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NARRATIVE REVIEW

Multidisciplinary Approaches to Research on Bullying in Adolescence

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Abstract Bullying is a significant public health problem in the United States that affects youth functioning in multiple domains. Much of the research on bullying to date has focused on children, however, leaving gaps in the literature with respect to understanding bullying among adolescents. In particular, less is known about how adolescents conceptualize bullying, what predicts and is associated with bullying involvement among adolescents, and how prevention programs might address the unique needs of middle and high school students. This special issue proposes that a multidisciplinary perspective might be particularly useful in better understanding bullying among adolescents and determining how to design more effective interventions and prevention programs for this age-group. The current article introduces the special issue by briefly discussing what is known about bullying in adolescence and considering three disciplines (computer science, big data, and virtual communities; media studies; anthropology) that are particularly well situated to move the field forward. Next, this article reviews teen pregnancy prevention efforts, as an example of another adolescent public health concern that has been addressed successfully using a multidisciplinary approach. The article concludes with an overview of the three manuscripts that are part of the special issue.

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Introduction

Bullying remains a pressing public health problem in the United States. Increasingly, scholars have considered precursors, predictors, and consequences of bullying involvement, as well as examined how to bolster the effectiveness of bullying prevention programs. Coupled with the research attention to bullying in the last few decades, there has been a significant expansion of states with laws mandating K-12 schools address bullying; whereas in 1999 only one state had enacted legislation (Georgia), as of 2015 all 50 states passed anti-bullying legislation. Despite these efforts from research and legal perspectives, there remain gaps in researchers' understanding of bullying. In particular, intervention research on bullying among adolescents, in contrast to children, remains limited. To date, research on bullying has been conducted primarily in the fields of psychology and education, but it is possible that other disciplines might offer novel and innovative approaches to understanding bullying and effective bullying interventions. As such, the purpose of this special issue is to suggest that one potentially fruitful approach to move research on adolescent bullying forward is to draw from disciplines that have been less central to, or to date not involved in, the discourse around bullying.

In this introductory article, we first provide a brief overview of what is known about why bullying in adolescence should be a specific focus of research by describing: bullying rates and correlates; the overlap between bullying and other victimization exposures that increase among adolescents; and what is known about the effectiveness of bullying prevention efforts in this age group. We next discuss how multidisciplinary perspectives might advance research on bullying in adolescence, with attention to one discipline (computer science, big data, and virtual communities) that has already provided novel findings on bullying, and to two disciplines (media studies and anthropology) that have the potential to shape how we investigate and understand bullying. Third, to illustrate how other public health problems have been successfully addressed through multidisciplinary approaches, we provide the example of teenage pregnancy prevention and highlight how efforts from a range of disciplines have cumulatively and successfully contributed to declines in teenage pregnancy. We close with a brief summary of the origins of the special issue and an overview of the included articles.

Rates and Correlates

Current US national data indicate that 20 % of all youth have been bullied on school property and 15 % have experienced cyberbullying within the past year (CDC 2013). In addition, 8 % of students report being bullied on a daily basis (Robers et al. 2015). However, research on bullying prevalence suggests the importance of attending specifically to the experiences of adolescents. In particular, there have been consistent findings showing that bullying increases throughout elementary school, peaks in middle school, and declines in high school (Espelage and Swearer 2003). For instance, in a recently published Institute of Educational Statistics (IES) report, 37 % of 6th grade students reported bullying victimization in contrast to 22 % of 12th grade students (US Department of Education 2015). These developmental trends suggest a unique opportunity to study both the increase in undesirable behaviors, and also a subsequent decrease in the very same behaviors. Also of note, although findings presented in this same IES report indicated that rates of cyberbullying did not vary significantly between 6th and 12th grade, cyberbullying is more relevant to and common in the period of adolescence than in childhood (Kowalski et al. 2014). Researchers additionally find that the forms of bullying reported by adolescents differ from those reported by children. In particular, adolescents report increases in indirect and relational aggression and decreases in physical aggression (Robers et al. 2012). This finding suggests the possibility that that the behaviors associated with bullying and their consequences shift over time. Research also finds that gender differences in rates of these forms of aggression are more pronounced in adolescence than in childhood (Salmivalli and Kaukiainen 2004), indicating a need for research and practice to further attend to gender roles. Further, bullying related to sexual relationships (Pepler et al. 2006) and sexual orientation (Birkett et al. 2009) peak during adolescence.

