S is a 36-item self-report measure that investigates youths' social emotional strengths, of which nine items are part of the *Engaged Living* factor. The SEHS-S was measured on a six-point response scale (1 = *very much unlike me*, 2 = *unlike me*, 3 = *somewhat unlike me*, 4 = *somewhat like me*, 5 = *like me*, and 6 = *very much like me*). Several studies have provided validation for the higher-order model of the SEHS-S, as well as for each second-order trait, including Engaged Living (You et al., 2014; You et al., 2015). A mean Engaged Living score was computed for each participant to comprise the psychological well-being variable. Internal consistency for the Engaged Living score is .88.

Psychological Distress

Psychological distress was measured by the *Social Emotional Distress Survey – Secondary* (SEDS-S; Dowdy et al., 2018), a self-report survey used to assess youths' psychological distress in the past month (e.g., "In the past month, it was hard to get excited

about anything"). The SEDS-S includes 10 items and uses a four-point response scale (1 = *not at all true,* 2 = *a little true,* 3 = *pretty much true,* and 4 = *very much true*). Exploratory and confirmatory factor analyses found good model fit for a unidimensional factor structure (Dowdy et al., 2018). Evidence was also found for convergent validity with measures of depression and anxiety and discriminant validity with measures of subjective well-being (Dowdy et al., 2018). For the current study, a mean SEDS-S score was computed for each participant in order to comprise the psychological distress outcome variable. Internal consistency for the total SEDS-S score is .91.

School Belonging

School belonging was measured using the *School Connectedness Scale* (SCS; Resnick et al., 1997), a five-item unidimensional scale designed to measure students' sense of connectedness or belonging to school in grades 7-12. The SCS uses a five-point response scale (1 = *strongly disagree,* 2 = *disagree,* 3 = *neither disagree nor agree,* 4 = *agree,* 5 = *strongly agree*). Example items include: *I am happy to be at this school* and *I feel like I am a part of this school*. Anderman (2002) examined the psychometric properties of the SCS and found adequate internal consistency (α = .78). Similarly, Furlong et al. (2011) found that the SCS had high internal consistency across multiple ethnic groups (α = .82-.87), in addition to support for the unidimensional factor structure. For the current study, a mean SCS score was created for each participant to compute the school belonging variable for the analyses. Internal consistency for the total SCS score is .89.

Academic Achievement

Academic achievement was measured by students' total Grade Point Average (GPA), obtained through school academic records. The GPA range for the current sample is .28 - 4.69 (M = 3.46), indicating an overall high average GPA.

Covariates

Gender and race/ethnicity were included as covariates to control for demographic differences in academic achievement. Prior research has found that female students tend to achieve higher academic scores across several subject areas (Dayioglu & Turut-Asik, 2007; Farooq et al., 2011; Lietz, 2006). Similarly, existing research has provided evidence for racial and ethnic differences in academic achievement, such that historically disadvantaged groups (i.e., African American, Latinx, and Native American students) perform lower than their White and Asian-American counterparts (Kao & Thompson, 2003). Descriptive statistics for each variable can be seen in Table 2.

Procedure

Data were collected in Fall 2016 (Time 1), Fall 2017 (Time 2), and Spring 2018 (Time 3) from one high school in Central California as part of a longitudinal grant investigating a social-emotional health screener (Institute of Educational Sciences #R305A160157). More specifically, the data measuring complete mental health (i.e., *Engaged Living* factor in SEHS-S and the SEDS-S) were collected in Fall 2016, data measuring school belonging (i.e., *SCS*) were collected in Fall 2017, and data measuring academic achievement (i.e., GPA) were collected in Spring 2018. Although all students in Grades 9-12 were selected for participation, the school district approved the use of passive parental consent (i.e., parental response only necessary for declined consent) and student assent. Both consent and assent procedures were offered in both Spanish and English. Less

than 1% of students lacked parental consent to participate in the survey during both the 2016-17 and 2017-18 school years and 5.8% and 5.9% of students declined assent during the 2016-17 and 2017-18 school years, respectively. Students were given the option of completing the entire survey in Spanish or English and 91% of students completed the survey in English.

All students with parental consent and assent completed the survey via computers in the school computer lab or tablets in the classroom. Classroom teachers and researchers proctored the survey administration and were provided with a standardized script to read, explaining the nature of the survey to all students. Teachers and researchers were available to answer questions. The survey included items asking about students' gender, grade, and race/ethnicity.

Statistical Analyses

Data Cleaning

IBM SPSS 25.0 software was used to test prior statistical assumptions, which were met. Consistent with procedures outlined in Furlong et al. (2016), data cleaning procedures included the removal of inconsistent or mischievous responders. Additionally, students with duplicate survey submissions, students whose student identification numbers were missing, and those who had all or most items missing within a measure were removed. These procedures resulted in 378 (13.6% of total sample) and 519 (18.6% of total sample) participants being excluded in the 2016-17 and 2017-18 school years, respectively. Moreover, there were 846 (30.4% of total sample) total participants who did not complete data collection in Year 2 and thus, were removed from the analyses due to attrition. This number was inclusive of students who had graduated and students who left the school.

