Teacher–student relationship, student mental health, and dropout from upper secondary school: A literature review

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In our literature search study, the teacher–student relationship in upper secondary school was associated with students' dropout and their mental health, write Vibeke Krane and colleagues.

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Dropout from upper secondary school has become a political concern and has received major awareness in both research and public debates, especially in Scandinavian countries (Lamb, Markussen, Teese, Sandberg, & Polesel, 2011). Although the school system and organization define "dropout" differently across the Scandinavian countries, students who leave school before they graduate or stay in school but fail to graduate are often referred to as dropouts (Markussen, Froseth, & Sandberg, 2011). The percentage of students who complete upper secondary school varies from 60% to 80% among the Nordic countries (Hyggen, 2015). Students who drop out from upper secondary school have substantially higher unemployment rates, lower lifelong earnings, and prospects of poorer physical and mental health (Croninger & Lee, 2001; De Ridder et al., 2013; Falch, Borge, Lujala, Nyhus, & Strøm, 2010). School completion and a reduction in dropout rates are emphasized as highly important initiatives by governments in Scandinavian and other western countries (Lamb et al., 2011; Markussen, 2010).

Numerous studies have focused on dropout from upper secondary school with relatively consistent findings. Students' social and family background factors, early school performance, and academic and social engagement seem to be predictive factors of dropout (Bridgeland, Dilulio Jr., & Morison, 2006; Lamb et al., 2011; Markussen et al., 2011). Students with poor mental and physical health are also found to have a higher risk of dropping out of upper secondary school (De Ridder et al., 2013; Markussen & Seland, 2012; Sagatun, Heyerdahl, Wentzel-Larsen, & Lien, 2014; Vander Stoep, Weiss, & Kuo, 2003). This knowledge has led to a focus on early intervention and youth mental health in schools to prevent dropout (Hagquist, 2015; Holen & Waagene, 2014). Furthermore, the importance of exploring the school organization and the teacher–student relationship (TSR) as contributing factors has been raised as a focus of attention and investigation (Barile et al., 2012; Lee & Burkam, 2003).

In this study, we focus on school dropout in relation to TSR and students' mental health as we suspect there are dynamic relationships among them, and because there is a

need to gain an in-depth understanding about such relationships as evidenced in the literature. This is based on our assumption that TSR can play a critical role in promoting students' mental health and in influencing school dropout.

TSR is a general concept that has been described in several different constructs within the literature with varied orientations in communication style, social interaction, emotional bonds, and social capital. Several models have been used as a framework to understand the concept of TSR. The most frequently used models include attachment theory and developmental systems theory (Pianta & Allen, 2008; Sabol & Pianta, 2012). Bowlby's attachment theory highlights the importance of the attachment between children and parents/a significant other (Bowlby, 1969). Within the relationships with significant others, children develop different attachment styles that may influence their relationships with teachers. A developmental systems theory emphasizes a more contextual understanding of TSR (Bronfenbrenner & Morris, 1998). From this perspective, the TSR is embedded in a multilevel system where each level (individual, family, classroom, peers, school environment, school administration, and society) influences and interact in the development of the relationship (Bronfenbrenner & Morris, 1998; Sabol & Pianta, 2012). A contextual understanding of TSR in the developmental processes of young people and their mental health is stated in a policy document by the World Health Organization (WHO): "A positive psycho-social environment at school can affect the mental health and well-being of young people" (WHO, 2003, p. 4). The WHO further emphasizes that a sense of connectedness, good communication, and perceptions of adult caring in schools have been shown to be related to a wide range of mental health outcomes for young people (WHO, 2003). These findings are in line with a contextual understanding where the school environment, education, and TSR are essential factors for the developmental processes of young people and their mental health.

As TSRs are important everyday relational experiences and contribute to the developmental processes of students, they must be examined carefully regarding their role in student mental health and dropout (Bronfenbrenner & Morris, 1998; Pianta, Hamre, & Stuhlman, 2003). Furthermore, TSR has been conceptualized in relation to students' experiences as both an aggregate construct that exists in the school environment and as an individual relationship between specific teachers and students. Therefore, there is a need to assess the status of research in relation to this variety of conceptual and construct approaches to TSR in relation to school dropout and mental health.

Taken together, the general assumptions are that school dropout is influenced by students' personal factors and contextual factors. Furthermore, students' experiences in school in terms of academics, social relationships, and personal well-being, including physical and mental health, are thought to have an impact on school dropout. A cursory glance at the literature has shown that TSR may contribute to an understanding of student school experiences associated with dropping out. As TSR is

a critical force affecting students' school experiences, one that may be interrelated with their mental health experiences, it is essential for us to gain an understanding of the associations between these three concepts: school dropout, TSR, and mental health. The aim of this study is to review the existing research literature on the associations among (a) the TSR and dropout, (b) the TSR and mental health, and (c) the TSR, mental health, and dropout.

Method

A mixed-study review of the literature, which includes bringing together quantitative and qualitative data (Grant & Booth, 2009), was used as the method for this study in order to gain a comprehensive understanding regarding the status of knowledge. The literature search was conducted with the assistance of a research librarian. The selected databases were Eric, PsycInfo, Medline, Scopus, and the Norwegian databases Norart and Idunn. The keywords "school dropout," "mental health," and "teacher-student relationship" were used in combination with thesauri terms. To answer the research aim, four searches were performed in each database. Search 1: s*chool dropout, mental health,* and *teacher-student relationship* as separate terms; Search 2: *school dropout* and *mental health;* Search 3: *school dropout* and *teacher-student relationship;* and Search 4: *mental health* and *teacher-student relationship*. The terms were used to identify articles addressing the association among TSR, mental health, and dropout from upper secondary school. A total of 1,686 references were found. All references were screened by the first author on the basis of the abstracts. This information was compared with the research aim and the following inclusion and exclusion criteria listed in Figure 1, which shows the procedures applied in the selection of the studies for this review.