For youth of all ages, bullying victimization is associated with deleterious effects in multiple domains (e.g., psychological, health behaviors, academic) (Copeland et al. 2013; Fekkes et al. 2006; Holt et al. 2015; Swearer and Hymel 2015). However, a handful of researchers have suggested that bullying victimization might have differential effects based on the age at which it occurs (McDougall and Vaillancourt 2015). For example, Ttofi et al. (2011) found that the link between bullying victimization and depression later in life was strongest when the victimization occurred in childhood, rather than adolescence. Among adolescents, however, bullying is linked to risk factors that specifically increase among this age group, including sexual risk taking (Holt et al. 2013), substance use (Radliff et al. 2012), and suicidality (Holt et al. 2015). Another study found that high school students classified as having experienced ongoing victimization at baseline had lower school attendance 2 years later (Smith et al. 2004).

Conceptualization of Bullying in Adolescence and Relevance of Other Victimization Forms

As youth move from childhood into adolescence, their conceptualizations of bullying changes, and in fact, as described in more detail in Bellmore et al. (this issue) the term "bullying" itself might feel less relevant for adolescents (Allen 2015). Qualitative work by Guerra and colleagues (Guerra et al. 2011) highlights, for instance, that while elementary school students conceive of bullying as involving physical altercations or property destruction, adolescents are more likely to attend to components such as power imbalance and jealousy. Similarly, adolescents were less likely than children to mention physical aggression when asked to define bullying (Vaillancourt et al. 2008). This research suggests that fundamental conceptualizations of the definition of "bullying" might shift over time.

Further, other forms of victimization emerge during adolescence, and these victimization forms are associated in complex ways with bullying involvement. For example, by high school 10 % of youth have experienced physical dating violence victimization (Miller et al. 2013). In turn, research has indicated that youth involved in bullying are more likely to experience teen dating violence (Debnam et al. 2016; Holt et al. 2007). Given shifts in victimization experiences among adolescents, with bullying becoming less common and other peer-based victimization exposures emerging, scholars have set forth theories on aggression that address its developmental progression. For instance, Wolfe et al. (2009) suggest that, for some youth, teasing builds to bullying which in turn leads to dating violence. Similarly, Espelage et al. (2012) proposed the bully-sexual violence pathway theory, in which it is posited that perpetrators of bullying who also use homophobic teasing might later engage as perpetrators of sexual violence. Given that bullying co-occurs with other forms of aggression in adolescence, and given the emergence of other victimization types, it is critical that prevention programs aimed at middle and high school youth attend to this broader landscape of victimization exposures that might be affecting youth.

Bullying Legislation and Prevention

The effects of legislation and bullying prevention programs on reductions in bullying behavior among adolescents have yielded mixed results. At the policy level, there is evidence that particular legislative components are associated with reductions in bullying among high school youth. Specifically, using a cross-sectional design Hatzenbuehler et al. (2015) examined anti-bullying laws from 25 states, and considered how components of these laws related to reports of bullying involvement from 63,635 high school students who completed the 2011 Youth Risk Behavior Surveillance Study. Results indicated that students living in states with at least one of the legislative components recommended by the Department of Education legislative reported reduced odds of both bullying (24 % reduction) and cyber bullying (20 % reduction). Additionally, this study found that states with laws that provided a clear statement of the scope of bullying behaviors, that included a description of which particular behaviors were prohibited, and that required school districts to design and implement policies, were more likely to house high school students reporting lower levels of bullying and cyber bullying. However, anti-bullying legislation typically does not address developmental considerations, including differences in policy and intervention implementation for children, as compared to adolescents.

