To Use Facebook for Good: Usage, Cyberbullying Involvement, and Perceived Social Support

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We examined the relationship between the extent of Facebook usage and social well-being with consideration of cyberbullying involvement using a person-oriented approach. Survey data were collected from a sample of 312 secondary students from Grades 7 and 8 in Hong Kong. Levels of cyberbullying involvement, Facebook usage and perceived social support were investigated. Participants were classified into three clusters based on the different levels of Facebook usage and cyberbullying victimization through cluster analyses (i.e., *frequent Facebook user/noncyberbullied victim*, *frequent Facebook user/cyberbullied victim*, and *uninvolved*). Our results showed that frequent Facebook users who are cyberbullied tend to engage in cyberbullying perpetration significantly more than the frequent Facebook users who are not cyberbullied, even when the latter reported higher Facebook usage. This result provides some support for the idea that cyberbullying victimization has additional value on top of the level of usage in explaining one's participation in cyberbullying perpetration. As expected, frequent Facebook users who were not cyberbullied reported the highest perceived social support among the three groups. What is even more interesting is the equal level of perceived social support found between the cyberbullied victims and the uninvolved. Our results suggest that, although limiting adolescents' Internet use might reduce their risks of being involved in cyberbullying, it might also take away the potential benefits they could get from interacting with the online community. Benefits of using the person-oriented approach in the study of cyberbullying are discussed.

Keywords: cyberbullying, person-oriented approach, adolescents, social networking sites, perceived social support, Facebook

Research on cyberbullying among adolescents has become increasingly important, maybe even more so since the invention of smartphones. With the use of mobile data and WIFI, Internet access is ubiquitous in many big cities around the world.

The rise of smartphones fosters an environment that promotes the proliferation of a wide range of social networking sites (SNSs). The new way of interacting online is very popular nowadays, especially among youth. Although some studies have identified positive outcomes for engaging in online communication, such as the establishment and maintenance of social ties that might otherwise be difficult to achieve offline (Amichai-Hamburger & Ben-Artzi, 2003; Henderson & Gilding, 2004; Mesch &Talmud, 2006), the rise of SNSs have also

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brought around new risks. With teenagers spending more time online, cyberbullying has gradually become a pernicious problem among youth. Hitherto, cyberbullying involvement has been found to be related to a range of externalizing and internalizing problems, such as delinquency, loneliness, depression, social anxiety, and even suicidal ideation (e.g., Bauman, Toomey, & Walker, 2013; Beran & Li, 2005; Hinduja & Patchin, 2010). With both sides of the argument considered, how does the popularization of SNSs (such as Facebook) affect the level of social well-being among adolescents? In the current study, we aim at examining how usage of Facebook, an SNS that is used by more than 80% of the adolescents in Hong Kong (Hong Kong Breakthrough, 2014), is related to one's social well-being with consideration of students' involvement in cyberbullying.

Intensity of Internet Use, Cyberbullying Victimization, and Cyberbullying Perpetration

The rise of the smartphone marks the beginning of a new Internet era. Recent statistics show that the amount of time teenagers spend online has been rising globally. Although regions in Europe, North America, and Oceania reported the highest Internet usage rates (Internet World Stats, 2015), the number of Internet users has also been growing in Asia. For example, in cities like Hong Kong, the percentage of adolescents with an Internet connection has reached 99.9% in recent years, of whom over 90% use the Internet mainly for communication purposes (Census and Statistics Department, 2013). It was also reported that, among all Hong Kong teenage Internet users under study, 80% use popular SNSs such as Facebook and Weibo on a daily basis (Hong Kong Breakthrough, 2014). Moreover, World Internet World Stats revealed that the Internet usage rates in some regions in Asia, such as Hong Kong, are now higher than in certain countries in the west, and over half of the world's Internet population (55.5%) is composed of Asian population only.

As teenagers spend more time online, their risk of engaging in cyberbullying perpetration also increases. The extent of Internet use was found to be positively related to the involvement in both cyberbullying perpetration and victimization in a range of youth studies in the west (e.g., Hinduja & Patchin, 2008). The frequency of Internet use was also identified as a significant predictor of cyberbullying perpetration in a recent meta-analysis on cyberbullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014).

