

Article

Is Cyberbullying a Stand Alone Construct? Using Quantitative Analysis to Evaluate a 21st Century Social Question

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Abstract: Using a subsample of the 2009 National Crime Victimization Survey, School Crime Supplement (NCVS-SCS), the present study explores the nature of the relationship between cyberbullying and traditional bullying victimization among students aged 12–18. One question of particular interest in the recent cyberbullying literature regards the classification of cyberbullying relative to traditional school yard bullying. As is the case in the cyber victimization literature in general, the question has become whether cyberbullying is an extension of traditional bullying or whether it is a unique independent phenomenon. Using the available data we attempt to address this question by exploring cyberbullying victimization as a standalone construct. Results of exploratory factor analyses suggest that cyberbullying victimization is both interlaced with traditional bullying modalities, and experienced as a unique phenomenon. Our results contribute a 21st century texture and dimension to the traditional construct.

Keywords: cyberbullying; bullying; schools; victimization

1. Introduction

In America, a large majority of teens have their own cell phone, and almost two thirds of school age children (age 12–17) go online daily [1,2]. Social media and social networking online have emerged as a cultural reality over the past 25 years. By September 14, 2012 Facebook reportedly reached 1 billion registered users worldwide. Online experiences have become progressively integrated into all aspects of life, so much so that for today's tech savvy youth, an online presence is an expected part of their social life. The reality of their modern social experience is that being social means being online and mobile. As such, the separation of social contexts—online *versus* offline—may be an old way of thinking.

The social processes that are augmented, replaced, or otherwise affected by pervasive forms of personal technology are myriad. Individuals across continents can work together seamlessly in real time. Friends can stay in contact via their mobile web apps, and countless other innovations have made life better with the use of technology. While the benefits of these new ways of forming and maintaining social connections may seem countless, these developments also create divergent, and new negative social experiences. Of particular concern to contemporary youth is cyberbullying victimization—a subject that continues to garner interest in both academia and general public forums. To the casual observer, cyberbullying continues to be highlighted in the news media as a new and growing threat to youth in America. For example, as of 25 November 2014 the New York Times has published over 190 articles related to cyberbullying since 2003, 22 of which were printed since 2013. This attention may come in spite of research suggesting trends in cyber bullying victimization appear stable [3].

More empirical work on cyberbullying victimization continues to emerge that in many respects confirms the media message that cyberbullying victimization is serious, and has significant negative effects for victims. For example, cyberbullying victimization has been linked to a number of negative consequences including decreased academic performance, diminished perceptions of safety, depression, anxiety, reduced self-esteem, self-harm, emotional distress, and suicidal ideation among others [4–14]. Recent work has also explored the link between online victimization and “real world” behavioral consequences [15,16]. The present study explores the relationship between traditional bullying victimization and cyberbullying victimization with the intent to better understand how these forms of bullying relate to one another among a large national level sample of American youth. Over time, one of the questions that has emerged from the empirical cyberbullying literature has been—is cyberbullying an extension of traditional bullying victimization? As we see it, the question is—is cyberbullying victimization nested within the broader context of traditional bullying victimization, or is cyberbullying an isolated free standing construct?

2. Literature Review

2.1. Traditional Bullying

Research on bullying began appearing in the social science literature base with regularity in the latter part of the 1970s. Most of this work was European, (particularly Scandinavian) and since that time the base of knowledge on this topic has become increasingly mainstream and global [17–22]. While the majority of students do not experience bullying (e.g., [16]) research suggests that males are significantly more involved as both bullies and victims [18,22,23]. Students who are new to high school

(incoming freshmen) experience more bullying victimization [23]. Unnever and Cornell [24] find bullying victimization was reported more frequently by girls and students in the lower grades. Bullying victimization has been linked to forms of aggressive behavior such as frequent fighting, fighting-related injury and weapon carrying for both boys and girls [18,25].

