

## ORIGINAL ARTICLE

### **Bullying among preparatory school students: prevalence, gender differences, and relationship with aggression, school type, and socioeconomic status**

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#### **Background**

Bullying is defined as a specific form of aggression, which is repeated, intentional, and involves a disparity of power between the perpetrators and the victim. Bullying can take several forms of behavior, including physical (hitting, pushing, and fighting), verbal (calling names, teasing, spreading rumors, and threatening), social (ignoring, leaving on purpose, and exclusion), sexual (sexual harassment, sexual comments), and cyber (annoying electronic messages through the computer or phone). Verbal and physical bullying are the most common types of bullying in boys, while with females, relational/social bullying is more frequently observed. And bullying behaviors are associated with aggression in school students.

#### **Objective**

The authors studied the prevalence of school bullying behaviors and their relationship with aggression, gender, residence area, and school type.

#### **Results**

The authors had a total sample of 521 students: males represented 48.4, while females represented 51.6% of the sample. More than half of the sample (54.7%) was students from governmental schools, while 45.3% were from experimental and private schools. Students reported as sometimes involved in bullying in the following sequence: relational bullying (27.1%), verbal bullying (26.9%), cyber bullying (24.4%), sexual bullying (18.4%), and physical bullying (17.9%). Students reported as usually involved in bullying in the following sequence: relational bullying (3.3%), verbal bullying (2.68%), physical bullying (1.7%), sexual bullying (1.7%), and cyber bullying (0.4%). Males had higher scores in verbal, physical, and sexual bullying and lower scores in relational bullying than females with comparable scores regarding cyber bullying. Governmental school students had the highest scores in all bullying domains than experimental and private school students. There were positive and statistically significant correlations between the scores of domains of bullying battery on one hand and verbal as well as physical aggression on the other hand.

#### **Conclusions**

Governmental school students are more exposed to all bullying types than experimental and private school students. Adolescents' bullying is strongly associated with verbal and physical aggression.

#### **Keywords**

Adolescents, Aggression, Bullying, School students.  
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## INTRODUCTION

Adolescence is the period of life involving specific developmental and health rights and needs. It is the time to develop skills and knowledge, learn to manage relationships and emotions, and acquire abilities that are important for assuming adult roles (World Health Organization, 2016).

Developmental changes in developing adolescents include spending more time with friends and increase in physical strength that may be associated with increased aggressive behavior (United Nations Children's Fund, 2011).

Bullying is defined as a specific form of aggression, which is repeated, intentional, and involves a disparity of power between the perpetrators and the victim (Olweus, 1993).

Moreover, bullying is unwanted, aggressive behavior(s) by another youth or a group of youths, who are not current dating partners or siblings involving a perceived or observed imbalance in power, and is repeated or highly likely to be repeated. Bullying may inflict distress or harm on the targeted person, including psychological, physical, educational, or social harm (Gladden *et al.*, 2014).

Types of bullying include physical bullying that involves acts such as kicking, hitting, punching, and taking or damaging belongings of others (Kristensen and Smith, 2003), verbal bullying involves attempt of name-calling or teasing against others (Bauman and Del Rio, 2006), relational bullying involves harm to individuals through damaging social connections and peer relationships (Crick and Grotpeter, 1995), and cyber bullying is a new growing form of bullying (Johnson and Calyn, 2013) that involves aggressive act offered through devices such as phones and the Internet (Slonje and Smith, 2008).

There is a considerable expansion of bullying phenomenon at a global level with associated great risks to local communities (Gini *et al.*, 2014). Bullying and victimization may be influenced by the interaction of family intrapersonal, peer, school, and community characteristics, and in turn increasing the risk of adjustment and behavioral problems (Swearer and Espelage, 2004; Swearer *et al.*, 2010; Swearer and Hymel, 2015).

School bullying is a problematic behavior among adolescents, affecting psychological well-being, prosocial skills, and school achievement for both perpetrators and victims (Hawker and Boulton, 2000; Roland, 2002; Boulton *et al.*, 2008).

Modecki *et al.*, (2014) reported in their meta-analysis that the average prevalence of traditional bullying to be 36% (35% for perpetration and 36% for victimization), while the cyber bullying prevalence to be about 15% in youth 12–18 years old.