Attrition Analyses

In addition to conducting attrition analyses to analyze participant demographics, attrition analyses were also conducted to determine whether students who participated in the study across both time points reported significantly different psychological strengths and psychological distress from students who dropped out of the study after Year 1 with the use of two independent samples *t*-tests.

Moderation Analysis

Rose et al. (2004) discussed the utility of moderation analyses to explore protective and promotive factors because the nature of a protective factor requires an interaction with prior risk whereas promotive factors can be shown through a main effect. In cross-sectional research, moderation analyses can be difficult to interpret due to the potential bidirectional pathways of the variables; identifying a variable as a moderator may be largely based on theory due to the fact that either independent variable may potentially be the moderating variable. However, utilizing longitudinal data at different time points permits an examination of a predictor variable as separate from the moderator variable. Consistent with the rationale outlined by Rose et al. (2004) in addition to other similar research (Bearinger et al., 2010; Huynh & Gillen-O'Neel, 2010; Markson et al. 2015), a longitudinal moderated multivariate regression analysis was conducted in the present study using a moderated path analysis in MPlus (Muthén & Muthén, 1998-2015). This analysis allowed for the examination of school belonging's potential role as a protective or promotive factor between complete mental health and academic achievement.

First, all continuous independent variables, covariates, and the moderator variable of school belonging were centered to reduce multicollinearity (Cohen et al., 2003). The model was estimated using Maximum likelihood estimation method with robust standard errors

(MLR) because it accounts for non-normality in data and missing data. Two interaction terms were created to investigate school belonging's effect on complete mental health: (1) psychological well-being (i.e., *Engaged Living* factor in *SEHS*-S) and school belonging (i.e., *SCS*) and (2) psychological distress (i.e., *SEDS*-S) and school belonging (i.e., *SCS*). The outcome variable, academic achievement (i.e., GPA), was regressed on the psychological well-being score, psychological distress score, school belonging score, both interaction terms, and the covariates of gender and ethnicity. Due to the small percentage of students identifying as "Other" (1.6%) for gender, gender was included as a binary variable, with male coded as 1 and female coded as 2. Students who identified as "Other" were excluded from the study. Additionally, the ethnicity variable was dummy coded into two different variables: White vs. non-White, with non-White coded as 0 and White coded as 1, and Latinx vs. non-Latinx, with non-Latinx coded as 0 and Latinx coded as 1. White and Latinx were chosen as the ethnicity covariates due to an overwhelming majority of students (87.4% of participants) identifying as either White or Latinx in the survey question regarding ethnicity. The moderation model can be seen in Figure 2.

Results

Attrition Analyses

Results indicated that there was a significant difference in reported psychological strengths for students who remained in the study (M = 4.67, SD = .82) and students who dropped out of the study (M = 4.51, SD = .96); $t(1888) = 3.85$, $p < .001$), such that students who remained in the study reported higher levels of psychological strengths. Similarly, there were significant differences in reported psychological distress for students who remained in the study (M = 1.86, SD = .81) and students who dropped out of the study (M = 2.01, SD =

.90); $t(1888) = -3.59$, $p < .001$), such that students who remained in the study reported lower levels of psychological distress.

Main Effects

Results indicated that psychological well-being (i.e., Engaged Living) was significantly positively related to academic achievement (i.e., GPA) ($\beta = .08$, $p < .01$). Similarly, school belonging was significantly positively related to academic achievement ($\beta = .18$ $p < .001$). Contrary to prior research, psychological distress was not significantly related to academic achievement ($\beta = .00$, $p = .92$).

Moderating Effects

The moderating influence of school belonging was partially supported, as school belonging significantly moderated the relation between psychological well-being and academic achievement ($\beta = -.10$ $p < .05$). To investigate the precise nature of school belonging's moderating effect on psychological well-being and academic achievement, the conditional effects were tested (Cohen et al., 2003). The relation between psychological well-being and academic achievement was plotted at one standard deviation below and above the mean of school belonging (see Figure 2). Results indicated that students who reported higher levels of school belonging also reported higher academic achievement, with the magnitude of difference decreasing for students who also reported higher levels of psychological well-being. To test the statistical significance of the moderation at low (i.e., one standard deviation below the mean) and high (i.e., one standard deviation above the mean) levels of school belonging, simple effects analyses were conducted (Aiken & West, 1991; Cohen et al., 2003). Results suggest that school belonging significantly moderates the relation between

psychological well-being and academic achievement at a low level (β=2.82, p<.001) and a high level (β=4.33, p<.001).

Covariates

Finally, the results of the covariates in the model are presented. First, gender had a significant impact on academic achievement, indicating that female students had higher academic achievement than did male students (β= -.19, p<.001). Similarly, ethnicity significantly affected academic achievement, such that White students performed higher than non-White students (β=.18, p<.001) and Latinx students performed lower than non-Latinx students (β= -.25, p<.001). The final model with all variables can be seen in Figure 1.

