



Confirmatory Factor Analysis of the Verbal and Physical Bullying Scale

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Introduction

- Bullying is a pervasive problem worldwide, which may cause harm to victims through a variety of behaviors (e.g. physical contact, verbal assaults, social exclusion, cyberbullying).
- Bullying is defined as engaging in repeated negative actions intentionally designed to inflict harm on individuals who are unable to defend themselves (Olweus, 1993).
- Due to the pervasive nature of bullying in society, it is imperative that those who research bullying and its effects confirm that the instruments used to evaluate the construct of bullying are valid and accurate.
- Confirmatory factor analysis (CFA) is a statistical tool for examining the nature of and relations among latent constructs (e.g., attitudes, traits, intelligence, clinical disorders) (Jackson, Gillaspay, & Purc-Stephenson, 2009).
- Thompson (1997) states that CFA directly tests the fit of theoretically or empirically grounded models to data and:
 - Provides evidence of construct validity for the variables being investigated.
 - Forces instrument developers to be precise in defining constructs.
 - CFA models can be evaluated to emphasize parsimony, enhancing the opportunity for replication.
- The purpose of this study is to confirm the three-factor loading of the bullying victimization subscale (i.e. verbal bullying, physical bullying, and relational/cyber bullying) within the Verbal and Physical Bullying Scale (VPBS; Swearer, 2012; Strawhun, 2016).

Method

Procedures

- This study is part of a larger, ongoing international study with youth and young adults ages 13-25 year-old.
- Data collection for this study took place between May 2016 and March 2017 using the Qualtrics online platform.

Participants

- The sample included 660 participants ranging from 13-25 years old. Participants had a mean age of 19.5 ($SD = 3.39$), and were primarily Caucasian (69.4%). Participants endorsed living in the following regions in the United States: Midwest (22.8%), West (21.2%), Northeast (24.7%), and South (31.3%).

Table 1
Demographic Information as a Percentage of the U.S. Sample

Demographic Information	Participants (n = 660)
Grade	
Middle School (Grade 6 – 8)	n = 25, 3.8%
High School (Grade 9 – 12)	n = 175, 26.5%
College	n = 195, 29.5%
Post-Graduate School	n = 24, 3.6%
Not Currently in School	n = 241, 36.5%
Gender	
Male	n = 209, 31.7%
Female	n = 350, 53.0%
Transgender	n = 35, 5.3%
Genderqueer	n = 38, 5.8%
Prefer not to disclose/Other	n = 28, 4.2%
Sexual Orientation	
Straight	n = 205, 31.1%
Lesbian/Gay	n = 177, 26.8%
Bisexual	n = 110, 16.7%
Queer	n = 22, 3.3%
Questioning	n = 42, 6.4%
Pansexual	n = 74, 11.2%
Prefer not to disclose/Other	n = 30, 4.5%

Verbal and Physical Bullying Scale (VPBS; Swearer, 2008)

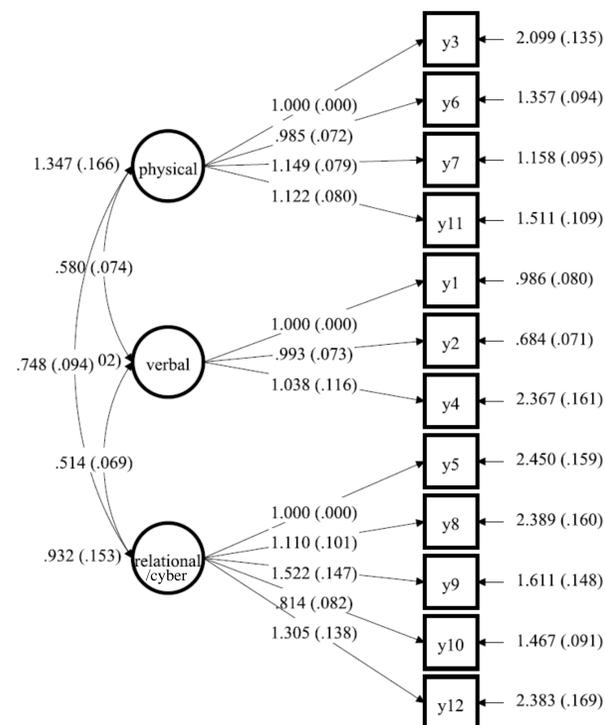
The initial version of the VPBS was designed as an 11-item scale assessing both verbal and physical bullying and was integrated in both Part A (being bullied) and Part C (perpetrating bullying) in the Bully Survey (Swearer, 2001). The most recent version of the VPBS, 2nd consists of 13-items, which include items to measure cyberbullying (y12) and bullying related to homophobia (y13).

