 Significant and Non-significant Associations Between Technology Use and Sexual Risk: A Need for More Empirical Attention

To the Editor:

We read with interest the article by Gordon-Messer and colleagues on the topic of sexting [1] published in conjunction with their own study on that topic [2] as well as the editorial on sexting by Levine [3]. In a national study of young adults (ages 18–24 years), Gordon-Messer found few relationships between sexting and sexual risk behavior. Our study found robust relationships between sexting, substance use, and sexual risk behavior in a convenience sample of young adults (ages 18–25 years). Here we comment on the differences between these studies as well as on the editorial.

Levine wondered why such a topic would be investigated. She correctly noted that young adults have the highest rates of sexual activity; unfortunately, they also have the highest rates of sexually transmitted infections (STIs) [4] and unintended pregnancy [5,6]. These associations underscore the importance of studying the sexual behavior of young adults.

Both empirical studies on sexting have considerable strengths and some limitations. Our sample was geographically restricted and only included college students. Gordon-Messer and colleagues’ study had greater geographic and educational diversity but used Internet recruitment and the final sample composition may have reflected the shrinking but still extant digital divide (e.g., 70.4% white, 5% African-American). Both studies were also cross-sectional—a reasonable starting point for a new area of research—but with known drawbacks.

Possible explanations for differences in findings across the studies include the nature of the assessment and data analysis. We assessed not only number of partners but also number of sexual acts, engagement in sex while under the influence of substances, and self-reported STIs. Gordon-Messer assessed a narrower range of risk behaviors but the key behavior they assessed—unprotected partners in the past 30 days—was especially high risk. We also chose different analytic approaches. We included everyone with complete data in primary analyses (Ns > 700) whereas Gordon-Messer included only individuals who had been sexually active in the past 30 days (Ns < 400). The net result was that we may have had greater statistical power to detect differences between individuals who had and had not engaged in sexting, Gordon-Messer and colleagues’ approach was justifiable but more conservative—if their results had shown an association between sexting and having more unprotected partners in the past 30 days in the sexually active subset of their sample—it would have been a very strong indicator of risk.

In her editorial, Levine asserted that the Gordon-Messer study was “able to debunk the fear-based myths that parents and teachers are critical stakeholders. Many would be uncomfortable allowing their children or students to participate in a survey that is so sexually explicit. It is worth noting that the age range in the Sanders study was 18–96 years, and included no minors.

To achieve community buy-in, which is critical, one must be careful not to burden respondents and other key stakeholders. Administration of the Youth Risk Behavior Survey (YRBS) requires teachers to lose precious instruction time. The YRBS has nearly 100 questions and typically takes an entire class period for students to complete. When we created our supplemental survey, we only had the capacity for 20 items. Because we could not link our supplemental survey to the main YRBS survey, we were faced with having to re-ask all of the demographic and sex risk questions we wanted to analyze. Asking 14 questions about sex was not realistic, regardless of how explicit those questions were.

In addition, it was important that our questions address the assessment needs of the Los Angeles Unified School District. The content of their sexual health curriculum encourages youth to use condoms for all sexual activities (i.e., oral, vaginal, and anal sex). Although human immunodeficiency virus risk is low with oral sex, other sexually transmitted infections can certainly be transmitted through oral sex (e.g., gonorrhea, chlamydia, herpes). Assessing youth with respect to these recommended sexual health practices was important.

To address all of these issues (respondent burden, explicit content for minors, and the district’s sexual health education content), we agreed collectively that appropriate wording was: “Have you ever had sexual intercourse (vaginal, oral, or anal sex)?” (A) Yes; (B) No," followed immediately by “The last time you had sexual intercourse, did you or your partner use a condom? (A) I have never had sexual intercourse; (B) Yes; (C) No.” These two questions closely mimic the questions asked in the main YRBS. The slight modification “(vaginal, oral, or anal sex)” was made to the first question so as to be more inclusive of sexual behaviors of sexual minority youth, many of whom do not engage in penile–vaginal sex, and to incorporate the sexual health education content of the schools.