Discussion

The present study sought to clarify school belonging's role as a protective or promotive factor within the relation between complete mental health and academic achievement. While school belonging is a known protective and promotive factor in several contexts (Bearinger et al., 2010; Huynh & Gillen-O'Neel, 2013), this specific relation has not been widely analyzed. In particular, the interrelations between psychological well-being, academic achievement, and school belonging are largely unexplored despite the growing body of research providing evidence for complete mental health (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008).

School Belonging's Role Within Complete Mental Health and Academic Achievement.

Psychological Well-being

Results from the current study indicated that psychological well-being significantly predicted academic achievement and school belonging significantly moderated this relation. More specifically, school belonging significantly moderated the role between psychological

well-being and academic achievement, such that the moderating effect was stronger for those who had lower well-being. Thus, school belonging acted as both a protective and promotive factor because it increased the outcome of academic achievement both with at-risk students (i.e., those with low psychological well-being) in addition to with all students.

This finding is consistent with existing research in that previous studies have shown school belonging to act as a protective factor in several contexts, such as with outcomes including academic achievement (Pate et al., 2016), weapon carrying (Bearinger et al., 2010), and sleep quality (Huynh & Gillen-O'Neel, 2013). Similarly, school belonging has been seen as a promotive factor in various studies, with several positive associations for all children, including those with no risk (Anderman & Anderman, 2002; Kia-Keating & Ellis, 2007; Resnick et al., 1997). Lastly, the few studies which have explored psychological well-being's relation to academic achievement found similar results (Suldo et al., 2010), indicating that the current study provides further evidence for psychological well-being's positive impact on academic success. In sum, the findings regarding psychological well-being, school belonging, and academic achievement provide further support of school belonging's significant protective and promotive role, in addition to psychological well-being's impact on academic achievement.

Psychological Distress

Results from the current study were unique in that psychological distress was not significantly related to academic achievement. As such, school belonging did not act as a protective or promotive factor within the relation between distress and academic achievement. This finding differed from a previous study investigating this same relation (Pate et al., 2016), in addition to previous literature denoting the robust impact of mental

health deficits on academic success (Alexander et al., 1993; Farmer & Bierman, 2002; Needham, 2009; Pittman & Richmond, 2007).

There are some factors which may have contributed to these unique results, including the fact that there are likely other effects impacting academic achievement than psychological distress. The covariates of gender and ethnicity were shown to have a significant impact on academic achievement. Female students were more likely to have higher academic achievement than male students, consistent with prior research (Dayioglu & Turut-Asik, 2007; Farooq et al., 2011; Lietz, 2006). Similarly, White students tended to perform higher than non-White students and Latinx students tended to perform lower than non-Latinx students. Again, these findings replicated results from previous studies (Kao & Thompson, 2003). While it was not possible to disentangle achievement on separate academic subjects, future studies may further analyze how gender and ethnicity play a role on academic achievement in distinct academic areas. Furthermore, additional research is necessary to determine whether there are differential moderating effects of school belonging on different gender and ethnic groups.

Concurrently, the measure used in the current study to examine distress, the SEDS-S (Dowdy et al., 2016) measures internalizing symptoms of distress, specifically symptoms related to anxiety and depression. While research supports the negative relation between academic achievement and symptoms consistent with anxiety and depression (Khesht-Masjedi et al., 2019), there is also evidence for the impact of externalizing distress symptoms on academic achievement (Ansary & Luthar, 2009). Ansary and Luthar (2009) found that students expressing externalizing symptoms, such as substance use and delinquency, exhibited worse academic outcomes that did students with solely internalizing symptoms of

depression and anxiety. In fact, students expressing both internalizing and externalizing symptoms displayed the lowest academic achievement (Ansary & Luthar, 2009). These findings suggest that measuring both internalizing and externalizing distress may have produced different results with regards to distress and academic achievement. Future studies exploring the relations between complete mental health, school belonging, and academic achievement may consider utilizing a distress scale that measures both internalizing and externalizing symptoms in order to fully capture students' psychological distress experiences.

Implications for Research

Results from the present study shed light on the importance of school belonging research and resiliency literature by providing further evidence for school belonging's impact on academic achievement. School belonging acted as a predictor and as a protective and promotive factor for limited psychological strengths. Future studies may continue exploring school belonging's protective and promotive role within complete mental health and additional measures of academic achievement, which may produce varying results as GPA is just one measure of academic achievement. More specifically, it may be beneficial to understand the influence of school belonging on other academic outcomes such as state standardized tests, school attendance, and enrollment in Advanced Placement (AP) or Honor's courses. As studies have shown significant associations between school belonging and school attendance (Sánchez et al., 2005; Wilkins, 2008), in addition to school belonging and enrollment in AP courses (Shiu et al., 2009), future research may consider analyzing how complete mental health fits into these relations, and whether school belonging acts as a protective or promotive factor. Incorporating additional factors related to academic achievement may provide a more holistic understanding of the importance of school

belonging, providing further evidence for the necessity of cultivating effective school belonging interventions.

