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Online Social Support for Young People: Does It Recapitulate In-person Social Support; Can It Help?

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Abstract

As social media websites have grown in popularity, public concern about online victimization has grown as well; however, much less attention has focused on the possible beneficial effects of online social networks. If theory and research about in-person social networks pertain, then online social relationships may represent an important modern source of or vehicle for support. In a study of 231 undergraduates, three major findings emerged: (1) for people with weaker in-person social support, social media sites provide a source of social support that is less redundant of the social support they receive in person; (2) in ways that were not redundant of each other, both online and in-person social support were associated with lower levels of depression-related thoughts and feelings, and (3) the beneficial effects of online social support (like in-person social support) offset some of the adverse effects of peer victimization. The study suggests that augmenting social relations via strategic use of social media can enhance young people's social support systems in beneficial ways.

Keywords

Social Support; Social Media; Internet; Victimization; Depression; Self-esteem

Enormous concern has arisen about the dangers of online victimization, but surprisingly little attention has been paid to the possible beneficial effects of online social networks. Research and public media have linked online victimization to many problematic and sometimes tragic outcomes, including drug and alcohol use, depression, and even suicide (Klomek, Sourander, & Gould, 2010; Reijntjes, Kamphuis, Prinzie, & Telch, 2010); however, most interpersonal relationships carry not just the possibility of risk but the potential of reward as well. Support from one social niche can sometimes offset of the adverse effects of social rejection or victimization in another part of one's social network (Bilsky et al., 2013; Maurizi, Grogan-Kaylor, Granillo, & Delva,, 2013; Rothon, Head, Klineberg, & Stansfeld, 2011). The Internet now provides many new social niches via a diversity of apps and websites. Therefore, we posit that online social support (1) will be somewhat independent of in-person social support, especially for people with weak in-person social support systems, (2) will be associated with lower levels of depressive

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thoughts and feelings in ways that complement (and are not completely redundant of) in-person social support, and (3) will offset some of the adverse effects of peer victimization in a manner similar to the positive effects of in-person social support.

Although definitions of in-person social support vary, most refer to tangible and intangible assistance from friends, partners, family members, and others (e.g., Barrera, Sandler & Ramsay, 1981; Cohen & Wills, 1985). Within in-person social networks, many subtypes of social support have been described (e.g., Cohen & Wills, 1985; Barrera & Ainlay, 1983). Literature reviews suggest that two particular subtypes, esteem or emotional social support and social companionship, have especially strong effects on social, emotional, and cognitive outcomes (Barrera & Ainlay, 1983; Caplan, 1976; Cobb, 1976; Cohen & Wills, 1985). These processes have clear analogues in a variety of online social media platforms (e.g., Facebook, Twitter, Instagram, Reddit, etc.). People use online spaces to discuss problems or obtain information that is helpful when coping with particular stressors. Social media sites may fulfill a need for social belongingness, distract people from various stressors, or offer micro-boosts to self-esteem by being "friended," "liked," or "followed" by others.

The first question that we address focuses on the degree of overlap or redundancy between the social support that people receive via their online versus in-person social networks. Do social media sites help people obtain social support that is somewhat different from the social support that they receive face-to-face, or do such sites simply represent a vehicle for the same supportive communications that are conveyed in-person? At least two lines of research suggest that online social support might complement in-person social support and not simply replicate it. One set of studies estimates about a 50% overlap between people's online and face-to-face friends. Among high school students, an average 58% ($SD = 25\%$) of the face-to-face friends are also online friends, either via social network sites or instant messaging (Reich, Subrahmanyam, & Espinoza, 2012). The overlap is a bit less among college students, where the average number of face-to-face friends who were also online friends dropped to 49% ($SD= 35\%$; Subrahmanyam, Reich, Waechter, & Espinoza, 2008), in part because former high school friends become online friends when they go to college. A second set of studies suggests that even within these populations, the degree of overlap between online and in-person social networks varies enormously from person to person, ranging from nearly zero to almost 100% (Reich, Subrahmanyam, & Espinoza, 2012; Subrahmanyam, Reich, Waechter, & Espinoza, 2008). Research suggests that people who are more introverted or socially anxious may be more likely than others to derive social benefit from social media (e.g., Indian & Grieve, 2014; Longman, O'Connor, & Obst, 2009). We suspect that the common denominator underlying these characteristics is having a weak in-person social support system, which can happen for all these reasons and more. Consequently, we hypothesize that the redundancy of online social support with in-person social support reflects a nonlinear relation. That is, for people with *low levels* of in-person social support, online social support will represent a relatively nonredundant resource; however, for people with *high levels* of in-person social support, online social support will be more redundant of what they already have in-person.

Our second set of questions pertains to the incremental healthy effects of online social support over-and-above in-person social support. Conceptualizing social media platforms as

new social niches, we anticipated that online social support would supplement the mental health benefits derived from in-person social support. Because adverse social relations have especially strong relations to depression-related outcomes (Barrera & Ainlay, 1983; Caplan, 1976; Cobb, 1976; Cohen & Wills, 1985), we focused our attention on low self-esteem, depressive symptoms, and maladaptive or dysfunctional self-cognitions. Research on *in-person* social relations has revealed that in-person social support is an important predictor of these outcomes (Goodwin, Costa, & Adonu, 2004; Friedlander, Reid, & Cribbie, 2007; Grav, Hellzèn, Romild, & Stordal, 2011). We hypothesized that *online* social support would be associated with these same outcomes but in ways that are not completely explained by (or redundant of) the contributions made by in-person social support.