Furthermore, as described in more detail in Swearer et al. (this issue), bullying prevention efforts in the United States have yielded mixed findings, and there have been few programs developed and tested among high school students in particular (Farrington and Ttofi 2009). Moreover, program effectiveness among adolescents specifically has increasingly been called into question. Although some meta-analyses initially suggested that programs tended to be more effective for early adolescents (i.e., 11–14 year olds) than for children (i.e., children 10 and younger), findings from a more recent methodologically innovative meta-analysis suggest the opposite. Specifically, Yeager et al. (2015) found that, from 8th grade on, there was either no effect of bullying prevention programs on bullying reduction, or the results were potentially iatrogenic. In their consideration of why programs might be less effective for adolescents, these scholars highlight that: (1) behavior is manifested differently in adolescence (e.g., behaviors are less observable), (2) the causes of bullying are different among younger and older youth (e.g., problematic social skills are more likely to result in bullying at younger ages, whereas at older aged youth more often facilitate indirect aggression), and (3) the program mechanisms necessary for change vary for children and adolescents (e.g., teachers providing direct instruction might be effective in elementary school, but is less likely to be in high school).

In contrast to studies focused on bullying prevention broadly, research on bystander intervention programs for adolescents has yielded more promising results. These results are described in more detail in Nickerson et al. (this issue). In particular, in their 2012 meta-analysis of bystander prevention programs, Polanin et al. (2012) found not only that that these programs were effective for all ages at increasing positive bystander behaviors, but also that effect sizes were largest for high school youth. This is a particularly important finding given evidence that adolescents are less likely to engage in bystander behaviors than children (Trach et al. 2010); interventions aimed at increasing such behaviors therefore have the potential to curb this pattern. Thus, for adolescents (and youth more broadly), implementing bystander prevention programs, or enhancing universal programs with greater attention to bystander behaviors, might yield promising findings with regard to reductions in bullying.

Potential Benefits of a Multidisciplinary Approach

The results reviewed above highlight concerns about the increase of bullying in early adolescence, the impact of adolescent bullying on long-term psychosocial outcomes, the co-occurrence of bullying with other related victimization experiences that emerge in adolescence, and the limited evidence for effective bullying prevention programs for adolescents. Together these findings indicate a need for a substantial shift in research addressing bullying among adolescents that can account for the specific needs of this developmental group. Traditionally, research on bullying has originated in social sciences disciplines including psychology, education, and public health. Drawing from disciplines beyond these traditional fields of study has the potential to broaden perspectives on the etiology and outcomes of bullying, raise critical questions about new approaches to prevention and intervention, and introduce novel methodologies to this field. Indeed, contributions from other disciplines have already provided key advances on this topic. As one illustration, we turn to research from the field of computer science. Further, we include perspectives from Media Studies and Anthropology, two disciplines that might offer new avenues for exploration in the field of bullying.

Computer Science, Big Data, and Virtual Communities

In contrast to traditional research on bullying that has relied on survey data, online communities and social network sites have provided computer scientists and social science researchers opportunities to collaborate to study social-psychological problems, including bullying. These approaches are particularly relevant for understanding the experiences of adolescents, who have increased access to and use of technology. As an example, data from the popular social network site, Facebook, have been used to study peer social networks. Researchers have used these data to identify the structure of social relationships (Lewis et al. 2008), and how social networks influence health and social behaviors (Christakas and Fowler 2013). As another example, data available from Google search engines and Youtube provide information about how the public interacts with media coverage of incidents of school violence. A study of data from Google trends indicates that relevant searches among Google users are high in the first 24-hours following a school shootings, but decrease to their usual level in under a week, suggesting a short time-frame to capitalize on public interest for policy change (Lindgren 2010).