The current study's findings also indicate that low psychological well-being is a risk factor with negative implications, such as lower academic achievement. Students in this study who reported lower psychological well-being had lower academic achievement, though this relation was mitigated by the presence of high levels of school belonging. Including low well-being as a risk factor in future studies can expand the current understanding of risk, which often includes solely deficit-based variables. Incorporating the complete mental health model within resiliency research may produce identification of additional protective and promotive factors that were otherwise unknown. Thus, it would be beneficial to further explore low psychological well-being as an adversity in additional relations.

Similar to previous research on the complete mental health model (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008), the current study's findings provide evidence for the fact that critical aspects of students' psychological experiences would be lost without the inclusion of well-being. In fact, with the results indicating that psychological well-being is more significantly predictive of academic achievement than is psychological distress, it is important to consider whether well-being is more critical to include in mental health research than is distress. Although findings from this study suggest that distress was not predictive of academic achievement, other studies have shown this robust relationship (Alexander et al., 1993; Farmer & Bierman, 2002; Needham, 2009; Pittman & Richmond, 2007), which warrants additional research. However, the current study's findings provide further evidence for the psychological field to move towards a complete mental health model inclusive of both psychological well-being and psychological distress.

Implications for Practice

In addition to research, findings from the current study hold several critical implications for practice, both within the specific field of school psychology in addition to the general field of mental health. Results showed that school belonging significantly predicted academic achievement, in addition to significantly interacting with psychological well-being. As a protective factor, school belonging had a greater impact on academic achievement when interacting with low levels of psychological well-being. This buffering effect indicates that school belonging is more critical for students with low psychological well-being and school belonging interventions should be especially targeted towards these students through small group (Tier 2) or individual (Tier 3) intervention practices. Additionally, school belonging acted as a promotive factor by positively impacting academic achievement for all students, regardless of their levels of psychological well-being. As such, schools may consider engaging in universal practices to boost levels of school belonging across all students, in addition to targeted interventions for additional support for at-risk students, specifically those with lower psychological well-being. The current trend of school belonging interventions include peer or teaching mentoring programs targeted towards at-risk students (Christenson et al., 2008; Holt et al., 2008). Researchers and practitioners may consider adapting these programs to benefit all students. Moreover, the study's indication of the importance of school belonging necessitates assessing students' levels of belonging in order to identify which students may need additional support. Including a school belonging measure in psychoeducational evaluations or screening processes may lead to more effective targeted interventions and would likely benefit students feeling disengaged from school.

Concurrently, the findings from the current study indicate that psychological well-being may be more critical than distress in predicting outcomes such as academic achievement. As such, there is a strong need for psychological assessment and treatment to be inclusive of psychological well-being in addition to mental health deficits. Screening measures or comprehensive assessments used to obtain an understanding of students' mental health may consider including a well-being component in order to achieve a holistic view of students' mental health functioning and identify students experiencing difficulties with psychological well-being. Lastly, treatment approaches for students may consider including a well-being component and practitioners may choose to monitor students' psychological well-being as a form of progress monitoring. As results indicated that psychological well-being directly impacts academic achievement, it is critical to attend to all students' psychological well-being through universal interventions, such as schools working to foster teacher support and improving students' relationship to school staff (Holt et al., 2008). Schools taking care to focus on both school belonging and psychological well-being through treatment and assessment practices will likely aid in increasing students' academic achievement, according to the present study's findings.

Limitations and Future Directions

Despite being a longitudinal study, which offered the unique ability to parse out school belonging's role as a protective and/or promotive factor without the bi-directionality of pathways often seen in cross-sectional designs, several limitations of this study are important to acknowledge. First, attrition analyses indicated that students who remained in the study reported significantly higher strengths and lower dress than students who dropped out of the study after Year 1. These differences may be due to several factors that were not

examined in this study, such as school attendance, socioeconomic status, or parental engagement, which would be beneficial to further examine in future studies. Additionally, these differences may have contributed to the moderation results since the students who remained in the study reported higher psychological strengths and lower psychological distress.

Second, the study sought to examine the relation between complete mental health and academic achievement. Due to minimal options of measures concurrently examining both factors of mental health (i.e., well-being and distress) and an unclear consensus on how to create complete mental health groups (Kim et al., 2016; Rebelez-Ernst, 2015), two sets of measures were required to examine psychological well-being and psychological distress. Thus, the model included psychological well-being and distress as two separate independent variables, though both variables and their corresponding interaction terms were included in one model. While this is not a statistical limitation and, in fact, presented unique results, it may be a conceptual limitation as complete mental health is considered to be one construct with two dimensions (Greenspoon & Saklofske, 2001; Suldo & Shaffer, 2008).

Third, the psychological well-being measure used was limited to items measuring engaged living. While this factor was chosen due to engaged living's known associations with psychological well-being (Froh et al., 2010; Vallerand et al., 2003) and academic achievement (Conversano et al., 2010; Froh et al., 2008; Gillham et al., 2010; Sansone & Sansone, 2010), future studies would benefit from examining other aspects of well-being to further explore the relations between psychological well-being, academic achievement, and school belonging. Such measures may include a specific life satisfaction component, given subjective well-being's inclusion of life satisfaction, positive affect, and negative affect

(Antamarian et al., 2010). Recognizing the large number of well-being and distress measures with validity and reliability evidence for adolescents, it is recommended for future studies to utilize additional measures to continue to explore these relations.