Related research provides preliminary support for this hypothesis (Indian & Grieve, 2014; Longman et al., 2009; Trepte, Dienlin, & Reinecke, 2015; Trepte, Reinecke, & Juechems, 2012; Ybarra, Mitchell, Palmer, & Reisner, 2015). In diverse samples, individuals' reports of online social support are proportional to their level of engagement in the social network of interest. LGBT youths reported that their online friends were better than their in-person friends at providing emotional support (Ybarra et al., 2015). Among World of Warcraft players, higher levels of in-game social support were associated with greater engagement in the game and fewer symptoms of anxiety and depression; however, the latter effects were not maintained after controlling for levels of in-person social support (Longman et al., 2009). For Facebook users with high social anxiety, online social support significantly contributed to subjective well-being (Indian & Grieve, 2014). Among German social network users, online social support was positively related with satisfaction with social support, although it was less related to life satisfaction than in-person social support (Trepte et al., 2012, 2015). Other research suggests that Internet use is correlated with improvements in loneliness, depressive symptoms, self-esteem, and perceived interpersonal closeness (Shaw & Gant, 2002; Valkenburg & Peter, 2007).

Constraints upon this preliminary work somewhat limit its generalizability. Some studies have focused on a single social network site, despite the fact that different sites yield opportunities for different kinds of social support (e.g., Indian & Grieve, 2014; Longman, et al., 2009). Some studies have dichotomized continuous variables, a practice that can generate highly misleading results (Maxwell & Delaney, 1993). Other studies have measured online and in-person support in such different ways that direct comparisons become problematic (e.g., Trepte et al., 2012; Trepte et al., 2014). Some studies assessed online but not in-person social support (Shaw & Gant, 2002). Among studies that did examine both online and in-person social support, results are highly discrepant (e.g., correlations between online and in-person social support range from .25 to .58; Indian & Grieve, 2014; Longman et al., 2009). Our goal was to examine the relative incremental advantages of online and in-person social support (across diverse social media platforms and using parallel measures) in relation to depressive thoughts and feelings.

Our third set of questions pertains to the ameliorative role that online social support might play vis-à-vis victimization. Previous research on in-person relationships has shown that support in one social niche can offset at least some of the adverse effects of victimization in another social niche (Bilsky et al., 2013; Maurizi et al., 2013; Rothon et al., 2011). In the

current study, we addressed the analogous question, does *online* social support also offset some of the adverse effects of victimization, and if so, how does this effect occur? Specifically, we test two models proposed by Cohen and Wills (1985). The first is their *buffering model* in which online support moderates the effect of victimization. Buffering could occur because online support affects the stress appraisal process. That is, online support fosters the belief that resources are available, which then diminishes the perception of stress. Statistical support for the stress-buffering model would consist of a statistical interaction between online social support and victimization in the prediction of psychological outcomes. The second of Cohen and Wills (1985) theories is called a *main-effects model*. This model suggests that social support has a positive effect on psychological outcomes regardless of the level of stress or adversity experienced. Statistical support for this model would consist of two main effects: one, a negative main effect of victimization (perhaps because it constitutes a major source of negative self-relevant information that can erode self-esteem and augment the development of depression; Cole, 1991; Cole et al., 2015; Sinclair et al., 2012); the other, a positive main effect for online social support (perhaps because it conveys positive information about acceptance that can lead to the construction of positive self-cognitions that protects against depression; Harter, 1999, 2012; Cole, 1991; Cole, Martin, & Powers, 1997). Therefore, in the current paper, we tested both the main effects model and the buffering model with respect to the abilities of both online and in-person social support to offset the effects of victimization on depressive thoughts and feelings.

In sum, the current study had three goals. First, we tested nonlinearities in the degree to which online and in-person social support are redundant of one another. Second, we examined incremental utility of online versus in-person social support in relation to depressive thoughts and feelings. The third was to test Cohen and Wills' (1985) two models of mitigation, whether online social support ameliorates the adverse effects of victimization by exerting an offsetting main effect or by moderating the effect of victimization.

Methods

Participants

The initial sample consisted of 256 undergraduates recruited from the research pool at a mid-sized private university. Missing data that were due to withdrawal or computer/Internet connectivity issues led to the exclusion of 25 participants, resulting in a final N of 231. Less than 1% of participants had missing data for other reasons (e.g., neglecting to answer a few items). We used full information maximum likelihood estimation to enable the inclusion of participants with partial data. On all nonmissing variables, differences between participants with and without missing data were nonsignificant ($p > .20$). Average age was 19.28 years ($SD = 1.15$). One hundred twenty-four participants were freshmen, 63 were sophomores, 27 were juniors, and 17 were seniors. More than half ($n = 167$) of the participants were female. The sample was 67.1% Caucasian, 23.4% Asian American, 10.4% African American, 5.2% Hispanic/Latino, and 0.4% other (race/ethnicities were not mutually exclusive).

Measures

Social Support and Peer Victimization—Rigorous comparison of online and in-person social relations requires comparable methods of measurement (Lord, Novick, & Birnbaum, 1968); however, no extant measure of online social support contains parallel scales for assessing in-person social support. Furthermore, extant measures of in-person social support give short shrift to online social support. Previous research into the differences between online and in-person social support have used dissimilar measures, potentially confounding the comparison with psychometric differences (e.g., Trepte et al., 2012; Trepte et al., 2014). Therefore, in addition to administering established measures, we constructed the Social Network Scales (SNS) to assess in-person and online social support and victimization. We also administered other established measures to validate the SNS, including the Ostracism Experiences Scale for Adolescents (OESA; Gilman, Carter-Sowell, DeWall, Adams, & Carboni, 2013), the Cyberbullying Experiences Questionnaire (CES; Doane, Kelley, Chiang, & Padilla, 2013), and the Perceived Social Support Scale (PSSS; Procidano & Heller, 1983).

