Procrastination and Anxiety amongst Indian College Students: The Role of Perceived Parenting Styles, Locus of Control and Self-Efficacy

Nayantara Vohra and Simantini Ghosh

Department of Psychology, Ashoka University

Author Note

Simantini Ghosh: <https://orcid.org/0000-0002-0791-7255>

Nayantara Vohra: <https://orcid.org/0000-0001-6141-1610>

Nayantara Vohra is now at the Department of Counselling and Clinical Psychology, Teachers College, Columbia University.

Both authors have no conflict of interest to disclose.

Correspondence concerning this article should be addressed to Simantini Ghosh, Department of Psychology, Ashoka University, India. Email: simi@ashoka.edu.in

Abstract

The purpose of the present study was to investigate the factors associated with procrastination and anxiety, both of which can impact a student's college experience significantly. The research question we examined was whether perceived parenting styles, locus of control and self-efficacy could predict anxiety and procrastination in our sample of college students. The participants were college students in India ($N = 156$), who responded to an online survey with self-report questionnaires measuring the variables of interest. The results found that procrastination was significantly correlated with general ($r = -0.597$) and social self-efficacy ($r = -0.241$), and locus of control ($r = 0.276$), while anxiety was significantly correlated with these variables ($r = -0.420$, $r = -0.248$, $r = 0.294$, respectively) and the acceptance-involvement dimension of parenting ($r = -0.227$). A multivariate regression was conducted with procrastination and anxiety as outcome variables, locus of control, social and general self-efficacy, parental acceptance-involvement, parental strictness-supervision, and helicopter parenting included as covariates and gender, history of child sexual abuse, history of parental neglect, and ongoing treatment for a mental health concern included as factors. These predictors significantly contributed to the variance in procrastination ($R^2 = 0.3826$) and anxiety ($R^2 = 0.4009$). General self-efficacy emerged as the only significant predictor ($\beta = -0.612$) of procrastination in the model described, while gender ($\beta = -0.117$), ongoing treatment for a mental health concern ($\beta = 0.147$) and general self-efficacy ($\beta = -0.451$) emerged as significant predictors of anxiety. These results suggest that general self-efficacy can be a variable of further investigation for interventions targeted towards improving procrastination and anxiety among college students.

Keywords: perceived parenting styles, locus of control, self-efficacy, procrastination, anxiety

Procrastination and Anxiety amongst Indian College Students: The Role of Perceived Parenting Styles, Locus of Control and Self-Efficacy

College life can be challenging for many students who are trying to manage their time and balance a number of different domains like extra-curriculars, social engagements, other roles and responsibilities, as well as their academics. According to a survey by the American Psychiatric Association, the percentage of U.S. college students undergoing treatment for mental health concerns has witnessed an increase from 19 to 34% between 2007 and 2017 (Lipson, Lattie, & Eisenberg, 2018). In India, too, the conversation surrounding college student mental health has seen an upward trend with a flurry of media reports concerning this topic. While systematic research in this area is still limited, a recent study found that around 15% of college students had either severe or extremely severe depression and around 37% had moderate depression (Deb, Banu, Thomas, Vardhan, Rao, & Khawaja, 2016).

With their hectic schedules, college students also often struggle with academic procrastination and anxiety. Procrastination, often conceptualised as a maladaptive behaviour, can be defined as the voluntary delay of a course of action that an individual originally intended to carry out, despite being aware of the adverse consequences of the delay (Steel, 2007, p. 66). Thus, procrastination is different from merely choosing to carry out a course of action at a later time. Researchers investigating academic procrastination have noted that as many as 70-95% of undergraduate students engage in this behaviour (Klassen, Krawchuk, & Rajani, 2008, p. 916).

Yet, despite the high rates of procrastination, it appears to be a phenomenon that causes distress to the individual, with an overwhelming majority of people who procrastinate claiming that they would like to reduce it (O'Brien, 2002). This feeling of distress or discomfort is generally considered to be anxiety (Haycock, McCarthy, & Skay, 1998, p. 317). Not surprisingly, some researchers even include the experience of anxiety as a significant

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part of their definition of procrastination (Rothblum, Solomon, & Murakami, 1986, p. 387).

Anxiety is an unpleasant internal state which involves the anticipation of a threatening situation that may occur in the future. It is different from fear, which occurs in response to a real or definite threat. Anxiety is associated with both avoidant behaviour and cautious or vigilant behaviour in preparation for the anticipated threat (American Psychiatric Association, 2013).

Previously, procrastination has been conceptualized from a behavioural approach as a learned behaviour that develops from the human tendency to engage in pleasurable activities that are rewarding in the short-term (McCown, 1986), or from a psychodynamic approach, where it is understood as a means of rebellion against parents who are overindulgent or overly demanding (Blatt & Quinlan, 1967; McCown, Petzel, & Rupert, 1987).

Procrastination has also been conceptualised in terms of cognitive factors like irrational beliefs, attribution style, self-esteem, self-handicapping strategies etc. (Beswick, Rothblum, & Mann, 1988; Solomon & Rothblum, 1984; Rothblum, Solomon, & Murakami, 1986; Ferrari, 1992).

Anxiety and problematic procrastination can end up defining a student's entire college experience. Previous research has demonstrated that procrastination is associated with a number of negative outcomes like depressive symptoms, low self-esteem, missed deadlines, test anxiety, low academic performance etc. (Beswick, Rothblum, & Mann, 1988; Ferrari, 1991; Ferrari, Johnson, & McCown, 1995; Lay, 1986, 1987; Lay & Burns, 1991; Solomon & Rothblum, 1984). By investigating the predictive factors related to procrastination and anxiety, the current study contributes to the literature on the mental health of college students in India. There is an urgent need for such research so that preventative and remedial measures can be developed based on it. It is especially important that the research is grounded in the Indian context because factors like parenting, perceived control and gender often play out

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differently than in the West given the collectivistic nature of Indian society. The central purpose of our study is to examine the association of perceived parenting styles, locus of control and self-efficacy with procrastination and anxiety amongst Indian college students.

Perceived Parenting Styles

Parental behaviour has been investigated and categorised into distinct ‘parenting styles’ based on the parents’ attitudes, style of discipline, communication and other behaviours towards the child. Baumrind’s classification of parenting styles, based on the parent’s degree of demandingness and responsiveness, is still the most widely used (McClun & Merrell, 1998). Demandingness is conceptualised as the setting of expectations and goals for the child, enforced through demands for maturity, supervision and disciplinary action while responsiveness is conceptualised as the parents’ efforts towards fostering individuality and self-regulation by being supportive and responsive to children’s needs (Baumrind, 1991, p. 61-62). Parents who use an authoritarian style of parenting are usually high on demandingness and low on responsiveness (Soysa & Weiss, 2014, p. 78) while parents with a permissive parenting style are usually highly responsive and low on demandingness (McClun & Merrell, 1998, p. 383). The authoritative parenting style, on the other hand, creates a balance between the degree of demandingness and responsiveness. Authoritative parents set high expectations for the child, however, they are responsive to the child’s questions and needs and are willing to discuss the rationale behind the rules they have put in place for the child (Soysa & Weiss, 2014, p. 78).

Adding to Baumrind’s typology, Maccoby and Martin (1983) distinguished between parents whose low levels of control (or demandingness) indicated trust in the child or indulgence in the child’s wishes, and parents whose low levels of control indicated a lack of engagement with the child or a deflection of child-rearing responsibilities (Lamborn, Mounts,

Steinberg, & Dornbusch, 1991). These parenting styles were named ‘indulgent permissive’ and ‘neglectful permissive’ respectively (Lamborn *et al.*, 1991).