Fourth, the ethnicity covariate provided limitations in that students were required to choose one ethnicity response option. If students identified as multiracial, there was no response option available to choose except 'Other.' Thus, as the study created dummy coded race variables for White v. non-White and Latinx v. non-Latinx, students who identified as both White and Latinx may have identified as "Other" in the survey and were then incorrectly coded as "non-White" and "non-Latinx". Future studies may consider including a "Multiracial" option or allowing participants to choose multiple ethnicity response options.

Additionally, the study relied solely on student self-report for the measures used for examining well-being, distress, and school belonging. Research on adolescents' accuracy of self-report responses on mental health measures is varied. An increasing number of studies suggest that adolescents are ideal informants for identifying internalizing symptoms, which were assessed in the current study, as these symptoms are often more difficult for outside sources to identify (Smith, 2007). However, relying solely on one informant may lead to mono-method bias (Podsakoff et al., 2003) and social desirability bias (Huang et al., 1998), indicating biased or inaccurate responses due to self-report for the independent variables and moderating variable. However, the risk of bias may be somewhat mitigated due to the academic achievement outcome variable (i.e., GPA), which was collected through academic student records rather than self-report. Additional studies utilizing multi-informant approaches to measuring students' mental health symptoms and levels of school belonging may be needed to further understand these relations.

Finally, although the sample size provided adequate power for the current analyses, the present sample consisted of students from one Central California high school, limiting the generalizability of the findings. The racial demographic was largely made up of students identifying as White and Latinx, indicating a need for future studies including students from more diverse ethnic and racial backgrounds. In addition, due to the longitudinal nature of the study, the sample size was limited by attrition. However, analyses showed there were non-significant demographic differences, indicating that there was likely low attrition bias. Students coming from one school within one district may have limited variability with regard to perceptions of school belonging and academic achievement. Cemalcilar (2010) and Ma (2010) showed that school climate, or the social characteristics of a school, critically impact levels of school belonging. Thus, future studies should consider including students from multiple school districts with differing school climates and varied geographic regions.

Conclusion

School belonging's many influences on academics, mental health, and overall well-being of students make it a critical construct for investigation, particularly as a protective and promotive factor (Bosworth et al., 1999; Finn & Rock, 1997; Gaete et al., 2016). While some of the study findings were unexpected (i.e., psychological distress not predictive of academic achievement), the results provide a unique contribution to the literature in furthering the understanding regarding the importance of school belonging as a protective and promotive factor, in addition to the necessity of including well-being within the construct of mental health. The results provide a focus for which populations would benefit the most from interventions aimed at boosting school belonging levels in an effort to increase academic

achievement. More specifically, it is critical to target students with low psychological well-being, as they appear to be the most at-risk for low academic success.

Adolescence is a critical developmental time period due to the rising prevalence of mental health problems (Kieling et al., 2011; Patel et al., 2007), increasing importance of social support (Roeser et al., 1998), and rigorous pressure to secure a job or college admission soon after graduation. Thus, the constructs of mental health, school belonging, and academic achievement are particularly crucial to attend to at this age, as is developing a deeper understanding of the interrelations between these variables. With the current study's results, schools can begin to focus on students who are most at-risk of academic difficulties by improving their psychological well-being and school belonging levels. Continuing to explore psychological well-being's impact on outcomes such as academic achievement, in addition to further analyzing school belonging as protective and promotive factor in different contexts, are important for supporting students' overall psychological and academic well-being.

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Table 1

Sample Demographics and Attrition Analyses

Variables	Study Sample		Attrition		*t*-statistic	*p*-value
	n	%	*n*	%		
Gender					0.61	0.54
Female	547	52.4	408	48.2		
Male	487	46.6	420	49.6		
Other	10	1	17	2		
Race/Ethnicity					-1.1	0.27
Latino/a/Hispanic	510	48.9	407	48.1		
White	398	38.1	325	38.4		

Multiracial	80	7.7	61	7.2
Asian	32	3.1	27	3.2
Black or African American	10	1	14	1.7
American Indian or Alaska Native	7	0.7	7	0.8
Native Hawaiian or Pacific Islander	5	0.5	5	0.6
Grade Cohort				
9th-10th	380	36.7		
10th-11th	326	31.3		
11th-12th	338	32		

