FINDING OUT ON FACEBOOK: A QUALITATIVE ANALYSIS OF ADOLESCENTS'

EXPERIENCES FOLLOWING A SUICIDE CLUSTER

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Suicide clusters have been identified in many populations; however, research exploring the role of online communication in the aftermath of a suicide cluster is extremely limited. This study used the Consensual Qualitative Research method to analyze interviews of ten high school students following a suicide cluster in a small suburban school district. Interviewee's responses were organized into 4 domains: the suicide, impact, perceptions of school environment, and recovery. The role of social networking emerged as a common theme across domains, suggesting broad relevance to adolescents' experience following the suicide of a peer. Implications for clinical intervention and research are discussed.

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EXPERIENCES FOLLOWING A SUICIDE CLUSTER

As one of the most frequent causes for death in the United States and the world, suicide is a major public health concern (Centers for Disease Control; CDC, 2011). In the United States, suicide is the 11th leading cause of death overall and the 3rd leading cause of death among adolescents (CDC, 2011). Clusters of suicide have been well documented (Juhnke et al., 2011). A suicide cluster is defined as "a group of suicides or suicide attempts, or both, that occur closer together in time and space than would normally be expected on the basis of statistical prediction or community expectation" (CDC, 1988). Transmission of suicide has been observed throughout social networks (Johansson, Lindqvist, & Eriksson, 2006), age groups (Gould et al., 1990), and ethnic groups (Hanssens, 2011). Suicide contagion is the social transmission of suicide by which one person's suicide influences another person to either attempt or complete suicide (O'Carroll & Potter, 1994).

Clusters of suicide are commonly divided into categories: mass clusters and point clusters. Point clusters occur within small communities (i.e. institutions or schools) and involve suicides contiguous in space and time (Mesoudi, 2009). Mass clusters include an increase in suicide grouped more in time than space, which is attributed to publicizing of actual or fictional suicides (Joiner, 1999). Youth aged 15-24 are 2 to 4 times more likely to experience suicide contagion than older age groups (Gould et al., 1990) and particularly susceptible to contagion effects from media reports of suicide (Stack, 2003). Guidelines for media reporting of suicide were created to reduce risk for contagion and encourage "information be disseminated and reported on in a sensitive and responsible manner" (Cox et al., 2012, p. 211).

Recent evidence suggests a changing nature in some of the factors influencing suicidal behavior, particularly in adolescents. The nature of rapid communication has changed significantly in recent years due to the communication tools available in online communities. "The role of the internet in suicide prevention and suicide risk is poorly understood" (Juhnke et al., 2011, p. 19). Furthermore, the potential risk and benefit of online social networking for adolescents following the death of a peer is not understood. The purpose of this study was to explore the experiences of adolescents following a suicide cluster, with specific focus on the role of online social networking. Due to our limited understanding regarding the impact of new technologies on social environment, qualitative research was chosen, drawing from the richness of participants' first hand experiences to examine this phenomenon.

Suicide in Children and Adolescents

Traditionally, suicide research has focused on identification of the risk factors for suicide, which include individual, relational, community, and societal factors (CDC, 2013). Protective factors for suicide are also important and include: clinical care for mental, physical, and substance abuse disorders; access to clinical interventions for help-seeking, restricted access to means for suicide; familial and community support; problem solving skills; conflict resolution training; and cultural or religious beliefs that discourage suicide (Juhnke et al., 2011). Similarly, research on suicide clusters has largely focused on documenting suicide clusters (Stack, 2003) and the factors underlying the transmission of suicidal behavior (Johansson, Lindqyist, & Erickson, 2006). Joiner (1999) suggested suicide contagion is a vague concept that has defied analysis, partly because of the failure to find a reasonable theory.

It is possible that developmental theory can contribute to our understanding of suicide contagion. Difficulty navigating the major developmental tasks of adolescence (i.e., individuation, separation, and autonomy) has been associated with negative mental health outcomes (Galambos, Barker, & Krahn, 2006). As a time of transition, adolescence is a period in life when individuals often turn to peers for support and validation. Connection to family and community is a well-documented protective factor for suicide (Maimon, Browning, & Brooks-Gunn, 2010) and adolescents may be at higher risk for disconnection as they strive towards identity formation and separation from adult influence. In light of these developmental tasks, adolescents are at particular risk for suicidal behavior after a peer suicide within their community (Gould, Wallenstein, & Kleinman, 1990) and social influence is one of the major factors underlying suicide clusters in adolescents (Ali et al., 2011). Brent et al. (1989) noted the importance of social contiguity in suicide clusters and found that individuals close to the victims were more likely to develop suicidal behaviors than other students. Adolescents exposed to a peer's suicidal act (attempt or completed suicide) reported significantly more suicidal behaviors than those who were not exposed (Ho, Leung, Hung, Lee, & Tang, 2000). Mauk and Gibson (1994) suggested the three closest friends of a suicide victim are most impacted by the suicide, due to the traumatic nature of having a close friend complete suicide. Feigelman, Jordan, and Gorman (2009) noted peers of the deceased with a history of suicidal ideation prior to the death are at highest risk for future suicide.

Aftermath of a Peer Suicide

"The death of a young person can have a deep and far-reaching effect on individuals close to the deceased, other young people in their school, and the community in general" (Cox et

al., 2012, p. 210). A suicide survivor was originally defined as someone who lost a close friend or relative to death by suicide and early estimates reported six survivors for every death by suicide (Schneidman, 1972). More recently, it has been suggested this number highly underestimates the number of survivors, which is now more broadly defined as "someone who experiences a high level of self-perceived psychological, physical, and/or social distress for a considerable length of time after exposure to the suicide of another person" (Jordan & McIntosh, 2011, p. 7).

In addition to having elevated risk for subsequent suicide (Ho et al., 2000), adolescent survivors of suicide may experience a range of social difficulties (Saarinen et al., 2002), psychological symptoms (Melhelm et al., 2004) and adverse impact on development (Forward & Garlie, 2003). Among adolescents, the psychological sequelae of grief following a suicide have been documented in both siblings (Dyregrov & Dyregrov, 2005) and close peers (Melhelm et al., 2004). The impact of a peer's death has also been demonstrated in acquaintances of the deceased, who experienced increases in traumatic grief, posttraumatic stress disorder (PTSD), and depression (Melham et al., 2004).

Some trends have been identified in studies exploring adolescent's grief reactions in the aftermath of a suicide. Survivors often experience a range of emotions, including: shame, sadness, and guilt (Hoffmann, Myburgh, & Poggenpoel, 2010). Parrish and Tunkle (2005) suggested adolescents often seek a target for blame and have many "why" questions. Jordan and McIntosh (2011) evaluated the literature on adolescent suicide survivors and highlighted common themes, which included: tendency to conceal suicide as the cause of death, experience of stigma and shame, feelings of abandonment and rejection, and blame. Oltjenbruns (1991) found some adolescents reported positive growth after experiencing grief, such as more

appreciation for life, deeper connection with others, emotional strength, and greater empathy for loved ones.

