

# The Relationship Between Social Support and Student Academic Involvement: The Mediating Role of School Belonging

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## Abstract

Canada's high school graduation rates are still low when compared to other members of the OECD. Previous studies have found academic involvement is associated with positive trajectories toward graduation, that social support promotes student engagement, and that school belonging could mediate this relationship. Still, little is known about the specificity of such mediation, especially in Québec. Therefore, this study examined the role of belonging as mediator of the relationship between social support and academic involvement. Participants ( $N=238$ ) were high-school students from the Greater Montréal Area. All variables were measured by the School-Climate Questionnaire. Results from hierarchical multiple regressions indicated parental support had a direct relationship, whereas peer and teacher support had a mediated relationship by school belonging with academic involvement. Results highlight the critical role of school belonging in promoting academic involvement in relation to social support.

## Keywords

peer support, parental support, teacher support, academic involvement, school belonging

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Canada's high school graduation rates are still low when compared to other members of the Organization for Economic Co-operation and Development (OECD, 2020). This remains an urgent concern despite the financial support that has been provided by provincial and federal governments to try to overcome this issue (Homsy & Savard, 2018; Statistics Canada, 2020). However, like most human development issues, many individual determinants drive youth to leave school, making it difficult to accurately track causes for dropout (Ménard, 2009). Yet, previous studies have found that being actively engaged in academic activities was associated with increased motivation and student satisfaction (Almarghani & Mijatovic, 2017; Willis, 1993), and with positive trajectories towards graduation (Pan et al., 2017). *Academic involvement* is conceptually defined in this study as self-reported behaviors (e.g., taking initiative, helping with problem solving, and decision making at school) that are key components of student engagement. Namely, it describes being involved in academic-related activities with purpose, feelings, and thoroughness (Juvonen et al., 2012; Willis, 1993).

Previous research has shown that supportive relationships (i.e., peers, parents, and teachers) enhance students' educational experiences (Chen, 2008), and promote students' engagement (Xerri et al., 2018). Therefore, it is not surprising that the quality of the support from meaningful others in these diverse social contexts indeed influences someone's development (Bronfenbrenner, 1979). This is particularly important during adolescence, where social relationships play an important role in shaping youth's experience (Erikson, 1968; Ferrer-Wreder et al., 2008).

*Social support* is conceptually defined in this study as the provision of psychological and material resources with the intention of helping the recipient (Cohen, 2004). Based on this perspective, social support is the self-reported perception that the person is cared for, has assistance available, and is part of a supportive social network (House, 1981). Previous studies have highlighted a positive relationship between *peer* support and student engagement (Brioux & Oubrayrie-Roussel, 2017; Li et al., 2011); the positive influence of peer support on satisfaction with school (Gutiérrez et al., 2017); and the importance of peer support for classroom engagement (Kilday & Ryan, 2019). Similarly, previous studies have indicated that *parental* support has a positive relationship with student engagement (Estell & Perdue, 2013; Garcia-Reid et al., 2015); that parental support has been related to positive academic engagement (Chen, 2005, 2008); and that parental support has too shown a positive influence on satisfaction with school (Gutiérrez et al., 2017). Additionally, *teacher* support has also been positively related to student engagement (Brioux & Oubrayrie-Roussel, 2017; Kalil & Zioli-Guest, 2008); has been noted as an important predictor for classroom engagement (Kilday & Ryan, 2019); and has an important role in promoting student motivation and belongingness (Kiefer et al., 2015).

However, other studies have unveiled that the relationship between social support and these various forms of student engagement could be mediated by other variables. *School belonging* is conceptually defined in this study as the extent to which students feel accepted, valued, and supported by teachers and peers (Goodenow, 1993). This

concept, therefore, describes feelings of inclusion in the life and experiences of the school (Eccles et al., 1993). Previous studies have indicated that school belonging could be mediating the relationship between social support and academic involvement (Vieno et al., 2007; Zumbunn et al., 2014).

Nevertheless, the main reason for choosing this topic was that little is still known about how specifically belonging mediates these supportive resources. Furthermore, to our knowledge, this topical gap is especially wide in the Québec context, where no studies have addressed how school belonging mediates the relationship between social support and academic involvement.