Longstanding definitions of the phenomenon generally refer to three major components of behavior which have been codified as distinguishing bullying from other forms of conflict among youth: (1) the intent to harm; (2) repeated behavior; and (3) and an imbalance of power [26]. Additionally bullying has been identified as repeated acts of physical or verbal aggression with intent to humiliate the victim [21]. Over time, specific attention has been paid to the *classification* of bullying through establishing more nuanced typologies; direct overt bullying (including verbal and physical) and indirect (social and relational which can include social exclusion) [27–30]. Others have classified bullying typologies as physical, verbal, and relational [31]. While these typologies are inclusive, encompassing a wide range of bullying forms and tactics, what remains to be seen is just how “typical” manifestations of *cyberbullying* will, or will not, fit within them. Are they more appropriately conceptualized within verbal bullying due to the distal nature of interactions, alongside verbal and physical bullying as a core typology due to conceptual or operational overlap with both forms, or separately from traditional bullying altogether?

2.2. Cyberbullying

In contrast to the traditional bullying literature, which has evolved over time to include well-accepted definitions, refined measures, and empirical examination across diverse populations, the cyberbullying research base is still comparatively young. Research into the extent and nature of cyberbullying began in earnest less than 10 years ago, but in that time tremendous progress has been made in understanding its prevalence, victims, perpetrators, and consequences. Yet, important questions remain surrounding this relatively new form of victimization. As is the case with other related forms of cybercrime victimization, such as cyberstalking or online harassment, it is not clear whether cyberbullying is a unique behavior, separate and distinct from its physical counterpart or simply an extension of traditional bullying carried out in cyberspace [32].

Most definitions of cyberbullying implicitly suggest that cyberbullying is essentially “bullying in cyberspace.” For example, von Marées and Petermann [33], (p. 468) define cyberbullying as “...bullying via the use of the internet, mobile phone, or a combination of both...” Similarly, Patchin and Hinduja [10], (p. 152) explain that cyberbullying is “willful and repeated harm inflicted through the medium of electronic text.” A more detailed definition provided by Smith *et al.* [34], (p. 367) describes cyberbullying as “An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself.” The common thread underlying each of these definitions is intentional harm experienced by victims through an electronic medium. The operational definition of cyberbullying for the current study reflects this focus on the consequences experienced by the victim, and the commission of the cyberbullying act through electronic means.

Opportunities for cyberbullying victimization have grown with the expansion and integration of technology in society. Indeed, convenient communication tools such as emails, instant messages, and text messages delivered by phones, tablets, laptops, and even videogame devices have made these

opportunities nearly ubiquitous. It is important to point out, however, that estimates of the extent of cyberbullying differ depending on cyberbullying definitions, measurement choices, and populations being studied by researchers. With this caveat in mind, estimates of the prevalence of cyberbullying are widely varied, and occasionally provide an inconsistent portrayal of the nature and scope of victimization. For example, in 2006 Li [35] reported that about 25% of students in a Canadian sample of adolescents had experienced cyberbullying, whereas a 2010 work by Mishna and colleagues [36] reported that half of their sample of Canadian middle and high schools students had been victims of cyberbullying. Examining a global convenience sample of adolescent Internet users in 2008, Hinduja and Patchin [37] reported cyberbullying victimization estimates of 32% for boys and 36% for girls (though they also noted no statistically significant difference between boys and girls as either victim or offender, p. 142). These three studies are fairly representative of the vast body of work that has estimated the prevalence of cyberbullying victimization, in addition to illustrating the point that these estimates are wide-ranging [34,38–40].

In addition to being prevalent, cyberbullying is also harmful. While cyberbullying experiences will be unique with distinct effects, an increasing number of studies suggest that experiencing cyberbullying can be very emotionally damaging to victims. Victims can experience a host of negative consequences ranging from self-harm to avoiding school to depression [6,13,16]. For example, Hinduja and Patchin [41] have suggested that cyberbullying victimization can lead to offline behavioral problems such as delinquency. Kowalski and colleagues [42] concluded that those who experience cyberbullying victimization often themselves become cyberbullies and vice versa.

As the previous discussion illustrates, much is known about the nature of cyberbullying. This knowledge base continues to grow as global research emerges addressing the extent to which victims of traditional bullying who are targets of threats, rumors, insults, exclusion, exploitation, and physical assault are also targeted online by their bullies in the form of cyberbullying [4,9,43]. Common cyberbullying behaviors include these same traditional behaviors, such as receiving threats and insults carried out through various online communications such as online gaming forums, text messages, social networks, emails, and other websites. Cyberbullies may also exclude victims from online activities, such as multiplayer videogame channels. If bullies are expanding their domain to into these online realms, it suggests that cyberbullying may be an extension of the traditional behaviors that victims are enduring at school. If, however, cyberbullying victims tend to only experience these online harms then cyberbullying may indeed be a distinct form of victimization [44,45].