Gender differences in coping behaviors have been identified. Cobb (2004) reported girls tended to engage in more positive coping behaviors than boys. For example, boys were more likely to engage in avoidance behaviors such as substance use or humor and girls tended to talk about their feelings, seek religion, and focus on positive outcomes. Seeking help or expression of grief has been linked with positive outcomes (Rask, Kaunonen, & Paunonen-Ilmonen, 2002), but some barriers have been identified in adolescent help seeking. In a qualitative study on adolescent survivors of suicide, Bartik (2013) found that some adolescent acquaintances felt less entitled to grief reactions than others who were closer to the deceased, which may deter them from seeking help.

Postvention refers to the intervention efforts that occur following a death by suicide (Schneidman, 1972). The Centers for Disease Protection and Control (1988) published a seminal work on containment and management of suicide clusters. More recent suicide postvention strategies are based on the original recommendations, which include avoiding glamorization of the suicide, minimizing rumors and keeping information about the death accurate, responding quickly and attending to children deemed "at risk" (Parrish & Tunkle, 2005). After reviewing and evaluating the suicide postvention literature, Cox et al. (2012) concluded that the majority of published work focuses on epidemiology of the cluster rather than postvention. They reported that data on the effectiveness of common postvention approaches were extremely limited, but commonly include community response plans and promotion of community recovery, education debriefings, individual and group counseling, suicide screenings, and media reporting guidelines.

Social Networks

Peer influence has been implicated in the spread of emotions and behaviors within social networks. In their research on in-person social networks, Cristakus and Fowler (2009) investigated the spread of emotions within social networks and found individuals who are generally happy tend to cluster together within social networks. Christakus and Fowler have extended these findings to the spread of health behaviors, financial status, and mate selection. In fact, behaviors such as eating, smoking, consumption of alcohol, and weight loss were correlated to six degrees of separation. These findings demonstrate that social networks influence our ideas, health, relationships, politics, emotions, and behavior.

Online Social Networks

The term "social networking" is often used to refer to online communication that occurs on social networking sites, such as Facebook or Twitter. The traditional definition of a social network is a group of friends, colleagues, or other personal connections of an individual (Christakus & Fowler, 2009). In contrast, online social network systems (SNS) have been defined as "web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system, (b) articulate a list of other users with whom they share a connection, and (c) view and traverse their list of connection and those made by others within the system" (Boyd & Elliason, 2007).

Online SNS have had a major impact on younger generations. An estimated 73% of adolescents engage in online social networking (Lenhart & Madden, 2007). Many adolescents are "immersed" in an online world; that is, in addition to a significant dedication of leisure time spent online, some adolescent users reported feeling a strong need or compulsion to use sites

(Koh & Kim, 2003). Understanding the nature of use provides a road map to understanding the ways online SNS are likely to impact adolescent communication and interactions. To understand how adolescents are making use of these online tools, researchers initially investigated trends in online social networking. Adolescents frequently cited "connection" as the most common and significant reason for using online SNS (Reich, 2010).

Interestingly, emotional investment in online SNS is believed to be relatively low. Although adolescents spend a considerable amount of time engaging in online communication, they do not report worrying about whether the site will disappear or feelings of sadness if they had to stop using social networking sites (Reich, 2010). In fact, aside from staying in contact or connecting with peers, adolescents commonly describe using SNS to "combat boredom" (Reich, 2010, p. 696).

Many researchers have found aspects of SNS potentially beneficial to users. Online interactions have been linked with positive health outcomes and health related behavior (Ali et al., 2011), increased self-esteem (Valkenburg et al., 2006), strengthened ties to a community (Reich, 2010). Individuals reported feeling special when friends post to their walls, leaving comments or pictures for them. Online SNS provide a social context to share interests, media, and promote important issues with ease and a place to honor or celebrate members of a particular group (Reich).

In contrast to the potential and realized benefits of online SNS, many authors argue SNS has potentially negative effects. Adolescents reported many problems with online SNS, including, drama, misunderstandings, and aggravation of problems (Reich, 2010). Some adolescents described using online tools to manipulate others and used online public posts to present false images of self. In addition, although participants commonly discussed the benefit of

connection, many described and expressed concern with the insincerity felt in online "friendships" (Reich). Of particular concern, online SNS can be an outlet for cyber-bullying. Adolescents commonly reported feeling "emotionally unsafe" in online social communities (Reich). Although this feeling was common in adolescents, the desire to connect with others appears to override concerns for emotional safety or fear of negative experiences online.

Integration: Suicide Clusters and Online SNS in adolescents

Based on recent successes treating mental illness in young people using Internet based programs, Cox et al. (2012) suggested future research should focus on understanding "how suicide clusters may operate within these communication methods" (p. 212). Williams and Merten (2009) reviewed public peer comments left for adolescents who died by suicide to understand how young people process emotional experiences in online social networks. They concluded adolescents relied upon social networking to maintain an attachment with the deceased, which facilitated coping through reflecting back over the relationship with the deceased.

Guidelines have been established for the reporting of a suicide in the media to minimize the potential for copycat or mass clusters, but there is limited focus on communication that occurs online (CDC, 2011). Harris, McLean, and Sheffield, (2009) surveyed high suicide risk individuals who sought support on the Internet. Participants reported feeling connected and a sense of belonging, but also visiting pro-suicide web sites, or sites that encourage suicidal behaviors. However, Kemp and Collings (2011) reported pro-suicide websites are rare and often overshadowed by sites dedicated to suicide prevention.

Recent expansions in technology have surpassed the rate of development of empirical evidence regarding the impact of such Internet sites. In a recent study examining the role of online social networking and short message service (SMS) or text messaging on suicide, Robertson (2012) found new technologies are an important part of transmission of suicidal behavior. Although the media followed existing guidelines, a significant amount of communication occurred via online SNS and SMS, which was "widespread among young people in the community" (p. 242) and "spread rapidly and far beyond each school that was directly affected" (p. 241). A particular concern was spreading of rumors, which ranged from the number of completed suicides, the method that was used, and the possibility of a suicide pact (Robertson). Parents and school officials reported that many students learned of the suicides within hours of the event and a considerable amount of the information shared was incorrect. Robertson concluded the rumors fueled further communication via online SNS and SMS conversations, likely contributing to fear and anxiety that spread through the community.

Robertson (2012) also suggested that the specific content of some communication was potentially a contributing factor to subsequent suicides. For example, specific memorial sites were created online to share eulogistic photos, videos, and slideshows that memorialized the deceased in a highly positive manner. Robertson concluded that individuals were memorialized through the funerals but also through communication that occurred in online SNS, which may have contributed to the suicide contagion.

A major problem in the current postvention approach is a failure to account for other forms of communication that have gained popularity in recent years. The findings of Robertson (2012) highlight the potential for communication online and via SMS as important factors influencing suicide contagion. Widespread use of modern technology makes geographical region

less relevant in the investigation of suicide clusters due to the potential spread of contagion over the Internet and mobile phones. This suggests the current definition of point cluster that includes "time and space" must take into consideration the globalization of communication, which complicates the identification of suicide clusters that have been spreading beyond the walls of the traditionally defined community (Robertson, 2012).