Recently, a team of researchers from the Departments of Educational Psychology and Computer Sciences at the University of Wisconsin-Madison studied the use of Twitter to discuss bullying (Bellmore et al. 2015; Calvin et al. 2015; Xu et al. 2013, 2014). This team collected millions of public tweets from 2011 to 2013 to analyze trends in references to bullying over social media. Findings indicated, for example, that tweets about bullying peak on weekday evenings when people are out of school and work (Bellmore et al. 2015), that tweets are more often posted by victims and reporters of bullying than by others involved in bullying (e.g., bullies, defenders; Bellmore et al. 2015), and that it was possible to predict whether tweets will be deleted, a potential proxy for regret about posts (Xu et al. 2013; retrieved from http://www.aclweb.org/website/old_anthology/N/N13/N13-1082.pdf). Differences between US and Chinese cultures were identified by comparing patterns of Twitter posts to those of the popular Chinese Weibo website (Xu et al. 2014). These methods provide a dynamic approach to data collection across geocoded locations and with specific time-stamps that can identify trends and patterns in ways that simply are not possible using traditional survey approaches and may be more relevant to adolescents.

Gaming and virtual environments have also been designed for the purposes of bullying assessment and intervention. For example, Mancilla-Caceres et al. (2014) developed a computerized game task in which particular in-game strategies were associated with engagement in relational aggression. As another example, FearNot! (Fun with Empathic Agents to Reach Novel Outcomes in Teaching) is a virtual environment that was developed to provide students with training to respond to bullying situations by navigating animated interactive scenarios (Vannini et al. 2011). Studies of FearNot! indicate that previously victimized youth who engaging with the program reported subsequent reductions in experiences of victimization (Sapouna et al. 2010). Such virtual environments provide a "low-stakes" opportunity for children to practice skills in situations that approximate real-life.

Media Studies

Whereas computer scientists have engaged in research on bullying, other disciplines have particular promise in creatively informing bullying research, but are yet untapped. One such discipline is the field of media studies, which might be particularly beneficial in the design, implementation, and evaluation of media campaigns and interventions targeting adolescents. Media effects scholars primarily examine the ways in which mass media messages impact audiences emotionally, cognitively, behaviorally, and physiologically. An understanding of these particular media effects domains could help guide campaign efforts through mass media to raise awareness of the severity and consequences of bullying, establish intervention strategies for victims, bystanders, parents, and school administrators to assist during these incidences, and provide relevant parties with necessary resources to act accordingly. Through a uses and gratifications perspective, which seeks to understand the types of channels and content individuals actively choose to consume, research from media studies can facilitate decisions about the conduits and programs that adolescents find most appealing.

Theories of communication, particularly in the area of persuasion, can inform the types of sources (e.g., origin of the message such as an individual, group, agency, organization, etc.) and content features (e.g., types of arguments, message frames and appeal, etc.) that are most relevant and effective for media campaigns centered on bullying and violence prevention in order to achieve desirable effects among target audiences. Therefore, turning to mass communication research can provide important avenues to understand the intricacies underlying the processes and effects of media messages, especially if they are intended to reach large audiences. With the proliferation of and reliance on social media, it becomes even more important for campaign efforts to optimize the synergy between interpersonal and mass communication. For example, individuals (unknown and well-known) have the capacity to reach mass audiences through social media platforms to heighten awareness of bullying and provide practical solutions for bullies, bystanders, and victims through campaigns such as the Bystander Revolution (http://www.bystanderrevolution.org/).

Anthropology

Another discipline with new potential to inform research on bullying among adolescents is sociocultural anthropology. Anthropology's central methodology and orientation hinges on ethnographic research. The aspects that distinguish this cornerstone anthropological method from other research methods (even other qualitative ones) have to do with its longevity, its immersive orientation, and its insistence that we must question even our most fundamental understandings of how the world works; that is, we have to open up for inquiry domains of human belief and behavior that might appear to be "natural" or "universal," but might turn out to be highly varied and not quite what we initially assumed.