This finding was also replicated in an Asian sample. A study in South Korea investigated the relationship between the level of Internet use and cyberbullying involvement among South Korean adolescents and found that frequent SNS users are more likely to engage in cyberbullying perpetration than nonfrequent users (Park, Na, & Kim, 2014). Similar results were uncovered in studies that investigated Facebook bullying specifically. A study which explored the relationship between the intensity of Facebook use and engagement in Facebook bullying among adolescents in Singapore found that the level of Facebook usage is positively related to both bullying perpetration and victimization on Facebook (Kwan & Skoric, 2013).

Other than the intensity of Internet use, cyberbullying victimization was also consistently found to be positively related to cyberbullying perpetration. A recent study showed that cyberbullied victims (12–18 years old) were over 6.5 times more likely to be a perpetrator as well (Walrave & Heirman, 2011). Results from other studies have also confirmed the strong relationship between cyberbullying perpetration and victimization in youth (e.g., Campbell, 2005; Juvonen & Gross, 2008; Riebel, Jager, & Fischer, 2009). Experience in cyberbullying victimization was also identified as one of the strongest predictors of cyberbullying perpetration in the recent meta-analysis mentioned earlier in this study (Kowalski et al., 2014).

From a Variable-Oriented to a Person-Oriented Approach to Cyberbullying Perpetration

Thus far, a number of studies have investigated how the extent of Internet use and cyberbullying victimization is related to one's engagement in cyberbullying perpetration separately. However, this variable-oriented approach could be problematic, as it omits the interaction effect between the two variables. In fact, some researchers have shown that when the extent of Internet use and cyberbullying victimization is taken into consideration, their relationships with cyberbullying perpetration might not be as clear as proposed by other studies. For example, Sticca, Ruggieri, Alsaker, and Perren (2013) found that, while the extent of Internet usage was a significant longitudinal risk factor for cyberbullying perpetration, cyberbullying victimization was not. The two variables, therefore, might not be contributing to the risk for one's involvement in cyberbullying perpetration in a purely additive manner. Moreover, people can get a high score on one scale and a low score on the other (e.g., some people who are not bullied might use the Internet just as extensively as people who are bullied). This could confound our predictions on one's involvement in cyberbullying perpetration if we only consider the effect of these two variables separately.

To take both variables into consideration when accounting for their relationship to one's involvement in cyberbullying, we propose to use a person-oriented approach in which we categorize our participants into groups based on their respective scores on the extent of Internet use and cyberbullying victimization through cluster analyses. The reason for using a person-oriented approach is that we believed people with different combinations of scores on the two scales could be categorically different, which is exceptionally important to account for in this case. For example, cyberbullied victims who use the Internet extensively could be characteristically different from other frequent Internet users who are not bullied. By dividing the Internet users into different groups based on their level of cyberbullying victimization and amount of usage, we were able to look at how different types of Internet users differ in terms of their online behaviors, involvement in cyberbullying, and their social well-being as a *whole person*.

Facebook Usage, Cyberbullying Victimization Clusters, and Cyberbullying Perpetration

Participants were expected to be divided into three clusters based on the different combinations of Facebook usage and cyberbullying victimization scores: (a) frequent Facebook user/noncyberbullied victim, (b) frequent Facebook user/cyberbullied victim, and (c) nonfrequent Facebook user/ noncyberbullied victim (i.e., uninvolved). We expected that there would be no *nonfrequent Facebook user/cyberbullied victim group*, as people who use Facebook infrequently will be exposed to significantly less cyberbullying naturally. This was the first hypothesis of our study.

Our second hypothesis was related to the difference of cyberbullying perpetration involvement across groups. We expected that adolescents who use Facebook frequently and are cyberbullied would have the highest involvement in cyberbullying perpetration, as the group manifests both a high level of Internet usage and of cyberbullying victimization simultaneously. The level of perpetration would be followed by the group constituting the Frequent Facebook users/ noncyberbullied victims. The uninvolved users were also expected to score the lowest in terms of their involvement in cyberbullying perpetration.

