

Exploring Adolescent Cyberbullying Behavior through the Theory of Planned Behavior

Tszheiemily Liao*

Guangdong Country Garden School, Foshan, Guangdong, 528312, China

*Email: liaotszheiemily@gcgsedu.com

Abstract

With the fast-growing Internet and social media, cyberbullying among teenagers is now a significant international problem for the field of mental health and social adjustment. The behavior is the product of the interaction among personal attributes, social norms, family environment, and situational factors. According to the Theory of Planned Behavior (TPB), the present study develops a model to further investigate the interplay among attitude, subjective norms, perceived behavioral control, behavioral intention, and actual cyberbullying behavior. A total of 400 questionnaires were administered to 13–19-year-old adolescents from one middle school at Foshan, Guangdong Province, with 381 valid questionnaires recovered. With the help of SPSS 26.0, the descriptive statistics, correlation analysis, and structural equation models were performed. Results show that attitude, subjective norms, and perceived behavioral control are the significant predictors for cyberbullying intention, and behavioral intention is the significant intermediary for these variables and actual behavior. The study verifies the rationality for TPB to be applied to the issue of cyberbullying and for online moral education and adolescent psychological intervention to have empirical evidence.

Keywords

Theory of Planned Behavior; Adolescents; Cyberbullying.

1. Introduction

The Internet opened immense doors to youth communication and self-expression, but it also brought with it a novel social threat-cyberbullying. Offensive language, rumormongering, or social exclusion are now common among many teens through social sites, online games, and instant messaging. Based on Brightpath Behavioral Health study, an estimated 26.5% of U.S. teens were victims of cyberbullying last month[1]. In the same vein, BMC Public Health online questionnaire among high school students in China established that 17.7% of the students indicated suffering from online harassment, with 8.1% confessing to committing it[2]. Cyberbullying not only injects emotional poison but also destroys social trust and moral conscience, with some instances leading to depression or self-mutilation.

Prior studies examined this problem through the lenses of personality traits, emotional regulation, and peer associations but found it without an integrated behavioral prediction model. The Theory of Planned Behavior (TPB) introduced by Ajzen systematically describes the psychological process from intention to behavior[3]. Attitude, subjective norms, and perceived behavioral control are hypothesized to jointly determine behavioral intention, which directly predicts actual behavior. Translating TPB enables the revelation of the social antecedents and the underlying psychological mechanisms for adolescent cyberbullying.

2. Literature Review

Int'l studies previously utilized the Theory of Planned Behavior (TPB) to cyberbullying. Heirman and Walrave showed that positive cyberbullying attitude carried significant prediction to behavioral intention, whereas subjective norm and perceived behavioral control also provided explanatory power[4]. Subsequent studies included moral disengagement and peers pressure variables, indicating that people are prone to removing moral inhibition and committing “depersonalized” attacks under virtual contexts. Auemaneekul et al. indicated that subjective norm became the local adolescents' best predictor for the intention to cyberbully, contrasting with Western findings, indicating that cultural background plays a role for weighting TPB variables[5].

Even though native studies began later, they have progressed at a furious pace. Researchers have tended to concentrate on the effects of family and sociocultural factors on cyberbullying. Li Xingrui ventured that parents' phone snooping might, indirectly, result in online aggression and subvert adolescents' needs for psychology, offering an extension at the family level for the TPB model[6]. Other research has suggested that other variables, for example, time spent online and gender, are also associated with cyberbullying. Lastly, some studies confirm the TPB's applicability to the situation with cyberbullying; however, cross-cultural comparisons and expositions to mechanisms of affect for variables are yet required.

2.1. Theoretical Foundation of Cyberbullying

Cyberbullying is generally defined as actions that repeatedly damage other people's psychological well-being with the help of online electronic media, with verbal abuse, social isolation, violation of privacy, and the spread of slanderous information. Unlike face-to-face bullying, cyberbullying is distinguished through the fact that it is anonymous and instantly spread, rendering the psychological effects more latent and, at the same time, more stable. According to the findings, cyberbullying is not only connected to problems with emotion regulation and the quality of relations with peers, but also with social principles and online supervising mechanisms. Behaviorally, cyberbullying is deliberate, rendering the usage of the Theory of Planned Behavior (TPB) a logical theoretical framework for the interpretation.