While some contextualized research supports the assertion that there is overlap between bullying victimization and cyberbullying victimization [38,46] scholars have not fully investigated which bullying and cyberbullying victimization experiences overlap. The current study focuses on comparing and contrasting several potential indicators of conceptual and measurement overlap in a large, nationally representative sample of victims. Addressing this issue is important for the ongoing study of both bullying and cyberbullying in America. Any conceptual and measurement similarities and differences have the potential to inform future research, inductive theory development, and policy related youth victimization.

3. Data and Methods

Data for the present study originated from the 2009 National Crime Victimization Survey—School Crime Supplement (NCVS-SCS). The School Crime Supplement of the NCVS is considered an “occasional” supplement, but it has been collected with regularity since 1995 (every 2 years beginning 2003). This supplement collects interview data from NCVS household members age 12–18 who had attended a qualifying school in the past six months (typically between January and June), and asks them to reference the current school year. The 2009 SCS sample nets nearly 4000 cases in a national level multi-stage cluster sample. Within this sample 1232 students reported experiencing some form of traditional bullying victimization, and 269 reported a least one cyberbullying victimization experience.

The analyses included three stages, with each stage designed to allow differences between traditional bullying and cyberbullying to emerge. In the first stage we present simple cross tabulations of traditional bullying victimization and cyberbullying victimization to illustrate the degree of overlap that exists between them. We attempt to provide evidence which would facilitate either a “grand” bullying variable in the future—or on the other hand—support including cyberbullying as an additional measure in future bullying research. In the second stage of analysis we further assess the constructs of traditional bullying vs. cyberbullying using a technique similar to alpha modeling to assess the relative stability of these phenomena both independently and collectively. Given the prevalence of overlap between victimization types, the common theme of bullying victimization, and the research questions at hand, we proceed by generating a single reliability score to illustrate congruity in bullying victimization types. Finally, we explore similarities and differences in the constructs through exploratory factor analysis techniques, which articulate the unique characteristics of cyberbullying victimization. Conducting an exploratory factor analysis allows us to further investigate the relationship between traditional and cyberbullying victimization responses, specifically assessing cross-item associations that exist in the data. Across these techniques we adjust for the dichotomous nature of our victimization indicators by using a tetrachoric correlation matrix. Most readers are familiar with the typical Pearson correlation matrix and the corresponding coefficients presented (r). However, when exploring entirely discrete data the most suitable process differs from the traditional method.

The principal question addressed in this study hinges on how bullying, both traditional and cyber forms, are conceptualized and measured in quantitative research. More specifically, how do they fit together for quantitative analysis? To that end, we use a number of advanced, and in some cases non-traditional analytical techniques, to explore a unified bullying construct.

Bullying Variables

The 2009 NCVS-SCS included 13 different items that address bullying in general. Seven of these are suited to address the more traditional concepts of schoolyard bullying. The remaining six items have been tailored to address technology-driven bullying victimization experiences. Each of these items are dichotomous in nature, students reporting yes or no answers. The individual items were introduced to the respondent through the following statement: “Now I have some questions about what students do that could occur anywhere and that make you feel bad or are hurtful to you. You may include events you told me about already. During this school year, has another student....” Traditional *Bullying* is addressed

through SCS items including: "...has another student..." (1) "Made fun of you, called you names, or insulted you?"; (2) "Spread rumors about you?"; (3) "Threatened you with harm?"; (4) "Pushed you, shoved you, tripped you, or spit on you?"; (5) "Tried to make you do things you did not want to do, for example, give them money or other things?"; (6) "Excluded you from activities on purpose?"; and (7) "Destroyed your property on purpose?" Collectively, any positive response to any of these categories results in a score of *Bullying* $\alpha = 0.75$, suggesting a certain degree of success in the measurement of traditional bullying.