Effect of Usage vs. Level of Victimization on Perceived Social Support

It is clear that cyberbullying victimization is detrimental to one's social well-being. However, the relationship between Facebook usage and social well-being is less clear. There are some studies that have found a positive

relationship between Facebook use and social well-being. For example, some have found that Facebook helps people to form and maintain social connectedness in the cyber world (e.g., Grieve, Indian, Witteveen, Tolan, & Marrington, 2013), change latent ties with others into weak ties, and announce requests for information and support (e.g., Ellison, Steinfield, & Lampe, 2011). Nevertheless, there are also studies that found a negative relationship between Facebook use and one's social well-being. For example, Burke, Marlow, and Lento (2010) found that reading more Facebook content reports might lead to an increased level of loneliness. Studies that looked at other social well-being indicators also found that Facebook usage predicts the decline of life satisfaction. In one study, Kross and colleagues (2013) found that, the more a person uses Facebook over a 2-week period, the more their life satisfaction will reduce over time.

One potential explanation for the conflicting results could be partly attributed to the increased likelihood of being exposed to cyberbullying as the level of Internet usage increases. As cyberbullying victimization is highly related to loneliness and depression (e.g., Bauman et al., 2013; Beran & Li, 2005; Hinduja & Patchin, 2010), it is not surprising to find a negative link between Facebook usage and one's social well-being if cyberbullying involvement is not statistically controlled. As a matter of fact, many studies that have found a negative link between level of Facebook use and one's perceived social support did not take cyberbullying involvement into account (e.g., Burke, Marlow, & Lento, 2010; Kross et al., 2013). Moreover, previous studies have shown that users' perceptions of the Facebook environment could be as important as the level of Facebook usage in predicting one's level of perceived social support. For example, it was found that people who have larger estimated audiences on Facebook score higher in life satisfaction and perceived social support than users who estimated a smaller audience on Facebook in a study conducted by Valenzuela, Park, and Kee (2009). This result shows that

perception could play a role in moderating the effect of the extent of Facebook usage on one's social well-being. Therefore, it is reasonable to expect that people who are not cyberbullied and use Facebook extensively would benefit from Facebook more than people who are cyberbullied, as their perception of Facebook should be more positive and their process of maintaining social ties and seeking support on Facebook should not be interfered with by bullying. This leads to our third hypothesis: The level of perceived social support would differ across clusters, with frequent Facebook users who were not cyberbullied having higher perceived social support than the cyberbullied victims and the uninvolved group.

A recent report entitled "Cyberbullying among Hong Kong Chinese secondary students" carried out by the Hong Kong Federal of Youth Group (2010) found that students who reported being involved in cyberbullying were mainly male students from Grades 7 and 8. Reports have also shown that young adolescents tend to report a higher level of distress due to bullying experiences (e.g., Ybarra, Mitchell, Wolak, & Finkelhor, 2006). Hence, students from Grades 7 and 8 were specifically selected for this study.

Method

Procedure and Sample

The participants were recruited from three local secondary schools in Hong Kong. These schools were targeted because they are public secondary schools of the same banding (i.e., Band 2), which share similar academic curriculum and performance. Schools in Hong Kong are ranked according to academic prestige, ranging from 1 (highest) to 3 (lowest). A Band 2 ranking indicates a midrange academic performance.

After obtaining parental consent for data collection, questionnaires were delivered to the institutes that had agreed to participate in the study. As all students agreed to participate, questionnaires were distributed to all Grade 7

and 8 students who were present after school in their classrooms in the presence of school teachers. Instructions on how to fill out the questionnaires were explained clearly to the students prior to testing. Upon completion, participants were thanked and debriefed about the rationale of the study. The administration of the questionnaire took 25–30 minutes for each school. All students who were present filled in the questionnaires. Three hundred twenty-six questionnaires were collected, of which only 312 were included in the analyses. Fourteen questionnaires were excluded from the study due to too many unanswered questions.