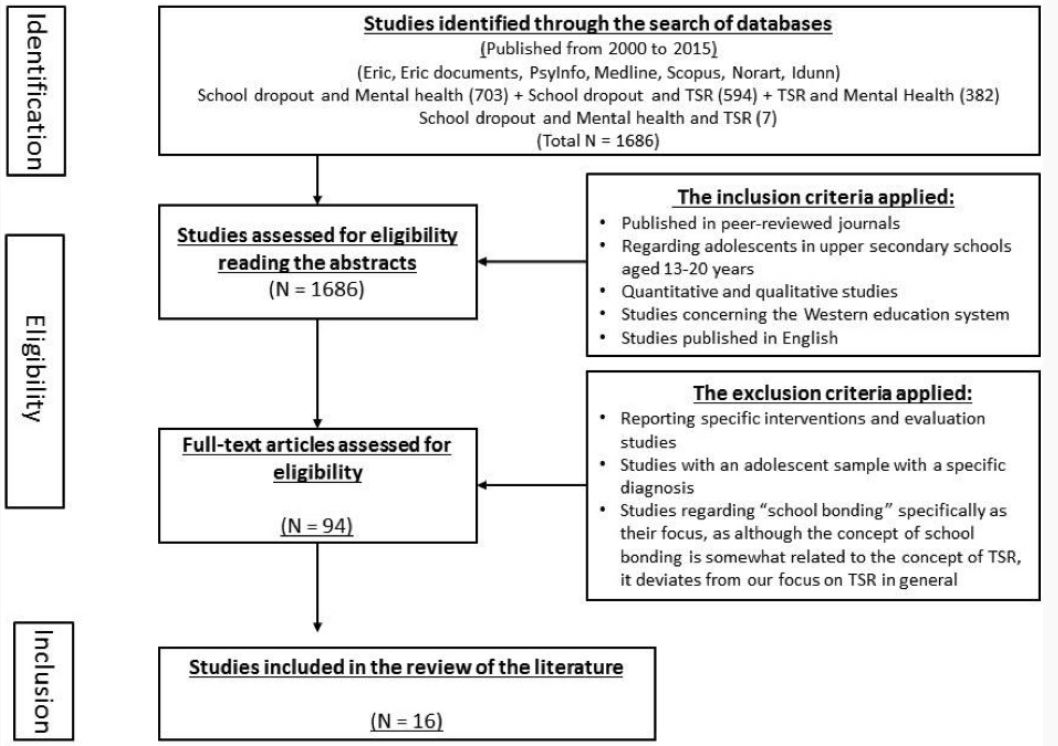

FIGURE 1: The procedures applied in the selection of studies for the review.

After the initial screening of the abstracts of the identified 1,686 articles, a total of 94 studies either were found to meet the inclusion criteria or were identified for further investigation to determine their relevance to the review. The first author read the full text of the 94 studies and discussed the contents with the second author. After this screening, reading, and review, 78 articles were found to not meet the inclusion criteria and were not relevant for this review. Sixteen articles were found to meet the inclusion criteria and are included in this review.

The articles were then analyzed using a thematic analysis (Braun & Clarke, 2006; Thomas & Harden, 2008). All authors read the articles to become familiar with the data, noting initial thoughts, ideas, and patterns. In the next step, the first author structured all articles in tables on the basis of the studies' backgrounds, research questions, methods, findings, results, and discussions. Initial themes were identified on the basis of this structure. In accordance with the aim of the research, the themes were discussed and identified collaboratively among the authors. The articles were then read in full to review them in terms of their associations among the themes of TSR, dropout from upper secondary school, and mental health. Three main themes were identified: (1) the TSR and dropout from upper secondary school; (2) the TSR and student mental health; and (3) key attributes of the TSR related to student mental health and dropout.

Findings

Table 1 provides detailed information about the reviewed set of 16 articles. This set

includes 12 studies with non-experimental survey designs, three qualitative studies, and one meta-analysis.

TABLE 1: The procedures applied in the selection of studies for the review.

Reviewed Studies: Author(s) & Title	Research Questions	Key Measures & Study Subjects	Major Findings	Research Design & Internal Validity	External Validity
Barile et al. (2012). Teacher-student relationship climate and school outcomes: Implications for educational policy initiatives	1. Teacher reward and evaluation policies are related to students' perceptions of the TSR climate. 2. The TSR climate, in turn, is associated with longitudinal gains in students' math scores and risk for school dropout. 3. Teacher reward and evaluation policies are related to students' math scores or high school dropout.	· School-level measures: (a) teacher evaluation/reward policy, (b) TSR climate · Student-level measures: (a) math achievement, (b) school dropout status Study Subjects: Adolescents with mean age of 16 (N = 7,779)	1. RQ #1: (a) policy of assigning good teachers with better students and the TSR climate (negative association), (b) teacher reward policy and the TSR climate (no association), and (c) teacher evaluation policy and the TSR climate (positive association) 2. RQ #2: (a) the TSR climate in 10th grade and the odds of dropping out by senior year (negative association after controlling for sophomore-year math grades, school-level covariates, and student-level effects), (b) the TSR climate and gains in math achievement (no association) 3. RQ #3: teacher evaluation and reward policies with math achievement in senior year and with the odds of dropout (no association)	· Non-experimental longitudinal survey design · A testing of a multilevel mediation model with structural modeling—introduction of various covariates into the model testing to tease out alternative explanations · Limitation – Because it used a public use dataset, the examination of covariates is limited by the availability of measures in the data, and the measures used in the study may be limited in their construct validity.	· Used a large sub-sample of the national representative sample (HES of NELS) for public schools only and with data with no missing values obtained in 2002 · Rigor in generalizability: moderate—The findings' generalizability is limited by a possible bias through the inclusion of only public schools and the data collection date.
Bergeron, Chouinard, and Janosz (2011). The impact of teacher-student relationship and achievement motivation on students' intentions to drop out according to socio-economic status	Test the predictive value of teacher-student relationships and achievement motivation on the dropout intentions of students from different socio-economic status	· Students' achievement motivation · TSR · Intention to drop out · School-level SES Study Subjects: Adolescents 12–15 years of age (N = 2,360)	1. The TSR and the intention to drop out (negative association) 2. Gender, age, SES, type of TSR, and students' achievement motivation explains 28% of the variability of intentions of dropout.	· Non-experimental survey design · Application of a single multiple regression model—an appropriate form of explanation in variability for the predictor variable of intention to drop out · Limitation – a possibility of omitting critical covariates	· Used a large sample of students enrolled in French Canadian schools, with the data obtained in 2005—No statement is given regarding the representativeness of the sample. · Rigor in generalizability: moderate
Colarossi and Eccles (2003). Differential effects of support providers on adolescents' mental health	1. Do male and female adolescents perceive different amounts of support from parents, peers, and teachers? 2. Do male and female adolescents differ on levels of depression and self-esteem? 3. What are the differential effects of support from mothers, fathers, teachers, and peers on adolescents' self-esteem and depression? 4. Do these effects differ for male and female adolescents?	· Social support: separate measures for mother support, father support, friend support, and teacher support · Depression · Self-esteem Study Subjects: Adolescents 15–18 years of age (N = 217)	1. Support for gender difference in peer support and father support but not in mother and teacher support 2. Gender difference in depression and self-esteem 3. The model for prediction of changes in depression and self-esteem by support variables and the model for prediction of changes in depression and self-esteem by support variables controlling for gender were confirmed.	· Non-experimental survey design · Application of multi-group structural equation model—Testing of a prediction in depression and self-esteem changes over two points in time gave an estimated explanation of changes in these outcomes by social support variables with gender as the key control variable.	· Used a sub-sample of children aged 15 to 18 years in 1995—1996 from a cohort data collected in several waves for another study—No statement given regarding the representativeness of the sample. · Rigor in generalizability: moderate
Cornelius-White (2007). Learner-centered teacher-student relationships are effective: A meta-analysis	1. The degree of association between all person-centered teacher variables and all positive student outcomes combined 2. The degree of association between positive teacher-student relationships and positive student outcomes 3. The degree of	· Independent variables: nine person-centered teacher variables · Dependent variables: nine cognitive student outcomes and nine affective/behavioral student outcomes · 35 moderator variables Study Subjects: Students from pre-	1. Association between all person-centered teacher variables and all positive student outcomes combined 2. Association between positive TSR and positive student outcomes 3. Association between learner-centered education and student outcomes 4. Association between specific person-	· A meta-analysis of 119 studies (1948–2004) reporting study-level and finding-level results—reporting correlations · The threats to internal validity inherent in the original studies remain intact. · Construct	· Generalizability—Most of the studies included in this meta-analysis used samples that were not randomized and were small in size. (Representativeness cannot be assumed.)

