





Effect of Teacher and Parent Autonomy Support on Academic Motivation: A Central Focus of Self-Determination Theory

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ABSTRACT

Based on SDT this correlational study investigated unique and additive effects of teacher and parent autonomy support on academic motivation of middle school students. Results revealed significant individual and additive effects of parent and teacher autonomy support exists. Age and gender related differences in academic motivation was found. Negative effects of teacher control on motivation was reported. Study highlights necessity of intervention programs, for teachers especially experienced teachers unwilling to conform to the idea of autonomy support, and for parents so they can be aware about providing threshold support when school situations fail to provide autonomy support.

KEYWORDS

Academic motivation; autonomy support; middle school; self-determination theory

Introduction

Motivation is a state of mind, an inner driving force, a volitional intention propelling one toward a definite goal aligned to one's interest (Deci & Ryan, 1987). Motivated learners perceive learning tasks as having relevance and value; engage in tasks to gain knowledge and skills; demonstrate greater intensity and persistence at performing tasks, and this results in qualitatively better academic performance (Brophy, 2004; Fadilah et al., 2019). Such learners engage in academic tasks voluntarily and do not require reinforcement or verbal praise or material rewards, since participation in and accomplishment of the task provides them

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enjoyment, pleasure, and satisfaction, which are all rewards by themselves (*intrinsic motivation*) (Grolnick, 2003).

Intrinsic motivation is an ideal state, vital to gaining satisfaction from learning, enhancing academic engagement, and improving performance, and it is much sought after by parents and teachers for their children, though certain barriers stand in the way of achieving or sustaining such a state (Mansour & Martin, 2009); these barriers can be intrapersonal (inherent in a child, hence internal) or interpersonal (external in nature) (Reeve & Jang, 2006). The internal barriers are mostly related to the child's ability beliefs, effort beliefs, values, attitudes, interests, personality, and goal orientations (Cheon & Reeve, 2015). The external barriers originate from the child's environment and can range from task difficulty, unappealing or boring nature of the tasks, societal pressure to perform well, controlling teachers who issue deadlines to high parental expectations (Cheon et al., 2012; Pazner, 2018; Ricard & Pelletier, 2016; Vallerand et al., 1997).

Academic Motivation: Forms Based on Level of Self-Determination

The present research explores academic motivation in the middle school period (adolescence), a period, in fact, associated with significant reduction in motivation (Gillet et al., 2012). Adolescence is a transition period where the child faces numerous personal changes such as physical and psychological changes, and environmental changes such as the shift transition from the "known" elementary school to the "unknown" middle school environment which tends to undermine motivation (Grolnick, 2009; Lepper et al., 2005). In this transition period, the aforementioned internal and external factors both undergo changes, leading to variation in the amount and intensity of motivation. The internal psychological changes create a change in motivational orientation as adolescents begin to attach an ego element to education (Ryan, 1982). Maintaining self-image, something that was not important in earlier phases of life, now takes priority and becomes the primary source of motivation for the adolescent (*introjected motivation*) (Deci & Ryan, 2008). Education becomes a responsibility as adolescents are forced to study in order to fulfill parental aspirations and uphold family status as well as to conform to the expectations of society (*introjected motivation*), which desires high achievement and accords status to high achievers only (Grolnick, 2009). The change in societal attitudes as the child matures forces the child to view education as a means to achieve future benefits and forge a successful career (*identified motivation*), while the aim of gaining knowledge, which was prioritized at the elementary level, takes a backseat (Froiland, 2011). Parents and teachers are also under pressure to make their child

perform well and thus start endorsing extrinsic performance goals (Ryan & Deci, 2000). The joyful intrinsic nature of education is thus continually undermined. Motivation based on the aforementioned external pressures is not long-lasting, as it ceases to exist upon withdrawal of incentives and external reinforcements (*external motivation*) (Lei, 2010). Once the external reinforcement is withdrawn, the child no longer has the drive to complete the task, which is unappealing, difficult, and no longer valued (*amotivation*), thus making him quit at the slightest difficulty (Assor et al., 2005). This amotivated state results in negative maladaptive outcomes such as lower engagement (Furrer et al., 2014), lack of persistence, and poor performance (Anderson, 2018) in adolescents, further leading to absenteeism (Balkis et al., 2016) and, finally, dropout (Ricard & Pelletier, 2016). Such negative consequences prompted the researcher to explore the determinants of academic motivation as well as ways to sustain it.

Influence of Social Contexts on Academic Motivation: Self-Determination Theory Approach

Of the several motivation theories that suggest ways of promoting and sustaining intrinsic motivation, the *self-determination theory* (SDT, Deci & Ryan, 1985) is prominent. SDT states that the home and school environments can develop and sustain motivation by supporting and satisfying three basic psychological needs of children: need for autonomy, competence, and relatedness (Deci & Ryan, 2015). Satisfaction of these needs helps the process of internalization of initial external motivational orientations while the frustration of these needs leads to external motivation (Gairns et al., 2015). Basic psychological need theory (a mini-theory of SDT) posits that though basic psychological needs and academic motivation are innate constructs, but they are dependent on social support for their fulfillment (Cheon et al., 2012). Supportive social contexts through the satisfaction of basic psychological needs not only influence the type of motivational orientation (intrinsic or extrinsic) children will develop and the level of academic motivation (high or low) children will possess (Laursen et al., 2006) but also improve other academics-related outcomes in terms of improved attendance rates and academic persistence (Edmunds et al., 2008).