The final sample consisted of 312 secondary school students (207 females; 105 males) from Grades 7 and 8. The mean age of the sample was 13.5 years. The low number of male participants is mainly attributed to (a) the high discard rate of male data (all 14 questionnaires excluded from the analyses were completed by boys) and (b) the rather skewed gender distribution of the three schools. Most participants (70%) lived in apartments of the size of 400 square feet or above. Slightly more than half of the participants (51.3%) lived in private housing. Therefore, it could be deduced that most of our participants came from middle-class backgrounds. No statistical difference was found across schools on cyberbullying scales, ages, or SES. Hence data from different schools were collapsed.

Measurement

Measures used in this study were mostly scales adapted from previous research on cyberbullying and peer relations among young adolescents in Hong Kong. All scales have been validated with high levels of reliability (Cronbach's alpha > 0.8). The composite score of each scale was computed basing on the average of all items. Details of each measure included in our self-report questionnaire are described below.

Facebook usage scale. The 7-item Facebook usage scale was developed in the

present study to assess one's frequency of using various Facebook functions. Participants reported their frequency of engaging in a range of common Facebook activities in an 8-point Likert scale, ranging from 0 (*never*) to 7 (*very frequent*). Sample items are "I update my status on Facebook" and "I contact my friends using Facebook messages." A higher score in this scale indicates a higher level of Facebook usage. Cronbach's alpha was .82.

In terms of validity, results of explorative factor analyses support a 1-factor model, with all factor loadings higher than .5. The cumulative sums of squared loadings of the model were satisfactory (49.1%). The composite score of our Facebook usage scale was also positively correlated to average time spent online as reported by our participants (i.e., hours spent online per day, $r = .357, p < .001$)

Cyberbullying perpetration on Facebook. Our 17-item Facebook bullying perpetration scale was adapted from a non–platform-specific cyberbullying scale used in a previous study conducted in Hong Kong (e.g., Leung & McBride-Chang, 2013). Adaptations were made to the scale to account for specific bullying behaviors on Facebook (e.g., the original item from the scale "I get mad at others, then I ignore or stop talking to others in online games/on the Internet" was changed to "I block and leave people out of groups/page on Facebook when I am mad at them"). The finalized pool of items was piloted in a focus group of 20 Grade 7 and 8 students. We also interviewed the group on whether they have heard of those bullying behaviors before, how common they think those behaviors are and the perceived severity of each behavior. This process resulted in 17 final items for our cyberbullying perpetration on Facebook scale. In the current scale, participants indicated the frequency of their bullying behaviors on Facebook in an 8-point Likert scale, ranging from 0 (*never*) to 7 (*very frequent*). Items on both direct cyberbullying perpetration (e.g., "I kept on making insulting posts on someone's Facebook wall because I do not like him/her")

and indirect cyberbullying perpetration (e.g., "I persuade others to block people I do not like on Facebook") were included in the scale. Cronbach's alpha for direct bullying and indirect bullying items were .90 and .88, respectively.

Cyberbullying victimization. This eight-item scale taps individuals' level of bullying/ victimization online. This scale was validated in a previous study conducted in Hong Kong (Leung & McBride-Chang, 2013). Participants rated the frequency of their experiences in an 8-point Likert scale, ranging from 0 (*never happened*) to 7 (*very frequent*). Both direct cyberbullying victimization (e.g., "Some people sent me threatening messages") and indirect cyberbullying victimization (e.g., "Some people ignored or blocked me online because they do not like me") were included. Cronbach's alpha for the eight-item scale was .91. Alpha for direct and indirect victimization items were both .83.

Perceived social support. The participants' perceived social support was measured using items adopted from the multidimensional perceived social support scale created by Zimet, Dahlem, Zimet, and Farley (1988). The 8-item scale used in the present study measures adolescents' general perceived support from their peers and their family members on an 8-point Likert scale (i.e., 4 items on perceived peer support and 4 items on perceived family support). Higher scores indicated higher levels of perceived social support. Both peer and family support were covered in this study, as previous research has shown that cyberbullying victimization is highly correlated to family (Accordino & Accordino, 2011; Wang, Iannotti, & Nansel, 2009; Ybarra & Mitchell, 2004) and peer support (Williams & Guerra, 2007).