Therefore, the purpose of this study was to examine the role of school belonging as mediator of the relationship between social support from peers, parents, and teachers with student academic involvement for secondary education students from a suburban English-language high school in the Greater Montréal Area.

This study is of potential benefit for: (a) high school teachers looking to promote academic involvement among their students, (b) school psychologists considering the implementation of school-wide interventions and/or the promotion of professional development of their teachers to increase student academic involvement, and (c) researchers interested in further examining the relationships between student academic involvement, social support, and school belonging among secondary education students and beyond.

There were three primary research questions in this study: (a) What is the relationship between social support, school belonging, and student academic involvement? (b) What is the contribution of teacher support beyond the contributions of peer and parental support to predicting student academic involvement? (c) Is school belonging mediating the relationship between social support and student academic involvement? Based on the literature, this study hypothesized that: (H1) there will be a significant positive relationship between social support, school belonging, and student academic involvement; (H2) peer and parental support will be positive predictors of, and teacher support will have an additional positive contribution to, student academic involvement; and (H3) school belonging will mediate the relationship between all three sources of social support and academic involvement.

## Method

### Participants

Participants ( $N=238$ , 64% boys,  $M_{\text{age}}=14.76$ ,  $SD_{\text{age}}=1.32$ ) were a sample of secondary students recruited between November 2019 and December 2019 from a suburban English-language high school in the Greater Montréal Area, Québec, Canada. Most participants were in Grade 8 (30%), followed by Grade 9 (26.6%), Grade 11 (24.5%), Grade 10 (18.5%), and non-reported grade (0.4%). Participants predominantly identified themselves as Anglo-European (47.3%), with others reporting as Indigenous (11.5%), Latin American (4.4%), African-Caribbean (2.7%), and different ethnicities (e.g., mixed ethnicities: 34.1%).

## Procedure

A purposive volunteer sample was accessed with the help of the high school counselor. Researchers delivered 250 paper-envelopes to the counsellor that included invitation letter, parental consent form, participant assent form, questionnaires, and various community support resources. The high school counsellor assisted in distributing these packages to the individuals who were interested in participating in the study, and collecting them once participants had completed them. Participants received a \$10 gift card for their participation. Ethical approval was obtained. Participant confidentiality and anonymity were attained by removing any identifiable information that could potentially pinpoint to their identity.

## Measures

All variables in this study were measured using the *School-Climate Questionnaire* (Konishi et al., 2020). This is a self-report tool that has been recently developed to be a comprehensive measure of school climate from a high school student perspective. Its development has been informed by both theory and relevant measures related to school climate (e.g., bullying). Furthermore, its validity has been assessed by both experts in the field and high school students via focused groups, as well as factor analyses. This tool asks students to rate items using a 7-point Likert scale (1 = *strongly disagree*, 4 = *neutral*, and 7 = *strongly agree*). Higher scores reflect higher perceived social support, self-reported academic involvement, and perceived school belonging respectively. The following sections describe the specific sub-scales of the *School-Climate Questionnaire* that were used in this study.

**Perceived social support.** This concept was procedurally defined in this study by three sub-scales. Firstly, the *Peer Interaction Scale* (Konishi et al., 2020) comprises 11 items that focus on perceived peer interaction and/or support (e.g., “Students at my school care about each other”). The internal consistency of this scale in this study was acceptable  $\alpha = .69$ . Secondly, the *Community Support Scale* (Konishi et al., 2020) comprises 10 items that focus on perceived community and/or parental support (e.g., “Parents or family have a say when the school wants to make important decisions”). In this study, the internal consistency was acceptable  $\alpha = .74$ . Thirdly, the *Student-Teacher Relationship Scale* (Konishi et al., 2020) comprises 10 items that focus on perceived teacher support (e.g., “Adults at my school care about students”). The internal consistency of this scale in this study was excellent  $\alpha = .91$ .

**Student academic involvement.** This concept was procedurally defined in this study by the *Autonomy Scale* (Konishi et al., 2020) that comprises six items focusing on autonomy and/or academic involvement (e.g., “Students at my school work together to solve problems”). In this study, the internal consistency was acceptable  $\alpha = .73$ .

**Perceived school belonging.** This concept was procedurally defined in this study by the *School Belonging Scale* (Konishi et al., 2020) that comprises five items focusing on

school belonging (e.g., “I feel I belong at my school”). Similarly, the internal consistency of this scale in this study was adequate  $\alpha = .69$ .