Table 1

Maccoby & Martin’s Parenting Styles

	High Responsiveness	Low Responsiveness
High Demandingness	Authoritative	Authoritarian
Low Demandingness	Indulgent Permissive	Neglectful Permissive

The current study used an instrument (Lamborn *et al.*, 1991) roughly based on Maccoby and Martin’s (1983) model that measures parenting on two dimensions, namely, acceptance-involvement (similar to responsiveness) and strictness-supervision (similar to demandingness). By retaining the quantitative scores on these two subscales rather than creating categories for parenting styles, we were able to separate the associations of acceptance-involvement and strictness-supervision with procrastination and anxiety. Thus, we could perform a more thorough analysis of perceived parenting variables.

Cultural variables play a major role in shaping parenting styles. For instance, collectivist cultures tend to emphasise family obligations and interdependence, whereas individualistic cultures tend to emphasise independence and autonomy. Often, in collectivist cultures, restrictiveness is not associated with a lack of warmth (Sondhi, 2017). In fact, it is common for parents to expect obedience, adherence to family values and fulfilment of familial social obligations. Such interdependence tends to be more or less absent in families in individualistic cultures (Sondhi, 2017). Thus, these cultural differences must be considered when drawing conclusions regarding the role of parenting styles.

In general, the authoritative parenting style tends to promote positive emotional development and social development in children and adolescents (McClun & Merrell, 1998,

p. 388). For instance, children with authoritative parents tend to have lower levels of anxiety and better academic performance as compared to other children (Dornbusch, Ritter, & Leiderman, 1987; Gruener, Muris, & Merckelbach, 1999; Muris, Meesters, Merckelbach, & Hülßenbeck, 2000; Muris & Merckelbach, 1998; Silva *et al.*, 2007; Spera, 2005). The paucity of research is apparent in studies on procrastination and parenting styles, specifically in India. Even in the West, little has been done to directly investigate the association of parenting styles with procrastination. A recent study investigated the association of authoritative and authoritarian parenting styles with test anxiety, focusing on the mediating effect of maladaptive perfectionism and academic procrastination. Results indicated that perceived authoritarian parenting by the father was positively correlated with test anxiety, with both academic procrastination and maladaptive perfectionism serving as mediators in the relationship (Soysa & Weiss, 2014). Given the conceptual and empirical link between procrastination and anxiety, we expected that perceived parenting factors would be related to procrastination. These associations were investigated in the current study.

Another form of parenting which has gained research attention in recent years is helicopter parenting, which is employed by parents who are over-involved and over-protective of their children (Odenweller, Booth-Butterfield, & Weber, 2014). They may intervene and make decisions, or try to solve problems for their children and show personal investment in their goals. It has been suggested that helicopter parenting could adversely affect the child's self-esteem and confidence (Rutherford, 2011) and contribute to the development of an external locus of control (Gibbs, 2009). Although helicopter parenting has been found to be weakly associated with the authoritarian parenting style (Odenweller *et al.*, 2014), it is a distinct construct that does not fit into previous typologies of parenting styles. Given that psychodynamic theories of procrastination conceptualise it as a form of rebellion against overly demanding or indulgent parents (Blatt & Quinlan, 1967; McCown, Petzel, &

Rupert, 1987), it would be interesting to investigate the association between helicopter parenting and procrastination. Further, helicopter parenting has been found to be positively related to neuroticism (Odenweller *et al.*, 2014), which suggests that it may also be related to anxiety.

Like most psychological research, it is evident that the studies on parenting styles conducted in the Western context greatly outnumber the limited studies conducted in other cultures. As a result, the findings from these non-Western empirical studies are equivocal. A larger body of rigorous research about perceived parenting styles and procrastination and anxiety is required in the Indian context to draw robust conclusions that are applicable to the Indian population.

Locus of Control

Locus of control orientation refers to the individual's perception of control over their own behaviour. A person with an internal locus of control orientation perceives a sense of internal control over behaviour, whereas a person with an external locus of control believes that his or her behaviour is determined by an external force – like fate, luck, chance or powerful others – outside of his or her control (McClun & Merrell, 1998). An external locus of control has been found to be associated with negative outcomes in terms of academic achievement, mental health etc. while an internal orientation has been associated with positive outcomes in these areas (McClun & Merrell, 1998).

A few studies have investigated the association of locus of control with procrastination and anxiety related to academics. In a study with undergraduate students, it was found that those who were internally oriented reported lower procrastination and lower test anxiety scores as compared to those participants who were externally oriented (Carden, Bryant, & Moss, 2004). Another study conducted with a sample of Israeli-Jewish students found that individuals with an internal locus of control orientation reported lower anxiety, a

higher level of aspiration and greater academic success (Bar-Tal, Kfir, Bar-Zohar, & Chen, 1980).

While most of this research is based on self-reported data, an experimental study about locus of control & procrastination conducted with college students found similar results (Janssen & Carton, 1999). Students randomly assigned to two levels of task difficulty were instructed to read a given psychology article and answer two questions based on the article. One group was assigned an easy article, meant for laypersons, while the other group was assigned a relatively difficult article from a research journal. Interestingly, task difficulty was not associated with the students' procrastination levels. Instead, results indicated that the students with an internal locus of control with respect to academic outcomes began working on the assignment before students with an external locus of control, regardless of task difficulty. They also completed and submitted the assignment faster than the students with an external orientation (Janssen & Carton, 1999).

Self-Efficacy

Self-efficacy refers to an individual's perception of his or her ability to perform well in a particular situation (Haycock, McCarthy, & Skay, 1998, p. 318). According to self-efficacy theory, individuals' beliefs in their capabilities play an important role in determining their choice of tasks, the amount of effort put into the task, persistence and ultimately performance (Bandura, 1997). In addition, low self-efficacy can result in behaviour avoidance, whereas high self-efficacy can contribute to behaviour initiation as well as persistence (Haycock, McCarthy, & Skay, 1998, p. 318). It is important to note that, unlike self-esteem, which is a global measure of self-worth, self-efficacy is a domain-specific factor that is often assessed in relation to a particular task or particular kinds of tasks (Klassen, Krawchuk, & Rajani, 2008, p. 918). Self-efficacy can be divided into two components – efficacy expectations, which are individuals' beliefs regarding their ability to accomplish

particular tasks, and outcome expectations or individuals' beliefs regarding the probability of particular behaviours leading to desired outcomes (Bandura, 1986).

Individuals with high efficacy expectations have been found to report lower levels of procrastination than those with low efficacy expectations. A study conducted with college students found that while anxiety levels and efficacy expectations had significant relationships with procrastination individually, only cumulative efficacy strength (a measure of the individual's degree of confidence that he or she can complete a task) emerged as a significant predictor when these variables were entered into a regression model (Haycock, McCarthy, & Skay, 1998, p. 321). Another study found that while academic self-efficacy was correlated with procrastination, it did not emerge as a significant predictor of procrastination when self-efficacy for self-regulation was entered into the hierarchical regression model (Klassen, Krawchuk, & Rajani, 2008, p. 922). Self-efficacy for self-regulation is defined as a person's perception of their ability to successfully self-regulate their learning. This could include using different learning strategies, resisting distractions, finishing assignments on time, participating in class discussions etc. (Klassen, Krawchuk, & Rajani, 2008, p. 918). Since self-efficacy by itself does not emerge as a clear predictor of procrastination, more empirical research is required to gain a complete understanding of the relationship between the two variables.

Keeping in mind the literature on the association of anxiety with locus of control orientation and self-efficacy, Gallagher, Bentley and Barlow (2014) conducted a meta-analytic review to examine the role of perceived control over anxiety-provoking events. While perceived control is not viewed as synonymous with locus of control and self-efficacy, the interrelatedness of these theories of control with perceived control has been acknowledged. Prior empirical research supported the prediction that beliefs about the uncontrollability of anxiety-producing situations contribute to the maintenance of anxiety

symptoms (Barlow, 2002). The results of the meta-analysis indicated that there is a strong negative correlation between perceived control and anxiety, both at the trait level and at the psychopathological level (Gallagher, Bentley, & Barlow, 2014).