Although we appreciate Ruben’s commentary on misclassification bias, the realities of participant burden and community participation can often affect the decision-making process when research is conducted in schools and other community settings. It is critical for researchers to wrestle with issues such as misclassification bias, so as to create the most robust findings possible. It is also critical for researchers to wrestle with how their study participants and community partners experience and perceive the research being conducted, to conduct meaningful research with community partners.

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surround sex and technology” (p. 257). Given the differences in the findings of the two studies, the limitations of each study, and the meager amount of research on this topic, we submit it is premature to conclude that sexting either definitely is or is not associated with sexual or other risk behaviors. We agree with Gordon-Messer and colleagues that additional research is needed. We agree with Levine that sexting is not something that should necessarily induce fear, but like all sexualized activity, could be associated with both positive [7] and negative [8–10] outcomes.

Levine also raised the important point that our study did not specifically recruit individuals at the highest risk for HIV (men who have sex with men [MSM], young adults of color). We agree that additional research should focus on those groups. With only 3.5% of the men in our sample reporting a male sexual partner in the past 3 months, our sample is too small to explore MSM risk. Among the 47.1% of our participants (n = 349) identifying as a racial/ethnic minority, individuals who engaged in sexting reported more sexual partners and more unprotected vaginal/anal sex acts in the past 3 months as well as more lifetime sex partners, relative to those who did not report sexting (all ps < .01), suggesting that even in this group at elevated risk for HIV, sexting is associated with risk.

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The Author Replies:

Sexting (sending and/or receiving sexually explicit photos via text message) and its association with health have received increasing attention in the academic and popular literature in recent years. Our data showed no support for an association between sexting and psychological well-being and/or sexual risk behavior among young adults (18–24 years of age) across the United States [1] who were recruited through a Web-based responding driven sampling approach [2]. On the other hand, Benotsch and colleagues [3] documented a relationship between sexting and increased risk behaviors in a convenience sample of college students enrolled in a psychology course. In our study, we operationalized sexual risk as the proportion of partners with whom participants had unprotected sex if they had been sexually active in the prior 30 days. In the study by Benotsch et al., sexual risk was defined as any unprotected sex in the prior 3 months and/or having multiple partners in the prior 3 months (irrespective of whether condoms were used). Although the variation in findings may be attributable to how sexual risk is operationalized, Levine [4] astutely pointed out that in carrying out additional research in this area, we should be conscious in specifying how sexting fits into the sexual risk equation. Here, I build on Levine’s editorial using data from both studies to suggest future areas of inquiry that may clarify the internal validity of the observed relationships before we make generalizations across study findings.

Sexting could be a precursor to sexual risk-taking behaviors among young adults. In both studies, sexting was associated with onset of sexual activity; however, given the cross-sectional nature of both studies, we are unable to make causal or temporal conclusions. For example, whereas sexting may precede sexual behavior, it is also possible that young adults use sexting as foreplay with partners with whom they are already sexually involved. Longitudinal studies examining whether sexting is predictive of sexual behavior, or vice-versa, are warranted. The relationship between sexting and sexual behavior could also be mediated by other variables known to be associated with sexual risk (e.g., psychological distress); however, we found no preliminary support for a mediational model (i.e., we found no association between sexting and depression, anxiety, or self-esteem). It is also plausible that the divergent findings between sexting and sexual risk may be confounded by the presence of other risk correlates not accounted for in our models. For example, although Benotsch et al. [3] found an association between sexting and sexual risk behavior after accounting for alcohol and other drugs, these relationships may diminish or disappear if we control for the influence of constructs known to have a robust relationship to risk-taking (e.g., sensation seeking) [5]. In addition, neither study considered relationship status in the multivariate analyses; consequently, it is possible that the relationship between sexting and sexual behavior is not attributable solely to risk-taking, but rather to new relationship dynamics among a population that has grown sharing their lives through online technologies.

In both studies, sexting prevalence ranged around 40%, and I expect it to continue to increase as technology becomes more ingrained into our lives and its use for sexual communication becomes more normative. In light of these trends, we must be conscious of how we link sexting with sexual health. As

References