### Data Analysis

Pearson correlation coefficients were performed to assess the associations between social support, academic involvement, and school belonging (H1). Hierarchical multiple regression analyses were then performed to predict the contribution of social support from peers, parents, and teachers in academic involvement (H2), and to identify the mediating role of school belonging in this predicted relationship (H3). To examine the mediator effect of school belonging, a series of regression analyses were conducted. Firstly, the dependent variable (academic involvement) was regressed on the independent variables (social support, see Table 3, Step 2). Secondly, the mediator (school belonging) was regressed on the independent variables (see Table 4). Lastly, both the independent variables and mediator were regressed on the dependent variable (see Table 3, Step 3). The mediation effect would exist if the effect of the independent variable on the dependent variable reduced when the mediator was controlled. Supplemental Appendix A shows the mediation analysis model that was tested in this study. All data were analyzed using SPSS Statistics 26.

### Results

The total number of cases was deemed suitable for meaningful statistical patterns of relationship to emerge (Garver & Mentzer, 1999; Hoe, 2008). Therefore, statistical analyses were performed. Seven residual univariate outliers were detected using box-plots (see Supplemental Appendix B), and seven cases were detected as residual multivariate outliers using Mahalanobis distance statistics ( $\chi^2 = 13.82, p < .001$ ). However, results from the remaining statistical assumptions and further statistical analyses did not significantly change with or without them, thus outliers were not dropped from further analyses.

Besides checking for univariate and multivariate outliers, the assumption of normality was also assessed by visually examining a histogram, which showed a normally distributed data (see Supplemental Appendix C). Moreover, a normal P-P plot of regression standardized residual showed data points closely following the line (see Supplemental Appendix D). Therefore, the *normality* assumption was met.

The assumptions of linearity and equal variances (i.e., homoscedasticity or homogeneity of variance) were assessed by visually examining a scatterplot, which showed data points forming an oval shape in the center of the chart (see Supplemental Appendix E). This indicates that variables were normally distributed, linearly related, and that equal variances were assumed. Therefore, both the *linearity* and the *equal variances* assumptions were adequately met in this model.

Additionally, potential issues with collinearity were assessed using collinearity statistics. The statistical values for the *Peer Interaction Scale* (Tolerance = 0.655,

**Table 1.** Pearson Correlation Coefficients Between All Study Variables.

	1	2	3	4	5
1. Academic involvement*	1				
2. Peer support*	.289**	1			
3. Parental support*	.428**	.307**	1		
4. Teacher support*	.488**	.492**	.466**	1	
5. School belonging*	.572**	.540**	.360**	.564**	1

Note. \*N=231, \*\*p < .001.

VIF = 1.526), the *Community Support Scale* (Tolerance = 0.767, VIF = 1.305), the *Student-Teacher Relationship Scale* (Tolerance = 0.568, VIF = 1.760), and the *School Belonging Scale* (Tolerance = 0.585, VIF = 1.711) showed no multicollinearity issues with a Tolerance cut-off set at >0.2, and VIF cut-off set at <4 (Cohen et al., 2003). Furthermore, Pearson correlation coefficients showed variables were moderately correlated, further indicating no multicollinearity issues in this model (see Table 1).

Lastly, because of the aforementioned data collection procedures, the assumption of *independence* can be assumed to have been met (Nimon, 2012). Therefore, the proposed model was deemed appropriate for further statistical analysis.

### *Relationship Between Social Support, School Belonging, and Academic Involvement*

The first objective was to assess the associations between perceived social support (i.e., peers, parents, and teachers), perceived school belonging, and student academic involvement. Table 1 presents the results from Pearson correlation coefficients between all study variables. These results showed moderate, but statistically significant, positive linear correlations between all variables in this study. In other words, the greater any of the sources of social support, the more students' sense of school belonging, and academic involvement improved.

### *Social Support as a Predictor of Academic Involvement*

The second objective was to predict the contribution of teacher support above and beyond the contributions of peer and parental support to predicting student academic involvement. Table 2 presents the means and standard deviations for all study variables. To this end, peer and parental support were entered in Step 1 of the hierarchical multiple regression analyses, and teacher support was added in Step 2.