In order to do this, sociocultural anthropologists develop their research questions and methods based on some key philosophical distinctions regarding forms of knowledge and behavior. The first distinction is between explicit and tacit knowledge. Explicit knowledge includes information that we can communicate readily to anyone who might ask. Tacit knowledge, on the other hand, includes things we know, but that we cannot easily articulate, and may not even be aware of. For anthropological research, the understanding that the bulk of useful cultural information exists at the tacit level has implications for how we get to it. There are limits to what you can ask and expect to get as a direct answer. To get at this kind of logic—whether it is about something as mundane as how you sit or as troubling as why some people are bullies—you often cannot simply ask, or perhaps asking is only the beginning. You must observe, make inferences, participate in, and usually violate (and then get corrected) a range of tacit cultural behaviors. And this requires long-term immersion and engagement in an unfamiliar context.

The second, and overlapping, distinction is that between rules and real behavior. We might think of rules as a set of explicit codes of conduct, but of course we know that, when trying to understand human behavior, they do not often tell us more than that. For instance, we can ask you what the rules are regarding speed limits for driving on state highways, or what the rules are for crossing busy city streets. And you can tell us that that you cannot drive over 65 mph and you have to wait for the walk signal, but of course that does not help us understand how people actually behave in each of these contexts. Similarly, we can ask a child what his or her school's rules are for intervening when one sees a classmate getting bullied, and he or she will likely be able to recite them, but that might not tell us much about what that same child has done or would do in such a situation. Getting a sense of the rules that govern particular social, cultural, or institutional settings is but one step for anthropologists, and a preliminary one at best. But by living with people and observing what they actually do, we begin to see all of the interesting ways in which behaviors do not always neatly align with stated rules.

The final—and most vital—distinction is that between etic and emic perspectives. These words are borrowed from linguistic analysis and get extended into anthropological methods in particularly important ways. An etic understanding is one that is based on the outsider's version of reality, the observer's concepts and categories, the researcher's ideas about what questions to ask and how to analyze the answers. An emic understanding is one that is meaningful for the members of a given group, based on their worldview and values. For an outsider to achieve an emic understanding of another culture (or any group in which he or she is not a member) is an exercise in extreme and sophisticated empathy. In striving for an emic understanding, we cannot impose our assumptions in making sense of others. We must suspend not only judgment, but our own version of reality so we can try to make sense of their behavior and values from *their* frames of reference, in order "to grasp," as Bronislaw Malinowski—one of the late ninetieth century's architects of anthropological fieldwork—said, "the native's point of view" (Malinowski 1922; p. 25)

Following all of these epistemological guideposts, anthropological approaches insist that we must question what we assumed to be unquestionable. And, methodologically, the heart and soul of this approach relies on participant observation; that is, actively engaging in the day-to-day lives of the people we wish to understand better. This approach has implications for more deeply understanding the experiences of students involved in all bullying roles (e.g., target, aggressor, and bystander) in new and potentially more meaningful ways.

Teen Pregnancy Prevention: An Example of the Utility of Multidisciplinary Approaches

One reason to consider increasing multidisciplinary research efforts for bullying prevention and intervention work among adolescents is that multidisciplinary approaches have proven beneficial in other contexts. In particular, in this section we review teen pregnancy prevention, as one instance of how multidisciplinary resources were effectively merged to address a public health crisis among adolescents. There are several parallels between bullying and teen pregnancy that make this a useful case example. First, both bullying and teen pregnancy involve a highly complex and interpersonal dynamic, making them important public health issues to address at a macro-level, but also important to understand in the context of adolescent peer relationships. As such, identifying influences (e.g., peer, family, school, and media) on attitudes and beliefs about peer relationships is critical. Second, both bullying and teen pregnancy are considered public health crises, but are also considered by some adolescents to confer person and interpersonal benefits (i.e., some adolescents seek parenthood and some adolescents seek the power afforded by bullying others). In these ways, understanding the specific perspectives and experiences of involved adolescents (i.e., through the anthropological approach described above) may be central to researchers' work to change behaviors. Finally, many youth interventions involve family, particularly parents. For both bullying among adolescents and teen pregnancy, the role of family is complicated, as youth are individuating from parents and entering into more intense peer relationships. This suggests that perhaps whether and how family are involved in prevention and intervention efforts needs to be newly considered.