Basic Psychological Needs

The first need (*autonomy*) comprises freedom in every aspect of education, from choice of tasks, participating in classroom decisions, choosing educational partners in cooperative learning, and being informed about the relevance of educational tasks to performing them without internal or external pressures (Nunez & Leon, 2015). The second need, *structure*, is

related to guidelines about every educational task, including the process to initiate it, optimal ways to complete it, expected outcomes from the task, corrective informational feedback during and at the end of the task (Farkas & Grolnick, 2010). The third need (*relatedness*) is based on the provision of emotional and material resources by parents and teachers to help the child realize the value of education, and manifests in attentiveness and availability, which facilitates help-seeking and provides warmth so that the child feels a sense of belongingness to the social context (Guay et al., 2008).

Of these three needs, the present researchers desired to investigate autonomy support, as it is the primary and most influential prerequisite in fostering intrinsic motivation (Nunez & Leon, 2015). Compared to the other two needs, autonomy support is extremely significant in the middle school phase because adolescents need freedom to form their individual identities (Wentzel & Battle, 2001) and it is vital for overall development and sustenance of motivation (Soenens et al., 2007); furthermore, the desire for autonomy increases in intensity upon reaching adolescence (Feng et al., 2019). Though the perception of autonomy is crucial for all round development of adolescents (Van Petegem et al., 2012, cited in Feng et al., 2019), yet the perceived autonomy support seems to decline in new middle school environments due to coping problems, increased need for independence, and societal pressure of performing tasks not aligned with adolescent's goals (Diseth et al., 2017; Grolnick, 2009; Katz et al., 2009; Pesch et al., 2016). Structure and relatedness cannot compensate for absence of autonomy and fails to motivate any child who has to perform under pressure from parents, teachers, and society. SDT theorists believe that perceptions of structured environment and relatedness support will enhance motivation only if children feel a sense of autonomy in the first place (Vasquez et al., 2016). Moreover, if the task is not selected volitionally, the child may become amotivated and may alienate himself from academics altogether, thus also failing to benefit from the other two needs (Pesch et al., 2016). Again, some researchers consider structure to be already included in the dimension of autonomy support, and thus having no individual effect on motivation (Grolnick et al., 2014) while relatedness, being considered a nonacademic construct, is thought to have an indirect effect on academic motivation (Niemic et al., 2014). The present researchers thus focused on the need for autonomy and tried to examine whether autonomy support alone can cause a significant variation in academic motivation of adolescents.

Autonomy or Mere Independence

Autonomy support can be provided in diverse ways, and it begins with the fostering of independence where parents encourage the child to think

or act individually, this being termed as *autonomy support through promotion of independence* (PI) (Soenens et al., 2007; Soenens et al., 2009) even though the choice to be independent may not be the child's decision but mere parental will. Parents may push their child to think or act independently or make decisions while the child may be unwilling or incapable of handling independence (Steinberg & Silk, 2002, cited in Soenens et al., 2007). True independence is where the child acts independently based on his own volition, interests, and values, this being termed as *autonomy support through promotion of volitional functioning* (PVF) (Soenens et al., 2007, 2009). While PI was mostly orthogonal to psychological control, PVF was found to be negatively related to it, indicating true autonomy (Skinner et al., 2005, as cited in Soenens et al., 2009; Soenens et al., 2007) and a better predictor of positive academic outcomes (Grolnick, 2003, as cited in Soenens et al., 2007).

Autonomy Support: The Most Vital Psychological Need

The need for autonomy is the perception of volitional engagement and psychological freedom along with lower amount of external pressure while performing any task (Deci & Ryan 2000). SDT conceptualizes autonomy as an innate psychological need, which can be satisfied by conducive environmental conditions and supportive interpersonal (teacher or parent) relationships where autonomy is provided by formulating academic tasks aligned with life goals, aspirations, and choices of children (Assor et al., 2002; Hughes et al., 2018; Roeser et al., 1998; Su & Reeve, 2011). Autonomy support not only has immediate positive academic benefits but also far-reaching effects in terms of adoption of intrinsic goal orientation, task value, self-efficacy, and self-determined motivation, all of which form the basis of lifelong learning (Garcia & Pintrich, 1996). Autonomy supportive teachers and parents are able to foster motivation better than controlling ones (Jungert & Koestner, 2015; Vasquez et al., 2016), and teachers and parents of high achievers were found to use autonomy supportive techniques (Cheon et al., 2018; Garn et al., 2010).

Autonomy Support and Motivation: Unique Effects of Teachers and Parents

Previous studies on autonomy support mainly dealt with the unique and additive effects of teacher and parent autonomy, or interventions provided to enhance teacher autonomy support, and gender- or grade-level differences in perceived autonomy support. Autonomy support does not mean lowering teacher presence; on the contrary, it implies using teacher

presence to assist the development and attainment of personal goals by children (Assor et al., 2002). Teachers create a classroom environment based either on autonomy supportive techniques, which foster innate motivation (Deci & Ryan, 2000) or based on controlling strategies as reward systems (Nunez & Leon, 2015). *Autonomy supportive teacher behaviors* include provision of rationales, hearing students' opinions, using praise as informational feedback, understanding student perspectives, offering encouragement and choice, and being responsive to student queries while *controlling behaviors* include criticizing students, using praise as reward, setting deadlines, monopolizing learning materials and using controlling questions, statements, and directives (Diseth et al., 2017; Reeve & Jang, 2006). Earlier researchers have found that teacher autonomy support increased motivation universally across grades from elementary (Oga-Baldwin et al., 2017), middle school (Diseth et al., 2017; Katz, 2017), high school (Cheon et al., 2018; Ricard & Pelletier, 2016), college (Soenens et al., 2009) to medical students (Feri et al., 2016) and learners of English as a foreign language (Hu & Zhang, 2017). It has a similar effect across localities such as urban (Shen et al., 2009) and rural (Hardre & Reeve, 2003); and across nations such as in Bedouin students (Kaplan, 2018), Malaysian children (Kaur et al., 2014), and Japanese classrooms (Oga-Baldwin et al., 2017). In eastern traditional societies (Indonesia) or rigid societies (Russia), where teachers favored controlling strategies, the effect of autonomy support was lower (Chirkov & Ryan, 2001; Maulana et al., 2016). Apart from immediate benefits, teacher autonomy support had long-term benefits as perceptions of autonomy supportive motivational contexts in lower classes resulted in increased engagement and motivation and, in higher grades, alleviated anxiety and depression (Diseth et al., 2017; Murdock et al., 2000; Yu et al., 2016). Parent autonomy support also resulted in positive school outcomes manifested as better school adjustment, positive attitudes toward school, greater achievement, autonomous motivation, and improved psychological health (Garn et al., 2010; Soenens et al., 2007; Vasquez et al., 2016). Autonomy support from mothers was reported to be higher than that from fathers and resulted in higher autonomous motivation in children (Fadilah et al., 2019; Hughes et al., 2018). Even perceived parent autonomy support increased intrinsic motivation with children demonstrating greater enjoyment, effort, and achievement (Pazner, 2018). Of the different parenting styles, authoritative parents were most autonomy supportive allowing their children freedom in academic decision-making and thus fostering autonomous motivational orientation in children (Froiland, 2010), while permissive parents (due to their alienating attitude) and authoritarian parents (due to excessive control or helicopter parenting) were unsuccessful in motivating children (Kouros et al., 2017; Pesch et al., 2016).

