The Influence of Aggression on Students’ Achievement: Evidence from Higher Education

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Abstract

The current study examined the effects of uni-dimensional aggression scale (composed of verbal aggression, anger with resentment, physical aggression, and suspicion) on students’ current academic achievement score (GPA) and cumulative academic achievement score (CGPA). Undergraduate students (n=1481) partook in the current study at a university in Northern Cyprus. The study tested the negative effects of aggression on students’ GPA and CGPA. Demographic variables such as age, gender, and class-size have also been incorporated into the analyses and were treated as control variables. Multiple regression analyses have been deployed to test the hypothesized relationship. Results revealed that aggression had significant negative effects on students’ current academic achievement (GPA) and cumulative academic achievement score (CGPA). Inclusion of control variables into the regression equation did not confound the effect of aggression on both achievement scores. Additionally, variance inflation factor (VIF) was controlled to monitor the issue of multi-collinearity. The results depicted that all VIF values were below the benchmark value. The study further notes implications, limitations, and avenues for future research.

Keywords: Aggression; academic achievement; uni-dimensional; higher education;

1. Introduction

According to Horan, Chory, and Goodboy (2010) aggression is portrayed as an antisocial behaviour whereas Efrati-Virzter and Margalit (2009) identify aggression as a disrupting behaviour. The concept of aggression has gained an international credit due to its increasing importance (Abasiubong, Abiola & Udofia, 2011) and it is widely recognized in education field since the existing literature discusses its wide use during middle childhood and adolescence (Kikas, Peets, Tropp & Hinn, 2009). Buss (2005) states that aggression possesses potentiality of being led to violence and criminal activities wherein extreme cases could be closely associated with psychopathy (cf. Coyne & Thomas, 2008). The specific feature of aggression is that it is related to reflect pain or harm (Coie & Dodge, 1997). According to prior studies aggressive behaviours are triggered by the size of the individual’s social network, relations with peers, efficiency in social skills. On the other hand, these are not the only reasons for

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individuals to be aggressive as stated by Lopez, Olaizola, Ferrer, and Ochoa (2006). By all these influences, aggression can take forms as physical, verbal, suspicion and resentment (Garcia-Leon et al. 2002).

The sub-dimensions of student aggression boil down to four categories. These are verbal aggression, anger with resentment, physical aggression, and suspicion. Verbal aggression is defined as “hurting or harming others verbally, represent the instrumental or motor component of the behaviour” (Buss & Perry, 1992, p. 457). Anger with resentment (referred as anger by Buss & Perry, 1992) involves “physiological arousal and preparation for aggression, represents the emotional or affective component of behaviour” (Buss & Perry, 1992, p. 457). Suspicion (referred as Hostility by Buss and Perry, 1992) consists of “feelings of ill will and injustice that represents the cognitive component of behaviour” (Buss & Perry, 1992, p. 457).

Academic achievement denotes to students’ academic performance at a school/university. In order to measure achievement, students’ GPA (Grade Point Average) and CGPA (Cumulative Grade Point Average) scores were utilized. Similar approach is used in the study of Butler (2007) and Uludag and Yaratan (in press).

Stemming from the aforementioned literature, the current study first aims to fill the void of empirical paucity pertaining to the relationship between aggression and academic achievement (both current and cumulative) specific to higher educational setting. Second, Uludag and Yaratan (2012), Yaratan and Uludag (2012), and Chory (2007), clearly state that the validation of aggression across contexts needs further empirical inquiry. Hence, this study tests aggression within an educational setting incorporating current and cumulative achievement into the equation.

2. Hypotheses

The study of Barriga et al. (2002) have depicted that aggressive behaviours negatively influence academic performance and overall academic achievement. In line with the abovementioned findings, Uludag and Yaratan (2012) have found negative but insignificant effect between verbal aggression and academic achievement. Furthermore, Caprara et al. (2000) have found negative associations between aggression, pro-social behaviour and academic achievement. Parallel to the empirical grounds portrayed above, current study proposes the following hypotheses:

H1: Aggression is negatively related to current academic achievement (GPA).
H2: Aggression is negatively related to overall academic achievement (CGPA).