Table 2

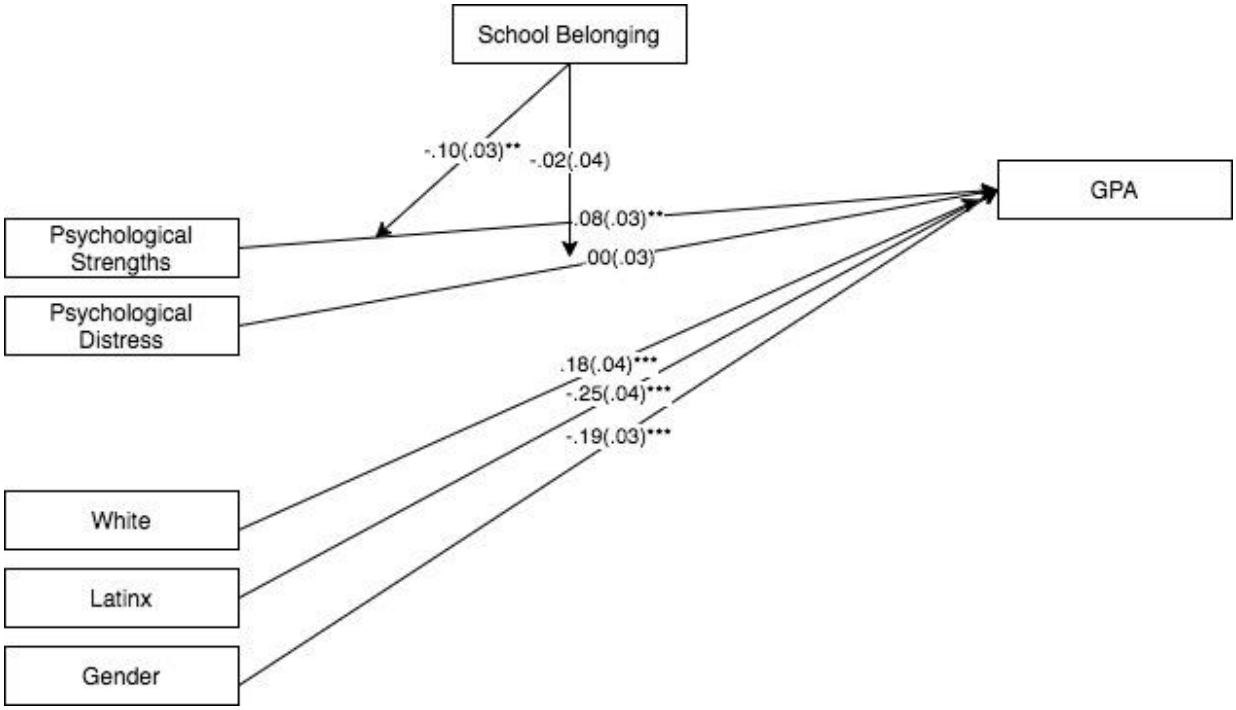
Descriptive Statistics and Correlation Coefficients for Key Variables

Variables	*M*	*SD*	Min	Max	1	2	3	4	5	6	7	8	9
1. Total GPA	3.46	0.84	0.25	4.69	1								
2. Gender	1.47	0.50	1	2	-0.02	1							
3. Engaged Living (EL)	4.67	0.81	1	6	0.21	0.02	1						
4. Distress (SEDS)	1.86	0.81	1	5	-0.04	-0.19	-0.38	1					
5. School Belonging (SCS)	3.78	0.70	1	5	0.28	0.03	0.42	-0.27	1				
6. White	0.38	0.49	0	1	0.41	0.00	0.10	0.01	0.15	1			
7. Latinx	0.49	0.50	0	1	-0.43	0.03	-0.08	-0.04	-0.14	-0.77	1		
8. ELSCS					-0.10	-0.02	-0.20	0.16	-0.08	0.02	-0.04	1	
9. SEDSSCS					0.06	0.08	0.17	-0.27	0.12	0.01	-0.01	-0.52	1

Note. EL = Engaged Living (i.e., Psychological Well-being), SEDS = Psychological Distress, SCS = School Belonging, ELSCS = Engaged Living*School Belonging interaction term, SEDSSCS = Psychological Distress*School Belonging interaction term. Mean values are presented on the original variable metric, prior to centering for the analysis.

Figure 1

Moderation Model with All Covariates



Note. Standard errors appear in parentheses, $^{**}p < .01$, $^{***}p < .001$.

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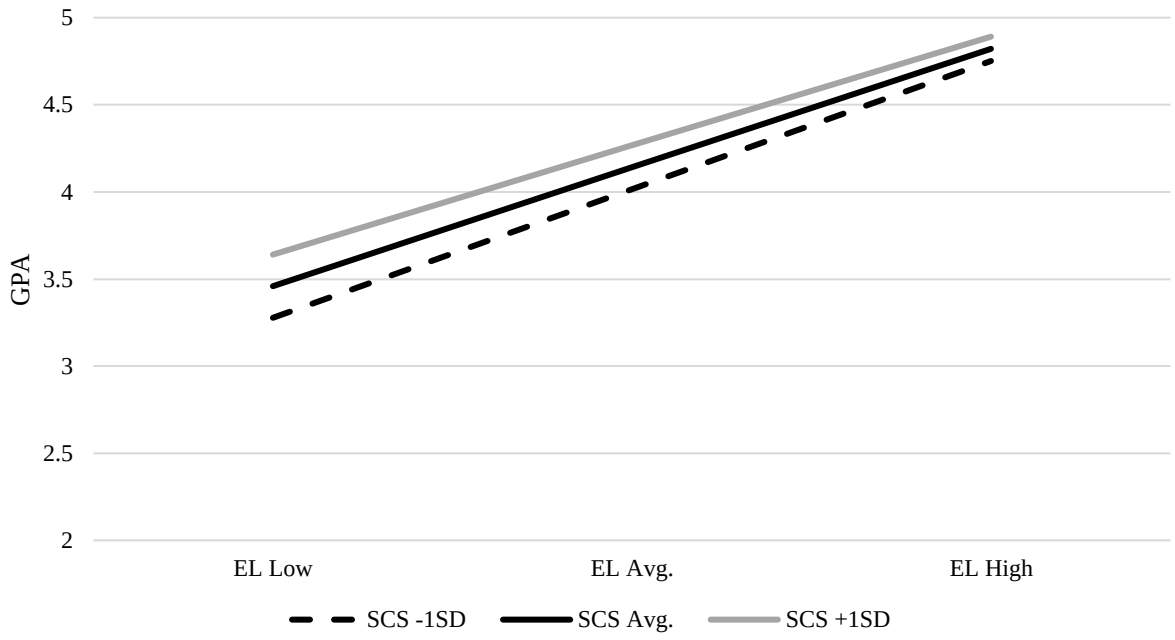
Figure 2