On the contrary, controlling teacher behaviors in the classroom caused extrinsic motivation (Kaur et al., 2014), negatively influenced autonomous motivation (Chirkov & Ryan, 2001; Kaplan, 2018), exacerbated amotivation and dropout (Hardre & Reeve, 2003), and also decreased motivation and intention of future performance (Edmunds et al., 2008). Similarly, parental coercion caused controlled motivation (Grolnick et al., 2009) and was associated with higher disruptive behavior, substance use, lower resilience, low self-regulation, and increased amotivation, especially in high-risk students (Wong, 2008).

Autonomy Support on Motivation: Additive and Threshold Effects of Parent and Teacher Support

The influence of parent and teacher autonomy support may either be additive or have a threshold effect (Guay et al., 2013). Past researchers supporting *additive models* believed that with an increase in the number of supportive relationships (with father, mother, teacher, peers, siblings), the level of motivation will rise, and also found that children who received support from both parents and teachers performed better, felt more competent, and were intrinsically motivated for in-school and out-of-school tasks, as compared to children with only one autonomy supportive relationship (Feng et al., 2019; Guay et al., 2013). Such children had higher academic motivation, school attendance, study hours, grades, and classroom engagement but lower levels of problem behaviors (Furrer & Skinner, 2003; Martin & Collie, 2019; Rosenfeld et al., 2000).

One strong relationship is enough to act as a buffer against all problems and negative influences from every other source and, therefore, to maintain motivation termed as threshold model. Laursen and Mooney (2008) demonstrated that if any one of the relationships with mothers, fathers, and same-sex best friends is highly positive, it can act as a buffer against several negative relationships. Lack of autonomy support from a relationship can be balanced by positive support from another (van Aken & Asendorpf, 1997). The study concluded that while one parent could replace the support of the other parent, peers or teachers were unable to do so. At times, teacher autonomy support may be the more influential factor if parent autonomy support is absent, such as when parents are not educated or competent enough (Olusiji, 2016); at other times, parent autonomy support was the stronger and stabler influence compared to that from teachers who tend to change with grades (Ricard & Pelletier, 2016).

Intervention Studies

Earlier intervention studies on autonomy support were concerned with low teacher autonomy and parent autonomy, and explored ways of improving those. These studies revealed an array of interventions from long-term professional ones such as the Autonomy Supportive Intervention Program (Cheon & Reeve, 2015; Cheon et al., 2012; Cheon et al., 2018) and the Action Program for Learner Autonomy (Hu & Zhang, 2017) to brief workshops on autonomy support (Naeghel et al., 2016). Post-intervention results show that increased teaching efficacy, adoption of intrinsic instructional goals, and increased autonomy support from teachers changed the perceptions of experimental group students who exhibited greater need satisfaction, higher engagement, and lower amotivation (Cheon & Reeve, 2015; Cheon et al., 2018; Hu & Zhang, 2017; Naeghel et al., 2016; Reeve et al., 2004). Teachers increased their autonomy support even after the intervention was withdrawn and their students continued to show increase in interest, effort, and integrated motivation, and a simultaneous decrease in anxiety, pressure, and external motivation for a long period (Kaur et al., 2015). Parents undergoing training of autonomy supportive communication techniques also exhibited greater autonomy support and their children were found to show greater positive attitude toward homework (Froiland, 2011).

Gender, Age, Autonomy Support, and Motivation

Though parents and teachers provide the same support, gender difference in perception of autonomy support results in variations in academic motivation (Feng et al., 2019; Wentzel, 2002). Some researchers found that girls tend to perceive teacher autonomy support to be higher (Katz, 2017) and others show that girls experienced lower autonomy compared to boys (Diseth et al., 2017; Soenens et al., 2007). Parent and teacher autonomy support had higher positive gains for males while parental control had more detrimental effects for girls (Kouros et al., 2017; Naeghel et al., 2016).

Researchers demonstrate that younger students entering middle school possess lesser perception of autonomy support than well-adjusted older students, revealing that autonomy support is sensitive to school transition (Diseth et al., 2017; Murdock et al., 2000). Contradictory results show that older students perceive teacher or parent autonomy to be lower as they feel an increased need for autonomy and independence (Abdulhay, 2015; Feng et al., 2019; Katz et al., 2009; Vasquez et al., 2016) or because there occurs an increase in parental control with age of children (Gillet et al., 2012).