With the expansion in communication made possible by new technologies, particularly online SNS, it is possible a new type of suicide cluster has emerged: online network cluster. A new model is necessary to understand the transmission of suicide because point and mass clusters fail to account for the new means of communication that breaks down barriers that once existed between communities. Due to new technology increasing the communication and decreasing distance among members of distinct communities, a new classification of influence is likely overdue.

The Current Study

The problem currently under investigation - the association of social networking and adolescent grief in the aftermath of a suicide cluster - has clear implications regarding trauma, grief, and loss, and thus lends itself well to a qualitative study. Semi-structured interviews were conducted to explore reactions of a sub-population of students in a community that experienced a suicide cluster the previous year. A major strength of qualitative methods is their ability to systematically answer different types of questions in more depth than those available to empirical investigations (Green & Britten, 1998). Quantitative investigations have overwhelmingly focused on identification of risk factors associated with suicide (Rogers, 2011). The complexity of human behavior often clouds these efforts and attempts to use risk factors to

predict suicide have been largely unsuccessful. Qualitative methods have been used in suicide research to gain a more in-depth understanding of a variety of issues, such as experiences of individuals who had a history of deliberate self-harm or suicide attempts (Ghio et al., 2011). The qualitative process was chosen to use words rather than numbers to describe this complex phenomenon and better allow for the portrayal of the human experience.

Method

Relevant History of the Suicides

A high school senior and varsity athlete held in high esteem by peers died by suicide. The school followed suggested protocol to inform students of the death. One month later, a student in the middle school, another athlete, died by suicide using the same method as the previous death. Subsequently, there were multiple reported suicide attempts, including one attempt on school property. Community mental health agencies were dispatched to conduct suicide assessments in the school gymnasium and noted a high level of reported suicidal ideation. The use of social networking to memorialize the first suicide was one hypothesized as a potential factor underlying the subsequent death and attempts.

Sample and Participant Selection

The proposed study utilized a small subsample of participants ($N = 10$) from a larger project investigating social factors and adolescent outcomes among 257 high school students from a small community in the southern United States. The community had experienced a suicide contagion one year before the data collection. The participants of the larger study reported an average age of 15.9 years and predominately European-American (57.5%) and

Hispanic/Latino (19.7%) ethnicity, which is similar to the ethnic distribution reported by the school district (European American = 62.7% and Hispanic/Latino = 21.8%). The sub-population under investigation was comprised of 4 males and 6 females who reported an average age of 16.7 years and predominately European-American (90%) and Hispanic descent (10%).

Due to the sensitive nature of research on suicide and the potential for exploration of participant suffering to contribute to heightened distress or increased risk for suicide (Lakerman & FitzGerald, 2009), ethical considerations took precedence over randomized selection of participants for the qualitative portion of the study. Our research protocol utilized consultation with one of the high school counselors who identified students who would be appropriate for the qualitative portion of the study. The high school counselor contacted 30 students who attended the high school or middle school where the suicides occurred, knew one of the students who completed suicide, or were identified by the school counselor as "at-risk" following the suicide cluster but not currently experiencing suicidal ideation. Out of 30 students contacted for participation, 10 individuals responded and agreed to participate in the qualitative portion of the study. All students in the school district were offered free psychological services at a local mental health clinic.

Measures

Background Information Questionnaire (Riggs & Jacobvitz, 2002)

The background information questionnaire requests information about basic demographics (e.g., age, gender, ethnicity, grade level, relationship status, number of people living in their household, income level) and family background information (e.g., number of siblings, adoption status, parental divorce, and death of family members).

Qualitative Interview

A semi-structured interview was developed for this study. As an exploratory study, questions were written to be general and allow for a participant-directed discussion of their experiences and reactions following the deaths within their community. Questions were based on review of the current literature on grief related to suicide and were designed to explore student reactions in general, followed by more specific inquiry into the role of online SNS. The interview from a published CQR study on complicated grief among psychologists related to client suicide was used as a template for the interview in the current study (Darden & Rutter, 2011). In addition to the 12 main questions, the interview included some optional probe questions to encourage elaboration of a particular response (See Appendix E.1).

Procedure

Prior to the onset of the study, researchers obtained approval from the school superintendant and the university Institutional Review Board (IRB). In collaboration with school officials, researchers recruited participants for the larger study over the course of one month by distributing a description of the study and parental consent forms to students in social studies classes, which were targeted because these classes are inclusive and not based on academic performance. After parental consent was obtained, data collection was conducted during a typical class period by a doctoral student in counseling psychology. Students who elected not to participate or did not have parental consent were given an alternate activity (e.g. a writing assignment administered by the teacher). Students completed an assent form prior to administration of measures.

Students in the sub-population returned a second parental consent form for the qualitative interview and were called from class to complete an interview conducted in a private office. After introducing the study and obtaining participant assent, the interviewers completed all 10 interviews over the course of four days. Participants in the subsample also completed the packet of questionnaires as part of the larger study, either in their social studies class or directly following their interview. As an incentive for participation, all participants in the large study were offered entrance into a drawing for an 8GB IPod Touch, and two ITunes gift cards (worth $20 each). Participants who chose to enter the drawing provided relevant contact information that was immediately separated from the data. Interviews were transcribed into Microsoft Word and demographic data entered into SPSS. Qualitative data analysis was managed by a carefully chosen research team using consensual qualitative research protocol (Hill et al., 1997).

Interviewers and Judges

Consensual qualitative research (CQR) relies upon consensus within a diverse team of researchers to support validity. The creation of a safe, open environment that fosters critical evaluation of team members' ideas is essential. The interviewers were two doctoral students in counseling psychology, who completed a 1-hour training to establish consistency. Both had prior experience administering semi-structured interviews. The data analysis team was composed of four females, including the first author, who was a doctoral candidate in counseling psychology. Each individual was carefully chosen based on her unique contributions to the overall team dynamic. Aside from gender, the team reflected a diverse range of individuals, with varied racial/ethnic background, nationality, and educational background. All team members have

profiles on social networking sites. The auditor was a White male with a doctoral degree in school psychology.

Data Analysis

The design of the current study followed the consensual qualitative research (CQR) method, an organized approach to summarizing data (Hill et al., 1997). Overall there is a linear trajectory; however the process is circular, challenging team members to reconsider and improve upon the created domains as they move from general to more specific understanding of the data. The primary research team each transcribed 2-3 interviews using a standardized protocol to denote long silence and/or emotional tone. Throughout the data analysis process, the team referred to the original audio file when clarification was necessary, or to discern emotional tone of an interviewee. Team members agreed upon a start list of domains prior to independently coding each of the 10 interviews, meeting for the purpose of reaching consensus after coding each interview. Once the domains were chosen and interviews coded into domains, the research team abstracted core ideas. The core ideas are designed to capture the content of the data in more concise words (Hill et al., 1997). Similar to the process of coding domains, research team members identified core ideas individually, then met as a team to reach consensus. The auditor examined the domains and core ideas and team members discussed his comments until agreeing upon changes.