Teen pregnancy prevention is a nice example of successful multidisciplinary effort that can be used to illustrate some of the ways that various disciplines can collaborate. The Centers for Disease Control and Prevention has identified teenage pregnancy as one of their top six priorities, and importantly views the issue as a "winnable battle." (http://www.cdc.gov/teenpregnancy/about/index.htm). Data from the CDC's National Center for Health Statistics indicate that since the late 1950s, the US teenage birth rate has dropped significantly. Although still ranking highest worldwide among industrialized countries, the US has witnessed a 57 % decrease in the teenage birth rate between 1991 and 2013 and another 9 % decrease from 2013 to 2014 (http://www.cdc.gov/teenpregnancy/about/index.htm). A handful of potential reasons for this decline have been explored, most notably an increased use of contraception, decreased sexual activity, and delayed onset of initial sexual activity among US teenagers (Brindis 2006). In their exploration of teen pregnancy prevention (TPP) through an ecological systems framework, Wright et al. (2015) acknowledged the contributions of a range of disciplines (e.g., child development, nursing, public health) in addressing factors related to adolescent pregnancy at multiple levels of the social ecology. Here, we briefly describe a few of the fields that tackled the problem of teenage pregnancy. Collectively, these fields and others contributed to the gradual yet significant decline in US teen pregnancy rates over the past few decades. Notably, although fields are described separately below, much research on TPP to date has bridged disciplines.

Family Studies

Parents and families are a critical component of teen pregnancy prevention and intervention efforts, given that family characteristics (e.g., parent–child communication about sex) can serve to increase or reduce the likelihood of teen pregnancy (Silk and Romero 2014). As such, several studies have examined the efficacy of family-centered prevention and intervention. Findings from a comprehensive meta-analysis of parent- and family-based teen pregnancy prevention programs and policies (Silk and Romero 2014) found that programs that include a parent- or family-focused component, such as parent–child communication about sex, seem to be successful in improving factors related to teen pregnancy. Research in the area of family-focused programs for TPP highlights the importance of well-timed interventions. Specifically, in the case of TPP, programs that target preteens and younger teens, groups who are less likely to be sexually active than older adolescents, might be particularly promising. For example, one examination of a social learning-based sexual risk prevention program for middle school youth and their parents found that youth who participated in the program, compared to youth who participated in a traditional educational program, were more likely to report intending to delay initial sexual activity (Lederman et al. 2004).

Clinical Medicine

The medical context is central to TPP, given its role in not only treating pregnant adolescents, but also in providing access to contraception and offering targeted programs. For instance, in a prospective clinical study of new teenage mothers, results indicated that those who chose long-term contraception (i.e., the DepoProvera/DMPA shot) were more likely to still be using contraception, and were significantly less likely to have experienced a repeat pregnancy one year after delivery, than those who chose oral contraceptives or the patch (Thurman et al. 2007). As another example, the Young Parent Program provides comprehensive healthcare, continuity of care, and contraceptive counseling, along with flexible office hours, free contraceptives to teens without insurance, and regular appointment reminders (Omar et al. 2008). In a retrospective study of the Young Parent Program, only 11 (<1 %) of the 1386 teenage mothers who participated in this program reported a repeat pregnancy during the 3 years after participation, a sharp contrast to other research finding rates of up to 35 % of teen mothers have a repeat pregnancy within a year of this first child's birth (Omar et al. 2008).