Research Questions

Using the SDT framework, this study seeks to examine the unique and additive effects of teacher and parent autonomy support on academic motivation of middle school children in a traditional society like India. Though earlier researchers (Feng et al., 2019; Laursen & Mooney, 2008) studied teacher and parent autonomy simultaneously, their unique and additive influence in the context of traditional societies where autonomy support is not much valued (Chirkov & Ryan, 2001), has not been thoroughly explored. The present study hypothesizes the following research questions:

- a. Whether teacher and parent autonomy support influence academic motivation of middle school children, and which of these exerts a stronger influence?
- b. Whether teacher and parent autonomy support have an additive effect on academic motivation of middle school children?
- c. Whether there exists a significant difference in academic motivation of middle school children with respect to age and gender?
- d. Whether there exist significant associations between the dimensions of teacher autonomy support and academic motivation of middle school children?

Method

Participants and Procedure

In this correlational research, the sample comprised of 522 middle school students (Male = 246, Female = 276; 176 = 6th graders, 182 = 7th graders, 164 = 8th graders; 11–14 years) of urban English medium schools of Kolkata (India), all of whom were normal children without any physical, behavioral or cognitive problems. Schools were chosen randomly and children were also chosen in random manner. Prior permission of Principals and informed consent of children were obtained. Honest opinions were requested and confidentiality assured. Survey was conducted in classroom with a 15-min break between questionnaires.

Measures

Three standardized questionnaires and one demographic scale was used in the study; A *General Information Schedule (GIS)* was used to collect the demographic information of students. This scale is developed based on Kuppaswamy (1981) scale.

The academic motivation of adolescents was measured using *Academic Motivation scale* (Vallerand et al., 1992) containing 28-item (both English

and French version), originally developed by Vallerand for high school children but later adapted by Kozok (2012) for middle school students. Motivation was measured along seven dimensions through seven subscales assessing three dimensions of Intrinsic Motivation (intrinsic motivation to know, to accomplish things, to experience stimulation), three dimensions of Extrinsic Motivation (external, introjected, identified regulation) and one for amotivation. The reliability of the scale as found by researcher was 0.778. Dimension-wise reliability coefficients are: Intrinsic motivation is 0.745, Extrinsic motivation is 0.762 and Amotivation is 0.796. The validity of this scale as assessed by researcher through inter item-dimension correlation ranged from 0.457 to 0.833 ($p < .01$). The items of this test were statements like “because I really like going to school” measured on a five point scale.

For measuring perceived teacher autonomy support, *Teacher as a social context questionnaire* (Belmont et al., 1992; Wellborn et al., 1988) consisting of 24 items measured on a 4 point scale ranging from “not at all true” to “very true” was applied. The three major dimensions of teacher influence viz. Autonomy (further subdivided into viz. controlling behavior, respect, choice, relevance), Structure (further subdivided into viz. clarity of expectations, contingency, instrumental help and support, adjustment of teaching strategies), Involvement (further subdivided into viz. affection, attunement, dedication of resources, dependability) are assessed using 8 questions each. The scale had two parts -student report and teacher report—the former was used for the study. The researchers used only 8 items measuring autonomy support which were like “my teacher gives a lot of choices about how I do my school work” and “my teacher listens to my ideas.” The Cronbach alpha of this scale was found to be 0.766 for all positive items and for the negative items it is 0.671. Dimension-wise reliability coefficients are: Involvement positive is 0.693, Involvement negative is 0.438, Structure positive is 0.639, Structure negative is 0.518, Autonomy support positive is 0.253 and Autonomy support negative is 0.390. The validity of this scale was found to range from 0.434 to 0.777 ($p < .01$) as per inter item-dimension correlation.

Perceived parent autonomy support was measured using *Parents as social context questionnaire* (Skinner et al., 1986), 24 item scale assessing six parenting dimensions (Warmth vs. Rejection, Structure vs. Chaos, Autonomy support vs. Coercion). The student report version of the scale was used in the survey and 4 items measuring Autonomy support were like “my parents accept me for myself.” Responses were measured on a 4 point scale ranging from “not at all true” to “very true.” The Cronbach’s alpha for all the positive dimensions was found to be 0.809 and for all the negative dimensions was 0.749. Dimension-wise reliability coefficients are: Warmth is 0.683, Rejection is 0.556, Structure is 0.487, Chaos is

0.603, Autonomy support is 0.691 and Coercion is 0.540. Inter item-dimension correlation which ranged from 0.557 to 0.742 ($p < .01$) was used to assess the validity of this scale.

Statistical Techniques

SPSS package was applied for analyzing data and Libre open office was used in creating diagrammatic representation of stepwise regression analysis. Present researchers conducted Pearson correlation, linear regression, stepwise regression between the independent variables: Teacher autonomy support and Parent autonomy support, dependent variable (academic motivation) and categorical variables (age and gender of children). Linear regressions were performed to explore the unique effects of teacher and parent autonomy support on academic motivation, while stepwise regression exhibited the additive effect of independent variables. For investigating the difference in academic motivation with respect to age and gender, one-way ANOVA and t -test were conducted.

Results

Preliminary Analyses

Normality of Data

The normality of data was ensured before initiating any kind of statistical analyses (Table 1). According to Central Limit theorem distribution of sample approaches normal distribution for sample size >30 and current study had a much larger sample size. The skewness and kurtosis for teacher autonomy support were found to be -0.286 and 0.117 ; for parent autonomy support were -0.837 and 0.615 ; and for academic motivation were found to be $c1.2$ and 1.2 respectively. The skewness and kurtosis values were within an acceptable range as per Curran et al. (1996) ($sk < 2$, $k < 7$); Kline (2005) ($sk < 3$, $k < 10$). Many researchers have found (-2 to $+2$) to be a normal range of skewness and kurtosis (Field, 2009; George & Mallery, 2010; Gravetter & Wallnau, 2012; Trochim & Donnelly, 2006).

Table 1. Descriptive statistics.