The cross analysis involved studying the core ideas across all cases to reveal similarities, which were then allocated to categories. Categories were continuously revised until the team agreed that the data were accurately represented. Following most recent recommendations for description of frequency, labels were applied to denote the rate of occurrence (Hill et al., 2005).

General applied to categories that occurred in 9 or 10 cases; typical applied to 6 to 8 of the cases; variant applied to 3 to 5 cases and rare applied to 2 or fewer cases. The auditor then reviewed the cross analysis, and his suggestions were integrated by the primary team.

Due to the small sample size ($n = 10$), the stability check that involves temporarily excluding two cases before cross analyzing the data was omitted. Rather than excluding cases during the initial review, four cases were re-coded after domains were established. According to Hill and colleagues (2005), the stability check is no longer necessary if a homogenous sample was assembled. Documentation of procedure and use of quotes and/or core ideas are considered sufficient to confirm findings and provide evidence of trustworthiness.

Results

The findings yielded a phenomenological understanding of the students' experiences in the aftermath of a suicide cluster using the CQR process. Given the sensitive nature of this subject matter, confidentiality is protected by intentionally not assigning case numbers to supporting comments. Note that "interviewee" or "student" is used to refer to the research participant and "deceased" is used to refer to one of the individuals who died by suicide.

The team considered many options before agreeing on the final 4 domains: the suicide, impact, perception of school environment, and recovery. Analysis of the students' experiences revealed that social networking was embedded within all domains rather than comprising an independent domain. Table 1 summarizes the general (9 or 10 cases), typical (6-8 cases), and variant (3-5 cases) categories. In an effort to summarize salient data, rare (1 or 2 cases) and sub-categories were omitted from the current discussion but are available upon request.

The Suicide

This domain reflects how students initially learned about the suicide, sought details about the deaths, and their subsequent understanding of what happened. Two categories emerged within this domain.

Sources of Information

This category details how interviewees initially learned about the suicide and where they sought further information. It was typical for interviewees to first learn of the suicide at school from the official announcement. There were instances of students learning about the suicide via social networking or text messaging. One interviewee learned about the death of his/her sibling online and expressed anger and regret, "I was mad because the way I found out. I just didn't think it was appropriate to put a post on Facebook at all." Another interviewee mentioned immediately sending a SMS to his/her dating partner, who consequently found out before the official announcement reached the class s/he was in.

Some interviewees went to great lengths seeking details and confirmation of the death. One interviewee commented, "as soon as we found out I just ran out of the room crying and I got on my phone and I looked (on Facebook) and his mom had posted something like 'he's dead it's not a joke.'" Interviewees reported posting a certain level of detail publically (online), but seeking details either in person or via text message. Online SNS was also used by interviewees who were not close to the deceased to learn who s/he was and to search the deceased's list of online friends to identify peers who might know more about the death.

Understanding of the Suicide

The understanding of the suicide category reflects the interviewee's personal understanding of the suicides and the events that followed. It was typical for interviewees to describe their current understanding of the suicide, and variant for interviewees to report remaining uncertainty about the death(s). Interviewees' accounts of the events leading up to the death varied considerably.

Impact

The impact domain includes interviewee's reported emotional, behavioral, cognitive, philosophical, and interpersonal changes, as well as the reported impact of social networking.

Emotional

The emotional category is comprised of the immediate reactions and the reported long-term effects on the interviewee's emotional state. Sadness, hurt, and loss were typical labels used by interviewees, followed by shock, anger, or guilt, which were variant. Interviewees most commonly indicated shock as an initial emotion, followed by a range of emotions over the course of their grieving process. Increased sensitivity was a variant response, which was coupled with a fear of more suicides.

Behavioral

The behavioral category details changes in behavior following the suicides, as well as behavioral change attributed to new learning experiences. Some described withdrawal (variant), which ranged from finding it hard to return to school to missing several weeks. Interviewees

described positive changes in themselves (typical), such as intervening when witnessing bullying and becoming active in suicide prevention (variant). One interviewee noted, "it gets you to wake up and pay attention to your friends and don't ignore a text that they're upset…awareness is essential that could save somebody's life whether you know it or not."

Cognitive

The cognitive category details new insights or awareness. It was general for interviewees to look forward with new insight into life, death, and the reality of suicide, as reflected in the comment, "I don't take (life) for granted anymore. I feel it's more precious now." It was variant for interviewees to describe remaining wishes or regrets for the deceased and describe their plan to honor him over the course of their life.

Philosophical

It was typical for interviewees to describe a shift in philosophical or spiritual views. For some, this meant attending church more often, or new appreciation for life and other existential concepts. For others it strengthened their existing belief system.

Interpersonal

The interpersonal category reflects any effects the suicides had on the interviewees' relationships with friends and family. It was typical for interviewees to describe feeling closer and more connected to friends and family, particularly fellow students and community members. Tension in relationships with family or friends was a variant response.

Social Networking

Interviewees described the impact of social networking. It was often difficult to discern whether interviewee's were describing online or in-person interactions. Social networking was experienced as both positive (6 to 8 cases) and negative (6 to 8 cases) as highlighted by the comment, "Facebook can go either way. It can be good, neutral, and bad."

Unaffected

Some interviewees reported lack of impact overall (variant), which included little or no impact on grades (rare), lack of interpersonal impact (variant), and/or no reported change in spirituality (variant).

Experience of the Interview

It was variant for interviewees to comment on their experience during the interview. Those who did were surprised at their ability to discuss the suicides without crying, noting the recovery that occurred over the course of the year.

Perceptions of School Environment

Initially this domain was a category within the impact domain, but over the course of the CQR process it came to be viewed as a unique aspect of impact reflecting perceptions of social processes. The perceptions of the school and community environment following the suicides reflects the group dynamics and social norms interviewees perceived during the time of grieving.

Positive Impact

It was typical for interviewees to comment on positive changes observed within the social context of the school. For example, reduced bullying (variant) and increased connection and unity of the school body (variant). Some considered this a lasting change (variant), whereas others viewed it as a temporary shift (variant).

Negative Impact

It was typical for interviewees to comment on the negative impact online interactions had on the school environment. For example, one interviewee described a negative interaction on Facebook, which s/he said, "triggered a school wide protective response." S/he added that although the students in the school were highly impacted by the negative comments, the teachers and school officials were not aware of what happened.

Reminder of the Suicides

It was typical for interviewees to describe difficulty with reminders of the deaths over the course of the year. These ranged from peers discussing the suicides to physical reminders at school, such as a class that was shared with the deceased or seeing the deceased's peers or siblings.

Emotional Climate of the School

It was typical for interviewees to describe the school's emotional climate. One interviewee commented, "death was walking in the hallways everyday. It was very quiet, sad and mean just walking down the hall." Some believed the school environment hindered their own

coping by "dwelling" on the deaths, while others responded by questioning the sincerity of grief expressed in individuals who were not close with the deceased.