Chorpita and Barlow (1998) contend that a child's experience of uncontrollable events during childhood, as determined by parental factors like intrusiveness and over-protectiveness, contribute to the development of a sense of perceived control. In particular, the authoritative parenting style has been found to be associated with the development of an internal locus of control and a positive self-concept (McClun & Merrell, 1998, p. 388). In contrast, the authoritarian parenting style is associated with an external locus of control along with a more negative self-concept than either the permissive or the authoritative parenting styles (McClun & Merrell, 1998, p. 388). Given these associations between parenting styles and perceived control variables and their individual relationships with procrastination and anxiety, further research with all these variables together is warranted. Our study aimed to integrate these variables into a model as predictors of procrastination and anxiety.

Gender Differences

Investigations of gender differences in research related to academics have produced mixed results. For instance, studies on academic anxiety have generally found that female students experience test anxiety to a greater extent as compared to male students (Chapell *et al.*, 2005). Further, Chapell found that for female college students, low test anxiety was associated with higher grade point averages, however, no significant differences were reported for male college students (p. 271). Some research has found that while women experience more procrastination-related anxiety than men, there are no significant differences in the prevalence of procrastination amongst women and men (Rothblum, Solomon, & Murakami, 1986; Ferrari, 2001). Other studies have found significant gender differences (Pychyl, Coplan, & Reid, 2002) with mixed results. Some have found that women have a

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greater tendency to procrastinate than men (Paludi & Frankell-Hauser, 1986) while a recent study from India found that male students reported higher procrastination than female students (Shahnawaz, 2016). Thus, gender differences in procrastination and anxiety need further investigation, specifically in the Indian context where attitudes towards academics may differ among men and women.

A few empirical studies have demonstrated a correlation between our two outcome variables, procrastination and anxiety (Carden, Bryant, & Moss, 2004; Rothblum, Solomon, & Murakami, 1986). Further, Milgram (1999) proposed a theoretical model of appraisal-anxiety-avoidance to understand procrastination. According to this model, people experience anxiety in response to a specific task when they are faced with a fear of failure. Consequently, they attempt to alleviate their anxiety through task delay or avoidance, i.e. procrastination (Milgram & Toubiana, 1999, p. 345). Despite this theoretical and empirical link, previous research examining the factors associated with procrastination has overlooked the role of anxiety and vice versa. It is imperative to study the predictors of both procrastination and anxiety in the same study so that their influence on each other is not discounted.

Purpose of the current study

The current study had two specific aims. The hypotheses and research questions were formulated on the basis of past research.

Specific Aim 1 – To test whether perceived parenting styles, locus of control orientation and self-efficacy are associated with procrastination and anxiety.

Research Question 1.1: What is the relationship of perceived acceptance-involvement and strictness-supervision from parents with procrastination?

Research Question 1.2: What is the relationship of perceived acceptance-involvement and strictness-supervision from parents with anxiety?

Research Question 1.3: What is the relationship of helicopter parenting with procrastination and anxiety?

Hypothesis 1.1: A self-reported external locus of control orientation will be positively correlated with procrastination and anxiety.

Hypothesis 1.2: Self-reported general and social self-efficacy will be negatively correlated with procrastination and anxiety.

Specific Aim 2 – To assess whether perceived parenting styles, locus of control orientation and self-efficacy can be integrated into a model as predictors of procrastination and anxiety.

Research Question 2.1: Can perceived parenting styles, locus of control orientation and self-efficacy be integrated into a model as predictors of procrastination and anxiety?

Method

Participants

The participants of the study were Indian adults, all of whom were enrolled as students at universities in India at the time of the study. 275 individuals began filling the survey, out of which 178 (65%) completed the entire survey. The inclusion criterion for the study was that participants must be Indian college students above the age of 18. The exclusion criterion was that participants should not have lived outside of India for 4 or more years. This information was obtained using the demographic form, which was a part of the survey. The responses of 22 participants were not considered for analysis as they did not meet these criteria. Thus, having accounted for the eligibility criteria and completeness of the responses to the survey, the responses of 156 participants were ultimately analysed (Mean age = 20.3 years, SD = 2.08). Demographic characteristics of the participants are reported in Table 2. The participants were from different parts of India and were students of diverse

disciplines including economics, law, psychology, biology, history, management, architecture, computer science and so on.

Table 2

Demographic Characteristics of Participants

Demographic Characteristics	
Age, mean $\pm$ SD	20.3 $\pm$ 2.08
Gender, n (%)	
Female	107 (68.59)
Male	45 (28.85)
Non-binary	1 (0.64)
Transgender	1 (0.64)
Rather not answer	2 (1.28)
Type of Household, n (%)	
Two-parent household	111 (71.15)
Single-parent household	9 (5.77)
Joint family	31 (19.87)
Other	5 (3.21)
Residential University, n (%)	
Yes	120 (76.92)
No, lives close to campus on their own/with flatmates	14 (8.97)
No, lives at home with family	22 (14.10)
Family Total Monthly Income, n (%)	
> 78,062	93 (59.62%)
39,033-78,062	27 (17.31%)
29,200-39,032	4 (2.56%)
19,516-29,199	2 (1.28%)
11,708-19,515	1 (0.64%)
3,908-11,707	-
<3,908	1 (0.64%)
Rather not answer	28 (17.95%)

Materials

Demographic Questionnaire. The demographic questionnaire, which also acted as a screening procedure to identify participants who meet the eligibility criteria, was created for the present study. It was a comprehensive form which included questions about the participant's age, gender, nationality, country of residence, university, socio-economic background, sexual orientation, history of mental illness, child sexual abuse and trauma. The

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modified Kuppuswamy socioeconomic scale was referred to for formulating questions regarding family income, education and occupation (Saleem, 2019).

Procrastination Assessment Scale – Students (PASS) (Appendix A). This instrument for measuring procrastination amongst students, created by Solomon and Rothblum (1984), is divided into 2 parts and consists of 44 items in total. The first part assesses procrastination in 6 academic areas: paper-writing, studying for exams, completing weekly readings, completing administrative jobs, attending meetings, and general completion of academic tasks. There are 3 items each for these 6 domains that must be answered by providing a rating on a 5-point Likert scale. The second part evaluates the reasons for procrastination amongst students on the basis of 26 items that, again, must be answered on a 5-point Likert scale (Mortazavi, Mortazavi, & Khosrorad, 2015). A number of studies have reported that the Procrastination Assessment Scale possesses adequate psychometric properties – reliability and validity. Reliability scores have been reported as .82 for the section on prevalence as per academic domain and .89 for the section on reasons for procrastination. Cronbach's alpha with test-retest reliability over 6 weeks was found to be .74 for the first part of the scale and .65 for the second part (Mortazavi, Mortazavi, & Khosrorad, 2015).

Depression Anxiety Stress Scale (Appendix B). The Depression Anxiety Stress Scale (DASS) was developed by Lovibond and Lovibond (1995) in order to assess the psychological status of individuals. The original scale consists of 42 items, each of which has a 4-point Likert type scale. The score for each subscale is calculated separately. DASS has been found to be highly correlated to the Beck Depression Inventory ($r=.74$) and the Beck Anxiety Inventory ($r=.81$). It possesses satisfactory discriminant and convergent validity amongst samples taken from a non-clinical population (Crawford & Henry, 2003; Lovibond & Lovibond, 1995). Further, the internal consistency for each of the subscales is high, with

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Cronbach's alpha being .96, .89 and .93 for the depression, anxiety and stress subscales respectively (Basha & Kaya, 2016).

The shortened version of the DASS, the DASS-21, has been found to have satisfactory construct validity with high reliabilities for each of the three subscales. It is considered a better instrument than the full-length DASS because of its shorter length and the removal of problematic items that were present in the original 42-item version (Henry & Crawford, 2005). Validation studies for the DASS-21 conducted in Asian countries (like China and Vietnam and with a Nepali population in Hong Kong) have demonstrated adequate psychometric properties (Wang *et al.*, 2016; Tran, Tran, & Fisher, 2013; Tonsing, 2014). The anxiety subscale of the DASS-21 was used for analysis.