We used the OESA, an 11-item self-report questionnaire, to assess participants' perceptions of being socially included or socially ignored. According to its initial validation study (Gilman et al., 2013), the measure contains two factors. Our own factor analysis of this measure confirmed this structure (i.e., two strong eigenvalues, primary factor loadings of .59-.91, and cross-loadings all < .20). The first included negative items like, "In general, others treat me as if I am invisible." Like Gilman et al., we refer to this as the OESA-Ignored factor. The second factor contained positive items like, "In general, others invite me to join them for weekend activities, hobbies, or events." Gilman et al. reverse-scored these items and suggested that this factor represented social *exclusion*. Given that the low levels of inclusion do not necessarily imply active exclusion (Coie, Dodge, & Coppotelli, 1982), we opted to retain the original scaling and refer to this as the OESA-Included factor. Cronbach's alphas in the current study were .91 and .85, respectively.

Cyberbullying was assessed via the CES, a 42-item survey consisting of two subscales: Victimization and Perpetration (21 items each, assessing either the receipt or commission of public humiliation, malice, unwanted contact, or deception via the Internet or cell phone applications). The scales showed excellent evidence of convergent and discriminant validity via both exploratory and confirmatory factor analyses (Doane et al., 2013). Correlations with social desirability were low. In the current study, only the Victimization subscale was used (Cronbach's alpha = .91).

Perceived social support was measured with the PSSS, a 40-item questionnaire designed to measure perceived social support from both friends and family. For the current study, we used only the 20-item subscale about friends' support. Participants respond to items like, "I rely on my friends for emotional support." We used coded responses so that yes was 1 and no was 0 (and "I don't know" was missing). The instrument has high internal consistency. Convergent and construct validity consists of significant positive correlations with other social support measures and negative correlations with symptoms of psychopathology (Cole & Milstead, 1989; DuBois et al., 2002). In the current study, Cronbach's alpha was .83.

The Social Network Scales—Development of the SNS began by querying 20 college students about (1) ways that people provide or receive social support (both online and in person) and (2) ways that people bully, victimize, or ostracize one another (both online and in person). Examples of guiding questions included, "How do you show emotional support to your friends online (or in-person)," and "If you just wanted to hang out with others, how would you do this online (or in person)." We obtained 202 responses. We sorted the results, culling and collapsing responses, until we had eight broad types of responses. For each type, we constructed two items (one regarding online support and one regarding in-person support): e.g., "How often does someone say something nice to you online?" and "At school, how many times do people say something nice to you?" The process also generated 16 victimization items: eight about online victimization (e.g., How many people have posted something online just to hurt you?) and eight about in-person victimization (e.g., How many people have spread rumors about you at school?). To each of these questions, we attached 5-point Likert scales (0 = *none* or *never* to 4 = *a lot*). Cronbach's alphas were .86 for online social support, .85 for in-person social support, .83 for online victimization, and .83 for in-person victimization.

We conducted an exploratory oblique factor analysis (SPSS/Factor/Oblimin) of the 16 social support items (eight online and eight in-person). Both a scree plot and parallel analysis (Horn, 1965; Zwick & Velicer, 1986; see Patil, Singh, Mishra, & Donavan, 2007) indicated that two factors should be extracted. Table 1 reveals that all eight online items loaded onto an Online Social Support factor, and all eight in-person items loaded onto an In-person Social Support factor. The median of the primary factor loadings was .65; the median of the crossloadings was .02. Interestingly, the two factors were only modestly correlated with each other (r = .36), providing preliminary evidence that online social support is not redundant of in-person social support. Examination of means for both scales revealed similar distributions of online and in-person positive encounters (see Table 3), although statistically, in-person encounters were more common, $t_{(230)}$ = 7.16, p < .001.

We conducted a similar analysis of the 16 peer victimization items (eight online and eight in-person). As in the above analysis, scree plot and parallel analysis indicated that two factors should be extracted. Table 2 revealed that all eight online items loaded onto an Online Peer Victimization factor, and all eight in-person items loaded onto an In-person Peer Victimization factor. The median of the primary factor loadings was .65; the median of the crossloadings was .04. Interestingly, the two factors were strongly correlated with each other (r = .63). Examination of means for both scales revealed that online victimization was less common than was in-person peer victimization (p < .001; see Table 3).

Validity of SNS subscales accrues from their correlations with other measures of social support and ostracism. The In-person Social Support scale was positively correlated with both the OESA-Included scale (r = .56, p < .001) and the PSSS Friends Support scale (r = .41, p < .001). It was also negatively correlated with the OESA-Ignored scale (r = −.43, p < .001). Furthermore, the SNS Online and In-person Victimization scales were significantly correlated with both the OESA-Ignored scale (rs = .46 and .47, respectively) and the CES Cybervictimization scale (rs = .59 and .43, respectively).

In addition to the social support and victimization questions, we added two other kinds of inquiries. In order to orient respondents to the variety of Internet sites that we regarded as social media, we began the survey with a set of questions asking how frequently the respondents used specific social media sites. Response options were *never*, *a little*, and *a lot*. Approximately, 89% of participants indicated that they used at least one social media site. Facebook, Snapchat, and Instagram were the most common. We also added four questions about the overlap between the respondents' online and in-person social networks (e.g., How many of your friends from school do you chat or text or talk with online?). Items were rated on 5-point Likert scales with response option anchors ranging from *None of them* to *All of them*. Items were combined to form a single index of Overlap.