Perceptions of the School Interventions

In addition to the memorial services and organized events, students attempted to engage in activities to honor the deceased at school. It was typical for interviewees to comment on the school's response to those efforts. One interviewee stated it felt they were expected to "be over the deaths too quickly."

Recovery

The recovery domain is comprised of things that were helpful or conversely hindered their grieving process. It includes behaviors interviewees engaged in to reduce the frequency or intensity of pain, to grieve the loss, or gain a sense of what happened (cognitively, emotionally, and spiritually). Interviewees' grieving process ranged from avoidance or denial of the death (prolonged relationship with the deceased) to acceptance and realization of the loss.

Support Seeking

Support seeking was general among the interviewees, who sought support from family and peers (typical), online (typical), and from mental health professionals (variant). Interviewees also mentioned it was helpful to provide support to others (variant). Interviewees reported feeling support from viewing the responses of other students online. In person, they felt most comfortable seeking support from peers who had a similar relationship to the deceased and felt most understood by people with similar experiences. For example, one participant noted s/he

"found it helpful to talk with someone who had also lost a sibling…it was nice to talk to someone who really did understand."

Avoidance

Interviewees described emotional, behavioral, cognitive, and online activities they engaged in to avoid the grief reaction. Behavioral avoidance was variant and ranged from minimal disengagement (i.e. low motivation to clean room or attend class) to missing 3 weeks of school. Cognitive avoidance included preference to avoid thinking about the situation and was variant among interviewees. Similarly, emotional avoidance was a variant response style in interviewees. Avoidance of interaction online or via SMS text was rare, but was salient to the interviewee(s) discussing it.

Realization of the Loss

The process of coming to terms with the death and realizing the loss was a rare response. Attending the gravesite, going to the funeral, and visiting the Facebook page of the deceased were identified as activities the interviewee(s) engaged in during their process of realizing the death.

Prolonged Relationship with the Deceased

Interviewees maintained a connection with the deceased by talking to the deceased and visiting the grave (variant) and communicating to the deceased online (typical). Online communication included viewing pictures, writing messages to the deceased, and acknowledging the deceased's birthdays/anniversaries.

Memorialization

It was typical for interviewees to preserve memories and celebrate the deceased's life. This included sharing information and memories on the deceased's Facebook page and creating an online memorial site (typical), attending student organized school events (variant), and/or attending the deceased's funeral or gravesite (rare).

Factors that Hindered Coping

It was general for interviewees to describe aspects that hindered their coping processes, such as online interactions (typical). As one interviewee stated, "Facebook is horrible…it hinders everybody's recovery and everybody's state of mind." Constant online reminders of the deceased (variant) or negative comments (rare) interfered with the grieving process. Expectations for grieving were also a hindrance (variant), often based on social pressures. Students close to the deceased expected peers outside their social circle would not grieve, creating anger, resentment, and confusion on who "should" grieve.

Personal Experiences and Other Losses

Both personal experiences and previous losses were rare, but emerged as factors that may influence the interviewee's process of grieving.

Discussion

This study sought a deeper appreciation for the experiences of adolescents following a suicide cluster, with a particular focus on the role of online social networking. The research team expected online communication would present as a new context, one with less adult presence and

minimal monitoring, but findings suggested it was embedded in and far more central to adolescent experience. As channels for rapid dissemination of information, online social networks present challenges in the face of an adolescent suicide. Interviewees immediately turned to social networking for confirmation of the suicide and further information about a peer's death. Similar to previous findings suggesting adolescents often wonder "why" in the aftermath of a suicide (Parrish & Tunkle, 2005), many interviewees turned to online networks seeking understanding about what led to the suicide.

On a positive note, there appears to be a certain level of social expectation or cultural norms emerging. Interviewees acknowledged the public nature of the online culture. Interviewees considered certain communication appropriate for the online setting (e.g. posting condolences, expressing grief, providing social support), but indicated that other forms of communication were done in-person or via individual SMS text message. Violations of these standards were considered "disrespectful," such as when a student posted a picture of the deceased from the viewing at his funeral.

The online context was perceived to impact the in-person community – both positively and negatively. The online forum united the student body in their grief by providing a safe place for expression of condolences. On the other hand, negative comments or violations of online social expectations spilled over from online contexts to in-person interactions. Furthermore, analogous to concerns about cyber-bullying, destructive negative comments online were not reported to trusted adults. The findings of this study highlighted the potential benefits of online interactions in the aftermath of a suicide, particularly the shared experiences and place for support, but also confirmed the fear that people may be hurt or offended by negative remarks. Therefore it will be important to monitor online forums, paying close attention to the potential

negative impact of destructive negative statements and potentially even contributing to suicide contagion.

The public nature of social networking appeared to highlight social pressures and uncertainty about who was entitled to grieve. Interviewees who were close to the deceased reported feeling angry at other students for constantly posting on the deceased's Facebook page, and attributed these behaviors to attention-seeking. Other interviewees described feeling obligated to "be sad" at school and were uncertain whether it was acceptable to laugh or when observation of the death would be over. This finding mirrors previous research indicating that adolescent survivors of suicide "questioned their entitlement to grieve compared to others they deem to be closer to the deceased, such as family members" (Bartik 2013, p. 215). Although some interviewees reported decreased bullying, it appears the context of bullying may have just shifted.

The effectiveness of the school's intervention was not under investigation, but many interviewees mentioned being confused by the school's response. The school's postvention successfully increased student's awareness about suicide warning signs and bullying. However, the school also followed postventions recommendation to avoid memorialization of the deceased. After the initial perception of support in their grief process, students perceived the school's lack of involvement with memorial activities as expectation to return to "business as usual."

Implications

Intervention

A "one-size-fits-most" postvention strategy was not supported by the interview data of this study. The majority of participants discussed the nature of their relationship to the deceased

and how it related to their experiences and needs after the deaths. Thus, it appears closeness to the deceased is an important variable to consider and provides insight into the unique needs of students. For example, students found more meaningful support from individuals with experiences similar to their own. Furthermore, interviewees who did not know the deceased well often described feeling uncertain whether they were entitled to have a grief reaction. The unclear social expectations for grieving were associated with anger on the part of students who were close to the deceased (e.g., feeling angry towards students engaging in memorialization or attending grief counseling when they were not part of the deceased's social circle). In students who did not know the deceased well, they were unsure how to "move on" without being disrespectful to other students who were still sad and grieving. This uncertainty and heightened emotionality within the school is a potentially dangerous combination. Some adolescents looked to assign anger or blame in the aftermath of a peer suicide. This, combined with the belief that students who were not close to the deceased may not feel entitled to grieve the loss (Bartik, 2013) may create tension between those who were close to the deceased and those who were not, due to a lack of understanding regarding the need for everyone to grieve, regardless of their relationship with the deceased prior to the death.

The typical social norms of the school were interrupted by the non-normative event of a suicide, which created a sense of uncertainty in students. Many students identified this as a positive aspect and appeared more open to learning about topics such as bullying and depression. Postvention strategies often discuss the warning signs for suicide and appropriate responses. Based on the information of this study, it is important to educate students on the variations of grief responses. This study highlights the importance of educating students on expected grief reactions and the potential for the loss of a peer to trigger previous unresolved loss. Students

would likely benefit from normalization of the expected emotional reactions and the different reactions to grief.