General Self-Efficacy Scale (Appendix C). This 23-item instrument, developed by Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, and Rogers (1982), consists of two subscales: general self-efficacy and social self-efficacy. The internal consistency of each subscale is high, with Cronbach's alpha for the general self-efficacy scale being 0.86 and for the social self-efficacy scale being 0.71 (Yildirim & Ilhan, 2010).

Internal-External Locus of Control Scale (Appendix D). This instrument, developed by Rotter (1966), is the most commonly used and widely cited measure of locus of control. It consists of 29 items, out of which 6 are filler items, meant to maintain some amount of ambiguity regarding the purpose of the scale. The items present a pair of statements out of which one represents an internal orientation while the other represents an external orientation. The respondent is faced with a forced-choice between the two statements (Wang & Lv, 2017).

A higher score on the test indicates that the person is more externally oriented while a lower score indicates that the person is internally oriented. In the original study, the scale was found to have adequate coefficient alphas as well as test-retest reliability after a period of one

month. A meta-analysis conducted recently of 120 studies that used the Internal-External Locus of Control Scale revealed a satisfactory average reliability of .70 (Ng, Sorensen, & Eby, 2006). This instrument has also been used for cross-cultural research (Smith, Trompenaars, & Dugan, 1995).

Parenting Styles Questionnaire (Appendix E). Developed by Lamborn *et al.* (1991), the Parenting Styles Questionnaire consists of two subscales – the acceptance/involvement subscale, which assesses the extent of the respondents' perception of their parents as responsive, loving and involved, and the strictness/supervision subscale which examines the extent to which the respondents' parents monitor or supervise them. The acceptance/involvement subscale consists of 10 items with Cronbach's $\alpha = .72$. The strictness/supervision subscale consists of 9 items with Cronbach's $\alpha = .76$ (Lamborn *et al.*, 1991).

Items from the Parenting Styles Questionnaire were used in a study on the association of parenting styles with academic achievement amongst a sample of Indian adolescents. The study found that for the acceptance/involvement items, reliability was .64, and for the strictness/supervision items, reliability was .63 (Garg, Levin, Urajnik, & Kauppi, 2005).

Helicopter Parenting Instrument (Appendix F). Developed by Odenweller, Booth-Butterfield, and Weber (2014), the Helicopter Parenting Instrument (HPI) consists of 15 items measured on 7-point Likert scales. The reliability of the instrument has been found to be close to 0.80, and it has demonstrated strong construct validity through its positive associations with conformity orientation and authoritarian parenting, variables to which it is theoretically related (Odenweller *et al.*, 2014).

Table 3

Instruments Used to Measure Predictor and Outcome Variables

Variable	Instrument	Author(s)	Reliability
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Perceived Parenting Styles	Parenting Styles Questionnaire	Lamborn, Mounts, Steinberg, & Dornbusch (1991)	.72 – acceptance/involvement subscale .76 – strictness/supervision subscale
Locus of Control	Helicopter Parenting Instrument (HPI)	Odenweller, Booth-Butterfield, & Weber (2014)	.80
	Internal-External Locus of Control Scale	Rotter (1966)	.70
Self-Efficacy	General Self-Efficacy Scale	Sherer, Maddux, Mercandante, Prentice-Dunn, Jacobs, & Rogers (1982)	0.86 – general self-efficacy subscale 0.71 – social self-efficacy subscale
Procrastination	Procrastination Assessment Scale – Students (PASS)	Solomon & Rothblum (1984)	0.82 – prevalence 0.89 – reasons
Anxiety	Depression Anxiety Stress Scale (DASS-21)	Lovibond & Lovibond (1995)	0.96 – depression subscale 0.89 – anxiety subscale 0.93 – stress subscale

Procedure

Posts giving a brief description of the study were shared on Facebook and WhatsApp groups for recruitment of participants. These included public groups like Network Capital and students' groups for different universities in order to reach individuals who would be eligible to participate in the study. Further recruitment was carried out through snowball sampling. Reminders were sent to the prospective participants to encourage participation. The questionnaires used for the study were administered by designing a survey on the online platform, Survey Monkey. The first page of the survey was for informed consent. The participants were provided with some more information about the study including the eligibility criteria. They were also informed of their rights as participants, of the

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confidentiality of their responses, the potential benefits and risks of participation and the contact details of the researchers. After providing informed consent, the participants filled the demographic questionnaire. To prevent order effects, the order in which the instruments to measure perceived parenting styles scale, locus of control, self-efficacy scale, procrastination and anxiety were presented to the participants was shuffled. At the end of the survey, participants were provided with a database of support resources in case they wished to seek professional help for a mental health concern.

Ethical Concerns

The study was approved by the Institutional Review Board of Ashoka University and no ethical concerns were raised.

Results

First, the scores for each variable including procrastination, anxiety, locus of control, self-efficacy, perceived parenting styles and helicopter parenting were calculated based on responses to the instruments used to measure these variables. There were separate scores for social self-efficacy and general self-efficacy as per the sub-scales of the General Self-Efficacy Scale (Sherer *et al.*, 1982). Further, separate scores were calculated for the acceptance-involvement and strictness-supervision subscales of the Parenting Styles Questionnaire (Lamborn *et al.*, 1991). These scores were then standardised by dividing the participants' score by the maximum possible score on that scale. Thus, the scores were converted to proportions between 0 and 1 for each variable.

Bivariate Correlations**Table 4***Correlation Matrix of Variables of Interest*

Variables	1	2	3	4	5	6	7
1. Procrastination							
2. Anxiety	0.308***						
3. Locus of Control	0.276***	0.294***					
4. Social Self-Efficacy	-0.241**	-0.248**	-0.143				
5. General Self-Efficacy	-0.597***	-0.420***	-0.380***	0.375***			
6. Acceptance-Involvement	-0.060	-0.227**	-0.268***	0.194*	0.145		
7. Strictness-Supervision	-0.120	-0.022	0.012	-0.060	-0.059	0.218**	
8. Helicopter Parenting	0.123	0.058	0.129	-0.216**	-0.167*	0.046	0.356***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Correlation analysis was conducted to assess the associations between procrastination, anxiety, external locus of control orientation, general self-efficacy, social self-efficacy, parents' acceptance-involvement, parents' strictness-supervision and helicopter parenting. The results of the correlation analysis are reported in Table 4.

Consistent with *Hypothesis 1.1*, the analysis indicated a small positive correlation between external locus of control and procrastination ($r = 0.276, p < .001$), and a small positive correlation between external locus of control and anxiety ($r = 0.294, p < .001$). Further, the results indicated that there is a small negative correlation between social self-efficacy and procrastination ($r = -0.241, p = 0.002$), and a moderate negative correlation between social self-efficacy and anxiety ($r = -0.248, p = 0.002$). General self-efficacy was found to be moderately negatively correlated with procrastination ($r = -0.597, p < .001$), and with anxiety ($r = -0.420, p < .001$). These findings supported *Hypothesis 1.2* about self-efficacy. Perceived acceptance-involvement from parents was not significantly correlated with procrastination. However, a small negative correlation was found between perceived

acceptance-involvement from parents and anxiety. Perceived strictness-supervision from parents was not significantly correlated with either procrastination or anxiety. In addition, no significant correlation was found between helicopter parenting and procrastination, or between helicopter parenting and anxiety. Thus, *Research Questions 1.1, 1.2 and 1.3* were addressed.