Regarding prevalence of school violence and bullying in Egypt, violent traits were reported in 35%, while violent behaviors were reported in 11.7% of preparatory school students (Tohamy *et al.*, 2005). Bullying behavior was reported in 12.5% of students with significantly more male bullies than female and males had higher scores in all bullying domains, except social bullying (Ahmed *et al.*, 2022a).

Moreover, verbal and physical bullying are the most common types of bullying in boys, while with females, relational/social bullying is more frequently observed (Garrett, 2003). And bullying behaviors are associated with aggression in school students (Arabkhazayi *et al.*, 2020).

Prevention programs of bullying are recommended to increase awareness and promote early detection and intervention of affected students in a way to prevent future psychiatric disorders (Ahmed *et al.*, 2022b).

The aim of the current study is to evaluate the prevalence and gender differences in bullying behaviors in preparatory school students and their relation to school type and socioeconomic status.

## **MATERIALS AND METHODS**

Our study is a cross-sectional comparative study that was conducted in five schools in Minia City, two governmental, one experimental, and two private schools. The governmental schools were located in southern districts of the city (lower socioeconomic level). The experimental and the private schools were located in northern districts of the city (higher socioeconomic level).

A written permission was taken from Minia Education Administration to conduct the study in selected schools.

### **Inclusion criteria**

1. All students in their second year of preparatory school.
2. Both genders (males and females).
3. Student's consent to participate in the study after discussion with parent/guardian through social worker.

### **Exclusion criteria**

1. History of organ failure or apparent physical disability.
2. Refusal to participate in the study and its procedures.

We had 350 students from governmental schools, 65 of them were excluded (10 because of absence in days of study procedures, six because of apparent physical disabilities, 15 students refused to participate, and 34 students were excluded because they did not understand the procedures and questionnaire and selected the same choice in all parameters). The total number recruited from governmental schools was 285 participants.

In the experimental school, the total number was 158 students, 23 of them were excluded (seven were absent, six refused to participate, and 10 were excluded because they did not understand the procedures and questionnaire and selected the same choice in all parameters). The total number recruited from experimental schools was 135 participants.

Furthermore, we had 111 students from private schools, 10 of them were excluded (eight were absent and two students refused participation). The total number recruited from private schools was 101 participants.

## Tools of the study

### The Aggression and Hostility Scale for adolescents (Abdelsameea, 2009)

It involves four subscales measuring verbal aggression, physical aggression, hostility, and anger.

Each subscale includes 14 items. Each item is answered on a five-point Likert scale (1= never happens, 2= happens rarely, 3= happens sometimes, 4= happens a lot, and 5= happens very often). Higher scores indicate a higher level of aggression. Scores below 28 indicate low level, 28–41 indicate mild level, 42–55 indicate moderate, and scores 56–70 indicate severe level of aggression.

### The bullying battery (Shoqair, 2018)

It consists of three subscales measuring three domains (types, motives, and consequences of bullying). We used the first subscale measuring types of bullying.

The subscale measuring types of bullying includes 60 questions measuring five types of bullying (verbal, physical, relational, sexual, and cyber bullying). Each question is answered on a three-point Likert scale (1= rarely, 2= sometimes, 3= usually).

### Data analysis and statistical methods

Data analysis was done by the Statistical Package for the Social Sciences (SPSS, IBM Corp. Released 2010. IBM SPSS Statistics for Windows, Version 19.0. Armonk, NY: IBM Corp) Version 19.0 for Windows. Descriptive statistics: Frequencies and percentages were calculated for categorical variables, while means and SDs were calculated for continuous variables. Regarding analytical statistics, *t*-test was used to compare groups regarding continuous variables, while  $\chi^2$  test was used in comparing groups on categorical variables. *P* value <0.05 was considered significant.

### Ethical aspects

We provided the potential participants with sufficient information about the nature, aim, and the steps of the study, in addition to the anticipated benefit to the society. The potential participants had the right to either accept or refuse to participate in the study without any pressure and also had the right to withdraw from the study without any negative consequences.

A written permission was taken from Minia Education Administration to carry out the study. All participants in the study had to provide oral consent before joining the study after discussion with parent/guardian through social worker.

The protection of the privacy as well as confidentiality of participants was of great importance, as data were kept nonidentifiable by applying codes to protect their identity and subjects were not subjected to any type of harm throughout the study.