Outcome Measures—We administered four outcome measures, focusing on depressive thoughts and feelings. These were the Dysfunctional Attitudes Scale (DAS; Weissman, 1980), the Cognitive Triad Inventory (CTI; Beckham, Leber, Watkins, Boyer, & Cook, 1986), the Beck Depression Inventory-II (BDI-II; Beck, Steer, & Brown, 1996), and the Rosenberg Self-Esteem Scale (RSE; Rosenberg, 1965).

Low self-esteem was measured by the inverse of the RSE, a 10-item self-report survey, assessing global attitudes about the self. It consists of five negatively worded items and five positively worded items, answered on 4-point scales (1 = *strongly disagree* to 4 = *strongly agree)*. Items include statements such as "I feel I have a number of good qualities," and "At times, I think I am no good at all." This scale is widely used and has displayed good reliability and validity (Crandall, 1973). In our sample, the scale had a Cronbach's alpha of . 90.

Dysfunctional attitudes were assessed with the DAS, a 40-item scale that measures the extent of cognitive distortions in an individual. Items are statements displaying common but dysfunctional attitudes or beliefs that people may hold (e.g., "If I fail at my work, then I am a failure as a person"). Each statement is rated from 1 to 7 to indicate extent of agreement with the statement (1 = *totally agree* to 7 = *totally disagree*). Scores are summed such that higher scores represent more dysfunctional cognitions. The DAS has good internal consistency, test–retest reliability, and validity in student samples (Dobson & Breiter, 1983; Olinger, Kuiper, & Shaw, 1987). In the current study, Cronbach's alpha was .93.

Depressive cognitions were measured using the CTI, a 36-item scale assessing negative views of self (e.g., "I am a failure"), the world (e.g., "The world is a very hostile place"), and the future (e.g., "There is nothing to look forward to in the years ahead"). Half of the items are positively worded and half are negative. Items are rated on 7-point Likert scales (1 = *totally agree*, 7 = *totally disagree*). Before summing, items were scaled so that higher scores represent negative views. In the current study, Cronbach's alpha was .93.

Depressive symptoms were measured using the BDI-II, a self-report questionnaire measuring severity of affective, behavioral, and cognitive depressive symptoms in adolescents and adults. It consists of 21 items about the "past two weeks, including today," which are rated on 4-point scales (from 0 to 3). Because of IRB concerns, we deleted the suicide item, leaving 20 items. Scores are summed so that higher scores reflect more severe

depression. The measure has excellent internal consistency, convergent validity and discriminant validity. It also discriminates well between depressed and nondepressed individuals (Dozois & Covin, 2004). In the current study, Cronbach's alpha was .91.

Procedure

Participants independently completed the battery of questionnaires online using the Research Electronic Data Capture system (REDCap; Harris, Taylor, Thielke, Payne, Gonzalez, & Conde, 2009). Those who reported elevated depressive symptoms received referrals to the university psychological services and counseling center. Presentation of measures was randomized to minimize the effects of order and fatigue. All participants received course credit in exchange for their research participation.

Results

Preliminary Analyses

Descriptive statistics and Pearson correlations for all subscales of all measures are reported in Table 3. Means and standard deviations for the outcome measures were similar to those reported for other college student studies. The median of the absolute values of the correlations among the outcome measures was .62, suggesting a high degree of convergent validity among the outcome measures. In fact, a single factor confirmatory factor analysis of these measures indicated that the RSE, BDI, CTI, and DAS all loaded onto a single latent Depressive Thoughts and Feelings (DTE) factor, with $\chi^2_{(df=2, N=231)} = 5.21$ ($p > .05$), NFI = .99, IFI = .99, CFI = .99, and RMSEA = .049. Standardized factor loadings were −.88 for the RSE, .73 for the BDI, .83 for the CTI, and .72 for the DAS. To avoid redundancy, reduce capitalization on chance, and increase statistical power, we used the latent DTF factor not its four manifest variable indicators in subsequent analyses.

Hypothesis 1: Overlap of Online and In-person Social Support

Our first hypothesis was that the relation between online and in-person social support would be nonlinear. Specifically, we expected the relation to be stronger for people with *higher* levels of in-person support, suggesting that the benefits of online social support are largely redundant of the already substantial social support they derive from their in-person social networks. Conversely, we also expected the overlap to be weaker for people with *lower* levels of in-person support, suggesting that that online social support represents a somewhat nonredundant resource for people with weaker in-person support networks.

To test this hypothesis, we standardized both the in-person (IN) and online (ON) subscales of the SNS. Then we used least squares regression to examine the linear and quadratic trends comprising the relation of in-person to online social support: $ON = \beta_0 + \beta_1 IN + \beta_2 IN^2$. The overall regression was significant ($R = .39$, $F_{2,227} = 19.85$, $p < .001$), as were both the linear trend ($\beta_1 = .40$, $b_1 = .40$, $t_{227} = 6.29$, $p < .001$) and the quadratic trend ($\beta_2 = .09$, $b_2 = .15$ $t_{227} = 2.36$, $p < .019$). Figure 1 shows the expected curvilinear relation with the correlation increasing with the magnitude of the predictor. Follow-up estimations revealed that $r = .23$ for people in the bottom quartile, $r = .32$ for people in the second quartile, $r = .49$ for people

in the third quartile, and $r = .57$ for people in the top quartile of in-person social support. The pattern supported our hypothesis.