Univariate regressions

Several linear regressions were conducted with single predictors on each dependent variable to assess which factors should be controlled for in the final multivariate regression model. The factors that were assessed were age, gender, year of the programme, type of household, whether the university is residential, history of child sexual abuse, history of childhood adversity, history of parental neglect, whether the individual is currently undergoing treatment for a mental health concern and whether they experienced a highly stressful life event in the past one year. The results of these regressions indicated that anxiety was significantly predicted by gender ($R^2 = 0.12$, Adjusted $R^2 = 0.108$, $F(2, 151) = 10.29$, $p < .001$), history of child sexual abuse ($R^2 = 0.034$, Adjusted $R^2 = 0.027$, $F(1, 144) = 5.076$, $p = .026$), history of parental neglect ($R^2 = 0.04$, Adjusted $R^2 = 0.034$, $F(1, 146) = 6.131$, $p = 0.014$), and ongoing treatment for a mental health concern ($R^2 = 0.204$, Adjusted $R^2 = 0.199$, $F(1, 147) = 37.66$, $p < .001$) while procrastination was significantly predicted by ongoing treatment for a mental health concern ($R^2 = 0.073$, Adjusted $R^2 = 0.066$, $F(1, 147) = 11.52$, $p < .001$). All of these factors were included in the multivariate regression model as controls along with the predictors.

Multivariate regression

A multivariate regression was conducted with procrastination and anxiety as the outcome variables since they were moderately correlated with each other. Locus of control, social self-efficacy, general self-efficacy, parental acceptance-involvement, parental

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strictness-supervision, and helicopter parenting were included as covariates in the model.

Gender, history of child sexual abuse, history of parental neglect, and ongoing treatment for a mental health concern were included as factors in the regression model. Assumption checks were conducted for multicollinearity, linearity, normality, homoscedasticity and independence of observations and all the assumptions were met.

Table 5

Multivariate Regression on Procrastination

R-Squared	Adjusted R-Squared	F(11, 122)	p-value
0.3826	0.327	6.874	<0.001

Table 6

Coefficients from Multivariate Regression on Procrastination (Table 5)

Coefficients	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
(Intercept)	0.891422	0.144313	6.177	<0.001
GenderMale	0.045798	0.026121	1.753	0.0821
GenderOther	0.150570	0.136471	1.103	0.2721
MentalHealthYes	0.021256	0.033104	0.642	0.5220
CSAYes	0.005429	0.037076	0.146	0.8838
NeglectYes	0.011658	0.032672	0.357	0.7218
LOC	0.098554	0.078218	1.260	0.2101
SSE	-0.005165	0.085626	-0.060	0.9520
GSE	-0.612386	0.101122	-6.056	<0.001
AI	0.102002	0.098676	1.034	0.3033
SS	-0.099822	0.063397	-1.575	0.1179
HP	0.076388	0.117354	0.651	0.5163

The results of the regression on procrastination indicated that the predictors significantly contributed to the outcome, explaining 38.26% of the variance in procrastination (Adjusted $R^2 = 0.327$, $F(11, 122) = 6.874$, $p < .001$). In this model, only general self-efficacy emerged as a unique predictor of procrastination ($\beta = -0.612$, $p < .001$).

Table 7

Multivariate Regression on Anxiety

R-Squared	Adjusted R-Squared	F(11, 122)	p-value
0.4009	0.3469	7.421	<0.001

Table 8

Coefficients from Multivariate Regression on Anxiety (Table 7)

Coefficients	<i>B</i>	<i>SE</i>	<i>t</i>	<i>p</i>
(Intercept)	0.71166	0.20743	3.431	0.000822***
GenderMale	-0.11732	0.03755	-3.125	0.002225**
GenderOther	0.28552	0.19616	1.456	0.148096
MentalHealthYes	0.14710	0.04758	3.091	0.002469**
CSAYes	0.02110	0.05329	0.396	0.692836
NeglectYes	0.06481	0.04696	1.380	0.170121
LOC	0.10855	0.11243	0.966	0.336202
SSE	-0.19101	0.12308	-1.552	0.123261
GSE	-0.45110	0.14535	-3.103	0.002377**
AI	0.09143	0.14184	0.645	0.520402
SS	-0.06344	0.09113	-0.696	0.487615
HP	-0.01698	0.16868	-0.101	0.920005

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Further, the results of the regression on anxiety indicated that the predictors significantly contributed to the outcome, explaining 40.09% of the variance in anxiety (Adjusted $R^2 = 0.347$, $F(11, 122) = 7.421$, $p < .001$). General self-efficacy ($\beta = -0.451$, $p = .002$), gender ($\beta = -0.117$, $p = .002$), and ongoing treatment for a mental health concern ($\beta = 0.147$, $p = .002$) emerged as unique predictors of anxiety.

Self-Efficacy as a mediating variable

In addition to the correlational analysis and multivariate regression, we conducted mediation analyses using the “medmod” package (R Core Team, 2019) of the software Jamovi (The jamovi project, 2020) to further understand the relationships among the variables of interest. Given that helicopter parenting was found to be significantly correlated with both general and social self-efficacy (Table 4), but did not emerge as a significant predictor for procrastination or anxiety in the multiple regression model, we investigated the role of general and social self-efficacy as mediators in the relationships between helicopter

parenting and the outcome variables, procrastination and anxiety. As per the results, general self-efficacy mediated the relationship between helicopter parenting and procrastination with the indirect effect ($\beta = 0.142, p = 0.04$) accounting for 79.9% of the variance in the model (Figure 1). General self-efficacy also mediated the relationship between helicopter parenting and anxiety with the indirect effect ($\beta = 0.153, p = 0.048$) accounting for 84.7% of the variance in the model (Figure 2).

We went on to investigate the role of social self-efficacy as a mediator in the relationship between helicopter parenting and procrastination and anxiety. We found that social self-efficacy partially mediates the relationship between helicopter parenting and procrastination with the indirect effect ($\beta = 0.07, p = 0.048$) accounting for 39.2% of the variance in the model (Figure 1). In addition, social self-efficacy emerged as a significant mediator in the relationship between helicopter parenting and anxiety with the indirect effect ($\beta = 0.116, p = 0.039$) accounting for 92.66% of the variance in the model (Figure 2).

Figure 1

Path Diagram Illustrating the Indirect Effect between Helicopter Parenting and Procrastination through GSE and SSE

Figure 2

Path Diagram Illustrating the Indirect Effect between Helicopter Parenting and Anxiety Through GSE and SSE

Given the results of the multivariate regression which found that general self-efficacy uniquely predicted both procrastination and anxiety while locus of control did not emerge as a significant predictor, we decided to assess whether general self-efficacy mediates the relationship between locus of control and procrastination and anxiety. We found that general self-efficacy mediates the relationship between locus of control and procrastination with the indirect effect ($\beta = 0.204$, $p < .001$) accounting for 79.2% of the variance in the model (Figure 3). In addition, general self-efficacy was found to be a partial mediator in the relationship between locus of control and anxiety with the indirect effect ($\beta = 0.193$, $p < .001$) accounting for 46.6% of the variance in the model (Figure 4).

Figure 3

Path Diagram Illustrating the Indirect Effect between LoC and Procrastination through GSE

Figure 4

Path Diagram Illustrating the Indirect Effect between LoC and Anxiety through GSE

Lastly, we assessed whether the relationship between general self-efficacy and each outcome variable was mediated by the other outcome variable. We found no significant indirect effect on the association between general self-efficacy and procrastination through anxiety (Figure 5). So, anxiety does not mediate the relationship between general self-

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efficacy and procrastination. Further, we found that there was no significant indirect effect on the association between general self-efficacy and anxiety through procrastination (Figure 6).

In other words, procrastination does not mediate the relationship between general self-efficacy and anxiety (all tables in Appendix G).

Figure 5

Path Diagram Illustrating the Direct Effect between GSE and Procrastination

Figure 6

Path Diagram Illustrating the Direct Effect between GSE and Anxiety

Discussion

The purpose of the study was to understand if perceived parenting styles, alongside variables such as self-efficacy and locus of control are associated with procrastination and anxiety among Indian college students. To our knowledge, for the first time in India, our study attempts to integrate the psychodynamic, humanistic and cognitive perspectives by investigating the association of procrastination and anxiety with parenting styles (a variable relevant to psychodynamic theories) and with locus of control (a variable relevant to the humanistic perspective) and self-efficacy (a variable relevant to the cognitive perspective).