Items in this scale were non–platform-specific, as this study aimed to speculate whether Facebook usage and experience would affect a person's general well-being. A non–platform-specific perceived social support scale enabled us to go beyond Facebook-contingent perceptions and examine how Facebook usage and bullying victimization can affect general feelings of support. This helped us to illustrate how online behaviors and experiences can affect one's general well-being. Sample items included "I can get support from my friends," "I have friends I can share happiness with," and "I have family members I can share my problems with." The complete scale had a Cronbach's alpha of .91. The alpha of its components—perceived peer support and perceived family support—were .92 and .93, respectively.

Results

The bivariate correlations among the study

Table 1

Correlation Among Facebook Usage, Cyberbullying Perpetration, Victimization, and Perceived Social Support

	1	2	3	4	5	6	7
1. Direct cyberbullying	—	.832**	.533**	.388**	−.111	−.095	−.102
2. Indirect cyberbullying		—	.476**	.403**	−.068	−.054	−.068
3. Cyberbullying-victimization			—	.147**	−.196**	−.208**	−.145*
4. Facebook use				—	.164**	.225**	0.072
5. Perceived social support					—	.886**	.900**
6. Perceived peer support						—	.595**
7. Perceived family support							—

* *p* < .05. ** *p* < .01.

variables are displayed in Table 1. Apart from the expected significant correlations found among the two types of cyberbullying perpetration and cyberbullying victimization, we found that Facebook usage is significantly and positively correlated to the composite score for perceived social support ($r = .164, p < .01$) and its subscale (perceived peer support; $r = .225, p < .01$), while cyberbullying victimization was found to be negatively related to both perceived social support subscales, perceived peer support ($r = −.208, p < .01$) and perceived family support ($r = −.145, p < .05$). Because cyberbullying victimization was significantly correlated to both perceived social support subscales and the scales were found to be positively correlated ($r = .595, p < .01$), we opted for the composite perceived social support score in our analyses.

Creating Facebook Usage/Cyberbullying Victimization Clusters

To test our hypotheses, we first needed to assign participants into groups according to their levels of Facebook use and cyberbullying/victimization (e.g., frequent Facebook user/cyberbullied victim, frequent Facebook user/noncyberbullied victim, and uninvolved). To achieve this, a data-driven cluster analysis was conducted on the cyberbullying victimization and Facebook usage scales simultaneously. We followed the two-step cluster analysis procedure recommended by Gore (2000). Mean scores on the two measures were standardized prior to the analyses. The unstandardized means for cyberbullying victimization and Facebook usage scales showed a modest, significant correlation ($r = .14, p < .05$).

A hierarchal cluster model was examined using Ward's (1963) linkage method on squared Euclidean distances. Because there are limitations in applying internal stopping rules for cluster determination (Gore, 2000), the final number of clusters was decided based on the following criteria: (a) whether the solution was parsimonious, (b) whether the cluster classification was theoretically meaningful, and

(c) whether the clusters had satisfactory explanatory power, with a minimum of 50% explained variance in both Facebook usage and cyberbullying victimization. Using the criteria stated above, we saved the three-cluster solution from the hierarchal analysis and performed an iterative k-means cluster analysis using centroids of the solution as the nonrandom starting points of the procedure. A three-cluster solution converged after 10 iterations.

We examined the replicability of our cluster solution by randomly dividing our participants into two subsamples. The same orthogonal pattern was identified in each subsample. Reliability tests were carried out between the subsample and the total sample. The levels of correspondence were found to be rather strong, Cohen's $\kappa = .99$ and .88 for each subsample–total sample comparison. Due to the reasons stated above, we opted for the three-cluster solution for our study.

Describing Facebook Usage/Cyberbullying Victimization Clusters

The scores for Facebook usage and cyberbullying victimization for each of the three clusters are displayed in Table 2. The first cluster consisted of above-average scores on Facebook use and below-average scores on cyberbullying victimization (frequent Facebook user/noncyberbullied victim group, $n =116$, 18.59%). The second cluster was comprised of above-average scores on both Facebook use and cyberbullying victimization (frequent Facebook user/cyberbullied victim group, $n = 58$, 37.18%). The final cluster consisted of below-average scores on both Facebook use and cyberbullying victimization (uninvolved, $n = 140$, 44.87%). Thus, we achieved a clear and theoretically meaningful contrast between Facebook use and cyberbullying victimization. We use the terms *frequent* and *nonfrequent* to describe the level of Facebook usage for the three groups in a relative sense. Because the mean scores for cyberbullying victimization for the two noncyberbullied victim groups were