Hypothesis 2: Incremental Effects of Online versus In-person Social Support

Second, we used SEM to examine the incremental utility of online versus in-person social support in relation to depressive thoughts and feelings. Specifically, we tested a model in which we simultaneously regressed our latent DTF variable onto online and in-person social support. Because the degree of overlap between one's online and in-person friends varied considerably from person to person, and because gender differences in the use of online and in-person social networks have been reported (Pew, 2013; Umberson, Chen, House, Hopkins, & Slaten, 1996), we included Overlap and Gender as covariates; see Figure 2. (Analyses not reported here revealed that interactions of these covariates with both social support variables were not significant.) The model fit the data well, $\chi^2_{(df=14, N=231)} = 22.36$ ($p > .05$), NFI = .98, IFI = .99, CFI = .99, and RMSEA = .044 (90% CI = .021 to .078). As shown in Figure 2, both path coefficients were significant: for online social support, $b = .16$, $z = 2.10$ ($p < .05$); for in-person social support, $b = .41$, $z = 6.01$ ($p < .001$). Neither Gender nor Overlap were significant predictors. Although the effect of in-person support was stronger than the effect of online support, $\chi^2_{(df=1, N=231)} = 8.15$ ($p < .01$), both sources of social support predicted DTF over and above the other, supporting our hypothesis.

Hypothesis 3: Ameliorative Relation to Negative Outcomes

Our third main goal was to test Cohen and Wills' (1985) two hypotheses with respect to the ability of online and in-person social support to offset the adverse effects of victimization. We focused first on online social support, testing two structural equation models. The main effects model tested whether a significant and salubrious main effect of online social support offset some or all of a significant adverse effect of victimization on our latent DTF variable. Specifically, we regressed the latent DTF variable onto two correlated predictors, online social support and peer victimization. The model provided a close fit to the data, with $\chi^2_{(df=8, N=231)} = 19.78$, NFI = .96, IFI = .98, CFI = .98, and the 90% CI around an RMSEA of .080 contained .05 (.036 to .125). Both the adverse effect of victimization and the salubrious effect of online support were significant, $\beta = -.26$ ($p < .001$) and $\beta = .42$ ($p < .001$), respectively. Although the absolute effect of victimization was significantly larger ($p < .001$), online support did partially offset its adverse effect in a manner consistent with Cohen and Wills (1985) main effects model.

To test the buffering model, we added the online support × victimization interaction as a predictor. This model also fit the data well, with $\chi^2_{(df=11, N=231)} = 21.96$, NFI = .98, IFI = .99, CFI = .99, and the 90% CI around an RMSEA of .066 contained .05 (.023 to .106). The online support × victimization interaction was significant, $\beta = -.07$ ($p < .05$). As shown in Figure 3, not only was the main effect of online support still evident but online support significantly reduced the strength of relation between victimization and the latent DTF. Taken together, these analyses provide support for both Cohen and Wills' (1985) main effects and buffering models.

Next, we tested the effects of in-person social support. The main effects model provided a close fit to the data, with $\chi^2_{(df=8, N=231)} = 17.87$, NFI = .97, IFI = .98, CFI = .97, and the 90% CI around an RMSEA of .070 contained .05 (.034 to .119). The main effects of victimization and in-person support were of similar size and opposite in direction, as expected; both were significant, $\beta = .36$ ($p < .001$) and $\beta = -.40$ ($p < .001$), respectively. Their absolute values were not significantly different from each other ($p > .10$). As shown in the lower part of Figure 3, the healthy main effect of in-person support offset the adverse effect of victimization on depressive thoughts and feelings, in a manner consistent with Cohen and Wills (1985) main effects model. We also tested the buffering model; however, the In-person Support × Victimization interaction was not significant. Taken together, these analyses provide support for Cohen and Wills' (1985) main effects model but not their buffering model.

Discussion

Three major sets of findings emerged from the current study. First, the relation between online and in-person social support was curvilinear, such that social media represented a less redundant source of social support for people with low levels of in-person social support but was relatively redundant source for people who already had high levels of in-person social support. Second, both online and in-person social support were negatively related to depressive thoughts and feelings, each evincing incremental advantages over and above the other. Third, both online and in-person social support ameliorated the pernicious effect of victimization on depressive thoughts and feelings in ways that support Cohen and Wills' (1985) stress-buffering model and/or main-effects model. Each of these findings suggests compelling new directions for future research as well as intriguing possibilities of novel interventions for students suffering the effects of victimization. We elaborate on each of these topics below.

First, online social support is more redundant of in-person social support among people who already have strong in-person social support networks. Conversely, online social support is less redundant of in-person support (and therefore may offer a relatively new source of social support) among people who have weaker in-person social networks. We speculate that somewhat different factors mediate the successfulness of online versus in-person social interactions. People at the high end of the social support continuum likely have a set of skills that facilitate social interactions in all kinds of social niches. At the low end of the continuum, however, several factors that often interfere with the development of healthy in-person social support systems may less relevant in the online world. First, the primary reasons for in-person ostracism include having poor social skills (Erath, Flanagan, & Bierman, 2007), being "different" in terms of one's physical appearance, disability, speech, physical ability, minority status, etc. (Boel-Studt & Renner, 2013; Fox & Farrow, 2009; Leenaars, Dane, & Marini, 2008), and responding to social overtures in an anxious or emotionally reactive manner (Tran, Cole, & Weiss, 2012; Morrow, Hubbard, Barhight, & Thomson, 2014; Rosen, Milich, & Harris, 2012). In the online world, these factors may be less salient or more easily handled. Second, the skills that facilitate online versus in-person social acceptance may be somewhat different. Face-to-face social skill, extraversion, and wittiness may mediate in-person social acceptance; however, other skills (e.g., writing,

gaming, photography) may prevail online. Third, some aspects of effective self-presentation may be easier online than in-person. In the online world, one has more time to craft social overtures, refine social responses, and "reboot" (if necessary) by creating a new online persona or account. For these reasons, social media sites may represent a kind of social niche that (a) affords social opportunities that are more radically different for people who have difficulty obtaining social support in the face-to-face world but (b) yields opportunities that largely recapitulate the in-person opportunities already available to people who are socially successful in the face-to-face world.