Initial correlation analysis revealed that, as expected, general self-efficacy and social self-efficacy were significantly associated with both procrastination and anxiety. From the multivariate regression analysis, General Self Efficacy emerged as the only significant predictor of both procrastination and anxiety, and gender emerged as a moderator of anxiety. Although the initial correlational analysis showed variables such as Locus of control and Helicopter Parenting to be associated with social and/or general self-efficacy, they didn't predict either procrastination or anxiety in a statistically significant manner in the multivariate regression model. We therefore tested if the effects of these variables on our outcome variables were mediated by self-efficacy variables, and this seems to be the case in this sample. Finally, we ran further mediation analyses to confirm that the two outcome variables were not mediated by one another.

A closer inspection of the correlation indices suggests that who had lower levels of self-efficacy were more likely to have higher levels of procrastination. These findings are consistent with past research that found a link between low self-efficacy and behaviour avoidance and high self-efficacy and behaviour initiation, persistence (Haycock, McCarthy, & Skay, 1998), given that procrastination is conceptually very similar to behaviour avoidance. However, the present study goes a step further by establishing separate relationships between both general and social self-efficacy and procrastination, in an

academic context. The moderate positive association between social self-efficacy and academic procrastination is a novel finding which highlights that low social self-efficacy is related to higher procrastination, perhaps on specific academic tasks like meeting professors and advisors, preparing for presentations etc.

Previous studies have reported associations between procrastination and social or interpersonal variables. One study had found that procrastinators self-reported more public self-consciousness than non-procrastinators (Ferrari, 1991). A 2018 study by Ko & Chang found a positive association between social anxiety and procrastination. Social anxiety refers to the fear of being scrutinised and evaluated by other people (Stein & Stein, 2008). Our research furthers these findings by demonstrating that social self-efficacy is also related to procrastination. Arguably, having low self-efficacy with respect to social situations may be associated with the fear of negative evaluation by others, a feature of social anxiety, which is conceptually linked to the fear of failure. Notably, procrastination has been associated with a fear of failure in the past (Milgram & Toubiana, 1999). Future studies could investigate whether social self-efficacy is related to procrastination through a third variable like fear of negative evaluation or fear of failure.

The results of the correlation analyses also suggest that those who had lower general and social self-efficacy had higher levels of anxiety. According to Milgram and Toubiana's (1999) appraisal-anxiety-avoidance model, when people experience a fear of failure in response to a particular task, they feel anxious, and engage in procrastination to alleviate the anxiety. The fear of failure mentioned here indicates that the individual has doubts in their ability to accomplish the task, implying that the individual may have low self-efficacy, which then causes anxiety. This is consistent with our results that found a negative relationship between self-efficacy and anxiety. As per the appraisal-anxiety-avoidance model, it is anxiety that then mediates the relationship between the individual's appraisal of the task (based on

self-efficacy) and the procrastination on the task. The results of our study, however, found that general self-efficacy uniquely predicted both procrastination and anxiety in a multivariate regression model. This indicates a direct relationship between self-efficacy and procrastination that was confirmed by our mediation analysis which indicated that anxiety was not a significant mediator in the relationship. In other words, the relationship between self-efficacy and procrastination could not be explained by the level of anxiety. These results provide further insight into our current knowledge of procrastination and anxiety, and suggest that the appraisal-anxiety-avoidance model does not apply to the sample of college students studied in our research.

Correlation analysis also revealed a positive association between an external locus of control and both procrastination and anxiety, in line with our hypothesis. These findings are consistent with the existing literature in which both correlational and experimental studies have suggested a relationship between locus of control orientation and procrastination (Carden, Bryant, & Moss, 2004; Janssen & Carton, 1999). Since having an external locus of control indicates that the individual tends to attribute external causes to events, it is understandable that they would be more likely to procrastinate given that they perceive that their behaviour is anyway outside of their control. Anxiety, too, has been found to be associated with perceptions of low control as per a meta-analysis by Gallagher, Bentley and Barlow (2014). In the present study, locus of control did not emerge as a unique predictor of either procrastination or anxiety in a regression model that included general self-efficacy, social self-efficacy and parenting variables. Instead, it appears that the association between locus of control and procrastination and anxiety can be explained by mediation via general self-efficacy. As per our mediation analysis, locus of control had an indirect impact on the level of procrastination and anxiety through general self-efficacy, which was found to be a significant mediator. These results further our understanding of the path through which locus

of control may have been found to be associated with procrastination and anxiety in past empirical research.

Perceived acceptance-involvement from parents was found to be negatively related to anxiety. That is, those who reported low parental acceptance-involvement also reported higher anxiety scores, but no relationship was found between parental strictness-supervision and anxiety. This is an interesting finding which may be indicative of cultural differences in parenting. In collectivistic cultures like India, parents are more likely to expect obedience, an adherence to family values and fulfilment of familial social obligations from their children (Sondhi, 2017). Such parental restrictiveness and supervision tends to be the norm and is not related to a lack of warmth from the parent (Sondhi, 2017). Thus, it may be speculated that the direct association between perceived strictness from parents and negative outcomes like anxiety in the child that has been reported in Western research may be weaker in the Indian context.

However, as discussed earlier, research on the development of anxiety has found that parental intrusiveness and overprotectiveness influence the child's perceived sense of control (Chorpita & Barlow, 1998). So, there is reason to consider that helicopter parenting may affect the child's self-efficacy. In fact, our results found that there is a negative correlation of small effect size between helicopter parenting and both social and general self-efficacy. Further mediation analysis also indicated that there is a relationship between helicopter parenting and procrastination and anxiety through general self-efficacy, which acts as a mediator. This finding is consistent with the results of a 2016 study which found that helicopter parenting has an indirect effect on physical and mental health including level of anxiety through self-efficacy (Reed, Duncan, Lucier-Greer, Fixelle, & Ferraro, 2016). Our study delineates the influence of both general and social self-efficacy on the relationship between helicopter parenting and anxiety. Further, one study by Hong, Hwang, Kuo, and Hsu

(2015) found an indirect relationship between parental monitoring and procrastination through helicopter parenting. Our results increase the complexity of our understanding of the association between helicopter parenting and procrastination by highlighting the role of general and social self-efficacy in the relationship.

Overall, our results indicate that among the variables studied, the strength of the association with procrastination and anxiety is highest for general self-efficacy. Our analyses also highlight the crucial role played by general self-efficacy in the relationship of the perceived parenting variables and locus of control with procrastination and anxiety. These findings suggest that it is the individual's belief in their ability to perform well in different situations that is the key factor which influences their tendency to procrastinate. Thus, having doubts in one's capabilities increases the likelihood that one will delay carrying out the task. The delay may be a result of difficulty understanding how to begin the task. On the other hand, perhaps the delay allows the individual to later attribute their weak performance to external factors like lack of time spent on the task rather than internal factors like their own abilities to accomplish the task. It would be interesting to assess the applicability of these theories about the role of self-efficacy in future studies.

Another interesting finding is the role of gender as a unique predictor of anxiety but not procrastination. Male students were found to have lower levels of anxiety than others. This finding is consistent with past literature on gender differences in anxiety symptoms and specifically in anxiety disorder prevalence. Anxiety disorders have consistently been reported to have higher prevalence rates among women than men (McLean, Asnaani, Litz, & Hofmann, 2011). Further research is required to understand the role of gender in procrastination theoretically and even empirically, given the mixed results from different studies.