## RESULTS

In our study, males represented 48.4%, while females represented 51.6% of the sample. About 45.3% of the sample was students from northern region (private and experimental schools, higher socioeconomic class), while 54.7% were students from southern region (governmental schools, lower socioeconomic class) (Table 1).

In all types of bullying (verbal, physical, relational, sexual, and cyber), more students reported rare bullying experience than those who experienced bullying sometimes or usually. Among students who reported bullying experiences as 'usually', relational bullying was the most prevalent bullying type (3.3%), followed by verbal bullying (2.7%), physical bullying (1.7%), sexual bullying (1.7%), and finally cyber bullying in 0.4% of the whole sample. In the group of students who reported their bullying experiences as 'sometimes'; relational bullying was the most prevalent bullying type (27.1%), followed by verbal bullying (26.9%), cyber bullying (24.4%), sexual bullying (18.4%), and finally physical bullying in 17.9% of the sample (Table 2).

As shown in Table 3, there are gender differences regarding type of bullying as males had higher scores (more severe) in the domains of verbal bullying, physical bullying, and sexual bullying than females and these differences were statistically significant regarding verbal ( $P < 0.001$ ) and physical bullying ( $P < 0.001$ ). Females had higher scores (more severe) in the domains of relational bullying and cyber bullying than males and these differences were statistically significant regarding relational bullying ( $P < 0.001$ ).

As shown in Table 4, students from southern region of the city (lower socioeconomic class) had more severe (higher scores) verbal aggression, physical aggression, hostility, and anger than students from northern region of the city (higher socioeconomic class) and all these differences were statistically significant ( $P < 0.001$ ), indicating the relationship between aggression, hostility, and anger on one hand and socioeconomic class on the other hand (lower the socioeconomic class is associated with more severe aggression, hostility, and anger).

As shown in Table 5, students of governmental schools had the highest scores (most severe) of aggression, hostility, and anger followed by experimental school students and last (lowest scores) were found in students of private schools and all these differences were statistically significant ( $P < 0.001$ ).

Governmental school students had the highest scores of verbal, physical, relational, sexual, and cyber bullying than experimental and private school students and these differences were statistically significant ( $P < 0.001$ ) in all bullying domains, except for cyber bullying. These findings indicate that students from lower socioeconomic classes experience more bullying behaviors than students from higher socioeconomic classes (Table 6).

There were positive correlations between the scores of verbal aggression and physical aggression on one hand and all domains of bullying battery on the other hand and all these correlations were statistically significant. The highly significant correlations of verbal aggression were with verbal, sexual, and physical bullying ( $P < 0.001$ ), while the highly significant correlations of physical aggression were with physical and relational bullying ( $P < 0.001$ ) (Table 7).

Moreover, multiple linear regression analysis predicting the verbal bullying revealed that school area, sex, school type, and anger scores were the significant predictors of verbal bullying in descending manner from highest to lowest predictive value according to beta-coefficient.

The results of the binary logistic regression analysis examining the relationship between verbal bullying and anger, hostility, subscales of strengths and difficulties questionnaire SDQ, sex, school type, and school area showed that the male gender [odds ratio (OR)= 21.390,  $P = 0.000$ ], the governmental school type (OR= 56.295,  $P = 0.001$ ), southern school area (OR= 32.009,  $P = 0.007$ ), and total SDQ score (OR= 1.280,  $P = 0.036$ ) were more likely to report verbal bullying.

Multiple linear regression analysis predicting the physical bullying score revealed that school area, sex, and school type were the significant predictors of physical

bullying ordered in descending manner from highest to lowest predictive value according to beta-coefficient.

The results of the binary logistic regression analysis examining the relationship between physical bullying and anger, hostility, subscales of SDQ, sex, school type, and school area showed that the male gender (OR= 16.390,  $P = 0.000$ ), the governmental school type (OR= 24.225,  $P = 0.001$ ), southern school area (OR= 7.109,  $P = 0.007$ ), and total SDQ score (OR= 1.580,  $P = 0.029$ ) were more likely to report physical bullying.