Table 2
Raw Means and Standard Deviation by Cluster

	Frequent Facebook user/cyberbullied victim ($n = 58$)		Frequent Facebook user/noncyberbullied victim ($n = 116$)		Uninvolved ($n = 140$)	
	M	SD	M	SD	M	SD
Facebook use	3.49[a]	1.48	4.50[b]	0.96	1.64[c]	0.87
Cyberbullying-victimization	3.06[a]	0.96	0.35[b]	0.5	0.32[b]	0.52
Direct cyberbullying Facebook	2.07[a]	1.57	1.00[b]	1.08	0.39[c]	0.61
Indirect cyberbullying Facebook	1.99[a]	1.62	1.07[b]	1.11	0.37[c]	0.52
Perceived social support	4.13[a]	1.56	4.80[b]	1.63	4.40[a]	1.68

Note. Different alphabetical superscripts within the same row indicate differences at $p < .05$. (i.e., sharing the same alphabetical superscripts within the same row indicate that the differences are non-significant)

lower than 1, we believed it was reasonable to label them as noncyberbullied victim groups. MANOVA with Tukey post-hoc tests on the z-scores of Facebook use and cyberbullying victimization showed that the three-cluster solution explained 61.4% of the variance in Facebook usage and 74.8% of the variance in cyberbullying victimization.

Means and standard deviations for Facebook bullying behaviors and perceived social support per cluster are shown in Table 2. To test for how the level of bullying perpetration and perceived social support differed across the Facebook use/cyberbullying victimization clusters, we used a 3 (cluster, between) × 2 (bullying types, within) × 2 (gender, between) mixed design in the multivariate analyses.

Multivariate results indicated a main effect of gender, $F(1, 305) = 25.397$, $p < .001$, $\eta_p^2 = .077$. Boys (direct bullying $M = 1.48$, $SD = 1.58$; indirect bullying $M = 1.48$, $SD = 1.62$) generally reported more Facebook bullying perpetration than girls (direct bullying $M = .63$, $SD = .79$; indirect bullying $M = .64$, $SD = .80$). Chi-square results showed that more boys were identified as cyberbullied victims than girls, $\chi^2(2) = 68.76$, $p < .001$. More than 42% ($N = 45$) of our total sample of male participants was

classified as cyberbullied victims, whereas only around 6 % ($N = 12$) of our female participants was classified as cyberbullied victims. Male Facebook users also seemed to suffer from a higher risk of being cyberbullied than female Facebook users. Of all male Facebook users ($N = 63$), more than 70% were identified as cyberbullied victims, whereas only around 11.1% of all female Facebook users ($N = 108$) were identified as cyberbullied victims in this study. The analyses showed no significant main effect of bullying types.

Cluster Differences in Facebook Usage

Levels of Facebook usage were also found to be different across clusters using MANOVA, $F(2, 308) = 248.33$, $p < .001$, $\eta_p^2 = .617$. Our post-hoc tests showed that noncyberbullied victims used Facebook more in general than both the cyberbullied victims and the uninvolved groups ($p < .001$). Cyberbullied victims also used Facebook significantly more than the uninvolved group ($p < .001$).

Cluster Differences in Facebook Bullying

A significant main effect was also found

between clusters, $F(6, 612) = 83.354$, $p < .001$, $\eta_p^2 = .45$. Across Facebook bullying types, frequent Facebook user/cyberbullied victim youths (Direct bullying $M = 2.06$, $SD = 1.58$; Indirect bullying $M = 2.00$, $SD = 1.63$) generally reported more bullying perpetration than any other group, followed by the frequent Facebook user/noncyberbullied victims (direct bullying $M = 1.07$, $SD = 1.12$; indirect bullying $M = .99$, $SD = 1.06$), and the uninvolved group (direct bullying $M = .39$, $SD = .61$; indirect bullying $M = .37$, $SD = .63$), respectively. Post-hoc tests showed that the frequent Facebook user/cyberbullied group engaged in more cyberbullying perpetration than the two other groups ($p < .001$), followed by the frequent Facebook user/noncyberbullied and uninvolved groups, respectively.