Social Networking Policies and Suicide Reporting

The initial reaction of shock to learning of a student's death was expected, but an overwhelming number of participants referred to checking Facebook to confirm the death. The immediate reaction of the interviewees was to share the information, using the Internet – a tool of mass, immediate communication. Aside from confirming the death online, further details were often sought in-person, which held more credibility than the online social commentary. The transmission of information via online SN and SMS messaging occurred significantly faster than the preferred personal dissemination of the death. Thus, school officials must act very quickly to maintain control over the method and context of informing students.

Specific policies exist for school districts and also the media when reporting a suicide. However, implementation of policies governing communication that occurs online following the same event remains largely controversial. Such policies may be necessary, but it is difficult, if not impossible, to write informed policies without first answering some critical questions. Policies created without some understanding of the potential risk and benefits of online SNS are likely to be ineffective and in the absence of strong empirical support will likely be rejected in exchange for freedom of expression. Research has demonstrated a link between copycat suicides and glorifying suicides in the media (Stack, 2003). Online memorial sites should be closely monitored and the publication of details regarding the method or glorification of a suicide should be removed immediately due to the potential for subsequent suicide. Interviewees perceived the school's response as inconsistent, largely due to the reluctance to organize public memorials for

the deceased. Online SNS served as an alternate forum for memorialization, which in the absence of monitoring may contribute to suicide contagion.

Future Research

Many themes emerging in the current study could be further examined, both quantitatively and qualitatively, to increase our understanding of the increasing importance of social networking. One of the key findings of the current study was how intertwined in-person and online social contexts are in the lives of youth in our society. Therefore, studies examining only one context are likely to miss important interactions between these two domains.

Although the potential benefit of online SNS was highlighted in the findings of the current study, in-depth exploration for the potential of online memorials to transmit suicide among teenagers is necessary prior to implementing online support programs. Future work should explore ways to disentangle the supportive nature of online communication from the more negative possibilities, including contagious aspects of suicide in adolescents. Postventions should seek a balance between the provision of support and the desire to reduce risk for contagion. Failure to foster a supportive environment in-person will encourage increased help seeking in unregulated online contexts.

Similarly, interviewees' relationship with the deceased appeared as a qualifier across every domain. It permeated understanding of the suicide, the impact it had on interviewees, and the recovery process. Future studies should focus on relationship to the deceased across the community and consider the varied experiences following a suicide or significant loss. Based on the current study, social dynamics should be considered when choosing postvention and intervention strategies. With the increased connection possible through online SNS, the range of

impact from a suicide cluster is expanding, and it will be essential to understand the idiosyncratic reactions and needs of adolescents.

Assumptions and Limitations

CQR provides opportunity for researchers to gain a deeper understanding of research participants and suggests an optimal sample size of 8 to 12 (Hill et al, 2005). With a small sample, the results should be considered within context and replication of the current study in another school district or geographical region may produce different results. Although similar to the suburban population of the school district, the current sample was largely a non-Hispanic White sample, which varies from the racial ethnic distributions of the state and national populations. Similarly, the current study was conducted with adolescents in 9th through 12th grade and may not generalize across other age groups. It should be considered that general themes were the primary focus of this study with hopes to compare across different regions or samples in the future. The frequencies of responses across cases can be used to differentiate ideas that were more common among the current sample.

Conclusions

Studies on suicide have predominately focused on understanding risk factors in an effort to prevent suicide. This study demonstrates the strong need for research on the social climate of a school in the aftermath of a suicide cluster. In general, interviewees noted positive and negative aspects of online SNS, suggesting it is a potential medium for supporting adolescents in a time of grief. However, there is a need to understand the risks of online communication, particularly during a time of social confusion. Beyond educating students about the risk signs for suicide, this

study demonstrated the need for education on grief reactions to increase awareness of the emotional, cognitive, interpersonal, and developmental impact of losing a peer, regardless of prior relationship.

Finally, school officials should familiarize themselves with the features and resources of online SNS. Although the CDC recommendations for the media are not enforceable online, partnerships between social media and organizations like the suicide hotline can encourage open communication about the dangers of certain online communications and work to reduce the potential for negative outcomes. For example, Facebook describes the process of reporting a friend of peer with suicidal ideation and provides links to suicide resources in the help center (Facebook Help Center, 2013). These resources would be helpful to students before, during, or after experiencing suicide within the community.

Table 1

Summary of Domains and Categories with Frequencies and Illustrative Core Ideas

Domain / Category	Frequency	Illustrative Core Idea(s)
THE SUICIDE	*This domain reflects how students initially learned about the suicide, sought details about the death, and their subsequent understanding of what happened.*	
Sources of Information	GENERAL	The interviewee heard of his friend's death when someone came to class and read an official notice off a piece of paper.
Understanding of the Suicide	TYPICAL	The interviewee mentioned texting with several people to clarify what happened after reading cryptic posts on Facebook because people felt awkward posting so publically.
IMPACT	*Impact of the suicides on the individual and impact of Social Networking after the suicides*	
Emotional	GENERAL	The interviewee views the hurt everyone experienced as the largest negative impact of the suicides.
Behavioral	GENERAL	The interviewee misses the deceased, but believes that having experienced these losses has motivated positive change in who s/he is as a person.
Cognitive	GENERAL	The interviewee stated his/her life was not directly affected by the suicide, but it has brought up a new awareness of the frequency of suicide in adolescents.
Philosophical/Spiritual	TYPICAL	Since the suicides, the interviewee considers life more valuable and attends church more often.
Interpersonal (Relationships)	TYPICAL	The interviewee believed seeing the variety of people who loved the deceased increased connection and allowed the students to grow closer.
Social Networking (Online)	TYPICAL	The interviewee felt that Facebook united the student body because it was a medium for discussing the death.
Unaffected / Lack of Impact	TYPICAL	The interviewee was not directly impacted by the news of the suicides because s/he did not know the deceased well.
Impact of the Interview (Experience of the Interview)	VARIANT	Over the course of the interview, s/he expressed new insight of the connection between bullying and fear of other suicides.