3. Method

3.1. Sample

Undergraduate students (n=1481) at a university in Northern Cyprus were selected as the sample for the current study. In order to collect data convenience sampling method was utilized. Convenience sampling is defined as selecting the items from the population based on accessibility and ease of selection (Groebner, Shannon, Fry, & Smith, 2005). Mahalonobis distance test was employed in order to monitor the variations in the data set. The benchmark value for the distance test was ±2.5. The results showed no outliers within the data set.

3.2. Data Collection

The data were collected in a self-administered manner. The researcher did not provide any grade, extra credit, or incentives for the completion of the questionnaire. The questionnaire was filled out voluntarily and the researcher has assured the anonymity of the respondents. A total of 1750 respondents were reached by the cut-off date. Moreover, 200 respondents have refused to participate to this study while additionally 69 questionnaires had missing data; therefore, these were removed from further analyses. After all the necessary monitoring to the data set a total of 1481 questionnaires were remained. This resulted in a response rate of 84.6%.
3.3. Questionnaire and Measures

Back translation method was utilized to translate the original instrument into Turkish. Similar approach has been used in prior empirical studies (Uludag & Yaratan, in press; Yaratan & Uludag, 2012, Uludag & Yaratan, 2010). The cross-linguistic comparability was monitored with experts in their field. Fifty students have participated in the pilot study to check the understandability of the survey items. Respondents were comfortable with the study questions and did not report any alterations. Hence, no changes were made to the study items. The feedback from the experts and student has further provided face validity to the study questions.

Prior empirical studies have shed a light in the utilization of the measures for the current study. Aggression scale (AQ) was utilized from the empirical work of Garcia-Leon et al. (2002). A total of 27 questions were drawn from the study to measure overall aggression. These 27 questions boil down to four sub-dimensions of aggression. Eight of these questions represent verbal aggression. A sample item for verbal aggression is ‘I am an even-tempered person’. Nine questions represent anger with resentment. A sample item for anger with resentment is ‘At times, I feel I have gotten a raw deal out of life’. Furthermore, 6 questions constituted physical aggression. A sample item for physical aggression is ‘If somebody hits me, I hit back’. Finally, four questions characterized suspicion. A sample item for suspicion is ‘I sometimes feel that people are laughing at me behind my back’. All items of aggression are represented in the Likert scale as follows: (1=Strongly disagree; 2= Disagree; 3=Neither agree nor disagree; 4=Agree; 5=Strongly agree). In order to unify the total effects, all items were composited to produce a uni-dimensional scale of aggression. It is not uncommon to measure constructs as a uni-dimensional concept (Uludag & Yaratan, in press) within a specific sample (cf. Schaufeli & Enzmann, 1998). Utilizing constructs as a uni-dimensional entity further simplifies the results and provides better understanding of the outcomes (Brenninkmeijer and Van Yperen, 2003).

In order to measure current academic achievement, students’ self-report GPA (Grade Point Average) scores and to measure overall academic achievement, self-report CGPA (Cumulative Grade Point Average) scores were obtained.

4. Results

An even distribution could be observed from the demographic breakdown of the sample in relation to gender and age. Most of the students (48.6%) ranged between the ages of 22-26. 702 students (47.4%) were in the age category of 17-21. Furthermore, 58 students (3.9%) ranged between the ages of 27-31 and only 1 student (0.1%) was in the age category of 32 and above. Almost half (737 - 49.8%) of the respondents were female and the rest of the respondents (744) were male (50.2%). Class-size variable was included to assess if students were in an ideal classroom or overcrowded classroom setting. Preponderance of the students (969, 65.4%) reported that the class-size was ideal. However, 512 of the students (34.6%) reported that the class-size was overcrowded.