	Mean	Std. deviation	Skewness		Kurtosis	
			Statistic	Std. error	Statistic	Std. error
AMS	8.82	3.457	-1.216	.107	1.213	.213
T _{AS}	2.82	0.514	-0.286	.107	0.117	.213
P _{AS}	3.22	0.593	-0.837	.107	0.615	.213
P _C	2.18	0.680	0.523	.107	0.071	.213

Note. T_{AS}: Teacher autonomy support; P_{AS}: Parent autonomy support; P_C: Parent coercion; AMS: Academic Motivation of Students.

Descriptive Statistics and Preliminary Analysis

Means and standard deviation of academic motivation ($M = 8.82$, $SD = 3.457$), teacher autonomy support ($M = 2.82$, $SD = 0.514$), parent autonomy support ($M = 3.22$, $SD = 0.593$) were also within expected range (Table 1). The means and SD of academic motivation for boys was ($M = 8.37$, $SD = 3.71$) and girls was ($M = 9.21$, $SD = 3.16$) while means and SD of academic motivation for sixth graders ($M = 9.48$, $SD = 3.43$), seventh graders ($M = 8.90$, $SD = 3.28$) and eighth graders ($M = 8.00$, $SD = 3.52$) respectively. Before conducting statistical analyses, the assumptions regarding linear and multiple regressions, ANOVA and t -test were checked. Pearson correlations were performed, and results showed significant associations between variables.

Testing the Hypotheses

Correlation among Variables

Correlations among predictor and outcome variables are displayed (Appendix Tables A.2 and A.3). Teacher autonomy support ($r = .369$, $p < .001$) and its dimension control ($r = -.243$, $p < .001$) was significantly correlated with academic motivation while other dimensions as choice ($r = .073$, $p < .095$), respect ($r = .000$, $p < .983$) and relevance ($r = -.010$, $p < .825$) showed no correlation. Parent autonomy support ($r = .261$, $p < .001$) and parent coercion ($r = -.229$, $p < .001$) were significantly correlated to academic motivation while parent scale had no sub dimensions. These significant associations between variables provided evidence in support of conducting regression analyses to determine predictive power of the variables.

Regression Analyses

Linear Regressions. Linear regressions (Tables 2 and 3) were performed to find out which one of teacher or parent autonomy support has stronger predictive power related to academic motivation. Regression analysis showed teacher autonomy support accounted for 13.6% ($R^2 = .136$) variation in academic motivation and this variation was positive ($\beta = .369$) and significant (Cohen, 1988). The value of $F(1,520) = 81.771$, $p < .001$ shows that the model is significant as p -value is less than alpha .05 level,

Table 2. Regression analysis of academic motivation of students on teacher autonomy support.

Factor	Predictor	R^2	F	Unstd. coeff B	SE_B	β	t
AMS	T_{AS}	.136	81.771***	2.479	.274	.369	9.043***

Note. T_{AS} : Teacher autonomy support; AMS: Academic Motivation of Students.

*** $p < .001$.

Table 3. Regression analysis of academic motivation of students on parent autonomy support.

Factor	Predictor	R^2	F	Unstd. coeff B	SE_B	β	t
AMS	P_{AS}	.068	37.992***	1.520	.247	.261	6.164***

Note. P_{AS} : Parent autonomy support; AMS: Academic Motivation of Students.
*** $p < .001$.

Table 4. Additive effect of parent and teacher autonomy support.

Predictor	R^2	F	β	t
Model 1				
T_{AS}	.136	81.771***	.369	9.043***
Model 2				
T_{AS}			.327	7.958***
P_{AS}	.169	52.936***	.188	4.578***

Note. T_{AS} : Teacher autonomy support; P_{AS} : Parent autonomy support; AMS: Academic Motivation of Students (Dependent variable).
*** $p < .001$.

with $t = 9.043$, $p < .001$. The regression equation was found to be $\hat{Y} = 1.817 + 2.479X$.

Regression analysis showed parent autonomy support accounted for 6.8% ($R^2 = .068$) variation in academic motivation and this variation was positive ($\beta = .261$) and significant (Cohen, 1988). The value of $F(1,520) = 37.992$, $p < .001$ shows that the model is significant as p -value is less than alpha .05 level, with $t = 6.164$, $p < .001$. The regression equation was found to be $\hat{Y} = 3.932 + 1.520X$.

Stepwise Regression

To examine the additive effect of Teacher autonomy support and Parent autonomy support on Academic Motivation of children, Stepwise Regression analysis (Table 4) was conducted.

Step 1: Here, the first variable teacher autonomy support was introduced in the regression equation meaning that this variable has had the greatest effect; the correlation coefficient, coefficient of determination and the adjusted determination coefficient were calculated as equal to $R = .369$, $R^2 = .136$, $R^2_{adj} = .134$, respectively. The value of $F(1,520) = 81.771$ was significant at $p < .001$ level and $t = 9.043$ at $p < .001$, so it can be said that teacher autonomy support alone contributes to 13.6% variation in dependent variable AMS. The regression equation of this step is $Y^a = 1.817 + 2.479X$

Step 2: At this stage, parent autonomy support was introduced in the regression equation meaning this variable has lesser effect than the former; in this stage the correlation coefficient, coefficient of determination and the adjusted determination coefficient were $R = .412$, $R^2 = .169$,

$R^2_{adj} = .166$ respectively. Value of $F(1,520) = 52.936$ was significant at $p < .001$ level, so it can be said that teacher autonomy support and parent autonomy support additively contributed to 16.9% variation in dependent variable AMS. Standardized coefficients for Teacher autonomy support were $\beta = .327$, $t = 7.958$, $p < .001$ and Parent autonomy support were $\beta = .188$, $t = 4.578$, $p < .001$. The regression equation of this second step is $\hat{Y} = 2.197 T_{AS} + 1.095 P_{AS} - 0.905$

Effect of Categorical Variables. Gender Differences

Independent sample t-test was conducted to find out whether gender causes any difference in academic motivation of children. The Levene's test is not *accepted* (7.154 , $p < .008$) so equal variances not assumed row is read for each variable tested when interpreting the *t-test*. The *t-test* shows ($t = -2.739$, $p < .006$, $MD = -.833$) that academic motivation of boys and girls are significantly different and girls were more motivated than boys ([Appendix Table A.4](#)).