The cyberbullying items included in the survey were: (1) "Posted hurtful information about you on the Internet, for example, on a social networking site like MySpace or Facebook?"; (2) "Threatened or insulted you through email?"; (3) "Threatened or insulted you through instant messaging?"; (4) "Threatened or insulted you through text messaging?" (5) "Threatened or insulted you through online gaming, for example, while playing a game, through Second Life, or through XBOX [Live]?" and (6) "Purposefully excluded you from an online community, for example, a buddy list or friends list?" These six items when combined would result in a *Cyberbullying* score of $\alpha = 0.63$.¹

Interestingly, the school crime supplement has evolved over time and added questions related to cyberbullying as they emerge in social sphere. The online social world changes very quickly and seemingly overnight the online social experience can evolve. The 2009 iteration adds questions related to victimization on specific online communities that cater to youths playing online video games. Cyberbullying item 5 addresses these online communities and provides us an opportunity to capture and include possible trends in victimization occurring on the leading edges of American youths social experiences.

4. Results

Our primary question addressed the classification of cyberbullying in relation to traditional bullying victimization. Specifically, does cyberbullying victimization typify an "extension" of school yard bullying, or does it manifest as a separate and distinct construct? In general, our results provided mixed support for either position.

4.1. Bivariate Associations

Table 1 presents a two-way table relating the prevalence of traditional bullying victimization to cyberbullying victimization. First, it should be noted that 29% of the sample¹ reported some form of bullying victimization within the past school year. In Table 1, we present the distribution of cases, percentages (by row, column, and total N), and ultimately the bivariate correlation between cyberbullying victimization and traditional bullying victimization ($\rho = 0.67$; $p < 0.000$). A large majority (83.27%) of cyberbullying victims report also experiencing traditional bullying victimization. And another 18.18% of traditional bullying victims report experiencing cyberbullying, supporting the intuitive position that traditional bullying and cyberbullying are indeed related. Importantly, we find that cyberbullying victimization is experienced outside of traditional bullying victimization. In this sample, 16.73% of those

¹ Original responses were coded categorically where respondent options included "never", "once or twice this school year", "once or twice a month", "once or twice a week", and "almost every day".

students reporting cyberbullying victimization report no traditional bullying victimization experiences. These results suggest that to some degree cyberbullying victimization is not an entirely collateral experience and is experienced by some as a separate form of victimization. There may be key features of the offenders, the victims, or the situations themselves that are accountable for the discrepancy in modalities. That being said, the majority of cyberbullying victimization is experienced by those already exposed to traditional school yard bullying.

Table 1. Two-way presentation of Bullying and Cyberbullying Victimization.

| | Bullying | | | | Total | |
|------------------|----------|-------------------|----------|-------------------|----------|---------------|
| | No | | Yes | | | |
| Cyberbullying | No | 3087 ** 98.56% | * 75.38% | 1008 ** 81.82% | * 24.62% | 4095 93.8% |
| | Yes | 45 ** 1.44% | * 16.73% | 224 ** 18.18% | * 83.27% | 269 6.2% |
| | Total | 3132 | | 1232 | | 4364 |
| Pearson χ^2 | 438.157 | $p < 0.000$ | | | | |
| Tetrachoric rho | 0.674 | $p < 0.000$ | | | | |

Note: * Row Percent; ** Column Percent.

Table 2 elaborates on the basic association between bullying and cyberbullying victimization presented in Table 1 by further unpacking the individual cyberbullying elements relative to the victims' broad scale victimization experiences. This table (Table 2) presents the number of individuals reporting each of the specific forms of cyberbullying victimization as well as a proportion of the number of line item victims that also reported traditional bullying victimization. Of the six different cyberbullying victimization line items, five items display a substantial proportion of their victims also experiencing traditional forms of bullying. Among the cyberbullying items, the lowest proportion reporting traditional bullying experiences is the item Cyber 5, which refers to victimization through online gaming outlets such as XBOX Live (0.69). Based on these results, and the need for clarity regarding the position of cyberbullying in the broader scheme of victimization, we further explore evidence that would illustrate the clearest picture in conceptual overlap and/or differentiation. Stage two of the analysis therefore explores deeper connections between individual elements of bullying victimization.