Our second major finding was that both online and in-person social support were significantly and uniquely associated with depressive thoughts and feelings. Specifically, online social support was correlated in the expected directions with self-esteem, dysfunctional attitudes, and depressive symptoms. This relation was smaller than those with in-person social support, suggesting that in-person support may be the more powerful form of support. Online support remained a significant predictor of self-esteem, dysfunctional attitudes, and depressive symptoms even after controlling statistically for in-person social support (probably because online and in-person support are only moderately correlated with each other), suggesting that each is related to cognitive and emotional outcomes in ways that are not completely attributable to the other.

These results reflect and extend previous research on social support. Developmental researchers have long known that social support in a single social niche can be sufficient to offset the adverse effects of victimization or rejection in another social niche (Hodges, Malone, & Perry, 1997; Parker & Asher, 1993; Schwartz, Dodge, Pettit, & Bates, 2000). As we move into the digital world, the current study suggests that one's online social network may constitute a new kind of social niche, which brings with it not only potential risks but also potential benefits. On the one hand, social media sites facilitate cybervictimization, the effects of which can be devastating. On the other hand, social media may also generate a new kind of social support that operates in ways that are similar to, but not completely redundant of, in-person social support.

Third, in slightly different ways, both online and in-person social support offset the adverse effects of victimization on depressive thoughts and feelings. In one set of analyses, we found that in-person social support and peer victimization had opposite but (nearly) equal main effects on depressive thoughts and feelings. That is, the healthy effect of in-person social support was large enough to offset the unhealthy effect of peer victimization. We must interpret this finding carefully. Although in-person support *does* offset the effect of victimization, better still is not to be victimized in the first place. This finding is commensurate with Cohen and Wills' (1985) main-effect hypothesis that stress and social support have opposing main effects on health-related outcomes. In other words, the effect of online social support was equally beneficial across all levels of victimization.

In the analysis of online social support, we found support not only for Cohen and Wills' (1985) main effects model but for their buffering model as well. Support for the main effects model consisted of opposite effects for online support and victimization, with the former offsetting some (but not all) of the latter. Over and above these main effects, however, was

an interaction, revealing that the salubrious effect of online support was actually somewhat stronger for people who reported higher levels of peer victimization. We should note that the interaction effect was relatively small; nevertheless, it was significant.

Support for both of these models suggests fascinating avenues for clinicians and counselors attempting to enhance students' social support systems. Factors that lead to social ostracism or victimization may be difficult if not impossible to change. In small colleges or communities, finding new in-person sources of social support can be quite difficult. Teaching *strategic* use of social media websites, perhaps by capitalizing on different skills sets or by extending one's network beyond the immediate community, may be relatively easy and may have beneficial effects on depression-related thoughts and feelings. In this, we emphasize the *strategic* use of social media. We observed a large correlation between in-person and online victimization ($r = .63$). If this means that perpetrators of one's in-person victimization also engage in cybervictimization, then victims should be coached to construct online social networks that do not completely overlap their in-person networks. Alternatively, if this means that victims social overtures (both in-person and online) are offensive (potentially engendering victimization), then a better intervention might be to teach more effective online social interaction strategies.

Several caveats and shortcomings of the current study suggest important avenues for future research. First, the current study is completely cross-sectional. As tempting as it is to make statements about the *predictive* utility and protective *effects* of online social support, such conclusions require longitudinal, if not experimental, methods. Second, like most research on perceived social support, the current study relied heavily on self-report measures. Two important next steps would involve (a) verifying people's self-reported online support against objective measures of online supportive communication and (b) examining the relation of online social support to clinical measures of depression and other illnesses. Third, the current study did not delve into the details of online support, leaving open questions like what specific kinds of social media result in stronger perceptions of social support, what kinds of social support can be derived from social media (e.g., informational, instrumental, social companionship, esteem support; Cohen & Wills, 1985), and how can people can avoid recapitulating in-person social network problems in the online world. Future studies of these key issues could add even more to the clinical utility of online social support.