The current study has some limitations that should be kept in mind when the results are interpreted. The study was cross-sectional in design due to the infeasibility of using a longitudinal design for the present research. Thus, the results of the study are correlational in nature and causality cannot be established. In addition, the recruitment of participants was carried out through online platforms which could have led to a self-selection bias of participants who felt that the research was relevant to their experiences. The completion rate for the survey was 65% but it is important to note that the responses marked as incomplete include those of participants who may not have gone beyond the informed consent. Lastly, the study investigated only a selected set of variables and cannot address all the variables that may be associated with procrastination and anxiety. For example, variables like task characteristics, sibling relationships and academic performance were not considered for this study.

Another caveat that we recognise is that this research was conducted during the early stages of the COVID-19 pandemic. At the time of data collection, the illness had not been declared a pandemic and very few cases had been reported in India. However, it is important to acknowledge the possibility that this unique global situation may have had an influence on participants' responses.

The study has both theoretical and practical implications. Theoretically, it enhances the understanding of the construct of procrastination and the antecedent factors associated with both procrastination and anxiety as described previously. Thus, on the basis of our findings, we developed a more comprehensive theory of procrastination which integrates different perspectives. Further, the current study provides empirical support for further research on this topic as has been discussed. Experimental research could examine interventions to help reduce procrastination and anxiety among college students. Since self-efficacy is a changeable attribute (Lent, Brown, & Hackett, 2002), subsequent studies can

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investigate whether there are differences in procrastination and anxiety before and after an intervention to enhance self-efficacy is employed. The development of useful interventions to decrease procrastination could have a tremendous impact on college students who struggle with academic work because of their tendency to put it off.

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Appendix A

Procrastination Assessment Scale for Students (PASS)

Instructions (as stated in the survey filled by participants):

For each of the following activities, please rate the degree to which you delay or procrastinate. Rate each item on the given scale according to how often you wait until the last minute to do the activity [Likert Scale A]. Then indicate on the given scale the degree to which you feel procrastination on that task is a problem [Likert Scale B].

Likert Scale A:

Never Procrastinate

Almost Never

Sometimes

Nearly Always

Always Procrastinate

Likert Scale B:

Not At All a Problem

Almost Never

Sometimes

Nearly Always

Always a Problem

Items:

I. WRITING A TERM PAPER

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

II. STUDYING FOR EXAMS

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

III. KEEPING UP WITH WEEKLY READING ASSIGNMENTS

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

IV. ACADEMIC ADMINISTRATIVE TASKS: FILLING OUT FORMS, REGISTERING FOR CLASSES, GETTING ID CARD, ETC.

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

V. ATTENDANCE TASKS: MEETING WITH YOUR ADVISOR, MAKING AN APPOINTMENT WITH A PROFESSOR, ETC.

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

VI. SCHOOL ACTIVITIES IN GENERAL

To what degree do you procrastinate on this task?

To what degree is procrastination on this task a problem for you?

Appendix B

Depression Anxiety Stress Scale (DASS-21)

Instructions (as stated in the survey filled by participants):

Please read each statement and select the option which indicates how much the statement applied to you over the last academic year. There are no right or wrong answers. Do not spend too much time on any statement.

Likert Scale:

Did not apply to me at all

Applied to me to some degree, or some of the time

Applied to me to a considerable degree, or a good part of the time

Applied to me very much, or most of the time

Items:

1. I was aware of dryness of my mouth
2. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
3. I experienced trembling (eg, in the hands)
4. I was worried about situations in which I might panic and make a fool of myself
5. I felt I was close to panic
6. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
7. I felt scared without any good reason

Appendix C

General Self-Efficacy Scale

Instructions (as stated in the survey filled by participants):

This questionnaire is a series of statements about your personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the option that best describes your attitude or feeling. Please be very truthful and describe yourself as you really are, not as you would like to be.

Likert Scale:

Disagree Strongly

Disagree Moderately

Neither Agree nor Disagree

Agree Moderately

Agree Strongly

Items:

1. I like to grow house plants. **Filler**
2. When I make plans, I am certain I can make them work. **GSE**
3. One of my problems is that I cannot get down to work when I should. **R GSE**
4. If I can't do a job the first time, I keep trying until I can. **GSE**
5. Heredity plays the major role in determining one's personality. **Filler**
6. It is difficult for me to make new friends. **R SSE**
7. When I set important goals for myself, I rarely achieve them. **R GSE**
8. I give up on things before completing them. **R GSE**
9. I like to cook. **Filler**
10. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me. **SSE**
11. I avoid facing difficulties. **R GSE**
12. If something looks too complicated, I will not even bother to try it. **R GSE**
13. There is some good in everybody. **Filler**
14. If I meet some one interesting who is hard to make friends with, I'll soon stop trying to makes friends with that person. **R SSE**
15. When I have something unpleasant to do, I stick with it until I finish it. **GSE**
16. When I decide to do something, I go right to work on it. **GSE**
17. I like science. **Filler**
18. When trying to learn something new, I soon give up if I am not initially successful. **R GSE**
19. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily. **SSE**
20. When unexpected problems occur, I don't handle them well. **R GSE**
21. If I were an artist, I would to draw children. **Filler**
22. I avoid trying to learn new things when they look too difficult to me. **R GSE**
23. Failure just makes me try harder. **GSE**
24. I do not handle myself well in social gatherings. **R SSE**
25. I very much like to ride horses. **Filler**
26. I feel insecure about my ability to do things. **R GSE**

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- 27. I am a self-reliant person. **GSE**
- 28. I have acquired my friends through my personal abilities at making friends. **SSE**
- 29. I give up easily. **R GSE**
- 30. I do not seem capable of dealing with most problems that come up in my life. **R GSE**

Note – Items marked **R** are reversed in scoring. Items marked **Filler** are not scored. Items marked **GSE** contribute to the General Self-efficacy Subscale. These are summed to produce the General Self-efficacy Subscale score. Items marked **SSE** contribute to the Social Self-efficacy Subscale. These are summed to produce the Social Self-efficacy Subscale score. The General and Social Self-efficacy Subscale scores are not summed to give an overall score.

Appendix D

Internal-External Locus of Control Scale

Instructions (as stated in the survey filled by participants):

For each question select the statement that you agree with the most.

Items:

1. a. Children get into trouble because their parents punish them too much.
b. The trouble with most children nowadays is that their parents are too easy with them.
2. a. Many of the unhappy things in people's lives are partly due to bad luck.
b. People's misfortunes result from the mistakes they make.
3. a. One of the major reasons why we have wars is because people don't take enough interest in politics.
b. There will always be wars, no matter how hard people try to prevent them.
4. a. In the long run people get the respect they deserve in this world.
b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.
5. a. The idea that teachers are unfair to students is nonsense.
b. Most students don't realize the extent to which their grades are influenced by accidental happenings.
6. a. Without the right breaks one cannot be an effective leader.
b. Capable people who fail to become leaders have not taken advantage of their opportunities.
7. a. No matter how hard you try some people just don't like you.
b. People who can't get others to like them don't understand how to get along with others.
8. a. Heredity plays the major role in determining one's personality
b. It is one's experiences in life which determine what they're like.
9. a. I have often found that what is going to happen will happen.
b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.
10. a. In the case of the well prepared student there is rarely if ever such a thing as an unfair test.
b. Many times exam questions tend to be so unrelated to course work that studying is really useless.
11. a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
b. Getting a good job depends mainly on being in the right place at the right time.
12. a. The average citizen can have an influence in government decisions.
b. This world is run by the few people in power, and there is not much the little guy can do about it.