Table 2. Comparison of Victims of Cyberbullying (Only) to Victims of Both Forms of Bullying.

| Variable | Traditional Bullying (NO) | | Traditional Bullying (YES) | | Total | Proportion Overlapping |
|------------------|---------------------------|-------------|----------------------------|-------------|-------|------------------------|
| | n | % of Sample | n | % of Sample | | |
| | Cyber 1 (Facebook) | 13 | 0.4% | 78 | | |
| Cyber 2 (Email) | 9 | 0.3% | 49 | 4% | 58 | 0.845 |
| Cyber 3 (IM) | 6 | 0.2% | 73 | 6% | 79 | 0.924 |
| Cyber 4 (Texts) | 15 | 0.5% | 119 | 10% | 134 | 0.888 |
| Cyber 5 (Games) | 10 | 0.3% | 22 | 2% | 32 | 0.688 |
| Cyber 6 (Forums) | 2 | 0.1% | 35 | 3% | 37 | 0.946 |

4.2. Item Reliability Analysis

Alpha reliability coefficients (Cronbach's alpha) are regularly used to demonstrate internal consistency, or the strength of a collection of variables to represent a construct [46]. This consistency or strength is then conveyed through a score between 0 and 1 that represents the inter-item correlation. More generally speaking, the higher this score, the more we assume the items to be congruent in capturing the same broad construct. As noted earlier, using entirely discrete data can be problematic. However, the Kuder-Richardson method compensates for, or accommodates binary data. Thus results displayed here in Table 3 can be interpreted as they would in a traditional alpha reliability analysis, yet the figures are derived from an alternative formula. As noted above there are several items available in the NCVS-SCS that address issues of bullying victimization as well as items that address cyberbullying victimization. As a part of the exploratory process we evaluate the alpha scores associated with the two possible conceptual classifications: (1) cyberbullying as a standalone construct; and (2) cyberbullying as a nested component of a more inclusive general bullying phenomenon. The results of this modeling process are presented in Table 3.

Table 3. Combined Bullying Victimization Kuder-Richardson Reliability Modeling ($N = 4346$).

| Item | Brief Description | Item | Item-Rest | Item |
|---------------|-----------------------|------------|-------------|----------|
| | | Difficulty | Correlation | Variance |
| Traditional 1 | (Making Fun) | 0.1871 | 0.5493 | 0.1521 |
| Traditional 2 | (Spreading Rumors) | 0.1661 | 0.5741 | 0.1385 |
| Traditional 3 | (Threatening) | 0.0575 | 0.4669 | 0.0542 |
| Traditional 4 | (Pushing, Shoving) | 0.0916 | 0.5143 | 0.0832 |
| Traditional 5 | (Coercion) | 0.0359 | 0.3856 | 0.0346 |
| Traditional 6 | (Exclusion) | 0.0458 | 0.4557 | 0.0437 |
| Traditional 7 | (Destroying Property) | 0.0324 | 0.4013 | 0.0314 |
| Cyber 1 | (Facebook) | 0.0209 | 0.3125 | 0.0205 |
| Cyber 2 | (Email) | 0.0133 | 0.2913 | 0.0132 |
| Cyber 3 | (IM) | 0.0182 | 0.3803 | 0.0178 |
| Cyber 4 | (Texts) | 0.0308 | 0.3976 | 0.0299 |
| Cyber 5 | (Games) | 0.0071 | 0.0998 | 0.0071 |
| Cyber 6 | (Forums) | 0.0083 | 0.2641 | 0.0082 |
| Test | | 0.550 | 0.3918 | |
| K-R Coef. | | | | 0.7628 |

First, we address the combined traditional and cyberbullying measures in one cumulative bullying construct, for which the Kuder-Richardson coefficient is 0.76. Second, we assess the constructs independently. The coefficient for the traditional bullying items alone is 0.75, and finally, the "alpha" score for the collection of cyberbullying items alone is 0.63.² Each of these scores individually suggests that the internal consistency of the measured concept is fair to acceptable. The comparatively lower

² The removal of one cyberbullying variable addressing victimization through online gaming mediums improves the Cronbach's alpha score of the cyberbullying composite, suggesting a possible sub group or sub form related specifically to online gaming.

alpha score for the cyberbullying measures alone does not necessarily mean it is a poorer construct; fewer items and fewer cases available for that portion of the analysis make a lower score somewhat justifiable. In sum, there are two key results to note from the examination of item reliability. First, both the traditional bullying items and the cyberbullying items create relatively stable and consistent independent constructs. And second, the inclusion of cyberbullying elements into a cumulative “grand” bullying measure does not markedly increase the stability of the traditional bullying scale.