Cluster Differences in Perceived Social Support

Result of regression analysis shows that SES does not significantly predict the level of perceived social support in our sample. Therefore, data from SES were also collapsed. Levels of perceived social support were also found to be different across clusters, $F(3, 309) = 3.64$, $p < .05$, $\eta_p^2 = .023$. Consistent with our second hypothesis, the post-hoc tests showed that frequent Facebook users/noncyberbullied victims had the highest perceived social support compared to the cyberbullied victims and the uninvolved participants. Apart from the expected results, we also found that the difference in the level of perceived social support between the cyberbullied victims and the uninvolved group was not significant. It is important to note that these two groups differed on both cyberbullying victimization and Facebook usage (i.e., the cyberbullied victims used Facebook more and were bullied more than the uninvolved group). The two noncyberbullied victim groups, however, only differed in terms of the level of Facebook usage. The two groups did not differ in their level of cyberbullying victimization.

Discussion

Although studies on SNS usage among adolescents have been growing in the past decade, researchers have not completely agreed on whether the use of SNSs is beneficial to one's social well-being. We believe the conflicting results could be potentially explained by the predominant use of variable-oriented approach in previous studies. Our present study was an attempt to fill in that gap in existing literature. In this study on Hong Kong Chinese adolescents, we examined the relationship between the extent of Facebook usage and perceived social support with consideration of cyberbullying involvement using a person-oriented approach.

Our study demonstrated that teenage Facebook users could be divided into three meaningful groups through cluster analysis based on their level of Facebook usage and cyberbullying victimization. We have also provided support that the three groups of Facebook users are different characteristically. As shown in our results, the levels of cyberbullying perpetration and general perceived social supported differ across groups, as predicted in our hypotheses.

Cyberbullied victims were found to have the highest cyberbullying perpetration rate out of the three groups. This result provides some support for the concept that a negative experience on Facebook might have a stronger linkage to cyberbullying perpetration than the extent of Facebook usage. It is clear that using Facebook extensively increases the likelihood of one's participation in cyberbullying, which is also supported by our findings on the significantly higher level of cyberbullying perpetration found in the frequent Facebook user groups. However, we believe that the users' negative experience on Facebook, such as cyberbullying victimization could better explain their cyberbullying behaviors. It is noteworthy that the two frequent Facebook user groups differed in terms of both the frequency of Facebook usage and their levels of cyberbullying perpetration. Although cyberbullied

victims perpetrated more on Facebook, they used the platform less than the frequent user/noncyberbullied victims, a fact that provides support to our claim that extensive Internet usage on its own might not sufficiently explain cyberbullying perpetration. Such findings support the potential utility of examining different profiles of Facebook usage and cyberbullying victimization.

In addition, the gender differences in cyberbullying involvement found in this study were consistent with the results from previous studies. As shown, male adolescents reported being more involved in cyberbullying (perpetration and victimization) than their female counterparts.

It could be argued that researchers have not completely agreed on the gender differences in cyberbullying involvement. As matter of fact, findings on the two genders' relative level of participation in cyberbullying have been highly mixed in the west. For example, a higher percentage of girls was found to be cyberbullies and cyberbullied victims than boys in some studies conducted in Europe and the United States (e.g., Mark & Ratliffe, 2011; Rivers & Noret, 2010; Smith et al., 2008; Snell & Englander, 2010; Tokunaga, 2010), while others found other patterns (e.g., Beckman, Hagquist & Hellström, 2013; Calvete et al., 2010; Erdur-Baker, 2010; Garaigordobil, 2011). However, studies in Asia tend to agree that boys are more involved in cyberbullying than girls. In a recent review on the moderating role of culture on risk factors of cyberbullying, most studies under review have found that male teenagers tend to cyberbully and be cyberbullied more than their female counterparts (e.g., Huang & Chou, 2010; Wong, Chan, & Cheng, 2014; Yang et al., 2013; Zhou, Tang, Tian, Wei, Zhang, & Morrison, 2013). Moreover, among the 26 studies reviewed, none found evidence that girls perpetrate more than boys in cyberbullying (Wong, in press). Our results on gender differences seem to follow the typical pattern found in Asia. A potential explanation for the unified trend could be attributable to the similar gender schema