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13. a. When I make plans, I am almost certain that I can make them work.
b. It is not always wise to plan too far ahead because many things turn out to- be a matter of good or bad fortune anyhow.
14. a. There are certain people who are just no good.
b. There is some good in everybody.
15. a. In my case getting what I want has little or nothing to do with luck.
b. Many times we might just as well decide what to do by flipping a coin.
16. a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
b. Getting people to do the right thing depends upon ability. Luck has little or nothing to do with it.
17. a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand, nor control.
b. By taking an active part in political and social affairs the people can control world events.
18. a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
b. There really is no such thing as "luck."
19. a. One should always be willing to admit mistakes.
b. It is usually best to cover up one's mistakes.
20. a. It is hard to know whether or not a person really likes you.
b. How many friends you have depends upon how nice a person you are.
21. a. In the long run the bad things that happen to us are balanced by the good ones.
b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.
22. a. With enough effort we can wipe out political corruption.
b. It is difficult for people to have much control over the things politicians do in office.
23. a. Sometimes I can't understand how teachers arrive at the grades they give.
b. There is a direct connection between how hard I study and the grades I get.
24. a. A good leader expects people to decide for themselves what they should do.
b. A good leader makes it clear to everybody what their jobs are.
25. a. Many times I feel that I have little influence over the things that happen to me.
b. It is impossible for me to believe that chance or luck plays an important role in my life.
26. a. People are lonely because they don't try to be friendly.
b. There's not much use in trying too hard to please people, if they like you, they like you.
27. a. There is too much emphasis on athletics in high school.
b. Team sports are an excellent way to build character.

28. a. What happens to me is my own doing.

b. Sometimes I feel that I don't have enough control over the direction my life is taking.

29. a. Most of the time I can't understand why politicians behave the way they do.

b. In the long run the people are responsible for bad government on a national as well as on a local level.

Note – Score one point for each of the following – 2.a, 3.b, 4.b, 5.b, 6.a, 7.a, 9.a, 10.b, 11.b, 12.b, 13.b, 15.b, 16.a, 17.a, 18.a, 20.a, 21.a, 22.b, 23.a, 25.a, 26.b, 28.b, 29.a.

A high score = External Locus of Control

A low score = Internal Locus of Control

Appendix E

Parenting Styles Questionnaire

Instructions (as stated in the survey filled by participants):

Please answer the following questions with respect to your father.

5-Point Likert Scale:

Usually false - - - Usually true

Items:

1. I can count on him to help me out, if I have some kind of problem.
2. He keeps pushing me to do my best in whatever I do.
3. He keeps pushing me to think independently.
4. He used to help me with my school work if there was something I didn't understand.
5. When he wants me to do something, he explains why.
6. When I get a poor grade, he encourages me to try harder.
7. When I get a good grade, he praises me.
8. He knows who my friends are.

5-Point Likert Scale:

Not very often - - - Very often

Items:

9. He spends time just talking with me.
10. We do something fun together.

Instructions (as stated in the survey filled by participants):

Please answer the following questions with respect to your mother.

5-Point Likert Scale:

Usually false - - - Usually true

Items:

1. I can count on her to help me out, if I have some kind of problem.
2. She keeps pushing me to do my best in whatever I do.
3. She keeps pushing me to think independently.
4. She used to help me with my school work if there was something I didn't understand.
5. When she wants me to do something, she explains why.
6. When I get a poor grade, she encourages me to try harder.
7. When I get a good grade, she praises me.
8. She knows who my friends are.

5-Point Likert Scale:

Not very often - - - Very often

Items:

9. She spends time just talking with me.
10. We do something fun together.

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Note – The items above form the acceptance-involvement subscale. The scores are summed for the items regarding the father and mother and then the average is taken for each item.

Instructions (as stated in the survey filled by participants):

Please answer the following questions with respect to both your parents.

5-Point Likert Scale:

Usually false - - - Usually true

Please answer the following questions with respect to both your parents:

1. My parents try to know where I go at night.
2. My parents try to know what I do with my free time.
3. My parents try to know where I am when I am not in class.
4. My parents REALLY know where I go at night.
5. My parents REALLY know what I do with my free time.
6. My parents REALLY know where I am when I am not in class.

Note – The items above form the strictness-supervision subscale.

Appendix F

Helicopter Parenting Instrument

Instructions (as stated in the survey filled by participants):

Please answer the following questions with respect to both your parents.

7-Point Likert Scale:

Never - - - - Always

Items:

1. My parent tries to make all of my major decisions.
2. My parent discourages me from making decisions that he or she disagrees with.
3. If my parent doesn't do certain things for me (e.g., doing laundry, cleaning room, making doctor appointments), they will not get done.
4. My parent overreacts when I encounter a negative experience.
5. My parent doesn't intervene in my life unless he or she notices me experiencing physical or emotional trauma.
6. Sometimes my parent invests more time and energy into my projects than I do.
7. My parent considers oneself a bad parent when he or she does not step in and "save" me from difficulty.
8. My parent feels like a bad parent when I make poor choices.
9. My parent voices his or her opinion about my personal relationships.
10. My parent considers himself or herself a good parent when he or she solves problems for me.
11. My parent insists that I keep him or her informed of my daily activities.
12. When I have to go somewhere (e.g., doctor appointments, academic meetings, the bank, clothing stores), my parent accompanies me.
13. When I am going through a difficult situation, my parent always tries to fix it.
14. My parent encourages me to take risks and step outside of my comfort zone. ☐
15. My parent thinks it is his or her job to shield me from adversity.

Appendix G

Table G1

Mediation Estimates in the Relationship between Helicopter Parenting (HP) and Procrastination with General Self-Efficacy (GSE) as the Mediator

Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.1419	0.0691	2.055	0.040	79.9
Direct	c	0.0356	0.0936	0.380	0.707	20.1
Total	c + a x b	0.1775	0.1142	1.554	0.120	100.0

Note. The labels are a (HP → GSE), b (GSE → Procrastination), c (HP → Procrastination).

Table G2

Mediation Estimates in the Relationship between Helicopter Parenting (HP) and Anxiety with General Self-Efficacy (GSE) as the Mediator

Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.1526	0.0771	1.980	0.048	84.7
Direct	c	-0.0276	0.1599	-0.173	0.863	15.3
Total	c + a x b	0.1250	0.1735	0.720	0.471	100.0

Note. The labels are a (HP → GSE), b (GSE → Anxiety), c (HP → Anxiety).

Table G3

Mediation Estimates in the Relationship between Helicopter Parenting (HP) and Procrastination with Social Self-Efficacy (SSE) as the Mediator

Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.0696	0.0352	1.975	0.048	39.2
Direct	c	0.1079	0.1141	0.946	0.344	60.8
Total	c + a x b	0.1775	0.1142	1.554	0.120	100.0

Note. The labels are a (HP → SSE), b (SSE → Procrastination), c (HP → Procrastination).

Table G4

Mediation Estimates in the Relationship between Helicopter Parenting (HP) and Anxiety with Social Self-Efficacy (SSE) as the Mediator

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Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.11578	0.0561	2.0651	0.039	92.66
Direct	c	0.00917	0.1724	0.0532	0.958	7.34
Total	c + a x b	0.12496	0.1735	0.7204	0.471	100.0

Note. The labels are a (HP → SSE), b (SSE → Anxiety), c (HP → Anxiety).

Table G5

Mediation Estimates in the Relationship between Locus of Control (LoC) and Procrastination with General Self-Efficacy (GSE) as the Mediator

Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.2036	0.0466	4.368	<.001	79.2
Direct	c	0.0535	0.0645	0.830	0.407	20.8
Total	c + a x b	0.2572	0.0716	3.590	<.001	100.0

Note. The labels are a (LoC → GSE), b (GSE → Procrastination), c (LoC → Procrastination).

Table G6

Mediation Estimates in the Relationship between Locus of Control (LoC) and Anxiety with General Self-Efficacy (GSE) as the Mediator

Effect	Label	Estimate	SE	Z	p	% Mediation
Indirect	a x b	0.193	0.0559	3.45	<.001	46.6
Direct	c	0.221	0.1090	2.03	0.043	53.4
Total	c + a x b	0.414	0.1075	3.85	<.001	100.0

Note. The labels are a (LoC → GSE), b (GSE → Anxiety), c (LoC → Anxiety).