4.3. Principal Components Analysis (PCA)

Classification of cyberbullying can also be addressed through further exploratory analysis. This process allows us, in essence, to process a number of individual items in such a way that their natural correlational patterns will produce variable clustering (or loadings). While there are a number of potential factor analytic solutions, the simplest and most direct for our purpose is a variation on the principal components method. Specifically, the nature of the research question suggests the possibility of correlated factors, supporting oblique (promax) rotations that naturally accommodate correlation of the factors rather than the alternative orthogonal (varimax) rotations. Table 4 presents a principal components analysis, derived from the tetrachoric correlation matrix, and the factor from a promax rotated solution when limiting to two factors. The two loaded components closely align with traditional bullying victimization and cyberbullying victimization constructs. Interestingly, initial extractions of bullying elements (Table 4) produce three components with Eigenvalues over 1.0. Entering all 13 items in a principal components analysis, we find that the elements of traditional bullying cluster on one factor and elements of cyberbullying victimization will cluster on another when constrained; when unconstrained, however, more interesting results emerge. Unlike simple evaluation of item reliability using alpha scores, principal components analysis yields a variety and depth of useful, textured results. Traditional bullying literature suggests that there are a number of identified modes of bullying victimization, yet the seven items representing traditional bullying victimization did not initially break out by verbal, physical, and relational forms, they remained clustered while cyber elements loaded separately on another factor.

Table 4. Exploratory PCA, Promax Rotated Solution, Two Factors (tetrachoric matrix).

| Variable | Component 1 | Component 2 | Unexplained |
|---------------|-------------|-------------|-------------|
| Traditional 1 | 0.445 | | 0.204 |
| Traditional 2 | 0.285 | | 0.228 |
| Traditional 3 | 0.404 | | 0.311 |
| Traditional 4 | 0.414 | | 0.259 |
| Traditional 5 | 0.356 | | 0.390 |
| Traditional 6 | 0.368 | | 0.311 |
| Traditional 7 | 0.341 | | 0.359 |
| Cyber 1 | | 0.389 | 0.353 |
| Cyber 2 | | 0.478 | 0.221 |
| Cyber 3 | | 0.483 | 0.114 |
| Cyber 4 | | 0.374 | 0.282 |
| Cyber 5 | | | 0.736 |
| Cyber 6 | | 0.385 | 0.311 |

In the interest of better understanding a data driven classification scheme, Table 5 represents a variation in the classification scheme that parses cyberbullying elements into two sub-groups. The larger of the two groups features Cyber elements 1–4 which address email, instant messaging, text messaging and internet postings, where Cyber element 5 (“Has another student: threatened or insulted you through online gaming?”) and Cyber element 6 (“Has another student purposefully excluded you from an online community?”) appear to diverge from the remainder of the cyberbullying elements in constituting the third factor. The relative strength of the online gaming element in the third factor may be important in understanding and developing the most appropriate means for classification of these types of victimization.

Table 5. Promax Rotated Principal Components (Comp.) Extraction of Bullying Items (Three Factors).

| | Comp. 1 | Comp. 2 | Comp. 3 | Unexplained |
|---------------|---------|---------|---------|-------------|
| Traditional 1 | 0.444 | | | 0.198 |
| Traditional 2 | 0.281 | | | 0.179 |
| Traditional 3 | 0.399 | | | 0.264 |
| Traditional 4 | 0.415 | | | 0.251 |
| Traditional 5 | 0.378 | | | 0.377 |
| Traditional 6 | 0.369 | | | 0.299 |
| Traditional 7 | 0.345 | | | 0.296 |
| Cyber 1 | | 0.470 | | 0.245 |
| Cyber 2 | | 0.461 | | 0.219 |
| Cyber 3 | | 0.469 | | 0.113 |
| Cyber 4 | | 0.443 | | 0.202 |
| Cyber 5 | | | 0.821 | 0.094 |
| Cyber 6 | | 0.309 | 0.292 | 0.278 |