	association between sub-models of person-centered education and positive student outcomes 4. The degrees of association between individual person-centered teacher variables and positive student outcomes 5. The degree of association for person-centered variables with the cognitive outcomes and with the affective or behavioral outcomes 6. Moderators for the variability of correlations between person-centered variables and positive student outcomes	K to 20 grades (N = 119 studies)	centered teacher variables and student outcomes 5. Association between the combined person-centered teacher variables with specific cognitive and affective student outcomes 6. No moderator effects by the quality of study moderator variables—Moderating effects present by students' IQ, the perspectives used for the measures, and teacher characteristics.	validity for variables coded from the 119 studies with different measures may be questioned. · Average correlations reported for associations between the teacher variables and student outcome variables were based on different numbers of studies, which in some cases were based on small numbers.—A possibility exists of relying on the findings from limited studies to draw conclusions.	
Croninger and Lee (2001). Social capital and dropping out of high school: Benefits to at-risk students of teachers' support and guidance	Examination of the effects of teacher-based forms of social capital on the risk of school dropout, especially for students at risk of educational failure: 1. The accumulation of social-risk factors as well as the combination of academic and social risk are likely to increase the probability of dropping out. 2. The more social capital students have from teachers, the more likely they are to complete high school. 3. Different dimensions of social capital will have different effects on dropping out.	· Dropout status between 10th & 12th grades · Risk status: (a) social risk status, (b) academic risk status · Social capital: (a) TSR, (b) student-teacher talks outside the classroom · Control variables: gender, 8th grade achievement, 8th grade academic behaviors, and 10th grade academic behaviors Study Subjects: Adolescents 8th to 12th grades (N = 10,979)	Application of logistic regression to examine the effects of social capital on dropping out: 1. Dropout students were more likely to be socially at risk. 2. Dropout students had a higher academic risk status. 3. Dropout students had less positive relationships with their teachers and were less likely to receive advice outside of class. 4. Dropout students were more likely to have poor academic behaviors. 5. TSR has a moderating effect on the relationship between academic risk and dropout, with academically at-risk students benefitting more from teacher social capital. TSR in terms of student-teacher talks benefited socially at-risk students entering high school with academic risk.	· Non-experimental longitudinal survey design · Causal inferencing problematic · Construct validity of risk and social capital measures has not been fully addressed. · A fuller understanding of dropout may require coalescing various alternative explanatory frameworks rather than one-dimensional ones.	· Used a large representative sample of NELS, the data collected between 1988 to 1992 of the base year, 1st and 2nd follow-up surveys · Rigor in generalizability—moderately high, except for the age of the data
De Wit, Karioja, Rye, and Shain (2011). Perceptions of declining classmate and teacher support following the transition to high school: potential correlates of increasing student mental health difficulties	Diminishing classmate and teacher support will uniquely predict a decline in self-esteem and an increase in depression and social anxiety.	· Independent variables: (a) classmate support and (b) teacher support · Dependent variables: (a) self-esteem, (b) symptoms of depression, and (c) social anxiety · Covariates: (a) background variables, (b) family social support, and (c) self-reported academic achievement Study Subjects: Adolescents in 9th & 10th grades (N = 2,616)	1. Association between the slopes for teacher and classmate support and the slope (change) in self-esteem 2. Association between the slopes for teacher and classmate support and the slope (change) in depression 3. Association between the slope for classmate support (not the teacher support) and the slope for social anxiety 4. No moderating effect by gender on these findings	· Non-experimental, longitudinal survey design · Applied latent growth curse modeling to test the hypothesis of change in the independent variables for changes in the dependent variables with an introduction of fixed covariates at the beginning of the growth process as the baseline condition—An appropriate control of covariates, although possible confounding effects by school environment, may need to be examined. · The authors addressed the possibilities of measurement bias introduced by the nature of the indicators used and how they were collected.	· A nested cohort design used in the study may introduce bias in sampling by either under-sampling or over-sampling due to possible over or under-representations within the region and schools.—No discussion of representativeness is made. · Rigor in generalizability: moderate
Dods (2013). Enhancing understanding	Integration of theoretical understanding and	Themes for TSR for trauma support identified from the	Development of a model for trauma-related needs and the relationship-	· Qualitative design: Case study with	· This small sample was not representative, but