The results of the multiple regression analyses are portrayed in Table 1. In order to monitor the possible confounding effects, control variables were incorporated into the regression analyses. The results yielded no confounding effects. Nevertheless, some of the control variables had a significant effect on the dependent variables. Gender had a significant negative effect on current academic achievement (GPA) ($\beta$= -.160, t= -6.02). This indicates that female students have higher levels of current academic achievement. In addition, gender also had a significant effect on overall academic achievement (CGPA) ($\beta$= -.139, t= -5.22). This further demonstrates that female students also have higher levels of overall academic achievement. None of the other control variables had an effect on the dependent variables.
Table 1. Multiple regression analyses

<table>
<thead>
<tr>
<th>Variables</th>
<th>Current Academic Achievement (GPA)</th>
<th>Overall Academic Achievement (CGPA)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β</td>
<td>t</td>
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<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-.029</td>
<td>-1.09</td>
</tr>
<tr>
<td>Gender</td>
<td>-.160</td>
<td>-6.02</td>
</tr>
<tr>
<td>Class-size</td>
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<td>-1.55</td>
</tr>
<tr>
<td>Aggression</td>
<td>-.055</td>
<td>-2.15</td>
</tr>
</tbody>
</table>

**Remarks:** Current academic achievement (GPA) was dependent variable on the first step and overall academic achievement was dependent on the second step. Gender (0=female, 1=male) and class-size (0=ideal classroom, 1=overcrowded classroom) was coded as a binary variable. Multi-collinearity was not an issue since all variance inflation factor (VIF) values were less than 5 (Groebner, Shannon, Fry, & Smith, 2005). t values 2.00 or above are significant.

The current study proposed two hypotheses. First, it was hypothesized that verbal aggression was negatively associated to current academic achievement (GPA). The result of the regression analyses demonstrated that this association was significant (β= -.055, t= -2.15), hence, hypothesis 1 is supported. Second, it was hypothesized that verbal aggression was negatively associated to overall academic achievement (CGPA). The results also reveal that this prediction is significant (β= -.053, t= -2.02), thus supporting hypothesis 2.

5. Discussion

The purpose of the current study was to examine the effects of aggression on students’ current (GPA) and overall (CGPA) academic achievements. The hypotheses were tested through multiple regression analyses. Control variables were also embedded in to the regression equation in order to test the potential confounding effects. The results did not yield any confounding effects.

The results suggest that aggression has a negative impact on current academic achievement. This indicates that students with aggressive tendencies tend to have lower GPA scores. This finding is consonant with the prior empirical studies (Barriga et al., 2002; Caprara et al., 2000). Additionally, this finding fills the void of empirical paucity demonstrated by Uludag and Yaratan (2012). Furthermore, the results also reveal that aggression also had a negative impact on overall academic achievement. This finding validates that students with aggressive tendencies tend to have lower CGPA scores. This finding is consistent with the study of Barriga et al. (2002). The findings of this study provide new substantiations to the educational sciences literature where a profound understanding is essential in relation to unified aggression scale and its’ associations to GPA and CGPA scores.

5.1. Implications

It is acknowledged that aggression exists within the educational context (Yaratan & Uludag, 2012). Although the results of the current study cannot yield causality among constructs, nevertheless, the findings are warranted. The antisocial tendencies of students such as aggression could be triggered from various sources. Although the current study did not investigate the antecedents of aggression, it is reasonable to state that sources of aggression may stem...
from teacher-student relations, peer problems such as pressure, perceived justice from teachers and administration, family troubles and etc. Whatever the condition or cause, teachers with the support of the administration should provide comforting environment for students who exhibit antisocial behaviours. In order to mitigate the effects of aggression on current and overall academic achievement, the administration of the universities should appoint mentors or guidance counsellors to monitor students portraying antisocial behaviours (cf. Yaratan & Uludag, 2012).

5.2. Limitations and directions for future research

Since the data used for the current study is cross-sectional in nature, future studies should obtain data from longitudinal, cross-cultural, or time-lagged study designs to provide stronger generalizability grounds and minimize the effect of common method bias. Moreover, measurement of the potential determinants of aggression is necessary in order to foresee the underlying factors. Future studies could incorporate perceptions of justice, peer pressure, ill communication, and course load first to replicate and second to examine the relationships among the study constructs and the potential determinants.

References