Hierarchical multiple regression analyses indicated that peer and parental support explained 21.1% of the variance in academic involvement,  $F(2,228) = 30.447, p < .001$ . Both peer support ( $\beta = .174, t = 2.807, p = .005$ ), and parental support ( $\beta = .375,$

**Table 2.** Descriptive Statistics for All Study Variables.

	<i>M</i>	<i>SD</i>	<i>n</i>
1. Academic involvement	3.8519	1.40112	231
2. Peer support	4.3738	.85806	231
3. Parental support	3.9394	1.18044	231
4. Teacher support	4.9012	1.29561	231
5. School belonging	4.3671	1.77846	231

**Table 3.** Hierarchical Multiple Regression Analyses for Academic Involvement.

	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i>
Step 1					
Constant	.859	.455			
Peer support	.283	.101	.174	2.807	.005
Parental support	.445	.073	.375	6.066	.001
Step 2					
Constant	.533	.437			
Peer support	.062	.105	.038	.592	.554
Parental support	.300	.075	.253	3.981	.001
Teacher support	.380	.075	.352	5.069	.001
Step 3					
Constant	1.104	.409			
Peer support	-.184	.103	-.112	-1.778	.077
Parental support	.252	.069	.212	3.634	.001
Teacher support	.208	.073	.192	2.827	.005
School belonging	.353	.053	.448	6.687	.001

Note.  $R^2_{\text{step1}} = .211$  ( $p < .001$ ),  $\Delta R^2_{\text{step2}} = .080$  ( $p < .001$ ),  $\Delta R^2_{\text{step3}} = .117$  ( $p < .001$ ).

$t = 6.066$ ,  $p < .001$ ), were positive predictors of academic involvement. That is, students who reported greater peer support were more likely to show greater academic involvement when holding parental support constant. Similarly, students who indicated greater parental support were more likely to show greater academic involvement when holding peer support constant (see Table 3, Step 1).

Furthermore, controlling for peer and parental support, teacher support explained an additional 8% of the variance in academic involvement,  $F(3,227) = 31.061$ ,  $p < .001$ . Both parental ( $\beta = .253$ ,  $t = 3.981$ ,  $p < .001$ ), and teacher support ( $\beta = .352$ ,  $t = 5.069$ ,  $p < .001$ ) were positive predictors of academic involvement. That is, students who reported greater parental support were more likely to show greater academic involvement when holding both peer and teacher support constant. Students who indicated greater teacher support were also more likely to show greater academic involvement

**Table 4.** Multiple Regression Analyses for School Belonging.

	B	SE B	$\beta$	t	p
Constant	-1.618	.507			
Peer support	.714	.122	.343	5.848	.001
Parental support	.119	.087	.079	1.369	.172
Teacher support	.486	.087	.352	5.574	.001

Note.  $R^2 = .409$  ( $p < .001$ ).

when holding both peer and parental support constant. However, peer support ( $\beta = .038$ ,  $t = .592$ ,  $p = .554$ ) was no longer significant when teacher support was added to the model (see Table 3, Step 2).

### *School Belonging as a Mediator Between Social Support and Academic Involvement*

The third objective was to distinguish the mediating role of school belonging in the relationship between social support and academic involvement. School belonging was entered in Step 3 of the hierarchical multiple regression analyses. Results showed that school belonging explained an additional 12% of the variance in academic involvement when controlling for all three sources of social support,  $F(4,226) = 38.959$ ,  $p < .001$ . This complete model explained 41% of the variance in academic involvement. School belonging was then a positive predictor of academic involvement ( $\beta = .448$ ,  $t = 6.687$ ,  $p < .001$ ). In other words, students who reported higher sense of belonging were more likely to display higher academic involvement, holding all three sources of social support constant (see Table 3, Step 3). Moreover, to indeed determine if school belonging would mediate this relationship, this variable was regressed on all three sources of social support. These results showed that peer ( $\beta = .343$ ,  $t = 5.848$ ,  $p < .001$ ), and teacher support ( $\beta = .352$ ,  $t = 5.574$ ,  $p < .001$ ) were significant predictor of school belonging. That is, students who reported greater peer support were more likely to have a higher sense of school belonging when holding both teacher and parental support constant. Similarly, students who indicated greater teacher support were more likely to have a higher sense of school belonging when holding both peer and parental support constant. Still, parental support ( $\beta = .079$ ,  $t = 1.369$ ,  $p = .172$ ) was not a significant predictor of school belonging (see Table 4).