2.2. Overview of the Theory of Planned Behavior

The Theory of Planned Behavior (TPB) suggests that behavioral intention has the simplest direct prediction relationship with actual behavior, whereas attitude, subjective norms, and perceived behavioral control all affect behavioral intention together.

Attitude is the person's assessment of a specific action. When teens view cyberbullying as leading to something that results or is an enjoyable laugh, then it is something that is likely to occur.

Subjective norms are the effects that other people or societies have on the behavioral choices of a person. When other children believe that other kids support or sanction bullying behaviors, the probability that the children will use these behaviors rises.

Perceived behavioral control entails what someone believes to be the ease or hardship of undertaking behavior. The Internet's lack of anonymity and weak supervision strengthens the perception of behavioral control among adolescents, further encouraging bullying behavior.

3. Research Questions

3.1. Research Objectives

The main goal is to examine the TPB model to determine how it can help explain adolescent cyberbullying. The other objectives are:

To investigate the prediction of cyberbullying intentions and behaviors by attitude, subjective norms, and perceived behavioral control.

To examine the cultural difference and applicability of TPB amongst a sample of Chinese adolescents.

To develop an evidence-based model for school-based mental health education and cyber moral education.

3.2. Research Hypotheses

H1: Attitude is positively correlated with cyberbullying behavior.

H2: Subjective norms positively predict cyberbullying among adolescents.

H3: Perceived behavioral control has a positive effect on cyberbullying behavior.

H4: Behavioral intention positively correlates with actual cyberbullying.

3.3. The Theoretical Contributions

The theoretical contributions are that this study, through the application of the Theory of Planned Behavior, explains the psychological processes behind adolescent cyberbullying, enriching the social cognitive theory application field with online behavior and bringing localized empirical support to the academic realm. The practical implications are to help school institutions formulate more scientifically-based strategies to combat cyberbullying, help families minimize the decoding of negativity and alienation within the learning process, and serve as the basis for policymakers to regulate adolescent online behavior.

4. Methodology

4.1. Research Design and Sample

The questionnaire survey was carried out under convenience sampling. 400 questionnaires were entrusted with the students aged 13–19 for the middle school at Foshan, Guangdong, and 381 valid copies were collected (98.0% valid rate). The sample consisted of 48.4% male and 51.6% female under various grade levels.

4.2. Measurement Instruments

(1) Cyberbullying Behavior Scale: The Cyberbullying Behavior Scale by Wright et al. was employed to test adolescents' cyberbullying behaviors[7]. The questionnaire comprises nine items (e.g., whether the respondent often tells lies about peers through the Internet or text messages). The five-point rating is utilized, with higher ratings signifying higher levels of cyberbullying engagement. The scale is confirmed to be valid among Chinese adolescents with good reliability and validity, with an internal consistency coefficient of 0.80.

(2) Theory of Planned Behavior Scale: According to Ajzen, the scale contains four subscales: attitude, subjective norms, perceived behavioral control, and behavioral intention, with a total 11 items[3]. All the questionnaires utilized a five-point Likert scale, with 1 indicating the response of “strongly disagree” and 5 indicating the response of “strongly agree.” Pretesting showed that all the Cronbach's α coefficients were higher than 0.80, showing good reliability.

4.3. Procedures and Analysis

Questionnaires were administered at classrooms, with the researcher's clarification of the instructions beforehand. SPSS 22.0 and PROCESS were utilized for the reliability test, descriptive statistics, correlation analysis, and regression model.

5. Results

5.1. Descriptive Statistics

Table 1. Descriptive statistics

names	sample	minimum value	maximum value	average value	standard deviation	median
attitude	381	1.000	5.000	3.719	1.125	4.000
subjective norms	381	1.000	5.000	3.730	1.111	4.000
perceived behavior control	381	1.000	5.000	3.735	1.119	4.000
cyberbullying behavior	381	1.000	5.000	3.924	1.346	4.000

Descriptive analysis summarizes the general state of the data with the help of the mean or the median. It is observed from Table 1 above: No outliers were found. The mean rate for all the variables remained 3.7, showing moderate support for norms and attitude concerning cyberbullying. Cronbach's α coefficients were above 0.90, indicating the presence of great internal consistency for scales.