Plot of Significant Interaction



Note. Significant interaction is between Engaged Living (EL) and School Belonging (SCS) on Academic Achievement (GPA), ***p <.001.

Summary and Integrated Discussion

School belonging in primary school students and secondary school students were examined across two studies. Study 1 investigated the constellation of experiences of perceived school belonging across 619 students in fourth and fifth grade using Latent Profile Analysis. Demographic covariates and proximal outcomes of complete mental health (i.e., psychological strengths and psychological distress) were examined. Study 2 examined school belonging as a potential moderator within the relation between complete mental health and academic achievement (i.e., GPA) using a longitudinal sample of 1,044 students across Grades 9-12. Analyses were conducting utilizing a moderated path analysis.

Exploring Latent Class Membership of School Belonging Within a Primary School Context

In Study 1, Latent Profile Analyses indicated a three-class class-invariant, diagonal model to be the optimal solution with three emerging school belonging classes: *High School Belonging, Moderate School Belonging,* and *Low School Belonging.* Positive indicators of school belonging included affective sense of belonging, peer support, teacher support, and general sense of acceptance. The negative indicator of school belonging included general sense of rejection. Within the *High School Belonging* classes, students tended to experience high levels of all positive indicators and a low level of rejection. Similarly, within the *Moderate School Belonging* class, students perceived moderate levels of each positive indicator and a low level of rejection. Students in the *Low School Belonging* class experienced low levels of each positive indicator and a moderate level of rejection. The class sizes varied with 16.10% of students being classified in the *High* class, 50.33% of students

being classified in the *Moderate* class, and 33.57% of students classified in the *Low* class. These findings are inconsistent with previous research suggesting that primary school students tend to experience higher levels of school belonging due to increased perceived teacher support (Fredericks et al., 2005). Rather, it appears that younger students are more likely to experience low to moderate levels of school belonging, suggesting a need for continued research in this area, inclusive of developing effective school belonging measures and interventions for younger students. Furthermore, replicating this study with older student populations may provide further information for the validity of these results.

By examining the profile plots more carefully, it can be seen that students within each class tended to experience similar levels of each positive indicator of school belonging. Students in the *High* and *Moderate School Belonging* classes perceived low levels of peer rejection, while students in the *Low School Belonging* class perceived moderate levels of peer rejection. This contrast suggests that peer rejection may have a downward spiraling effect (i.e., statistically influencing the other indicators to decrease), contributing to students' lower perceptions of school belonging. Further analysis is necessary to fully understand each indicator within school belonging and whether certain indicators are more influential in determining students' perceptions of belonging.

Covariates of gender (i.e., Female v. Male) and race (i.e., Latinx v. non-Latinx and White v. non-White) were included in the final model. Results indicated that female students were more likely to fall in the *High School Belonging* class than male students, which is consistent with prior research finding that female students often perceive higher levels of school belonging (Hughes et al., 2015; Pittman & Richmond, 2007). Similarly, Latinx students were more likely to be classified in the *High School Belonging* class than their non-

Latinx counterparts. However, they were equally likely to be classified in either the *Moderate School Belonging* or *Low School Belonging* classes. These findings are interesting given other studies' results that Latinx students often experience peer and teacher discrimination which contribute to low levels of school belonging (Brown & Tam, 2019). More research is needed in this area to further understand how culture and identity contribute to classification within school belonging profiles.

Lastly, the inclusion of proximal outcomes of complete mental health (i.e., psychological strengths and psychological distress) found expected results. More specifically, students in the *High School Belonging* class reported relatively high psychological strengths and low psychological distress, students in the *Moderate* class reported relatively moderate psychological strengths and distress, and students in the *Low* class reported relatively low psychological strengths and moderate psychological. In other words, school belonging was positively related to psychological strengths and negatively related to psychological distress. An important consideration, however, is that the range for psychological strengths and distress was low, indicating that all students tended to experience moderate to high levels of strengths and moderate to low levels of distress regardless of their school belonging profile. Covariates' effects on proximal outcomes were also examined. These findings suggest that female students experienced higher psychological strengths and emotional difficulties, consistent with findings that females report higher morbidity and mental health problems (Hibbard & Pope, 1983, 1986). Additionally, it was found that White students reported lower emotional difficulties than their non-White counterparts, which has been seen across several studies (Bratter & Eschbach, 2005; Brown et al., 2007).