shared among eastern cultures. In countries/ territories such as China, Japan, Korea, and Hong Kong, girls are often expected to be relatively submissive and gentle. People in the United States, on the other hand, are more egalitarian in this respect. The cultural difference means that girls in eastern cultures might be more discouraged from engaging in cyberbullying than their counterparts in the west, which contributes to the disparity in the pattern of gender differences found between the two cultures.

Other than the expected findings, we also uncovered an unanticipated distribution of perceived social support among the three groups. It was expected that frequent Facebook users/noncyberbullied group would score the highest on perceived social support, but what is even more interesting is that the uninvolved and the cyberbullied victims shared the same level of perceived social support. This might seem counter intuitive, as cyberbullying victimization was found to be linked to loneliness and depression (e.g., Bauman et al., 2013; Beran & Li, 2005; Hinduja & Patchin, 2010). However, we suggest that the insignificant difference in perceived social support between the cyberbullied victims and the uninvolved could be potentially explained. Victims, despite being bullied, might benefit from other aspects of the SNS. As Facebook could allow them to reach an extensive number of users through different means (e.g., adding of friends & creating or browsing pages and groups), it is quite possible for victims to find support on the platform. People who are uninvolved, however, cannot benefit from the use of the social networking site, which might explain their relatively lower perceived social support when compared to frequent Facebook users who are not cyberbullied. Our results suggest that, although limiting adolescents' Internet use might reduce their risks of being involved in cyberbullying, it might also take away the potential benefits they could get from interacting with the online community.

Going back to our methodology, by taking the level of usage and cyberbullying victimization

into account and classifying the users in terms of these two variables, we were able to identify the detailed between-group differences in their perceived social support. Again, this shows that the classification of SNS users is important in cyberbullying studies, especially when we are aiming to investigate the predictors of cyberbullying and the relationship between SNS use and one's social well-being.

Limitations and Conclusion

The current study had some limitations. First, we only accounted for behaviors on one SNS (i.e., Facebook) in this study. Although all SNSs aim to facilitate online socialization, layouts and usable functions can differ across platforms. Users might also interact with different groups of people across different SNSs. Together they can affect users' behaviors. Therefore, we should be cautious when generalizing our results to other SNSs.

Second, as this was a cross-sectional study; a longitudinal investigation might be needed to help us draw conclusions on the directionality of the relationship between perpetration and victimization. Also, although cluster analysis has shown its adequacy in differentiating our sample into groups with different levels of Facebook usage and cyberbullying victimization in our study, we should be cautious when generalizing our results to other samples as this analytic method tends to be data driven. Still, we believe our results have shown that cyberbullying experiences have additional value on top of the level of usage in explaining one's participation in cyberbullying perpetration.

Despite these limitations, this research has made important contributions to our understanding of adolescents' social development in the new Internet era. Methodologically speaking, we have introduced the person-oriented approach to the study of SNS, which could clarify the relationship between SNS usage and perceived social support among adolescents. We have demonstrated the possibility and usefulness of classifying Internet users into groups of different characteristics. The classifications of different SNS users allowed us to identify disparities between groups in terms of their online behaviors and their social well-being, which could be useful to explain the conflicting results found in previous studies. We believe that our results have provided some support for the importance of incorporating a person-oriented approach in future designs of cyberbullying studies and interventions.

Practically speaking, our study addresses some public concerns on whether the use of a SNS is beneficial to an adolescent's social well-being. The positive linkage found between the extent of SNS usage and one's social well-being among the majority of our participants (i.e., frequent Facebook users who are not cyberbullied) imply that we should not overlook the benefits of engaging in online social interactions in SNSs such as Facebook. This finding, together with the relatively lower perceived social support found among cyberbullied victims and the uninvolved has important implications for educators to develop strategies to optimize the benefits of SNS usage among adolescents.

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