5.2. Regression Analysis

Table 2. Regression Analysis

name	correction term total correlation(CITC)	term deleted α coefficient	Cronbach α coefficient
attitude	0.787	0.872	0.902
subjective norms	0.775	0.876	
perceived behavior control	0.787	0.871	
cyberbullying behavior	0.790	0.875	

Note: The standardized Cronbach a coefficient =0.904

As indicated by the Table 2, the reliability coefficient is 0.902, higher than 0.9, meaning that the reliability of the data is very high at this study. With respect to the " α coefficient if item deleted," the overall reliability remained not very great when any particular item is deleted, indicating all items need to be included. With respect to the 'Corrected Item-Total Correlation (CITC)' values, all the items were above 0.4, showing good internal correlation to the items and satisfactory reliability confirmation. Overall, the reliability coefficient higher than 0.9 indicates perfect internal consistency, consequently, the data is ready for further analysis.

5.3. Linear Regression Analysis

Attitude, subjective norms, and perceived behavioral control were utilized with independent variables, whereas cyberbullying behavior operated as the dependent variable for conducting linear regression analysis. According to Table 3, the derived model can be presented as:

Cyberbullying Behavior = $-0.041 + 0.391(\text{Attitude}) + 0.345(\text{Subjective Norms}) + 0.328(\text{Perceived Behavioral Control})$.

The R^2 for the model is 0.625, meaning that the these three predictors account for 62.5% variance in cyberbullying behavior. The F-test indicates that the model is significant at the 0.05 level ($F = 209.600, p = 0.000 < 0.05$), indicating that at least an independent variable has a significant contribution to cyberbullying behavior.

Table 3. Linear regression analysis (n = 381)

	non-standardized coefficient		standardized coefficient	t	p	collinearity diagnostics	
	B	standard error	Beta			VIF	tolerance
constant	-0.041	0.164	-	-0.253	0.800	-	-
attitude	0.391	0.058	0.327	6.763	0.000**	2.345	0.426
subjective norms	0.345	0.058	0.285	5.971	0.000**	2.293	0.436
perceived behavior control	0.328	0.059	0.272	5.526	0.000**	2.443	0.409
R 2	0.625						
adjusted R 2	0.622						
F	F (3,377)=209.600,p=0.000						
D-W value	1.507						
Note: Dependent variable = Cyberbullying behavior							
* p<0.05 ** p<0.01							

Table 4. Linear regression analysis results - Simplified format

	regression coefficient	95% CI	collinearity diagnostics	
			VIF	tolerance
constant	-0.041 (-0.253)	-0.364 ~ 0.281	-	-
attitude	0.391** (6.763)	0.277 ~ 0.504	2.345	0.426
subjective norms	0.345** (5.971)	0.232 ~ 0.459	2.293	0.436
perceived behavior control	0.328** (5.526)	0.211 ~ 0.444	2.443	0.409
sample size	381			
R 2	0.625			
adjusted R 2	0.622			
F value	F (3,377)=209.600,p=0.000			
Note: Dependent variable = cyberbullying behavior				
D-W value = 1.507				
* p<0.05 ** p<0.01 The values in parentheses represent the t-statistics.				

According to Table 4, attitude exerts a significant positive regression coefficient of 0.391 ($t = 6.763$, $p = 0.000 < 0.01$) to cyberbullying behavior. Subjective norms also exerts a significant positive influence with 0.345 ($t = 5.971$, $p = 0.000 < 0.01$). Correspondingly, perceived behavioral control applies a significant positive influence with 0.328 ($t = 5.526$, $p = 0.000 < 0.01$).

Overall, all the three factors—attitude, subjective norms, and perceived behavioral control—inductor greatly positive influences on cyberbullying behavior among adolescents.

Cyberbullying Behavior = $-0.0414613829 + (\text{Perceived Behavioral Control})$

Table 5. Model summary (Intermediate Process)

R	R ²	adjusted R ²	model error RMSE	DW value	AIC value	BIC value
0.791	0.625	0.622	0.823	1.507	940.964	956.735

As illustrated in the table 5, attitude, subjective norm, and perceived behavioral control were employed to serve as the independent variables, and cyberbullying behavior served to be the dependent variable for performing linear regression analysis. The model's R^2 is 0.625, showing that these three independently account for 62.5% variance for cyberbullying behavior.

Table 6. ANOVA Table (Intermediate Process)

	quadratic sum	df	mean square	F	p value
regression	430.615	3	143.538	209.600	0.000
residual error	258.177	377	0.685		
total	688.793	380			

Like the Table 6 indicates, the F-test result ($F = 209.600$, $p = 0.000 < 0.05$) suggests that the model passed the test for significance, indicating that the overall model is statistically significant.