of the nature of supportive school-based relationships for youth who have experienced trauma	findings from case studies to specify the aspects of TSR that are beneficial for students who have experienced trauma	analyses Study Subjects: Adolescents aged 19–21 (N = 4)	building process for students who have experienced trauma, incorporating the four elements of TSR building: · Teacher driven (leader of interaction) · Authentic caring as the key quality of interaction · Attunement as active interaction · Individualized perspective of interaction	interviews with a small sample · The sample bias inherent in the recruitment procedure and the recall bias in the data are limitations.	the transferability of the findings was addressed by comparing the findings with other studies involving different samples.
Frostad, Pijl, & Mjaavatn (2014). Losing all interest in school: Social participation as a predictor of the intention to leave upper secondary school early	Students are less likely to develop the intention to leave school if they participate socially in school.	· A priori predictors: gender, parents' educational level, academic achievement, and teacher support · Social participation variables: peer acceptance, friendship, and loneliness · Intention to drop out Study Subjects: Students aged 16 (N = 204)	Testing of a hierarchical regression model with a priori predictors of gender, parents' education level, academic achievement, and teacher support and with the addition of three aspects of social participation for an explanation of intention for dropout—The a priori predictors (academic achievement, mother's educational level, and teacher support) explained the intention to drop out, with loneliness accounting for an additional explained variance.	· Non-experimental survey design · The authors indicate the limitations in the construct validity of friendship and peer acceptance used in the study. Thus, the non-significant contribution of these two measures in the model may result from the nature of measures.	· Representativeness of the sample—A convenient, large sample with data obtained in 2009/2010 (No comparison of the sample with the general population base was made.) · Rigor in generalizability: moderate
LaRusso, Romer, and Selman (2008). Teachers as builders of respectful school climates: Implications for adolescent drug use norms and depressive symptoms in high school	Testing of a model of school climate and health risks in adolescence: 1. Teacher support and regard for students' perspectives independently help to create respectful climates (Ho1). 2. Respectful climates and teacher support produce greater social belonging that is associated with lower levels of individual depressive symptoms (Ho2). 3. A respectful climate is associated with fewer depressive symptoms (Ho3). 4. Respectful climates discourage friendships with drug-using peers and produce healthier school drug use norms, both of which in turn influence individual drug use (Ho4).	· Teacher support · Teacher regard for students' perspectives · Respect for students · Belonging · Depressive symptoms · Perceived school norms for drug use · Perceived friend drug use · Self-report of drug use · Key demographics Study Subjects: Adolescents 14–22 years of age (N = 476)	Regression analyses and application of structural equation modeling with drug use variables and depressive symptoms as the dependent variables supporting the model: 1. Ho1 – Supported 2. Ho2 – Supported 3. Ho3 – Supported 4. Ho4 -- Supported	· Non-experimental survey design · An alternative explanation introducing school context as the key covariate is missing.	· Representativeness of the sample: Use of a nationally representative random sample collected in 2003 and presentation of summary statistics for data weighting with the U.S. Census data on key background characteristics · Rigor of generalizability: moderately high
Lee and Burkam (2003). Dropping out of high school: The role of School Organization and Structure	Role of schools in terms of structure, academic organizations, and social organizations especially in terms of the character of relationships between students and teachers on school dropout: 1. Students' background factors on decision to drop out 2. Features of highs schools' structure, social organization, and academic organization on dropping out 3. Contingent nature of organizational factors associated with dropping out	· Student measures: school dropout, demographic variables, and academic background · School measures: school demographic composition, school structure, academic organization, and school social organization as TSR Study Subjects: Students in 10th to 12th grades (N = 3,840)	Applied a multilevel HLM as a two-step model to examine the study hypotheses 1. Students' race/ethnicity and academic background strongly related to dropping out 2. School size (average student-teacher relations) as the major factor in school structure related to dropping out 3. The effect of school social organization (TSR) on dropping out is contingent on the school structure of school size and sector. —Positive TSR with the probability of reduced dropout only in small or medium-sized public and Catholic schools	· Non-experimental longitudinal survey design · Carried out analyses of two alternative models (individual and school structural) explaining dropout · Construct validity of measures used in the study is constrained by the original data collection instruments.	· Used a large national sample (HES of NELS), the supplemental sample of NELS: 88 with data obtained in 1988 & 1990—Representativeness assured through weighting of the sampled schools · Generalizability may need to be considered in light of the age of the data used for the study.
Lessard, Fortin, Butler-Kisber, & Marcotte (2014). Analyzing the discourse of dropouts and resilient students	Examination of differences between those students who graduated (resilient students) and the dropouts	Applied a narrative analysis approach with Bronfenbrenner's ecosystem model as the framework to extract the themes existing differently in the resilient students and the dropouts Study Subjects: Adolescents 19–22 years of age (N = 140)	Challenges or risk revealed in the narratives at three ecosystem levels: 1. Ontosystem: "inreach" vs. giving up early; positive relationships with mothers, teachers, and peers 2. Mesosystem: resilient students' outreach ability; teacher support; school policies on school retention and	· Qualitative design: a semi-structured interview study with 140 participants · Participation of a research team to ensure trustworthiness of the data collection and analyses · Examination of	· Representativeness: a convenient sample (volunteers) drawn from a large longitudinal sample with data collection in 1996 and 2008—No comparison was made with those not included in the study on key variables. However, the transferability of the findings may be high

		[illegible]	transition 3. Chronosystem: continuity/discontinuity in life courses and presentation of lifelines	· Examination of the data on a specific framework of ecosystem model	findings may be high given the size of the participants and the rigor of the analyses.
Lessard, Poirier, & Fortin. (2010). Student-teacher relationship: A protective factor against school dropout?	Exploration of the association between school-related factors (i.e., achievement and TSR) and school dropout	· The Dropout Assessment Tool: at-risk status for dropout · The Classroom Environment Scale: students' perceptions of environment · The Student Life Questionnaire: students' perception of quality of life Study Subjects: Students in secondary schools (N = 4,312)	Applied stepwise logistic regression to address the research questions introducing the predictors, including the level of commitment of students, students' perceived satisfaction and achievement levels, students' attitudes toward teachers, the support felt from teachers, and the order and organization in the classroom, analyzing the data separately for boys and girls: 1. Boys – The lower the satisfaction and the achievement, the higher the risk of dropping out 2. Girls – The more committed, the more satisfied, and the better the academic achievement, the lower the dropout risk 3. The variables defining both context-oriented and action-oriented TSR did not contribute to explaining the variance in dropout.	· An exploratory, non-experimental survey study · Exploratory providing an insight for further investigation, introducing other predictors and covariates · A broader model for explanatory understanding is suggested for further investigation.	· Used a large sample of high school students from four schools in Quebec, Canada · As an exploratory study, suggestive inferences and meanings were emphasized rather than generalizability.
McGrath (2009). School disengagement and "structural options": Narrative illustrations on an analytic approach	Study of structures (cognitive/emotional and relational/interactional) in the decision-making processes underlying school exit	Applied a biographical- and narrative-based qualitative research using in-depth interviews with 14 students at the second-chance school program Study Subjects: Adolescents 15–25 years of age with mean age of 19 (N = 14)	· Structural options coalescing relational emotional structures that are influential in the decision making for school dropout: (a) teachers—divisive relations of power with affective dimensions; (b) peers/friends—group inclusion and peer support having impact on knowledgeability and emotionality; and (c) parent—buffering role of parental social support	· A qualitative design applying a biographical narrative approach · An exploratory study to illustrate the combination of relational and emotional structures that influence dropouts in different ways and in different combinations · Selective case illustrations—possibility of presentation-bias	· The study focused on the value of illumination and understanding rather than on transferability.
Muller (2001). The role of caring in the teacher-student relationship for at-risk students	Examination of the teacher-student relationship as a resource (or social capital) from the students' and teachers' perceptions of students' academic progress	· Math achievement · Students' perception of teachers' caring · Techers' perception of students' efforts · Teachers' perception of at risk for dropout · Students' expectation of school completion Study Subjects: Students in 10th grade (N = 6,007)	Applied regression analysis on three models: 1. Teachers' perception of students' high effort associated with teachers' high-expectancy 2. Students' previous performance associated with teachers' perception of students' effort 3. (a) Students' perception of teachers' caring associated with teachers' perception of students' effort; (b) teachers' perception of students' effort negatively associated with teachers' evaluation of at-risk status; and (c) change in math achievement in students at risk of dropping out positively associated with students' perception of teacher caring	· Non-experimental longitudinal survey design · Testing of models by applying regression analysis—More sophisticated analytical methods have been developed since the early 2000s, which could provide better insights in interpreting the data. · Limitation—Because it used a public use dataset, the examination of covariates is limited by the availability of measures, and the measures used in the study may be limited in their construct validity.	· Used a sub-sample of 10th grade students and teachers drawn from the nationally representative longitudinal study sample of the NELS of 1988–1992; included were those from public schools, with math or science data, non-missing data on all analysis variables, and excluding all American Indians · The findings' generalizability is limited by a possible bias by the inclusion of only public schools and by the data collection date.
Needham, Crosnoe, and Muller (2004). Academic failure in secondary school: The inter-related role of health problems and educational context	1. Are physical and mental health problems risk factors for academic failure, net of other important individual and contextual correlates of both health and academic status? 2. What are academic factors that may explain the [illegible]	· Academic course failure · Physical and mental health: self-rated health status and emotional distress · Mechanism factors: absenteeism, trouble with homework, and teacher attachment · School factors: [illegible]	1. Self-rated health and emotional distress associated with a likelihood of failing a class in the next year 2. Explanation of the association between self-rated health and academic failure by absenteeism, trouble with homework, and individual-level teacher [illegible]	· Non-experimental survey design · Analysis within the epidemiological framework · Analyses limited by the lack of availability of other explanatory [illegible]	· Used a student subsample of a nationally representative large sample of schools and their students in two waves from the Add Health study collected in 1994 & 1995—Comparison in key demographic variables of the [illegible]