Taken together, these findings indicated that school belonging mediated the relationship between academic involvement and peer support (Sobel test,  $z = 54.396$ ,  $SE = 0.057$ ,  $p < .001$ ), and also mediated the relationship between academic involvement and teacher support (Sobel test,  $z = 4.280$ ,  $SE = 0.040$ ,  $p < .001$ ). Namely, students with greater perceptions of peer and teacher support were more likely to show a higher sense of school belonging, which in turn was associated with greater academic involvement. However, school belonging did not mediate relationship between academic involvement and parental support (Sobel test,  $z = 1.339$ ,  $SE = 0.031$ ,  $p = .09$ ).

## Discussion

The purpose of this study was to examine the role of school belonging as mediator of the relationship between social support from peers, parents, and teachers with academic involvement of high school students from the Greater Montréal Area.

The first question explored in this study was related to the relationship between social support, school belonging, and student academic involvement. Results were consistent with the first hypothesis, and they showed that there were statistically significant positive correlations between all study variables (i.e., perceived social support from peers, parents, and teachers, perceived school belonging, and academic involvement). In other words, as any of the perceived sources of social support increased, students' sense of school belonging, and academic involvement improved. Moreover, these results were consistent with previous studies formerly linking social support with various forms of student engagement (Xerri et al., 2018), linking social support with school belonging (Kiefer et al., 2015), as well as linking school belonging with both student engagement and social support (Zumbrunn et al., 2014).

The second question addressed the relationship between social support and student academic involvement. In particular, the contribution of teacher support beyond the contributions of peer and parental support to predicting student academic involvement. Results were partially supportive of the second hypothesis. Results showed that students who perceived greater levels of peer and parental support were more likely to show greater academic involvement. These results were consistent with previous investigations linking both sources of social support with student involvement (Garcia-Reid et al., 2015; Li et al., 2011). However, after adding teacher support to the model, only parental and teacher support emerged as significant predictors of academic involvement. That is to say, students who perceived greater levels of parental and teacher support, but not of peer support, were more likely to show greater academic involvement. These results were not consistent with previous studies linking both teacher and peer support with student involvement (Kiefer et al., 2015; Kilday & Ryan, 2019), and linking all three sources of social support with student engagement (Gutiérrez et al., 2017). These results, nevertheless, were partially aligned with a previous study that highlighted the predominant role of parental and teacher support in student involvement, above and beyond the influence of peer support (Brioux & Oubrayrie-Roussel, 2017).

Consequently, and contrary to the second hypothesis, not all three sources of social support had an effect on student academic involvement when considered at the same time. Nonetheless, these results still highlighted important implications for both parents and teachers. For instance, they stressed the importance of stimulating positive parent-school, as well as positive parent-teacher relationships to foment student academic involvement. They also showed an important connection between parental, and potentially including all family members, to the degree of student involvement at school. This could be decisive when adopting a more comprehensive view of constructive academic involvement (Bronfenbrenner, 1979).

Likewise, these results showed the essential role of teachers in fostering student motivation, student satisfaction, and ultimately positive student academic involvement. Moreover, the fact that these results showed that academically involvement increased as perceived levels of parental and teacher support increased, at the same time that peer support was no longer a significant predictor of academic involvement, was noteworthy for developmental reasons. That is, participants were all adolescents, developmental period when peer relationships play a central role in their life experiences (Erikson, 1968; Ferrer-Wreder et al., 2008). Results were also noteworthy as teacher support explained an extra 8% of the variance.

The third question assessed the role of school belonging as mediator of the relationship between social support and student academic involvement. Similarly to the previous question, results were partially supportive of the third hypothesis. Particularly, school belonging showed to be mediating the relationship between peer and teacher support with academic involvement, but it did not mediate the relationship between parental support with student involvement. However, in view of the nature of school belonging (Goodenow, 1993), it is comprehensible that it did not mediate the relation with parental support. Both peers and teachers have a more immediate relationship with school-life, and thus with school belongingness, than most parents. So much so that results showed parental support was not even a significant predictor of school belonging.