Age Related Differences

One-way ANOVA was conducted to examine whether academic motivation changes with increase in grade level. The Levene's statistic = $.532$, $p = .588$, thus requirement of homogeneity of variance has been met, and the ANOVA test is robust. There is a statistically significant difference between groups as demonstrated by one-way ANOVA [$F(2,519) = 8.109$, $p = .001$]. A Tukey post hoc test showed that academic motivation decreases from sixth to eighth grade ([Appendix Tables A.5](#) and [A.6](#)).

Discussion

Unique Effects: Teacher and Parent Autonomy Support

In this study, the researchers were concerned with the unique effects of teacher and parent autonomy support and attempted to find out which one is a stronger influence on academic motivation of children. Regression analysis reveals that teacher autonomy support is a much stronger predictor of academic motivation than parent autonomy support. Past literature also revealed how teacher autonomy support increased motivation, academic achievement, and academic performance in children of all age groups from elementary to college (Cheon et al., 2018; Diseth et al., 2017; Feri et al., 2016; Hu & Zhang, 2017; Katz, 2017; Oga-Baldwin et al., 2017; Ricard & Pelletier, 2016; Soenens et al., 2009). Earlier researchers found that students in both urban and rural areas benefited from teacher autonomy support, and displayed increased self-determined motivation, perceived competence, academic persistence, and lower

dropout (Hardre & Reeve, 2003; Shen et al., 2009). Teacher autonomy support was found to be effective across nations in increasing motivation (Kaplan, 2018; Kaur et al., 2014) and even the perception of autonomy support resulted in positive academic outcomes (Oga-Baldwin et al., 2017). In traditional eastern societies, children were found to be less affected by teacher autonomy support (Maulana et al., 2016) because in such societies, for instance India, adults favor control over autonomy (Chirkov & Ryan, 2001). Being accustomed and conditioned to authoritarian behavior exhibited by parents and teachers, these children are confused without teacher directions in the classroom (Piko & Pinczes, 2014) and are unable to benefit from autonomy support even if they receive it (Assor et al., 2002).

The present study found parent autonomy support to be comparatively less significant as a determinant of academic motivation in comparison to teacher autonomy support. Past researchers support this finding and show teacher support to be more important in situations where parents were incompetent and/or uneducated (Olusiji, 2016). A meta-analytic review of 11 studies found that parent autonomy support has a stronger relationship with nonacademic motivational outcomes than academic self-esteem and motivation (Crowther, 2014). While it may be weak, yet parent support being a more stable determinant unlike teachers who keep changing with grade (Ricard & Pelletier, 2016) has immediate benefits in the form of greater enjoyment, enhanced effort, higher autonomous motivation, increased school adjustment, and improved psychological health (Fadilah et al., 2019; Garn et al., 2010; Hughes et al., 2018; Pazner, 2018; Soenens et al., 2007; Vasquez et al., 2016). Also, parental support exerts a continued impact on children even after they leave home for college (Kouros et al., 2017).

Additive Effect: Teacher and Parent Autonomy Support

From stepwise regression analysis, it is clear that teacher autonomy support accounted for the maximum variation in academic motivation but parent autonomy support could contribute over and above it thus suggesting the existence of an additive effect. Earlier research also showed how an increase in the number of autonomy supportive relationships (with father, mother, teacher, peers, siblings), i.e., receiving support from multiple sources, resulted in better educational outcomes and increased motivation in children compared to children receiving support from only one or two sources (Guay et al., 2013; Laursen & Mooney, 2008). The additive effect of parent and teacher autonomy resulted in positive school-related outcomes, including higher attendance, better achievement, and lower disruptive behavior as well as positive home-related outcomes,

including increased effort, longer study hours, and homework motivation (Feng et al., 2019; Furrer & Skinner, 2003; Rosenfeld et al., 2000; Martin & Collie, 2019). Similarly, support from both parents also had an additive impact, resulting in a larger increase in autonomous motivation compared to children with only one supportive parent (Vasquez et al., 2016). Laursen et al. (2006) concluded that it is not only the support from parents and teachers but also autonomy support from close friends and romantic partners that results in additive benefits, with adolescents consequently exhibiting greater self-worth, higher competence, and intrinsic orientation. However, as was the case with unique effects, the additive effects of parent and teacher support were also comparatively less impactful in traditional societies compared to western societies (Chirkov & Ryan, 2001).

Dimensions: Teacher and Parent Autonomy Support

The present study aimed to investigate the effects of dimensions of teacher autonomy support (choice, control, respect, relevance, and positive regard) on academic motivation.

Choice of academic tasks according to one's own values, beliefs, and interests and choosing task partners for group tasks promoted autonomy by fostering independent thinking, volitional activity, and respect of students' perspectives, and thus increased motivation, achievement, and emotional functioning of students (Koh & Frick, 2010; Roeser et al., 1998). Teachers who provide choice, avoid intrusion, or tolerate criticism create a space that allows students to realize their personal goals, and such provision of choice increases self-competence and motivation (Roeser & Eccles, 1998). In the present study, choice had no effect on academic motivation because children accustomed to the norms of a controlling traditional society were unable to benefit from it. Earlier literature shows that choice is not beneficial for students lacking personal goals (Assor et al., 2002) or those unable to use it, being accustomed to control (Iyengar & Lepper, 1999). Moreover, at times, choices become irrelevant if none of the alternatives are aligned with the child's interests.