	academic risk posed by health problems? 3. What are potential protective factors that might counter-balance the academic risk status of health problems?	physical health services, mean student-teacher bonding, and school size · Individual-level controls: gender, race/ethnicity, age, and self-esteem · Family-level controls: family structure, parental closeness, parents' education, family income, and health insurance Study Subjects: Adolescents in 8th to 11th grades (N = 10,988)	attachment, a partial explanation of the association between emotional distress and course failure by these factors 3. Examination of the institutional context (school): (a) no evidence of the effects of school structure on the association between self-rated health and course failure; and (b) students attending schools with higher mean student-teacher bonding associated with higher levels of emotional distress and a greater risk of failing, with no differences found in the odds of course failure in students with low levels of emotional distress according to the schools' TS bonding	contextual variables (such as within-school differences and other contextual variations are noted by the authors.	study's sub-sample and the original larger sample made by the authors indicates minimal bias. · Rigor in generalizability: moderately high · This is an exploratory study suggesting directions for further research.
Wang, Brinkworth, & Eccles (2013). Moderating effects of teacher-student relationship in adolescent trajectories of emotional and behavioral adjustment	1. The impact of adolescents' effortful control, parent-adolescent conflicts, and teacher-student relationships at age 13 on depression and misconduct from ages 13–18 2. The moderation effect of optimal teacher-student relationships at age 13 on depression and misconduct from ages 13–18	· Depressive symptoms—student rating · Misconduct—student rating · TSR—teacher rating · Effortful control—student rating · Parent-adolescent conflict—primary caregiver rating · Demographic covariates Study Subjects: Adolescents 13–18 years old (N = 1,400)	Applied HLM as a three-level model (time, individual, and school) 1. Significant main effects of effortful control, parent-adolescent conflict , and TSR on initial depression and on initial misconduct; early poor effortful control and parent-adolescent conflict being general risk factors for depression and misconduct and positive TSR being a protective factor for students' depression and misconduct 2. Interaction of TSR with effortful control on changes in adolescent depression and misconduct over time	· Non-experimental survey and interview study · The analyses were performed with the independent and moderator variables measured only at the initial data point to examine longitudinal change in the dependent variables. —Problems of possible changes in the independent and moderator variables over time · The possibility of the dynamic nature of the variables was not accounted for.	· Used a large longitudinal survey study sample drawn from schools in a single large and socioeconomically diverse county in the USA—acceptable representativeness · Rigor in generalizability: moderate

The TSR and dropout from upper secondary school

Ten of the reviewed studies explored the association between the TSR and dropout from upper secondary school. In these studies, two conceptual themes for dropout were found ("actual dropout" and "risk/intention to drop out"), while two conceptual themes were identified for the TSR ("school-level TSR" and "individual-level TSR"). The TSR was found to have a positive association with either preventing/decreasing dropout (Barile et al., 2012; Cornelius-White, 2007; Croninger & Lee, 2001; Lee & Burkam, 2003; Lessard, Butler-Kisber, Fortin, & Marcotte, 2014) or lowering the risk or intention to drop out (Bergeron, Chouinard, & Janosz, 2011; Frostad, Pijl, & Mjaavatn, 2015; McGrath, 2009; Muller, 2001). One study found no association between the TSR and dropout (Lessard, Poirier, & Fortin, 2010).

Barile et al. (2012), based on a large national, longitudinal survey sample, found that students' perceptions of the TSR climate, measured in the 10th grade with three items from the Education Longitudinal Study, were significantly and negatively associated with student dropout by senior year (Barile et al., 2012). This association was found to be mediated by students' families' socio-economic status (SES). Students from lower SES families were more likely to assess the TSR climate negatively and exhibited greater odds of dropping out of school by their senior year than those from higher SES families. Lessard et al. (2014) also found a negative relationship between TSR and

dropout in a qualitative interview study of a moderately large sample. Among those studied, 43% received diplomas and 57% dropped out of secondary school (Lessard et al., 2014). They found that the dropouts tended to have had negative relationships with and less support from their teachers. Those who were defined as the resilient students (those who graduated) tended to express positive relationships and support from their teachers. In a qualitative study exploring the complex social processes affecting disengagement from schools in Ireland, McGrath (2009) similarly described the impact of a lack of teacher support on students' experiences and their decisions to drop out. The study was carried out via biographical interviews with 14 teenagers and young adults aged 15 to 25 who had dropped out of regular schools and were attending an alternative educational program for a vocational certificate at the time of the interviews. The participants, who were all dropouts, had experienced the school culture as being either aggressive in terms of pressure for achievement or being passive toward the individual needs and concerns of students, with most teachers providing no affective support or guidance for their decision regarding dropout (McGrath, 2009).

Cornelius-White (2007) carried out a meta-analysis of 119 English and German papers published from 1948 to 2004 to examine the relationships between person-centered teacher variables and students' cognitive and affective/behavioral outcomes. None of the 16 studies included in the present review were included in this meta-analysis. The results show an association (corrected r = .35) between the composite of person-centered teacher variables (including empathy, warmth, genuineness, non-directiveness, encouragement of learning, encouragement of thinking, adaptation to differences, and learner-centered beliefs) and dropout prevention rates (Cornelius-White, 2007). However, the authors caution, as this finding is from only one study among the 119 studies included in the analysis, that there is a need for further research regarding such a relationship. Bergeron et al. (2011), in their survey study of a large sample of secondary students in Canada, found that a positive relationship with teachers predicted low intention to drop out, while a negative relationship with teachers predicted high intention to drop out. In a Norwegian survey, the authors investigated the intentions of students in upper secondary schools to drop out, finding that teacher support was negatively associated with the intention to drop out (r = – .35) (Frostad et al., 2015). In contrast, a Canadian study with a large sample of protective factors against school dropout found no support for the TSR contributing to dropout risk, suggesting the positive bond between teachers and students as an indication of the TSR did not serve as a safety net for the risk of school dropout (Lessard et al., 2010).

The TSR was considered a construct within the concept of social capital in three studies reviewed (Croninger & Lee, 2001; Lee & Burkam, 2003; Muller, 2001). Croninger and Lee (2001), using a national longitudinal survey sample, found that teacher support as social capital reduced the probability of dropping out by nearly half. More specifically, informal talks between teachers and students outside the classroom were found to have a strong impact on reducing dropout in academically and socially at-risk students (Croninger & Lee, 2001). Teacher support was found to be most

beneficial to those who were most at risk of dropping out of high school. Lee and Burkam (2003), analyzing a national longitudinal sample of NELS, found that students attending schools with a positive school social organization, defined by more positive TSRs, were less likely to drop out than those who attended schools with a negative school social organization. The association, however, differed according to school size and school type (public, Catholic, or independent). In another study analyzing the same dataset, Muller (2001) found that teacher-reported students at risk of dropping out of high school perceived their teachers to be less caring than those not at risk. In addition, the students who were rated by their teachers to be at risk of dropping out were in low-ability math classes, tended to have lower educational expectations, earned lower grades, perceived their teachers to be less caring, and were disproportionately African American or Latino and male (Muller, 2001).