VPBS Questions

- y1: I was called bad names.
- y2: I was made fun of.
- y3: People said they would do bad things to me.
- y4: People played jokes on me.
- y5: People wouldn't let me be a part of their group.
- y6: People broke my things.
- y7: People attacked me.
- y8: Nobody would talk to me.
- y9: People wrote bad things about me.
- y10: People said mean things about me behind my back.
- y11: People pushed me or shoved me.
- y12: People posted mean things or made things up online about me (i.e., Facebook, Instagram, Twitter, etc.)
- y13: People called me gay (or another homophobic name)*

VPBS CFA Output

Figure 1
VPBS CFA Output



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Results + Discussion

- The initial model, in which each of the items was hypothesized to load exclusively on one of the three factors, did not exhibit adequate model fit. However, allowing the item “People said they would do bad things to me” to load on both the verbal and physical bullying subscales led to improved model fit.
- The error variances between three dyads of items loading on the same factor were allowed to covary; this allows for the acknowledgement that there exists influences on the responses to these items that were not included in the model. The adjusted model showed acceptable model fit ($RMSEA = .067$, $CFI = .946$, $SRMR = .042$) and largely correspond with the Strawhun (2016) three-factor loading.
- The present study aimed to confirm the three-factor structure previously suggested by Swearer et al. (2012) and Strawhun (2016).
- While both studies used the first 12-items of the VPBS (and excluded question y13), each conceptualized the three-factor structure differently. Swearer et al. (2012) categorized each factor as “Verbal/Relational”, “Physical”, and “Cyber” while Strawhun categorized each factor as “Relational/Cyber”, “Physical”, and “Verbal.”
- The present study yielded good internal consistency on the 13-item victimization scale ($\alpha = .84$).
- The results of the VPBS CFA demonstrated covariance between three sets of questions: “Set 1” y8 with y5; “Set 2” y1 with y2; and “Set 3” y9 with y12. For “Set 1”, it is suspected this may have been due to the “exclusionary” component of the relational construct. Questions in “Set 2” loaded on the “Verbal” factor and took into account a variety of verbal victimization. “Set 3” focused on two forms of bullying, one through the use of technology and the other through a written form.

Limitations + Conclusion

Limitations

- Participant’s from this study were recruited through Lady Gaga’s Born This Way Foundation, and may display unique demographic features when compared to the general population.
- The “Relational/Cyber” factor only contained one item specifically addressing bullying online. It is plausible that additional items related to cyberbullying on future iterations of the VPBS may strengthen this construct validity.
- Findings cannot be generalized to elementary school students since the current sample ranged in age from 13-25.

Conclusion

- It is crucial that researchers and practitioners assess the psychometric properties of surveys used to measure bullying.
- The results from this CFA provide evidence of distinct factors demonstrating physical bullying, verbal bullying, and relational/cyber bullying, support the utility and usage of this measurement as a multifaceted bully instrument, and indicate ways in which the scale may be more parsimonious.
- This study provides evidence that the VPBS may be useful in assessing bullying outside of middle and high school settings (i.e. college & post-graduate school)

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