Education

Schools play a significant role in providing adolescents with health education, and in turn with sex education. Popular and political debates, however, have rendered educational research on sexual health and teen pregnancy among adolescents complicated. For instance, despite some research indicating that abstinence-based programs are ineffective at reducing the likelihood that adolescents will engage in sexual activity (Brindis 2006), policies in some US states restrict education-based interventions to abstinence-only content. With respect to teenage pregnancy specifically, evidence suggests that comprehensive school-based sex education programs are related to reductions in teen pregnancy, whereas abstinence only programs are not associated with such reductions (Kohler et al. 2008). However, more recent research indicates that when considering a range of outcomes—from knowledge to attitudes to short-term behaviors—comprehensive sex education programs are associated with only marginally improved outcomes than abstinence only programs (Oman et al. 2015).

Understanding adolescents' perspectives on teen pregnancy prevention is a key to component to reducing teen pregnancy rates. In a coordinated study designed by the Boston Public Schools, the Boston Public Health Commission, and the Boston Initiative to Prevent Teen Pregnancy, researchers sought to identify teenagers' perspectives on teen pregnancy prevention efforts as a way of gaining insight into what sex education content and skills students might be most receptive to, and what factors influence their receptiveness (Hacker et al. 2000). A majority (52 %) of teens surveyed reported that they thought more content focused on pregnancy and birth control could prevent teen pregnancy. Findings also highlighted the importance of multiple contexts for sex education; females were more likely than males to have learned about birth control from their parents, and were also more likely to prefer receiving sexual health-related information from healthcare settings.

Media/Communications

The recent rise in media representations of teenage pregnancy has created both opportunities and challenges to researching which factors might have contributed to the overall decline in teenage pregnancy during the past decades. In particular, media and mass communications research has begun to examine the role that the media has in framing and disseminating perceptions and expectations of sex among teenagers. Motivated by popular debate on whether the media glorifies or criticizes teenage pregnancy and motherhood, Wright and colleagues (Wright et al. 2013) sought to identify whether parent–child communication moderated the relationship between exposure to the MTV television shows *16 and Pregnant* and *Teen Mom* and sexual activity among female college students. Study findings indicated that father-daughter communication, but not mother-daughter communication, about sex during childhood moderated the association. Specifically, college females who engaged in frequent viewing of these shows were less likely to have engaged in sexual intercourse recently if they had fathers who communicated with them about sex in childhood, whereas college females whose fathers did not communicate with them about sex in childhood were more likely to have engaged in recent sexual intercourse. Another study (Aubrey et al. 2014) focused on *16 and Pregnant* found that teenagers who watched this program viewed the benefits of teen pregnancy as greater than the risks, and viewed themselves as less susceptible to the risk of teen pregnancy. Taken together, these studies highlight the potential effects of media portrayals of teen pregnancy on attitudes and behaviors among adolescents.

Summary

As briefly described above, teen pregnancy reductions have been attributed to a range of factors, most notably efforts aimed at multiple levels of the social-ecology (Brindis 2006), and by extension, by contributions from individuals across a range of disciplines. It seems possible that the bullying field would benefit similarly from a multi-disciplinary perspective. Relying on psychologists and educators alone to reduce bullying among adolescents might miss key opportunities in fields such as medicine, media studies, family studies, and anthropology that suggest new and innovative approaches to bullying prevention efforts.

Contributions of the Special Issue

This special issue examining multidisciplinary approaches to bullying research among adolescents is a product of the Bullying Research Network (BRNET) annual Think Tank. BRNET is a group of over 150 experts, primarily researchers, on bullying and was founded by Drs. Susan Swearer and Shelley Hymel. As stated on BRNET's website (brnet.unl.edu), the mission of the organization is to: "promote and assist international collaboration among bullying and peer victimization researchers." This mission is achieved through a number of initiatives including the annual Think Tank meeting. This Think Tank is a members-only meeting, and brings together leaders in the field to discuss key topics in bullying (e.g., bullying and mental health). The 5th annual BRNET Think Tank was held in June 2015 at Boston University, and was focused on multidisciplinary approaches to bullying prevention. Through extensive discussions, three primary themes emerged that seemed most promising in moving the bullying field forward, and these were selected as topics for the manuscripts in this special issue.