The evidence in these reviewed studies suggests a relationship between TSR and dropout or risk/intention to drop out from upper secondary schools. In these studies, the concept of dropout is applied in reference to either actual dropouts or risk/intention to drop out. Meanwhile, in relation to the concept of TSR, some studies have differentiated the individual-level TSR from the school-level TSR.

TSR and student mental health

Seven of the reviewed studies addressed the association between the TSR and student mental health (Colarossi & Eccles, 2003; Cornelius-White, 2007; De Wit, Karioja, Rye, & Shain, 2011; Dods, 2013; LaRusso, Romer, & Selman, 2008; Needham, Crosnoe, & Muller, 2004; Wang, Brinkworth, & Eccles, 2013). The main focus of the research interest in these articles was the association between the TSR and student mental health issues such as self-esteem, anxiety, depressive symptoms, and psychological distress. The meta-analysis included in the preceding section by Cornelius-White (2007) also reported positive average corrected correlations (r = .35) between learner-oriented TSR variables and the student outcome of self-efficacy/mental health. Because this was a meta-analysis of 119 studies, the construct for self-efficacy/mental health was not explicitly specified and may refer to a general conceptualization, including unspecified affective and behavioral elements. Colarossi and Eccles (2003), analyzing cohort survey data of two waves (1995–1996), examined the “differential effects” of parent, school, and peer social support on depression and self-esteem. Social support from teachers was measured by a teacher support scale developed by Eccles and colleagues. Depression was measured by the Symptom Checklist (SCL-90-R) (Derogatis & Melisaratos, 1983) and self-esteem was measured by a Likert-type scale (Colarossi & Eccles, 2003). The researchers found that student self-esteem was positively associated with teacher support for both genders, while depression was negatively associated with teacher support for female, but not male, students. However, via structural equation modeling, they stated that teacher and peer support had statistically significant “effects” on depression (negative association) and self-esteem (positive association) and that mother support had an additional negative effect on depression (negative association). They concluded that social support,

especially from peers and teachers, is likely to impact student mental health.

A large longitudinal survey study by Wang et al. (2013) examined the relationship between adolescents' effortful control, depression, and misconduct and the moderating effects on this relationship of parent-adolescent conflict and the TSR. In this study, the TSR was measured by the School Climate Survey as reported by teachers (Haynes, Emmons, Ben-Avie, & Comer, 2001). Depression was assessed by the Children's Depressive Inventory (Kovacs, 1992). Two subscales from the Adolescent Temperament Questionnaire-Revised were used to assess adolescents' effortful control (Putnam, Ellis, & Rothbart, 2001). The researchers found that those with higher effortful control and more positive TSR at age 13 were more likely to have lower initial levels of depression that decreased more quickly over time, suggesting that positive TSR contributes as a protective factor for depression in youth. A large follow-up study of 9^{th} and 10^{th} graders in a Canadian study found that perceptions of declining support from classmates and teachers were associated with declining mental health (De Wit et al., 2011). Teacher support was measured at three points, using children's appraisals of support and the teacher subscale. This latter benchmark contained five items from the Social Support Appraisals Scale (Dubow & Ullman, 1989). Self-esteem was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 2002), depression was measured using the Depression Scale for Children (Weissman, Orvaschel, & Padian, 1980), and social anxiety was measured using the four-item Generalized Social Avoidance and Distress subscale (La Greca & Stone, 1993). Declining teacher support was associated with students' worsening self-esteem and increasing depression, but no association was found between teacher support and social anxiety (De Wit et al., 2011). A study by LaRusso et al. and associates (2008) investigated the relationship between school climate and health risks in adolescence in a nationally representative, large sample of youth aged 14–18 years in the United States. The study included measures for teacher support, teacher regard for student perspectives, respect, belonging, depressive symptoms, perceived school norms for drug use, perceived friends' drug use, and self-reported drug use. They found that teacher support and respectful climate were each related to social belonging, which was inversely related to depressive symptoms (LaRusso et al., 2008). In a qualitative study, Dods (2013) explored the TSR as a school-based supportive relationship for youth who had experienced psychological trauma. Four participants (aged 19 to 21) who had either graduated or left school were interviewed after being assessed with the Trauma Symptom Inventory (Briere, Elliott, Harris, & Cotman, 1995). In their recall of school experiences, the participants voiced a general lack of support from teachers. The study suggested four ingredients necessary for TSR to be supportive to students living through trauma: teacher-driven, authentic caring, responsive to students' needs, and enduring individualized relationships.

Drawing on NELS data (1995–1996), Needham et al. (2004) analyzed the association between health and academic failure, incorporating the mediating associations of the TSR as individual-level and school-level constructs. Self-rated health and emotional

distress was measured by the Center for Epidemiological Studies' Depression Scale (Radloff, 1977) and were associated with a greater likelihood of failing a course in the next year. Data from the In-School Survey was used to construct a school-level measure of mean student-teacher bonding and individual measures based on how often students had trouble getting along with their teachers (Needham et al., 2004). On an individual level, about 66% of the association between emotional distress and course failure was accounted for by the measure of individual-level teacher attachment, absenteeism, and trouble with homework. However, students with high levels of emotional distress attending schools with high-school-level student-teacher bonding had a greater probability of failure in a school course than those attending schools with lower school-level student-teacher bonding (Needham et al., 2004).

The evidence from these studies is limited and inconclusive. The evidence suggests that TSR may have a protective role for students' mental health problems such as depression. It may also play a promotive role in developing positive mental health such as self-esteem. However, the findings also suggest the possibility of poor-quality TSR being a risk factor for the development of depression and the lowering of self-esteem.

Key attributes of the TSR related to student mental health and dropout

In nine of the reviewed articles, we identified key attributes of the TSR presented as being associated with student mental health and dropout. Our analysis suggests that support, closeness, trust, respect, and care are positive attributes of TSR that might be associated with student mental health and dropout in a positive way (Colarossi & Eccles, 2003; Croninger & Lee, 2001; Dods, 2013; Frostad et al., 2015; LaRusso et al., 2008; Lessard et al., 2014; Muller, 2001; Wang et al., 2013). The negative attributes of TSR would be humiliation, labeling, and judgment (Dods, 2013; Lessard et al., 2014; McGrath, 2009; Muller, 2001).