The small percentage of students in the *High School Belonging* class highlights a key limitation in the school belonging literature: examining belonging in primary school students. It is imperative for future studies to fully understand why primary school students perceive lower levels of school belonging and how this can be prevented, assessed, and treated effectively. It is critical that educators work to help all students perceive a sense of belonging and prevent any peer rejection that occurs. Future studies should continue studying school belonging in primary school students, particularly examining the indicators of school belonging in order to identify whether a particular indicator is more influential within the constellation of school belonging experiences for students.

Exploring School Belonging's Impact on Mental Health and Achievement in Secondary School Students

Study 2 focused on secondary school students' school belonging levels, particularly whether school belonging acted as a protective factor or promotive factor within the association between complete mental health and academic achievement. Data were collected longitudinally across two school years and three time points (i.e., Fall 2016, Fall 2017, and Spring 2018) and included 1,044 students from Grades 9-12. Results indicated that psychological well-being significantly predicted academic achievement and school belonging significantly moderated this relation such that higher levels of school belonging improved academic achievement more robustly when well-being was lower. More specifically, school belonging acted as a protective and promotive factor. Surprisingly, psychological distress did not significantly predict academic achievement.

Results indicating school belonging's protective role were consistent with other studies which had found school belonging to act as a protective factor with outcomes such as

academic achievement (Pate et al., 2016), weapon carrying (Bearinger et al., 2010), and sleep quality (Huynh & Gillen-O'Neel, 2013). Similarly, school belonging was found to be a promotive factor in other studies: (Anderman & Anderman, 1999; Resnick et al., 1997).

While it was unexpected that psychological distress did not predict academic achievement, given the robust research indicating otherwise (Farmer & Bierman, 2002; Needham, 2009; Pittman & Richmond, 2007), several factors may have contributed to these findings. First, several other factors may have impacted academic achievement, including gender or ethnicity. Female students in this study were more likely to have higher academic achievement than male students, consistent with prior research (Lietz, 2006). Similarly, White students in this study tended to perform higher than non-White students and Latinx students tended to perform lower than non-Latinx students. These findings were also similar to results from previous studies (Kao & Thompson, 2003). Additionally, while the SEDS-S measures internalizing symptoms of distress, research has found a connection between externalizing symptoms of distress and academic achievement (Ansary & Luthar, 2009), suggesting that a measure assessing for both symptoms may have found different results. Further analysis in this area is required to better understand why psychological distress was not significantly associated with academic achievement in this study. Future studies may consider utilizing varied academic outcomes, such as state standardized tests, school attendance, or enrollment in Advanced Placement or Honor's courses.

As the current study's findings highlighted the importance of the effects of school belonging and psychological well-being on academic achievement, it is critical that schools and educators work to increase students' levels of belonging and well-being. The results suggest that school belonging is both a promotive and protective factor, indicating that school

belonging is important for all students, but particularly for those with the presence of a risk (i.e., low psychological well-being). Thus, educators should work to integrate school belonging interventions more robustly for students who are the most at-risk for low academic achievement through small group (Tier 2) or individual (Tier 3) services. Schools may also consider utilizing universal interventions to increase all students' school belonging levels given the promotive role that school belonging also plays.

Conclusion

School belonging has several critical associations with academics, mental health, and the overall well-being of students (Finn & Rock, 1997; Gaete et al., 2016), providing support for its continued examination by researchers. While school belonging has been widely studied in secondary school populations, there is a gap of research for primary school students, suggesting that there are still some unknowns. In addition, school belonging has been shown to be a protective and promotive factor in several contexts, yet its specific role in the association between complete mental health and academic achievement is unclear. This dissertation aimed to fill these research gaps in order to better understand the construct of school belonging and how it affects both primary and secondary school students.

The present findings further clarify the constellation of school belonging experiences within primary school students, and how these profiles correspond to proximal complete mental health outcomes and vary based on demographic factors. Results highlight the need to boost young students' levels of school belonging through effective identification and treatment. Similarly, the present results provide further validation for school belonging's role as a protective and promotive factor in several contexts, particularly within the relation between psychological well-being and academic achievement. This result suggests that

school belonging is critical for all students to find academic success, but particularly for those experiencing low psychological well-being. Simultaneously, this result suggests that researchers may need to widen the way they view risk to include low psychological well-being.

While the present findings provided further clarity for school belonging in primary and secondary school students, there continues to be a need for additional research. In particular, future studies can further examine why primary school students experience lower levels of school belonging and how this can be prevented and treated. In addition, researchers may consider examining the relation between school belonging, psychological well-being, psychological distress, and academic achievement to replicate whether these findings are true across various contexts. Continuing to study, assess, and treat school belonging enables students to experience the important benefits of school belonging.

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