(table continues)

Table 1 *(continued).*

Domain / Category	Frequency	Illustrative Core Idea(s)
PERCEPTIONS OF SCHOOL ENVIRONMENT	*Reflects the interviewee's perceived the effects of the suicides within the school and community.*	
Positive impact	TYPICAL	The interviewee believes the deaths encouraged open discussion about suicide and prevention.
Online	TYPICAL	The Interviewee described a negative incident that happened on Facebook and triggered a school-wide protective response and reminded students of the loss.
Reminder of the suicides via peers	TYPICAL	The hardest thing since the deaths has been talking to the deceased' siblings, or when the deceased is mentioned in conversation, because it reminds him/her of the loss.
Uncertainty about grieving (the right to grieve)	TYPICAL	The interviewee was resented others who were grieving despite not being as close with him.
Emotional Climate	TYPICAL	The interviewee felt the deaths impacted the energy of the whole school, stating "it just felt weird to be happy" after a loss of someone in your own grade.
Perceptions of school interventions	TYPICAL	The interviewee expressed confusion about the school's lack of participation organizing memorial events for the deceased because they were initially supportive of coping efforts.
Highly focused on the suicides/rumors	VARIANT	The interviewee believes some people dwelled on the deaths and had difficulty letting it go.
Negative Impact	VARIANT	An event not associated with the suicides was perceived as related due to the emotional climate of the school.
RECOVERY	*Interviewee accounts of things that were helpful or that hindered their grieving process.*	
Support Seeking	GENERAL	Interviewee found talking with close friends helpful, but was unable to recall details of any conversations
Avoidance	GENERAL	The interviewee prefers to keep his/her feelings bottled up
Memorialization	GENERAL	Interviewee described a Facebook page that someone created in honor of the deceased.

Table 1 *(continued).*

Domain / Category	Frequency	Illustrative Core Idea(s)
Factors that Hindered	GENERAL	"Facebook is horrible…it hinders everybody's recovery and everybody's state of mind"
Prolonged Relationship with the deceased	TYPICAL	The Interviewee visits the Facebook page of the deceased to view pictures and reminisce about good times.

Note: General (9 or 10 cases); Typical (6-8 cases); Variant (3-5 cases); Rare (1 or 2 cases)

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APPENDIX A

EXTENDED INTRODUCTION AND LITERATURE REVIEW

As one of the most frequent causes for death in the United States and the world, suicide is a major public health concern for people of all ages (Centers for Disease Control; CDC, 2008). One of the major goals of suicide research is to identify qualities of individuals who are likely to engage in suicidal behavior in order to target interventions effectively. In some cases, suicide occurs in clusters, which have been well documented (Gould, 1990). Clusters of suicide have been compared to infectious diseases and some argue that there is a contagious aspect of suicidal behavior that spreads through social networks. Adolescents are heavily impacted by social environment (Gould, Wallenstein, & Kleinman, 1990) and susceptible to this contagion within institutions or communities (Mesoudi, 2009) and in the media (Joiner, 1999). As such, interpersonal communication appears to be an important underlying factor. The nature of communication has been heavily influenced by recent expansions in technology, such as online social networking. In contemporary society, social networks exist both on and offline; therefore research on suicide and social networks should consider the role of online social communications. While previous work has demonstrated the transmission of suicidal behaviors within in-person social networks, the role of online social networks following an adolescent suicide remains unclear.

Using a qualitative approach, the current study sought to understand how social networking influences suicide contagion among adolescents following the suicide of a peer. Qualitative research allows for a deeper understanding of the experiences and reactions of individuals during a time of social stress and may provide important insight into the reactions of adolescents within a community during the heightened anxiety and stress associated with a suicide cluster. The present study used the consensual qualitative research (CQR) method to

explore students' experiences one year after a suicide cluster, with a particular focus on the role of online social networking.

<center>Extended Literature Review</center>

Suicide is one of the top ten causes of mortality in the world and a major, preventable public health problem. Statistics released by World Health Organization (WHO; 2011) estimated 1.4% of all deaths in 2008 resulted from self-inflicted injuries and approximately one million people die by suicide annually. Worldwide, the rate of death by suicide is 3 or 4 times greater for males than females (WHO). High rates of suicide are observed in adolescents and young adults, accounting for 7.5% of all deaths among 10-24 year-olds in 2008 (WHO).

In the United States, suicide is the 11th leading cause of death overall and the 3rd leading cause of death among adolescents (CDC, 2011). In 2009, suicide rates were 1.3 per 100,000 in children aged 10 to 14, 7.75 per 100,000 in adolescents aged 15 to 19 and 12.54 per 100,000 in 20-24 year-olds (CDC, 2011). The rate of attempted suicide is projected to be approximately 10 to 15 times the rate of completed suicides (Welch, 2001).

In a systematic review of the international literature, Tollefsen, Hem, and Ekeberg (2012) found many studies under-report suicide and note the need for comparison between countries to further understand suicide as a global phenomenon. It is clear that deaths by suicide represent a national and international health concern, making prevention efforts essential to social health and well-being.

Terminology

Prior to reviewing the theoretical and empirical literature on suicide, clarification of the relevant terminology is essential. The CDC (2011) defines suicide as a death that results from the intentional use of force against the self. Other relevant terms in the study of suicide include:

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suicidal ideation, attempted suicide (parasuicide), suicidal intent, and suicidal behavior. Studies investigating suicide often fail to provide clear operational definitions of the terms involved, and many erroneously use terms interchangeably. For example, the distinction between suicidal ideation, attempted suicide, and completed suicide is often overlooked in the literature. Such variations in nomenclature hinder research on suicide by limiting the ability to compare findings across studies and making replication difficult.

Suicidal ideation is a complex construct and there is little coherence in the terminology used across studies (Silverman, Berman, Sanddal, O'Carrol, & Joiner, 2007). Suicidal ideation is a criterion for major depression, a diagnosis described in the diagnostic and statistical manual for disorders (DSM-IV-TR; American Psychiatric Association, [APA], 2000). The DSM-IV-TR goes beyond defining suicidal ideation as thoughts of suicide, and describes varying levels of severity for suicidal ideation, "from a belief that others would be better off if the person were dead, to transient but recurrent thoughts of committing suicide, to actual specific plans of how to commit suicide" (APA, 2000, p. 322).

Suicidal intent is often related to suicidal ideation or attempted suicide, but specifically refers to the intention underlying suicidal thoughts or behaviors. Silverman et al. (2007) described suicidal intent as "the aim, purpose, or goal of the behavior" (p. 254). Such a classification may be challenging, particularly when an individual lacks insight into their emotions or motivation. However, Silverman et al. maintained that whenever possible, it is essential to differentiate individuals who intend to kill themselves from those who may engage in self-harm for interpersonal attention or another goal. They proposed an individual's intention is important and must be classified prior to identification of suicidal ideation. Three categories are proposed: a) no intent, b) uncertain intent, and c) intent. They further classified suicidal ideation

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as casual, transient, passive, active, and persistent. Others have argued that the distinction of suicidal intent is less relevant to the investigation of self-harm or attempted suicide due to the presence of common underlying risk factors that influence both behaviors (Hawton, Saunders, & O'Connor, 2012).

Individuals who engage in a gesture of suicide but fail to die have made a suicide attempt, which is also sometimes referred to as parasuicide, a suicidal gesture, or suicidal behavior. Some consider the degree of lethality of a suicide attempt and refer to highly lethal attempts as medically serious (Beautrais, 2004). Individuals who complete suicide are also considered to have engaged in suicidal behavior. Thus, suicidal ideation refers to thoughts of suicide, whereas attempted suicide or completed suicide refers to behaviors of suicide. Some individuals have frequent thoughts of suicide that never result in an act or attempt of suicide. Pfaff, Almeida, Witte, Waesche, and Joiner (2007) estimated there are 10 to 20 suicide attempts for every 1 completed suicide. Nock et al. (2008) suggested that suicidal thoughts and behaviors fall on a continuum of severity with ideation on one end, attempted suicide in the middle and suicide completion on the other end. It is important to understand intent because it helps identify the degree of lethality among individuals engaging in suicidal behaviors (Silverman et al., 2007). For example, an individual who attempts suicide without intent may be seeking attention or concern from others compared to an individual with intent who truly wants to die.