**Table 1:** Sociodemographic characteristics of the studied sample (N= 521):

	<i>n</i> (%)
Gender	
Male	252 (48.4)
Female	269 (51.6)
Location of school	
Northern (high socioeconomic class)	236 (45.3)
Southern (low socioeconomic class)	285 (54.7)
Type of school	
Governmental school	285 (54.7)
Experimental school	135 (25.9)
Private school	101 (19.4)

**Table 2:** Prevalence of different bullying types in the whole sample as measured by bullying battery:

Test	Rare [ <i>n</i> (%)]	Sometimes [ <i>n</i> (%)]	Usually [ <i>n</i> (%)]
Verbal bullying	367 (70.4)	140 (26.9)	14 (2.7)
Physical bullying	419 (80.4)	93 (17.9)	9 (1.7)
Relational bullying	363 (69.7)	141 (27.1)	17 (3.3)
Sexual bullying	416 (79.9)	96 (18.4)	9 (1.7)
Cyber bullying	392 (75.2)	127 (24.4)	2 (0.4)

**Table 3:** Gender differences in different bullying types as measured by the bullying battery:

Test	Males	Females	<i>t</i> -test	<i>P</i> value
Verbal bullying				
Range	12–32	12–32	4.810	<0.001**
Mean±SD	16.58±5.04	14.76±3.51		
Physical bullying				
Range	12–34	12–30	5.005	<0.001**
Mean±SD	15.63±4.54	13.96±2.99		
Relational bullying				
Range	12–33	12–41	-5.427	<0.001**
Mean±SD	14.77±4.07	17.16±5.77		
Sexual bullying				
Range	12–34	12–30	1.901	0.058
Mean±SD	14.73±4.48	14.07±3.50		
Cyber bullying				
Range	12–28	12–33	-1.185	0.237
Mean±SD	14.59±3.89	15.01±4.23		

\* $P < 0.05$ , significant. \*\* $P < 0.01$ , highly significant.

**Table 4:** Aggression and hostility in students of different school regions (northern vs. southern):

Test	Northern	Southern	t-test	P value
Verbal aggression				
Range	14–59	14–68	-7.309	<0.001**
Mean±SD	22.28±14.07	30.95±12.98		
Physical aggression				
Range	14–62	14–59	-8.145	<0.001**
Mean±SD	18.69±12.05	27.46±12.38		
Hostility				
Range	14–64	14–65	-8.565	<0.001**
Mean±SD	22.42±13.75	32.53±12.13		
Anger				
Range	14–61	14–66	-8.575	<0.001**
Mean±SD	21.50±14.61	32.04±13.39		

\*P <0.05, significant. \*\*P <0.01, highly significant.

**Table 5:** Aggression and hostility in students of different school types:

Test	Governmental	Experimental	Private	F	P value
Verbal aggression					
Range	14–68	14–59	14–59	53.4	<0.001**
Mean±SD	30.95±12.98	25.03±14.55	18.6±12.55		
Physical aggression					
Range	14–59	14–62	14–45	66.3	<0.001**
Mean±SD	27.46±12.38	21.61±12.39	14.78±10.42		
Hostility					
Range	14–65	14–64	14–44	73.4	<0.001**
Mean±SD	32.53±13.13	24.67±14.72	19.41±11.73		
Anger					
Range	14–66	14–61	14–59	73.5	<0.001**
Mean±SD	32.04±13.39	24.09±15.33	18.05±12.87		

\*P <0.05, significant. \*\*P <0.01, highly significant.

**Table 6:** Bullying in students of different school types:

Test	Governmental	Experimental	Private	F	P value
Verbal bullying					
Range	12–32	12–31	12–22	26.6	<0.001**
Mean±SD	16.84±4.9	14.51±3.56	13.76±2.47		
Physical bullying					
Range	12–34	12–30	12–22	35.8	<0.001**
Mean±SD	16.00±4.25	13.09±2.77	13.53±2.83		
Relational bullying					
Range	12–41	12–31	12–22	31.7	<0.001**
Mean±SD	32.04±13.39	24.09±15.33	18.05±12.87		
Sexual bullying					
Range	12–34	12–21	12–21	40.5	<0.001**
Mean±SD	15.72±4.69	12.61±1.92	12.99±2.21		
Cyber bullying					
Range	12–33	12–22	12–22	2.7	.071
Mean±SD	15.15±4.48	14.61±3.79	14.11±3.03		

\*P <0.05, significant. \*\*P <0.01, highly significant.