The final exploratory factor analysis provides similar results, but expands the number of allowable components to five. This expansion presented in Table 6 facilitates further discriminatory analysis on which elements of bullying and cyberbullying will cluster differently than expected, if allowed. The resulting component formations are a departure from the findings from the previous rotations in Tables 4 and 5, and generally represent a “spectrum” of victimization experiences, some of which involve clustered behaviors and some of which integrate aspects of both traditional and cyberbullying. Traditional bullying elements break out into a mix of relational and physical typologies seen in component 2. Component 5 is dominated by the measure of traditional bullying associated with “making you do something you don’t want to” which we have previously labeled as ‘coercion’. Bullying in the form of purposeful exclusion takes form in component 3, consisting of a traditional bullying item regarding exclusion from activities (Traditional 6 “Exclusion”) in combination with a cyberbullying item focusing on exclusion from online communities (Cyber 6). Component 1 consists of cyber items pertaining to email, text, instant message and internet postings. Lastly, consistent with the results in Table 4, component 4 stands alone with the single item referencing online gaming.

Table 6. Promax Rotated Principal Components Extraction of Bullying Items (Five Factors).

| | Comp. 1 | Comp. 2 | Comp. 3 | Comp. 4 | Comp. 5 | Unexplained |
|---------------|---------|---------|---------|---------|---------|-------------|
| Traditional 1 | | 0.296 | | | | 0.190 |
| Traditional 2 | | | 0.229 | | | 0.170 |
| Traditional 3 | | 0.368 | | | | 0.250 |
| Traditional 4 | | 0.646 | | | | 0.137 |
| Traditional 5 | | | | | 0.900 | 0.051 |
| Traditional 6 | | | 0.758 | | | 0.090 |
| Traditional 7 | | 0.558 | | | | 0.222 |
| Cyber 1 | 0.474 | | | | | 0.244 |
| Cyber 2 | 0.543 | | | | | 0.098 |
| Cyber 3 | 0.463 | | | | | 0.107 |
| Cyber 4 | 0.450 | | | | | 0.183 |
| Cyber 5 | | | | 0.850 | | 0.088 |
| Cyber 6 | | | 0.327 | | | 0.148 |
| * Proportion | 0.30 | 0.20 | 0.12 | 0.11 | 0.09 | |

* Proportion of variance accounted for by component.

5. Discussion and Conclusion

The overarching purpose of this study was to evaluate competing conceptual and measurement approaches to the operationalization and classification of cyberbullying victimization. More simply, the goal of this work was to examine whether cyberbullying victimization was truly a unique phenomenon when exploring a large data set. Each of the preceding analyses has contributed insight to a data driven, framework aided, classification process whereby we attempt to find the best fit for cyberbullying victimization relative to the broader bullying victimization scheme. Results show that in this sample traditional bullying and cyberbullying victimization experiences are generally associated ($\rho = 0.67$) and there is a great deal of overlap in the experience of both traditional and cyber victimization. However, the empirical data supports operationalization and measurement of cyberbullying victimization as a distinct outcome. The exploration of these constructs allows us to go beyond simple bivariate associations to contrast dimensional stability when operationalizing in several different ways. We found early evidence that a “grand” bullying variable is viable, but not necessarily more stable than traditional bullying alone. We also find that cyberbullying elements can arguably stand alone as a separate but related construct. Yet, critical to this is the exposure to victimization via online gaming communities.

Exploratory factor analysis produced a more detailed specification of bullying which delineates traditional bullying elements including physical, verbal, and exclusion bullying, but importantly adds dimension to cyberbullying in the context of a grand bullying victimization scheme where online gaming stands out from other mediums such as email, text, instant message and online postings. In particular, this collection of findings has great potential to create future avenues of research in the cyber-social realm of youths. While cyberbullying victimization has the potential to fall within the traditional rubric of relational bullying dimensions as the wording of these items addresses ‘threat and insults’, and those items (traditional or cyber) addressing exclusion load together (purposeful exclusion), we have exposed