Therefore, taken together, study results suggested that parental support had a direct relationship with academic involvement, whereas peer and teacher support had a relationship with academic involvement that was mediated by school belonging. Thus, these results were consistent with previous studies underlining the mediating effect of school belonging (Vieno et al., 2007; Zumbunn et al., 2014). Furthermore, it is important to highlight that the full statistical model that included school belonging explained an additional 12% of the variance in academic involvement when controlling for all other three sources of social support. This is meaningful as the full mediating model tested in this study explained a total of 41% of the variance in student academic involvement.

Nonetheless, this study recognizes several limitations. First, participants were limited to students from one suburban English-language high school in the Greater Montréal Area, Québec, Canada. Although it is important to include these individuals, a more representative sample of the province's high school students (i.e., French speaking), as well as the country's high school students, would improve the generalizability of these results. Second, purposive volunteer sampling is highly prone to research bias due to its non-probabilistic nature. Even when it was the most ethically appropriate way to recruit participants, a probabilistic sample would improve the representativeness of the participants. Third, all variable data were exclusively collected using self-report measures, which are known to be subject of important participant biases. Future studies should attempt to include at least one variable in an objective way (e.g., academic involvement), or per another informant's report (e.g., teacher's perception of student engagement). Furthermore, the used measure had an unbalanced number of items between the different scales. Although this was an intentional initial decision—to respect the background theories and measures, respect the students' voices from focused groups, and respect the good levels of fit showed by factor

analyses, we are already considering the reduction of the number of items in some of the larger scales. Fourth, neither grade nor ethnicity were included as variables of interest in the analyses. Although this decision was initially made based on well-documented inconsistencies found in the literature (e.g., Núñez et al., 2015; Wang et al., 2011). However, despite these limitations, all statistical assumptions were met in this study, *making these results statistically sound* (Nimon, 2012), and making these findings very valuable for elucidating and expanding this topic.

Future research should, nonetheless, learn from the aforementioned limitations, and improve upon the population, the sampling, the recruitment, and the analytic strategies. Future studies should certainly continue to assess the role of school belonging as a mediator of social support and academic involvement, not only among high school students, but across the different levels of the education system. Moreover, it should be assessed considering different ethnic/racial groups. Undoubtedly, future research should also expand the scope of their investigations to explore the role of school belonging as a mediator of social support and other forms of student engagement. Likewise, it would be relevant to explore some these constructs, when possible, from the perspective of high school teachers (Quijada Domínguez et al., 2020).

In conclusion, parental support showed a direct relationship with academic involvement, while peer and teacher support had a relationship with academic involvement that was mediated by students' sense of school belongingness. Hopefully these results will be useful (a) for high school teachers trying to promote better academic involvement among their students, (b) for school psychologists wanting to better understand and to overcome school dropout, and (c) for researchers interested in further examining the relations between these variables and beyond.

### *Relevance to the Practice of School Psychology*

As school psychologists support the development and implementation of initiatives that advocate for positive learning environments for youth, these results have important implications to help advance school psychologists' knowledge base as they emphasized the critical role of school belonging in promoting student academic involvement in relation to peer (e.g., classmates) and teacher support. These results also accentuate the need to pay more attention to the role of school belonging as a potential mediator of other forms of student engagement at school, especially when undertaking school dropout (Ménard, 2009), and encouraging positive trajectories toward graduation (Pan et al., 2017). Both are areas of interest for school psychologists in regard to the schooling process.

Furthermore, these findings are also consistent with the social-emotional learning (SEL) and development approach to education. "Identification with school, belongingness, and positive relationships with teachers are associated with lower levels of dropping out of school" (Bergin & Bergin, 2009, p. 157). As this approach articulates, SEL provides students with opportunities to contribute to their class, their school, and their community, strengthening their social support connections, while experiencing an increasing satisfaction, sense of belonging, and motivation (Bergin & Bergin, 2009; Durlak et al., 2011). Therefore, these findings also highlight the importance of advocating for the

widespread inclusion of SEL content in current teacher education curricula, as well as teacher professional development programs. Taken together, these are areas of concern, and of action, for school psychologists in their professional practices.

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### Supplemental Material

Supplemental material for this article is available online.

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