**Table 7:** The Correlation between verbal and physical aggression and different bullying domains:

	Verbal aggression		Physical aggression	
	<i>r</i>	<i>P</i>	<i>r</i>	<i>P</i>
Verbal bullying	0.655	<0.001**	0.660	0.005**
Sexual bullying	0.477	<0.001**	0.545	0.009**
Physical bullying	0.520	<0.001**	0.523	<0.001**
Relational bullying	0.597	0.02*	0.583	<0.001**
Cyber bullying	0.458	0.03*	0.429	0.04*

\**P* <0.05 Significant, \*\**P* <0.01 Highly significant.

## DISCUSSION

In our study, we found that among the whole sample, 29.6% of preparatory school students were involved in verbal bullying perpetration, 19.6% were involved in physical bullying, 30.3% were involved in relational bullying, 20.2% of students were involved in sexual bullying, and finally 24.8% of students used technology to bully their colleagues (cyber bullying).

In comparing our results with studies done in Arab countries, our findings are in agreement with Ez-Elarab *et al.*, (2007) who found that prevalence of initiation of physical bullying to be 29% but lower than what was found by Galal *et al.*, (2019) who reported a higher prevalence of bullying perpetration (67.3%) among adolescent rural school students; among those, 9.5% were unique bullies and 57.8% were bully-victims, and a slightly higher prevalence than what was found in United Arab Emirates by Alomosh (2019) who found prevalence of bullying perpetration to be 14.2% among school students.

These differences can be explained by methodological and sampling differences as other studies used different tools and their studies were conducted in different settings as specific school type and rural areas in comparison with urban areas where our study was conducted.

Moreover, our results were in agreement with a meta-analysis that involved 80 studies from different geographic zones and found that the mean prevalence of bullying, across these reports, was 35% for perpetration and 36% for victimization (Modecki *et al.*, 2014), and also with studies from China and USA where victimization rates were 2–34% in the Chinese study and 40.6% bullying prevalence (23.2% being victimized, 8% perpetrators, and 9.4% were involved in both roles) in the US study (Chan and Wong, 2015; US Department of Health and Human Services, 2014).

Our study findings regarding the prevalence of different types of bullying were in consistence with other studies that found that verbal and relational bullying occurs most often, followed by physical and then cyber bullying (Kowalski *et al.*, 2012; Olweus, 2013; Salmivalli *et al.*, 2013).

The rate of cyber bullying in our study is comparable to traditional bullying, however, the results of two meta-analyses revealed that cyber bullying is considerably less

prevalent (Modecki *et al.*, 2014), this may be attributed to cultural and methodological differences and the fact that using technology among adolescents has significantly increased in Egypt and globally between the year 2014 and 2018.

Regarding gender, our study found that males had statistically significant higher mean scores than females in physical and verbal aggression and bullying scales, that is, males were involved in more severe forms of physical and verbal aggressive behaviors. Males also had higher scores (although not statistically significant) in hostility, anger, sexual, and cyber bullying. Also, regression analysis (linear and binary logistic regression analyses) revealed that male gender was a significant predictor of verbal aggression, physical aggression, verbal bullying, physical bullying, and sexual bullying.

However, females had a significantly higher mean score of relational bullying than males, regression analysis showed that female gender was a significant predictor of relational aggression, and females are twice more to involve in relational bullying.

These findings were in agreement with Garrett (2003) who reported that verbal and physical bullying are the most common types of bullying in boys, while with females, relational/social bullying is more frequently observed.

We did not find a statistically significant difference between males and females regarding cyber bullying and that was in agreement with Beckman *et al.*, (2013) who stated that there was some evidence suggesting that cyber bullying is likely equal in both genders.

These gender differences in bullying types and aggressive behaviors can be explained by the positive relationship between scores of masculinity and aggressive behavior (Young and Sweating, 2004; Gini and Pozzoli, 2006). Also, bullying behavior may be less adaptive for girls, as female bullies tend to suffer more, and to exhibit less personal group acceptance and maladjustment than male bullies (Postigo *et al.*, 2009).

Our gender differences in bullying behaviors were in consistent with findings of other studies that found that boys were more involved in bullying behaviors than girls and that males exhibit higher levels of victimization and

bullying than females (Nansel *et al.*, 2001; Townsend *et al.*, 2008; Barboza *et al.*, 2009; Napolitano *et al.*, 2010; Gendron *et al.*, 2011; Arabkhazayi *et al.*, 2020).