Control in a classroom occurs when a teacher gives frequent directives and uses controlling language, sets rules without student input, interferes with students' preferred pace or volitional acts, disallows participation in classroom decisions, does not accept opinions or critical suggestions, avoids providing rationale for punishment, and uses external behavior modifications (Assor et al., 2005). The present researchers also found that teacher control was negatively associated with academic motivation, a finding in line with earlier research showing how controlled classroom climate causes external goal orientation (Kaur et al., 2014; Noels et al.,

1999), reduced autonomous motivation (Chirkov & Ryan, 2001; Kaplan, 2018), and increase danger, anxiety, amotivation, and dropout (Assor et al., 2005; Haerens et al., 2015; Hardre & Reeve, 2003). Being rigid, controlling teachers tend to set rules for every academic endeavor, thus taking away the joy of learning and the feeling of volition. Past studies found that teachers in traditional societies were more controlling (Maulana et al., 2016; Piko & Pinczes, 2014; Wentzel, 2002) and the present study, conducted in a traditional society, also reported that controlling teachers reduced motivation. Teachers in traditional societies develop controlling attitudes due to causes such as overcrowded schools, negative emotions and amotivation shown by students (Assor et al., 2005), presence of at-risk students (Hornstra et al., 2015) and restricted school environments where the performance of teachers is not appreciated (Suogari & Sifakis, 2007). Sometimes to maintain structure in the class, a teacher may reduce student autonomy and peer interaction and thus effect amotivation, proving that the personal goal is as important as classroom goals (Chophy, 2018).

Relevance or providing rationale is more effective than choice; even when choice is provided, all the tasks may be uninteresting to the student but in the case of relevance, the difference lies in identifying the student's needs and developing tasks based on his goals, helping him realize how his needs are connected to assigned tasks, or assisting him in developing task-related goals (Assor et al., 2002). Upon understanding the relevance of a task, students can better integrate it with their values, beliefs, and interests, and this enhances their motivation, academic achievement, and emotional functioning (Roeser et al., 1998). In this study, relevance had no effect on academic motivation, thus showing that high expectations and autonomy support from the teacher could not positively influence motivation for such assignments that were not relevant to the child's innate goals and values (Wentzel, 2002). In the case of most developing nations, education is mainly job-oriented and may not be relevant to a child's personal goals. The education system in India too is performance-oriented and caters to the needs of future professions, thus incorporating parameters that are rarely relevant to an adolescent's life goals.

Respect (acknowledging the student's perspective) is a fundamental aspect for developing autonomy in children and implies the provision of opportunity to voice one's opinion and promotes sense of belongingness in students (Kaur et al., 2014). It especially fosters autonomy in adolescents who are able to discern the relationship between the school curriculum and their life goals and can provide critical suggestions for improvement; in contrast, suppression of student criticism will directly affect their emotions and reduce engagement or motivation (Assor et al., 2002; Kaplan, 2018; Koh & Frick, 2010). The assurance that their

opinions were valued caused fewer disciplinary problems and fewer doubts about the importance of education (Garn et al., 2010; Soenens et al., 2007; Vasquez et al., 2016) while positive peer expectations improved classroom engagement and motivation (Guay et al., 2013; Laursen & Mooney, 2008) but this may not be possible in a traditional societal structure such as India (Murdock et al., 2000). The present study found no association of this dimension with motivation, which may be because the rigid curriculum structure where had no scope to incorporate students' views, even if they were to be sought.

Another dimension of autonomy not measured in the study, teachers' *conditional negative regard*, was found to predict autonomy support negatively in adolescents in traditional societies (Kaplan, 2018) while positive teacher regard increased competence, self-esteem, and motivation (Roeser & Eccles, 1998).

The parent questionnaire contained no sub-dimensions but was a scale containing opposing dimensions of autonomy and coercion. Parent coercion was significantly negatively correlated with academic motivation as it forced adolescents to perform activities they personally dislike, just to fulfill parental expectations or to yield to parental pressure. Previous studies also showed similar results as coercion resulted in external motivation, higher disruptive behavior, lower resilience, low self-regulation, and amotivation (Grolnick et al., 2009; Wong, 2008).

Age and Gender Effects

The test results showed that there was a significant difference in academic motivation with respect to gender, and girls were found to be better motivated than boys. This may have resulted because the same amount of parent and teacher autonomy support is perceived differently by both genders, causing differences in their motivation levels (Feng et al., 2019; Wentzel, 2002). Girls perceived autonomy support to be higher, as compared to boys, and exhibited higher motivation (Katz, 2017) while the same amount of support was insufficient for boys who demanded more autonomy (Garcia-Perez et al., 2018). At times, in reality, parents and teachers mete out differential treatment; fathers were seen to provide more autonomy support to daughters while maternal support was gender-neutral (Hughes et al., 2018). Again, the same or similar treatment may have differential effects as higher level of parental control depressed well-being in girls but not in boys; similarly, higher autonomy support achieved better positive outcomes in boys rather than girls (Kouros et al., 2017; Naeghel et al., 2016). Girls perceiving lower autonomy support exhibited lower levels of motivation, adjustment, and psychosocial functioning (Diseth et al., 2017; Soenens et al., 2007).