Croninger and Lee (2001) measured teacher support by a composite of six items of students' characterizations of their social ties to teachers. In addition, they also measured TSR from teachers' experiences of informal exchanges with specific students regarding schoolwork and personal matters. Similarly, Frostad et al. (2015) investigated teacher support using a scale with three items from the Child and Adolescent Social Support Scale (Malecki & Demary, 2002), one item from Baard, Deci, & Ryan (2004), and two from the PISA "Supportive Teacher" questionnaire, Section 9.2.4 (Frostad et al., 2015). Examples of statements included: "I feel that my teachers accept me," and "The teachers give extra support if I need it." Colarossi and Eccles (2003) measured teacher support with a six-item scale. The questions included: "How many of your teachers value and listen to your ideas?" and "How many of your teachers treat students with respect?" LaRusso et al. (2008) assessed teacher support with four items regarding the presence of adult role models, caring teachers, and teachers or counselors who help with schoolwork and problems. To assess how much teachers and other adults value student perspectives and participation in decision-making, teachers' respect was measured by the Teacher Regard for Students'

Perspectives scale based on items from the Relationship Questionnaire (Schultz, Selman, & LaRusso, 2003). Wang et al. (2013) measured teacher reports of teacher–student relations by assessing teacher–student closeness and trust via eight items on the teacher–student relationship scale adapted from the School Climate Survey (Haynes et al., 2001). An example of the questions included is: “How often do you really understand how this student feels?”

Care has been identified as a key attribute in the TSR. Muller (2001) specifically incorporated “care” into the TSR by measuring student reports of the degree of agreement with the following statement about their teachers: “My teachers care about me and expect me to succeed in school.” A qualitative study by Dods (2013) described caring connections as crucial for students who have experienced trauma. The attributes of caring relationships were identified as being teacher-driven, authentically caring, attuned to students’ emotional states, and individualized (Dods, 2013). Likewise, in the qualitative study by Lessard et al. (2014), “nurturing,” which is an attribute similar to caring, was found to be crucial in TSR, evident when teachers were available and showed genuine interest, understanding, and warmth.

Our analysis also identified attributes that depicted the negative qualities of TSR. In McGrath’s (2009) qualitative study of disengagement, students described how they felt openly humiliated and punished by some teachers, especially when teachers undermined their intelligence and showed no belief in them. Muller (2001) measured teachers’ negative judgment of students based on their assessment of students’ effort. Conflict in TSR found in the qualitative study of students at risk of dropout (Lessard et al., 2014) appeared to be another negative attribute.

Though our findings of TSR attributes are limited, they suggest that support, care, humiliation, judgment, and conflict are attributes of TSR that may be associated with dropout. Whereas support, respect, closeness, and care are attributes of TSR that are important to promoting student mental health.

Discussion

This literature review has focused on the association between TSR and student mental health and dropout from upper secondary school. The results of this review suggest a complex interplay among the TSR, student mental health, and dropout, with the TSR being a critical mediating factor for student mental health and dropout.

TSR and dropout

The reviewed studies investigated the relationship between TSR and dropout, conceptualizing TSR either as school-level TSR or individual-level TSR. The concept of a school-level TSR refers to the characteristics of schools rather than relationships with individual teachers and determines schools as positive or negative units in their TSR attributes. On the other hand, an individual-level TSR refers to specific individual experiences or perceptions of teachers and students in their relationships. In the

reviewed studies, both of these TSR constructs were associated with dropout/dropout rates, individual student decisions to drop out (referring to the intention to drop out), and the risk of dropout.

The relationship between negative individual-level TSR and actual dropout suggests that negative TSR may be unsupportive or unhelpful in preventing dropout, or it may act as an additional force that propels students to drop out (Lessard et al., 2014; McGrath, 2009; Muller, 2001). This interpretation is in line with the findings that students deemed at risk of dropping out seem to benefit the most from positive TSR (Croninger & Lee, 2001; Muller, 2001). However, it seems that, paradoxically, at-risk students experience more negative TSR but will potentially benefit most from positive TSR. This determination is supported by a meta-analysis regarding TSR, engagement, and achievement that found more convincing support for the effects of the TSR on at-risk children than on normative children (Roorda, Koomen, Spilt, & Oort, 2011). The finding that negative TSR can be quite stable (Hamre & Pianta, 2001) also suggests that students' experiences with negative TSR may not be incidental but rather systematic. This suggestion is in line with our findings of the association between school-level TSR and dropout. The reviewed studies show that schools' social capital, with the school-level TSR as the major element, seem to be associated with dropout (Croninger & Lee, 2001; Lee & Burkam, 2003; Muller, 2001). The risk of dropout may result from a persisting influence of schools' social capital.

The mechanisms specifying the association between TSR and dropout, dropout intention, and risk of dropout seem complex based on the findings of these reviewed studies. However, there is a need to conceptualize and differentiate the constructs of dropout, dropout intention, and risk of dropout more clearly, as the relationships among these three constructs have not been well established. More specifically, dropout intention and risk of dropout intention are often determined by objective perspectives rather than student perspectives. In addition, several of the reviewed studies utilized longitudinal datasets that have information on students attending schools at the time of the surveys, which means the sample did not include those students who had dropped out. Therefore, the findings in these studies regarding the risk of dropout or dropout intentions would be for students who did not drop out, suggesting any dropout inferences from these studies could be problematic. The TSR measurements applied in the studies also present issues regarding conceptualization. Most of the reviewed studies treat TSR in terms of the attributes referring to the qualities in relationships rather than relational processes. The characteristics of relational processes in TSR, such as the quality of the interaction or how different topics are addressed in the process, are rarely included in conceptualization and measurements of TSR in these studies. In addition, the differentiation between the individual-level and the school-level TSR seems important for a theoretical understanding regarding the influence of TSR on dropout, with the individual level focusing on social-psychological processes and the school level focusing on social-structural processes.

There is a need to examine the nature of differences in the ways school-level and individual-level TSR constructs influence dropout, dropout intention, and risk of dropout. As revealed in the reviewed studies, the TSR, as a pivotal factor in students' school experiences, may impact these three constructs related to dropout through different mechanisms. This tendency highlights the need for investigations regarding processes of influence. For example, the school-level TSR may reduce dropout by creating a culture of support, while the individual-level TSR could be critical in influencing changes in behaviors or decision-making that modify dropout intention or risk of dropout. The literature on dropout suggests that the major theoretical perspectives on dropout have been on students' personal attributes and backgrounds rather than on school experiences (Lamb et al., 2011). It seems critical to gain an in-depth understanding about students' experiences in school, such as TSR in relation to dropout.

One issue that needs to be highlighted is the nature of data used in the reviewed studies. Most of the quantitative datasets used are somewhat dated: NELS datasets applied in four studies were from 1990 and 2002, two other national surveys of students and schools were from 1995/96, and one national telephone survey of youth was in 2003. It is necessary to obtain findings from more current data, as school experiences, as with all social experiences of youth, have gone through tremendous changes during the last decades.