Table 7. Regression coefficient (intermediate process) (n=381)

	Non-standardized coefficient		Standardization coefficient	t	p	95% CI	VIF
	B	standard error	Beta				
constant	-0.041	0.164	-	-0.253	0.800	-0.364 ~ 0.281	-
attitude	0.391	0.058	0.327	6.763	0.000**	0.277 ~ 0.504	2.345
subjective norms	0.345	0.058	0.285	5.971	0.000**	0.232 ~ 0.459	2.293
perceived behavior control	0.328	0.059	0.272	5.526	0.000**	0.211 ~ 0.444	2.443
Note: Dependent variable = cyberbullying behavior							
* $p < 0.05$ ** $p < 0.01$							

According to Table 7, titled "*Regression coefficient (intermediate process)*", summarizes the multiple regression results with **cyberbullying behavior** as the dependent variable. All three predictors-*attitude* ($B = 0.391$, $\beta = 0.327$), *subjective norms* ($B = 0.345$, $\beta = 0.285$), and *perceived behavioral control* ($B = 0.328$, $\beta = 0.272$)-show **positive and significant effects** ($p < 0.001$).

This indicates that stronger approval, peer pressure, and perceived ease of cyberbullying are each associated with higher levels of cyberbullying behavior.

Among them, **attitude** is the strongest predictor, followed by *subjective norms* and *perceived behavioral control*, consistent with the Theory of Planned Behavior. All 95% confidence intervals exclude zero, confirming the robustness of these effects. The **VIF values (2.29–2.44)** indicate no multicollinearity problems.

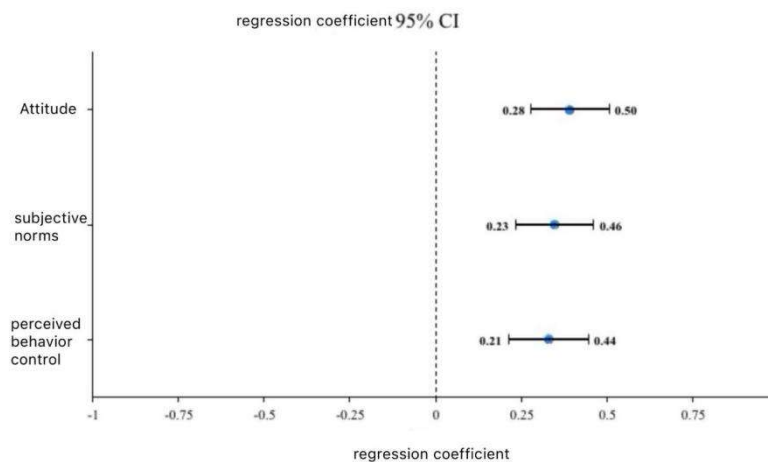


Figure 1. Figure with short caption of variables

Just as shown in Figure 1, titled “Figure with short caption of variables”, visualizes these regression coefficients with 95% confidence intervals. All intervals lie above zero, confirming that each predictor contributes positively to cyberbullying behavior. The order of coefficient magnitudes in the figure matches those reported in Table 7.

Table 8. Summary of sample missing situations

terms	sample	percentage
effective sample	381	100.0%
Exclude invalid samples	0	0.0%
total	381	100%

The Table 8 shows the situation of valid samples and excluded invalid samples when actually entering the algorithm model, etc. Firstly, In the above table, valid samples refer to the total number of samples where all analysis items have data, and excluded invalid samples refer to the total number of samples where any analysis item is missing. Secondly, If there is missing data in any analysis item of a certain sample (i.e., invalid samples are excluded), such samples cannot be included in the model analysis, and the model can only analyze valid samples.

6. Discussion and Analysis

6.1. The Influence of Each Variable on Cyberbullying Behavior

The findings of this research examined the potential for the Theory of Planned Behavior (TPB) to explain adolescent cyberbullies. Specifically, attitude proved the best cyberbullying intention predictor, suggesting that the cognitive and affective appraisal of adolescents toward bullying

determines behavioral tendency per se-if the adolescent finds bullying “fine” or “cool,” he or she is likely to cyberbully.