ANOVA results reveal that children in sixth grade (starting middle school) show greater motivation than children in eighth grade (about to finish middle school). Past literature found that younger children of sixth grade are motivated as they feel teacher support is adequate; as they move up through the grades, while teacher autonomy support remains unchanged yet its perception decreases (because adolescents seek greater independence) and this lowers motivation (Gillet et al., 2012). Katz et al. (2009) revealed that in comparison to elementary school students and middle school students perceived teacher support to be lower. Abdulhay (2015) found that sophomore students perceived teacher autonomy support to be adequate while senior and junior students felt it was decreasing continuously. In case of parent autonomy support too, younger children perceived higher level compared to older children who demanded greater freedom (Feng et al., 2019; Gillet et al., 2012; Vasquez et al., 2016). Parent autonomy support has more influence on children in lower grades and middle school than in high school or colleges when the children move out of home and become physically distanced from the parents (Garcia & Pintrich, 1996; Kouros et al., 2017; Vasquez et al., 2016). Contradictory findings show that younger students transitioning from elementary school perceive lower autonomy support than older students who are well adjusted to school, showing that autonomy support is sensitive to a change in the school environment (Diseth et al., 2017). Autonomy supportive perception and motivation were reported to be higher toward the end of middle school (ninth grade) compared to the beginning (seventh grade) (Murdock et al., 2000).

Implications

This study highlights the importance of teacher autonomy support and suggests the necessity of conducting training programs for teachers to make them autonomy supportive. This skill needs to be inculcated not only in pre-service teachers but also experienced teachers, especially those in favor of controlling strategies. In developing countries where the study was conducted, such training programs are vital for both parents and teachers who believe in authoritarian behavior. The researchers are of the opinion that parents should also be made aware of the detrimental effects of helicopter parenting and the excessive control it implies. Moreover, it is crucial for parents and teachers to understand the gender and age differences as the same amount of strictness or freedom cannot be handled by all children of all ages and both genders.

Conclusions, Limitations, and Future Research

Though it highlights some important findings regarding teacher and parent autonomy support, this study is not free from limitations. The correlational study design made causal interpretations difficult. In future research, experimental studies could be undertaken to provide interventions to increase the provision of autonomy support by teachers and parents and the subsequent changes in academic motivation could be observed.

Secondly, the study was based on self-reported data used to discover variations in perceived autonomy support but this carries the inherent possibility of bias. Young children are often unable to provide a clear expression of their perceptions or do so out of fear. Thus, the researchers explained the importance of the project and guaranteed confidentiality of responses. Future researchers could use more objective measures of motivation as grades or scores.

Thirdly, the sample was collected from a metropolitan city in India where the children may have had similar mindsets, and this may have affected the generalizability of results. However, across the world, all adolescents value autonomy so the findings are likely to hold in other countries as well.

Fourthly, the researchers studied only one basic psychological need, excluding structure and relatedness. Future research could include the latter as well to observe the interactive effects. However, as earlier research shows that autonomy support is the major influence on motivation, this paper wanted to study its effect in isolation.

As a concluding statement, it can be suggested that some other areas regarding autonomy support require attention. Future investigations could make a comparative study between autonomy support in well-adjusted and at-risk children in traditional societies. Moreover, in a multicultural society, the effect of caste and religion in the provision of autonomy support could be examined. Future research could also study the effect of mild control in case of children with defiant nature, disability, or amotivation.

Authors' Contributions

Both the authors (RB and SH) contributed equally to the study conception and design. Material preparation, data collection and analysis was conducted by RB under the constant supervision and assistance from SH. The initial draft was written by RB and refined, revised and enhanced step by step through the supervision and assistance of SH. Both authors read and approved the final version of the manuscript.

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No potential conflict of interest was reported by the author(s).

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Appendix

Table A.1. Nature of the total sample.

Sample	Category	In percentage (n = 522)
Gender	Male	246 (47.12%)
	Female	276 (52.87%)
Grade	Sixth	176 (33.71%)
	Seventh	182 (34.86%)
	Eighth	164 (31.42%)
School	Govt	205 (39.27%)
	Private	317 (60.73%)
Zones	North	222 (42.52%)
	South	102 (19.54%)
	East	115 (22.03%)
	West	(–)
	Central	83 (15.9%)

Table A.2. Correlation matrix.

	AMS	T _{AS}	P _{AS}	P _C
AMS	1			
T _{AS}	.369**	1		
P _{AS}	.261**	.224**	1	
P _C	-.229**	-.190**	-.448**	1

Note. T_{AS}: Teacher autonomy support; P_{AS}: Parent autonomy support; P_C: Parent coercion; AMS: Academic Motivation of Students.

** $p < .01$.

Table A.3. Dimensions of teacher autonomy support: correlation matrix.

	AMS	T _{CH}	T _{CTR}	T _R	T _{REL}
AMS	1				
T _{CH}	.073	1			
T _{CTR}	-.243**	-.043	1		
T _R	.000	.140**	.042	1	
T _{REL}	-.010	.059	.024	.101*	1

Note. AMS: Academic Motivation of Students; T_{CH}: Choice; T_{CTR}: Control; T_R: Respect; T_{REL}: Relevance.

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

Table A.4. Independent sample *t*-test between gender and Academic Motivation of Students.

	Levene's test for equality of variances		t-Test for equality of means				95% CI of the difference	
	<i>F</i>	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean difference	Lower	Upper
AMS	7.154	.008	-2.739	483.564	.006	-.832855	-1.430	-.235
	Equal variances assumed							
	not assumed							

Note. AMS: Academic Motivation of Students.

Table A.5. One-way ANOVA of categorical variable grade of students in relation to Academic Motivation of Students.

	<i>N</i>	Means	SD	Df	<i>F</i>	Sig.
6th	176	9.49	3.429	2,519	8.109***	.000
7th	182	8.91	3.284			
8th	164	8.01	3.529			
Total	522	8.82	3.457			

*** $p < .001$.

Table A.6. Post hoc test in One-way ANOVA of Academic Motivation of Students—Tukey HSD.

Grade (I)	Grade (J)	Mean difference (I-J)	Sig.	Levene Statistic	df1, df2
6th	7th	.579	.244	.532†	2, 519
	8th	1.482*	.000		
7th	6th	-.579	.244		
	8th	.903*	.038		
8th	6th	-1.482*	.000		
	7th	-.903*	.038		

* $p < .05$; † $p < .588$.