an area where there is much to learn: online gaming communities. Today's youth experience their social lives in such a way that online gaming environments may share distinct similarities with the traditional playground. So powerful are these dimensional differences that in all of our presented exploratory models, victimization in gaming environments commanded its own recognition. While other included mediums for experiencing victimization such as text or instant message could be considered facilitators of traditional relational bullying, online gaming may be a separate form of social world which traditional forms of bullying take place within. Thus, while in answering the question we set out to, we can suggest that with the exception of the online gaming environment, "cyberbullying" is a means to experience relational bullying. Yet, we cannot exclude the gaming environment as it is a part of the ever changing cyber social reality. As such, the online gaming world needs exploration to establish whether it should be considered a tool for delivery or a nested cyber social world in which traditional forms of victimization take place. The real value of this exploration may be in the admission that classifying the victimization experience is conceivably unrelated to what we understand about perpetration. The victimization experience may be more a reflection of the tools available within one's social circles. If traditional and cyber bullying are expressions of power within the confines of a social circle rather than a physical space, the dimensions of victimization are likely to reflect the contextualized means of the group. Perhaps the isolation of the recognition of the online gaming group within the data is a reflection of a uniquely clustered social structure among American youth. It may be that while many youth play video games as a part of their social experience, some small number of them live their entire social life within this arena. Further research is required in the area of bullying modality in concordance to group social settings.

Several ancillary findings also arise here, some of which may be instrumental in discussions about policy as well as theory. For example, while bullying and cyberbullying outcomes may be considered independent but related constructs, among these respondents experiencing cyberbullying without traditional bullying is uncommon. Among cyberbullying victims, only 16.73% reported not experiencing traditional bullying, and only 1% of all respondents reported experiencing cyberbullying without having experiencing any form of traditional bullying victimization. Conversely, and perhaps equally important, we find that a large majority (83%) of cyberbullying victims report experiencing both cyber and traditional bullying victimization. Furthermore, nearly 1 in 5 victims of traditional bullying is also being victimized 'online'. These findings are strongly suggestive that a comprehensive and integrated approach to prevention is appropriate. Further, the apparent predominance of overlap between the two forms inspires numerous questions about the etiology of offending. For example, do bullies specialize in one form over another, perhaps as a function of rational choice considerations about skill, expertise, or detectability? As the multi-disciplinary study of bullying and cyberbullying moves forward, there will undoubtedly be opportunities to apply traditional criminological theories to better understand these complicated dynamics.

As with any exploratory research, several limitations of the present study must be noted. First, a common feature of virtually all empirical analysis of cyberbullying to date is that datasets that include measures of cyberbullying are still relatively limited. Even when a nationally representative sample from the NCVS is used, as in this study, the relatively broad spectrum of victimization experiences and relatively few cyberbullying cases available presents challenges for analysis. Although it might be insightful to work with particular subsets of cases in order to identify relationships between specific risk

factors and victimization sequelae (e.g., gendered or race-based cyberbullying), these relationships are difficult to explore with the available secondary data. Second, the results presented here cannot address a fundamental issue with time ordering. Thus, while some of the findings suggest that the majority of victims of bullying also experience cyberbullying, without a more extensive understanding of ordering, we cannot conclude that cyberbullying victimization is a logical extension of the school yard experience. Third, the data here are a secondary and many readers familiar with the bullying literature will note deviations from the contemporary structuring of questions and examination of victim-offender overlap. As these elements are not a part of the survey's design, we sacrifice specificity for a large sample of students from across the United States. Finally, a common feature of bullying definitions is the power imbalance between bully and victim which cannot be addressed here. The result of this may be that we have cast a wider net which would include fighting among peers.

Similar to other emerging areas of literature, most notably the stalking/cyberstalking nexus, criminologists will soon be forced to confront nuanced conceptual and measurement problems when determining how to appropriately classify and accurately capture these experiences. Relatively little work to date has been published related to the similarities and differences in bullying and cyberbullying victimization in the United States, despite the growing volume of work globally. Our results suggest that bullying victimization can be experienced with conceptual distinction and empirical overlap among American youth, but replication with richer and larger data is a logical next step. Moreover, future researchers will need to ask why bullying victimization clusters along dimensions as they do here. As the field builds evidence-based consensus on these issues, the next generation of researchers will be in position to move forward with theoretical as well as policy-oriented work.

Author Contributions

R. Randa and M. R. Nobles conceived of the modeling process. R. Randa completed the modeling and constructed the tables, wrote the methods, results, and drafted the discussion and conclusion sections. B. W. Reynolds wrote the introduction and literature review and aided in the construction of the remainder of the paper, as well as the revisions. M. R. Nobles aided in the completion of the manuscript and the interpretation of the findings.

Conflicts of Interest

The authors declare no conflict of interest.

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