Second, subjective norms were particularly salient. Implicit norms of the peers and the group conscience of online forums render adolescents particularly open to social pressures consonant with collectivist cultural orientations toward conformity.

Third, the positive spillover effect of perceived behavioral control contends that the Internet’s lack of supervision and anonymity further the adolescents’ perceived ease of performing bullying behaviors, with the result that adolescents decrease the strength of their psychological inhibition.

Furthermore, the behavioral intention to mediate between the above three predictors and real behavior suggests that the process for the emergence of cyberbullying is an evolutionary process-from cognition to intention, and ultimately to action. Such a result is also aligned with Heirman and Walrave, further testifying to the cross-cultural generalizability of the TPB framework[4].

6.2. The Application of the Theory of Planned Behavior to Teenage Cyberbullying

The TPB underlines the point that behavior at the individual level is due to rational decisions. However, teens online are not always impulsive and irrational. The findings reveal that with the inclusion of the variable “past behavior” to the model, the explanatory power augmented, indicating that cyberbullying perhaps has some permanence and automatism.

Additionally, repeated exposure to online contexts and social learning procedures can turn bullying into an automatic response pattern. Hence, future research can combine the Theory of Planned Behavior with Social Learning Theory to develop a more comprehensive account for the stability and duration of cyberbullying behavior.

7. Conclusion and Future Directions

7.1. Limitations and Future Research

Adopting the Theory of Planned Behavior (TPB) framework, this study methodically investigated the underlying psychological mechanisms among adolescent cyberbullies and how attitude, subjective norms, and perceived behavioral control are predictive of behavioral intention and actual behavior. The study, however, is subject to some limitations. Firstly, the convenience sample utilized is not representative. Secondly, the reliance on self-reported questionnaires to collect the needed data opens up the possibility for social desirability bias. Thirdly, since the study design is cross-sectional, the causal relations are not entirely established. The future studies ought to utilize longitudinal tracking or experimentation to further investigate the dynamic interactions among these variables.

7.2. Educational Implications and Recommendations

Schools must develop systematic digital ethics education programs utilizing case studies and psychological consulting to assist students to comprehend the damage of cyberbullying, to develop empathy, and to achieve the sense of obligation. The teachers must implement TPB principles through reconceptualizing students’ attitudes, reinforcing positive norms for social behavior, and promoting self-control to diminish the intention to bully. The parents must be more attentive to children’s online behaviors, raise emotional communication, and foster the safe and caring family atmosphere. Societally, it is necessary to strengthen the legal and regulatory mechanisms and to construct the collaborative mechanisms among the school, society, and family to prevent and combat cyberbullying together.

8. Research Conclusion

The current study built and tested an adolescent cyberbullying behavioral model with the Theory of Planned Behavior. Results showed that attitude, subjective norm, and perceived behavioral control were the main predictors for adolescents' cyberbullying intention, and behavioral intention played the go-between role for these variables and actual behavior. The results endorse TPB's explanation applicability for antisocial online behavior and both theoretical and practical contributions. Future studies must incorporate multi-dimensional theoretical lenses and longitudinal designs to advance the scientific and systematic adolescent mental health education development.

References

- [1] Brightpath Behavioral Health (2023). Adolescent cyberbullying statistics report. *Journal of Behavioral Health Research*, 15(2): 103–118.
- [2] BMC Public Health (2024). Prevalence and correlates of cyberbullying among Chinese adolescents after the COVID-19 pandemic. *BMC Public Health*, 24: 1376–1389.
- [3] Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50: 179–211.
- [4] Heirman, W., & Walrave, M. (2012). Predicting adolescent perpetration in cyberbullying: An application of the Theory of Planned Behavior. *Psychothema*, 24(4): 614–620.
- [5] Auemaneekul, N., Powwattana, A., Kiatsiri, E., & Thananowan, N. (2020). Investigating the mechanisms of theory of planned behavior on Cyberbullying among Thai adolescents. *Journal of Health Research*, 34(1): 42-55.
- [6] Li Xingrui. (2021). The Impact of Parents' Mobile Phone Neglect Behavior on Adolescent Cyberbullying: A moderated Mediation Model. *Psychological Development and Education*, 37(6): 734-742.
- [7] Wright, M. F., & Li, Y. (2013). The association between cyber victimization and subsequent cyber aggression: The moderating effect of peer rejection. *Journal of Youth and Adolescence*, 42(5): 662–674.