As noted previously, in comparison to research focused on youth of other ages, much less is known about bullying dynamics among adolescents, and in particular, among high school students. To move the field forward, the first article, Bellmore et al. (this issue) identifies key factors to take into consideration when focusing on bullying among high school youth, including the organizational structure of high schools and the new social contexts adolescents experience during this time. In line with research indicating that the term "bullying" might be less relevant for adolescents, this paper highlights that labels assigned to behaviors that seem like bullying will vary based on social context, and that interpretations of these behaviors might vary widely based on the observer (e.g., teachers, romantic partners). Importantly, Bellmore et al. identify fields that have been less traditionally involved in bullying research that might offer critical perspectives on the issue for high school students, most notably criminal justice, medicine, communication, and computer science.

In the second article, Swearer et al. (this issue) consider bullying prevention and legislation efforts, highlighting reasons why, as detailed previously, existing approaches might be less effective for adolescents. For instance, this article explores how developmental differences (e.g., increases in autonomy) might require approaches that are distinct from those that might be effective for younger youth. Further, Swearer et al. integrate research findings from neuroscience, and highlight how the integration of information from multiple disciplines is necessary to produce effective laws and policies related to bullying. This article also considers social-emotional learning as an approach to reduce bullying and address other areas of key importance to adolescence (e.g., self-awareness), and brings in the importance of using delivery mechanisms that adolescents value (e.g., Facebook).

In the final article (Nickerson et al., this issue), authors provide a review of research on bystanders and bullying, as well as an overview of mass communication theory. As an illustration of how other disciplines might contribute valuably to research on bullying, Nickerson et al. consider potential applications of mass communication theory to bullying research, with an emphasis on the bystander intervention model. Specifically, the article describes each step of Latané and Darley's (1970) bystander behavior model, considers these steps in light of potential bullying situations, and provides examples of which types of mass communication strategies and messages might be most effective for each of the five steps. The integration of mass communication theory, which typically has not been applied to bullying research, into prevention approaches might be particularly fruitful for adolescents, given that messages could be tailored to the unique characteristics of this population.

Conclusion

In this Introduction to the special issue, we have argued that to move the field forward in its understanding of bullying among adolescents a multi-disciplinary approach is necessary. Adolescence reflects a distinct period of time in which youth are faced with new educational environments and changing social contexts, and in which some youth begin to experience other forms of victimization (e.g., dating violence). Given these reasons and others, it might be that "bullying" as a concept is less relevant for adolescents. Research indicates that bullying prevention programs for adolescents are largely ineffective, with the exception of bystander prevention programs. As such, it is critical that new approaches to address bullying among adolescents are identified; we postulate that a multi-disciplinary approach, drawing from fields of greatest relevance to adolescence, as teen pregnancy prevention efforts did, will yield the most promising outcomes. Taken together, this article and those in this special issue provide innovative ideas for next steps in research on bullying among adolescents, which have the potential to not only contribute significantly to enhancing research in this area, but also to inform practice and policy.

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Authors' Contributions MH and JG determined the article's focus; MH drafted sections, coordinated among authors, and finalized the manuscript; JG drafted sections and contributed to editing the manuscript throughout; MTV, JD, and CB drafted sections; All authors read and approved the final manuscript as submitted.

Compliance with Ethical Standards

Conflicts of interest The authors report no conflict of interests.

Ethical Standards Authors have complied with ethical standards when writing this manuscript. This research paper did not involve the use of human participants, and as such did not require informed consent procedures.

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