The TSR and student mental health

The reviewed studies of TSR and student mental health investigated the individual-level TSR rather than the school-level TSR. The quality of the TSR in these studies seems to be associated with student mental health status. Adolescence is a period of important emotional development and increased vulnerability to mental health problems. There is a dynamic interplay in adolescent development between risk factors and protective factors (Masten, 2001).The findings in our review show that TSR may serve as both a risk factor and a protective factor for student mental health status. Several of our findings show that positive relationships are associated with positive outcomes for students, such as a reduction in depression and an improvement in self-esteem (Colarossi & Eccles, 2003; LaRusso et al., 2008; Wang et al., 2013). This is supported by similar findings in a review of 133 papers investigating early adolescent (aged 10–14) emotional well-being, with the conclusion that the TSR is particularly powerful for emotionally vulnerable students (McLaughlin & Clarke, 2010). The findings in our review show that the TSR has the potential to promote a positive development of students' mental health in their everyday lives and supports the importance of focusing on the systemic interplay of adolescent developmental processes (Bronfenbrenner & Morris, 1998). From a resilience perspective, the TSR may act as a resource that can help students overcome risk (Fergus & Zimmerman, 2005). Our findings are in line with studies that emphasize the promotion of resilience in ordinary processes and relationships in the everyday lives of adolescents (Masten, 2001). In contrast, the findings also suggest that a negative TSR may act as a risk factor for student mental

health by decreasing self-esteem and increasing depression (De Wit et al., 2011; Dods, 2013). This is in line with previous studies of TSR in primary schools, which showed a strong association between the presence of behavioral or mental health problems in children and negative TSR (Drugli, Klökner, & Larsson, 2011; Hamre & Pianta, 2001).

Mental health in adolescents is critical for not only students' everyday experiences but also their academic performance (Sagatun et al., 2014). The findings of the TSR as both a risk factor and a protective factor suggest that student mental health is complexly associated with students' relationships with teachers. There seems to be a critical need to gain an in-depth understanding about the processes involved in two such opposite findings.

Attributes of the TSR

The TSR as a construct has been most frequently depicted in qualitative terms, usually referring to relational qualities of teachers. Teacher support is identified as a key attribute of the TSR in several of the reviewed articles, one that is associated with both dropout and student mental health.

The attributes of the TSR applied in these studies are, in general, in two dimensions: affective and evaluative. The affective attributes include closeness, emotional support, caring, and humiliation, while the evaluative attributes include trust, respect, labeling, and judgment. An additional dimension of the TSR attributes is instrumental, which focuses on providing practical assistance through TSR; this has not been applied in the reviewed studies. The current status evidenced in the studies reviewed indicates that the attributes of the TSRs identified in these studies are quite limited and do not sufficiently illuminate the complex nature of TSR. The TSR as a relational concept requires rigorous measurement approaches and conceptualization. Conceptualization has to encompass not only the qualitative relational features in participants (teachers and students); the relational processes of the TSR as an interactive dynamic, such as the quality and content of TSR, should also be addressed. The measurement focus of the TSR attributes in the studies has been teachers, somewhat disregarding the interplay between the teacher attributes and the student attributes in TSR, both in incidental relationships and in enduring, long-term relationships, that influence the dynamics of TSR. Moreover, there is a need to systematically conceptualize key attributes of the TSR, especially the negative attributes, to examine their influence on students' school experiences, particularly in relation to mental health and dropout. Although the emotional attributes of the TSR may be critical in helping students address various issues in their personal and school experiences, they do not cover the entire spectrum of their experiences, which occur in the academic, social, emotional, and personal arenas. Both the instrumental attributes and the evaluative attributes, which seem to affect the process of the TSR, need to be examined more critically to gain an in-depth understanding of the TSR influence on student mental health and dropout. It seems that the TSR also needs to be examined in terms of not only

attributes but also more critically relational processes such as the quality of the relationships: reciprocity, inter-subjectivity, individualization, and more quantitative terms such as length, frequency, etc.

Methodological limitations

This analysis is a mixed studies review that evaluates both qualitative and quantitative data. A challenge within this framework is related to the complexity of bringing together studies that are structured differently and conducted within different paradigms (Grant & Booth, 2009). The methodological approaches applied in the reviewed articles range from small qualitative studies to mixed methods studies, large national surveys, and meta-analysis. The research questions, terminologies, assessment tools, and surveys used in the reviewed articles are heterogeneous. This heterogeneity has complicated the analyses and the identification of themes in this review. However, a mixed studies review can give a more holistic overview of the associations between TSR and student mental health and dropout. In our analysis, the quantitative studies contribute to questions of association and prediction. The qualitative studies provide a deeper understanding of how the TSR influences students in more descriptive and complex ways.

The reviewed articles primarily concern data from a limited number of articles from a limited number of countries. These limitations challenge the validity of the review as our data may not reflect the situation in other countries and cultures.

Conclusion

None of the reviewed studies examined the tripartite relationship among the TSR, student mental health, and dropout. The results in the reviewed studies suggest that the TSR may play an important role in both school dropout and student mental health, although the exact nature of the association between these constructs is not clear. Since the results of some of the studies indicate the influence of TSR on students' academic performance, it is possible to suggest that TSR has an indirect effect on dropout by its influence on students' academic achievement. The TSR may act as a buffer and be particularly important to students who are academically and socially at-risk and who have mental health problems. As students' mental health problems are found to represent a risk factor for dropout and as TSR is associated with students' mental health statuses, a further investigation of the relationships and interplay among these constructs is crucial.

For the knowledge of TSR to have practical implications, it is important to further explore the attributes of TSR in upper secondary schools through rigorous conceptualizations and measurement approaches. Quantitative studies should address the issues of effect size and power analysis more rigorously with the further development of TSR measurements. A deeper understanding of the attributes of TSR and the interplay between TSR as a protector and a risk factor should be explored in future studies. To further identify and explore this topic, there is a need to go beyond

quantitative correlation studies into qualitative studies with thick descriptions. In particular, the complexity and interplay between the different factors that contribute to the development of adolescents, their mental health, and their decision to drop out should be investigated. Because the role of TSR as a contributing factor in student mental health and dropout remains elusive, it is critical to carry out research that examines in a comprehensive manner the complex processes in TSR and their impact on mental health and dropout. The majority of the reviewed studies were conducted in North America; thus, it is important to study this topic in other countries because school systems and cultures vary across countries.

Programs in teacher education need to address the potential of TSR as a source for supporting students to remain in school and for helping students maintain their mental health in general. Programs should also address the process of fostering and developing positive TSR and strategies to avoid negative TSR. Finally, the findings of this review call for greater awareness among decision makers and school leaders to facilitate school environments where TSR is emphasized as valuable.

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Abstract

Teacher–student relationship, student mental health, and dropout from upper secondary school: A literature review

The purpose of this study was to assess the status of knowledge regarding the association between teacher–student relationship (TSR), dropout from upper secondary school, and student mental health. A literature search was conducted in Eric, PsycInfo, Medline, Scopus, Norart, and Idunn covering the period spanning 2000 to 2015. Sixteen articles were identified for review. These articles were analyzed via thematic analysis. The results indicate that the TSR in upper secondary school is associated with students' dropout and their mental health. We suggest that the TSR in upper secondary school, identified with key attributes, might be both a protective as well as a risk factor for student mental health and dropout. Finally, we present some future directions for research and practice.

Keywords: dropout, mental health, teacher–student relationship, upper secondary school.

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