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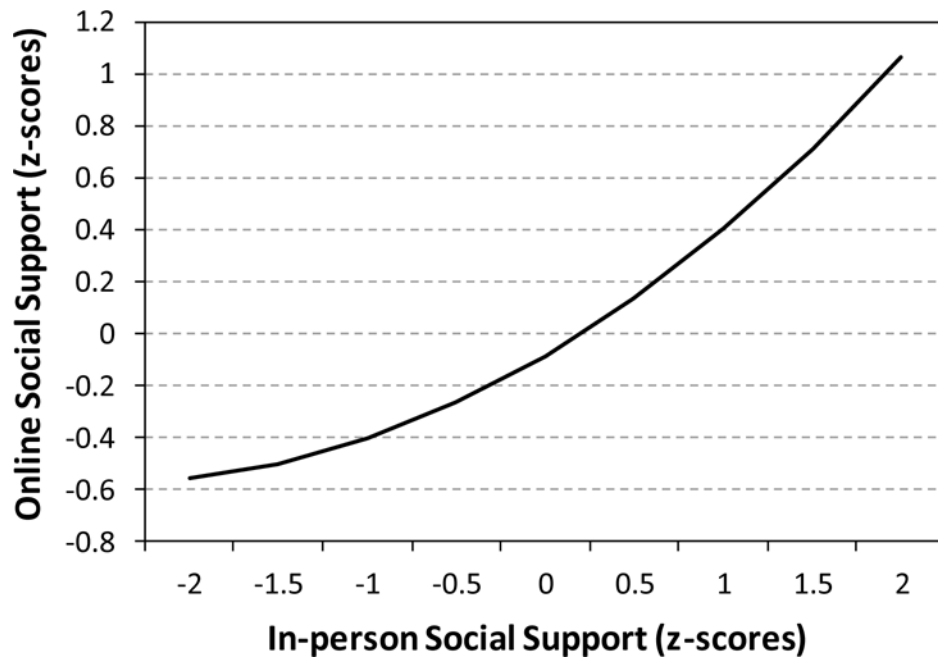
Figure 1.
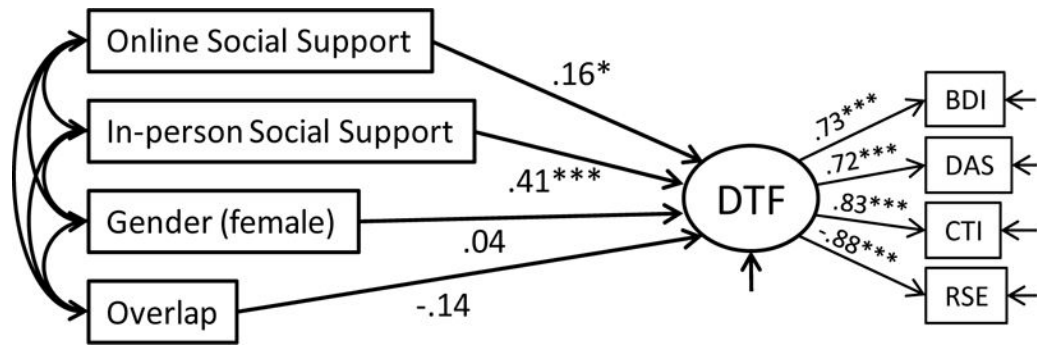Curvilinear relation between in-person and online social support.

Figure 2.
Structural equation model showing the effect of online and in-person social support on depressive thoughts and feelings (DTF), controlling for gender and overlap.
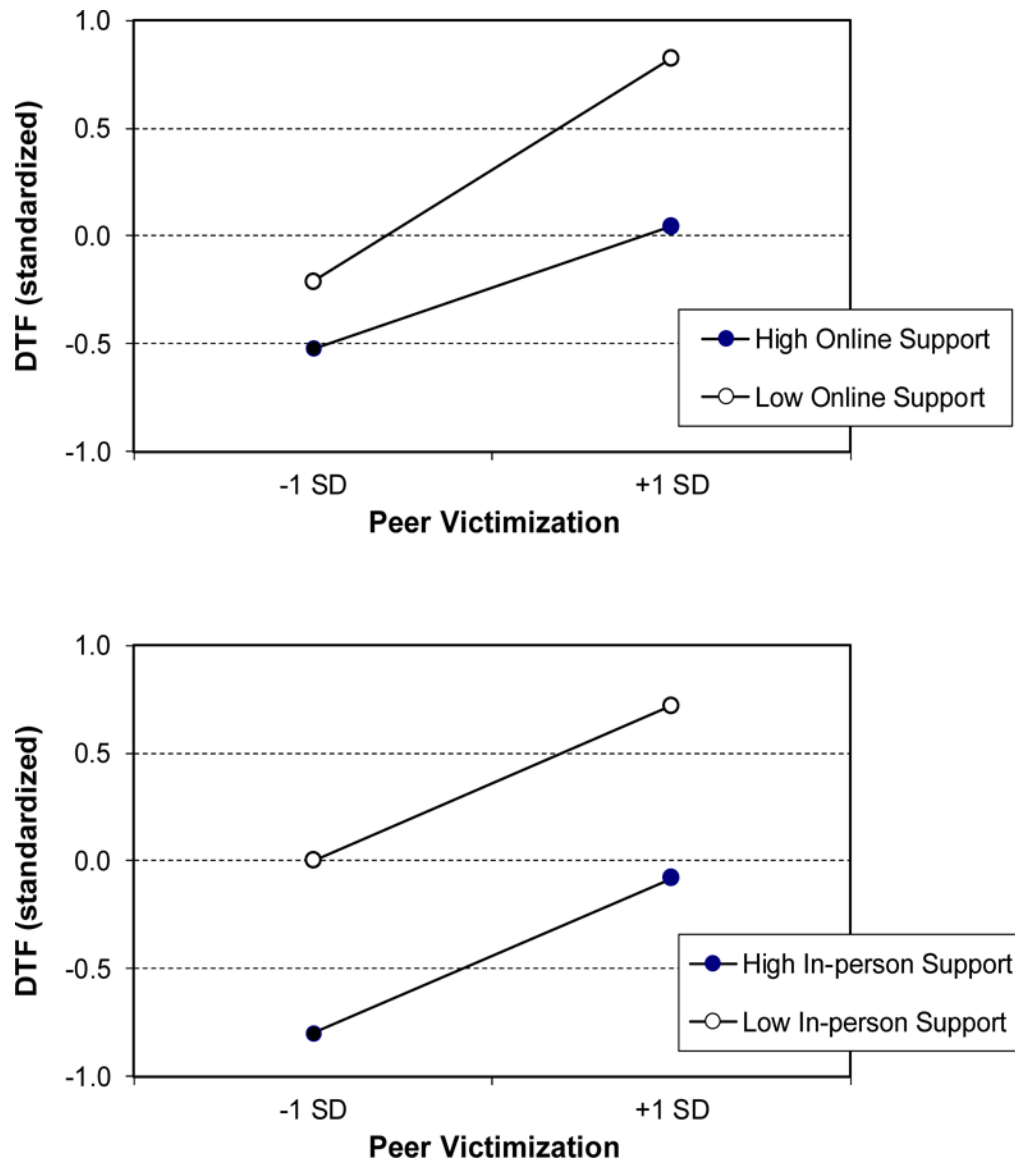
Figure 3.
Ameliorative effect of online (above) and in-person (below) social support, regarding the relation of victimization to depressive thoughts and feelings (DTF).