The differential difference between males and females in our study regarding the type of bullying (more verbal, physical, sexual, and cyber bullying in males, but more relational bullying in females) can be explained, as males tend to use physical aggression more than females who use relational and indirect forms of aggression (Hess and Hagen, 2006; Ombudsman, 2007; Stassen, 2007; Postigo *et al.*, 2009). Also, in the bully situation, boys tend to take the role of the bully or the encourager of the bully, while girls tend to take the role of the defender or bystander (Ma and Bellmore, 2012).

These findings do not necessarily mean that boys are more aggressive than girls, but they probably adopt these behaviors in an overt way (as physical bullying), but girls are more commonly involved in types of bullying that are indirect and difficult to be identifiable as humiliating, teasing, verbal threatening, gossiping, and rejecting (Yang *et al.*, 2006; Cook *et al.*, 2010; Farrington and Baldry, 2010). In general, traditional bullying looks to be more common in boys than girls (Li, 2006; Barboza *et al.*, 2009).

Furthermore, we found that students from southern districts (low socioeconomic/governmental schools) had higher scores of bullying and aggression than those from northern districts (higher socioeconomic status/private and experimental schools).

That was in agreement with and can be explained by findings of previous studies that concluded that there were variables related to the level of school that influence bullying and aggression and that bullying is significantly related to negative school climate (Williams and Guerra, 2007; Henry *et al.*, 2011; Wang *et al.*, 2013; White *et al.*, 2014) as bullying increases in schools that are perceived as unwelcoming, unfair, and unpleasant (Nansel *et al.*, 2001; Williams and Guerra, 2007; Barboza *et al.*, 2009; Gendron *et al.*, 2011). Bullying behavior is related to a lack of confidence in the school system itself (Cunningham, 2007; Martinez-Ferrer *et al.*, 2008).

Moreover, students' negative perceptions of school, lack of teacher's support and inappropriate response, and poor student-teacher relationships are associated with more bullying behaviors among students as a bully, victim, or bully-victim (Doll *et al.*, 2004; Unnever and Cornell, 2004; Bauman and Del Rio, 2006; Bacchini *et al.*, 2009; Barboza *et al.*, 2009; Harel-Fisch *et al.*, 2011; Richard *et al.*, 2011). All these variables are expected to be more common in governmental schools than in experimental and private schools involved in our study explaining the higher score of bullying and aggression among students in southern region (governmental schools/lower socioeconomic status).

Moreover, our findings were in agreement with Fitzpatrick *et al.*, (2007) who found that adolescents (grade 5-12) with low socioeconomic status were three

times more likely to engage in bullying behaviors than other adolescents with similar grades and ages in a national survey. Also, Farrington (1998) found that the lowest prevalence of aggressive behaviors was among students from private schools that offer a better school atmosphere for their students.

Although our results were contradictory with Watt (2003) who suggested that private schools may have a negative impact on adolescent's mental health and that private school students have lower levels of social acceptance and display higher odds than students in public schools, but these differences can be explained by methodological, sampling, and cultural differences as their study was conducted in Texas, United States.

Our study found a strong association between bullying and aggression in school students and that was in agreement with other studies (Arabkhazayi *et al.*, 2020). That association can be explained by the assumption that bullying behavior arises from the need to dominate others, create a power imbalance between the bully and the victim, and abuse power against others (Ttofi and Farrington, 2011) to resolve their interpersonal conflicts (Wolke *et al.*, 2000).

These findings indicate the great need for school-based campaigns, programs, and interventions to prevent or even reduce bullying behaviors in a way to reduce aggression and psychopathology in adolescents.

#### LIMITATIONS OF THE STUDY

From the above-mentioned discussion of the methodology and the results, we can conclude that the limitations of the present study were:

1. The sample size was relatively small that may affect generalization of the results.
2. The use of self-reported questionnaires to assess school bullying and aggression.
3. The tool used for detecting bullying and aggression of perpetrators only.
4. No direct comparison with rural students was done.
5. This study was a part of a research project studying bullying, aggression, and their relation to psychopathology in adolescents, a future paper will be published covering the adolescent's psychopathology and difficulty domains.

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#### CONFLICTS OF INTEREST

There are no conflicts of interest.

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