Table 1

Exploratory Factor Analysis of SNS Online and In-person Social Support Items

Items	Factor	
	Online	In-person
1. At school, how many times do you start conversations with others?	−0.04	**0.64**
2. How often do school friends call you (either during school or afterwards)?	−0.04	**0.34**
3. At school, how many times do people say something nice to you?	0.12	**0.50**
4. How many times have people done something nice for you at school?	0.09	**0.46**
9. At school, how many people seem to like you?	0.06	**0.65**
10. How many friends from school do you talk with most days?	−0.06	**0.77**
11. How many of your friends from school do you like a lot?	−0.07	**0.66**
12. How many people at school would say they are your friend?	0.00	**0.71**
17. How often do you use the internet to contact other people?	**0.86**	−0.16
18. How often do other people contact you online?	**0.88**	−0.13
19. How often does someone say something nice to you online?	**0.72**	0.03
20. How many times have people done something nice for you online?	**0.62**	−0.04
25. How many people have posted something nice about you online?	**0.44**	0.23
26. How many online friends do you text or chat with online?	**0.66**	0.07
27. How many of your online friends do you like a lot?	**0.50**	0.20
28. How many people follow or like you online?	**0.31**	0.29

Factor correlation = .36

Table 2

Exploratory Factor Analysis of SNS Online and In-person Peer Victimization Items

Items	Factor	
	Online	**In-person**
5. How often do people say something mean to you at school?	0.02	**0.62**
6. At school, how many times have people been mean to you behind your back?	−0.05	**0.77**
7. How often do people ignore you or avoid you at school?	0.02	**0.62**
8. At school, how many times has someone teased you or hurt you?	−0.11	**0.71**
13. In school, how many people ignore you when you try to talk to them?	0.27	**0.37**
14. At school, how many people say mean things about you to others?	0.06	**0.63**
15. At school, how many people try to get others to ignore you?	0.24	**0.41**
16. How many people have spread rumors about you at school?	0.14	**0.55**
21. How often has someone said something to you online that was hurtful?	**0.71**	−0.05
22. How often have people posted or texted mean things about you online?	**0.81**	−0.04
23. How often do people ignore you when you text or post something online?	**0.43**	0.18
24. How many times has someone teased you or hurt you online?	**0.80**	0.03
29. How many people ignore you when you try to talk to them online?	**0.59**	−0.06
30. On the internet, how many people say mean things to you about you to others?	**0.73**	0.04
31. How many people try to get others to ignore you online?	**0.68**	0.05
32. How many people have posted something online just to hurt you?	**0.67**	0.05

Factor correlation = .63

Table 3

Correlations, Means, and Standard Deviations for Study Measures.

Measure	1	2	3	4	5	6	7	8	9	10	11	12
1. SNS Online Social Support	1.00											
2. SNS In-pers. Social Support	0.36	1.00										
3. SNS Online Peer Victimization	0.15	−0.13	1.00									
4. SNS In-person Peer Victimization	−0.02	−.04	0.61	1.00								
5. OESA-Included	0.33	0.56	−0.15	−0.10	1.00							
6. OESA-Ignored	−0.09	−0.43	0.46	0.47	−0.44	1.00						
7. PSSS Friends Support	0.21	0.41	−0.14	−0.17	0.47	−0.41	1.00					
8. CES cyber-victimization	0.12	−0.05	0.59	0.43	−0.12	0.34	−0.15	1.00				
9. RSE Self- Esteem	0.24	0.43	−0.28	−0.28	0.38	−0.49	0.40	−0.24	1.00			
10. DAS Dysfunc-tional. Attitudes	−0.16	−0.27	0.26	0.32	−0.26	0.41	−0.34	0.24	−0.60	1.00		
11. CTI Depressive Cognitions	−0.19	−0.35	0.35	0.34	−0.37	0.45	−0.38	0.31	−0.74	0.63	1.00	
12. BDI-II Depres-sive symptoms	−0.09	−0.23	0.20	0.28	−0.20	0.43	−0.30	0.28	−0.66	0.56	0.56	1.00
Means	18.58	21.13	4.70	6.40	21.44	8.96	18.00	6.94	31.54	128.48	72.13	9.51
SDs	5.34	4.02	3.87	3.96	3.63	3.19	2.85	7.97	5.42	30.85	24.09	7.95

Note: When $|r| > 0.13$, $p < .05$; when $|r| > 0.17$, $p < .01$; when $|r| > 0.22$, $p < .001$.