For the purposes of the current study, suicidal ideation is used to refer to thoughts of suicide, ranging from passive occasional thoughts to specific and detailed ideation with intention to act. It was distinguished from attempted suicide and completed suicide in the reviewed literature whenever possible. Specifically, the differentiation between suicidal thoughts (ideation) and suicidal behavior (attempted and/or completed suicide) was made when possible.

Furthermore, suicidal behavior, although most frequently used to refer to both attempted and completed suicide was clarified when possible, with the distinction being whether the behavior was lethal (completed suicide or suicide completion) or nonlethal (attempted suicide or suicide attempt). When appropriate, based on Silverman et al.'s (2007) suggestion, the present study considered information regarding intent and worked to distinguish intent from no intent, and uncertain intent.

Risk Factors

In an epidemiological sense, risk factors refer to variables that are associated with an increased risk of disease or infection. In regards to suicide, risk factors are variables that are associated with an increased chance for suicidal ideation or behaviors. Risk factors are correlational in nature and evidence for causation evades our current ability, despite statistical methods used to assess the strength of these associations. Regardless, it is unlikely any single risk factor will directly cause suicide. For example, old age cannot be said to cause suicide, but older adults have a higher rate of suicide than other age groups (CDC, 2011). Understanding a broad range of risk factors and their severity seems important in understanding the complex interaction of variables that increase an individual's chance for suicide.

Early research on suicide investigated risk factors for high-risk individuals with the hope of predicting suicidal behavior. The potential to predict suicide or identify high-risk individuals is directly relevant to preventative efforts and interventions. However, such efforts have been consistently unsuccessful. Goldstein, Black, Nasrallah, and Winokur (1991) argued that the theoretical models based on risk factor variables fail in their attempt to predict suicide. Polcorny (1993) suggested the poor predictive power of these models is related to the low base rate of suicide, which limits the research possibilities on suicide, and the imprecision of predictor scales

used in research studies and suicide assessment. In fact, one of the major limitations in suicide research is the low base rate that makes it difficult to investigate large samples of individuals who commit suicide. As a result, many studies attempt to increase their sample size by combining groups of individuals who have attempted suicide with those who have completed suicide. Many of the conclusions about the risk factors for lethal suicidal behavior (completed suicide) are therefore clouded by risk factors for non-lethal suicidal behavior (attempted suicide). Although some would argue it is just as important to understand the risk factors for attempted suicide, failure to distinguish between these groups impairs our ability to successfully predict suicide.

Recently, some researchers have suggested the importance of distinguishing suicide risk factors from warning signs. In the suicide literature, a risk factor is a relatively stable quality (e.g. race, gender, age, chronic depression) that reflects a chronic, but not necessarily imminent risk of suicidal actions (Dejong, Overholser & Stockmeier, 2010). Warning signs (e.g. depressive episodes, substance abuse) represent more acute factors that "reflect imminent risk of suicidal crisis" (Dejong et al., 2010, p. 91). Risk factors may correlate with suicidal tendencies but do not demonstrate immediate risk for suicidal behavior (Rudd et. al., 2006). Distinction between risk factors and warning signs mirrors a more common distinction made in other disciplines, which often distinguish general risk factors from acute risk factors based on imminence. In both cases the distinction is made to help allocate resources or target interventions more efficiently. Within the suicide literature, authors suggest most risk factors provide information about suicidal behavior but provide limited predictive ability and are not necessarily in need of immediate intervention (Wenzel et al. 2011). Warning signs, in contrast, are believed to represent imminent risk and therefore require immediate intervention (Dejong et al). In the current study, warning

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signs were discussed as acute risk factors for suicide. This is due to the inconsistency of terminology used in the literature, and potential confusion making reference to risk factors that may be chronic, but demonstrate imminent risk for suicide.

Research on risk factors for suicide is exceedingly large and can be overwhelming when reviewed without an organizational framework. Wenzell et al. (2011) explored predictors of suicide in a sample of high risk patients who were followed for 30 years after their initial evaluation and classified major risk factors for suicide into 5 categories: demographic variables (age, gender, level of education, socioeconomic status, race, social isolation, employment status), diagnostic variables (diagnoses of depressive disorder, bipolar disorder, psychotic disorder, alcohol use disorder, drug use disorder, and anxiety disorder), psychiatric history (previous visit to a psychiatrist or psychologist in the year prior to hospitalization), psychological variables (symptoms associated with psychological diagnoses), and other suicide-relevant variables (history of previous attempts, suicidal ideation, family history of suicide).

Demographic Variables.

Age. Mixed findings regarding age as a risk factor for suicide have been reported. Some studies suggest death by suicide has been associated with older age (Hawton, Zahl, & Weatherall, 2003), while a few studies have shown the opposite (Zahl & Hawton, 2004). Different findings with respect to risk level of various age groups may be related to the different aspects of suicidality under study. Suicidal ideation and attempts have been found to decrease across the lifespan, while rate of completed suicide has been found to increase (Witte et al., 2006). Overall, the majority of findings suggest higher risk of suicide in older adults. Witte et al. (2006) found individuals over the age of 65 were at higher risk for completing suicide than other age groups. Milner, McClure, and de Leo (2012) found higher suicide rates in countries with

higher proportions of individuals over the age of 65 and suggested this may reflect a higher

burden of suicide in older adults. Another interesting finding related to age is the different

response to prevention programs. Matsubayashi and Ueda (2011) found a reduction in suicide

rates after implementation of government-led nationwide prevention programs in elderly and

young populations, but not working-age groups.

Gender. Differences in the nature of suicidal behavior have been observed in men and

women. However, there have been mixed findings regarding gender as a risk factor for suicidal

ideation or behavior. Consistent with statistics that report higher rates of suicide completion by

men (CDC, 2011; WHO, 2011), some studies have found males at higher risk for completion of

suicide than females (Suokas, Suominen, Isometsa, Ostamo, & Lonnqvist, 2001; Hawton et al.,

2003). In contrast, other studies have found females were at higher risk for suicide than males

(Landheim, Bakken, & Vaglum, 2006; Angst, Angst, Gerber-Werder, & Gamma, 2005; De

Moore & Robertson, 1998). Furthermore, some studies have found no differences by gender in

regards to suicidal ideation (Brener, Hassan, & Barrios, 1999).

Once again, it is important to consider the specific construct (i.e. suicidal ideation or

behavior) being measured to clarify the true nature of this relationship. Comparison of gender

differences across studies should first consider the different nature of samples and whether

suicidal ideation or behavior is generalized inappropriately. To clarify the true nature of

differences in suicidal ideation and behavior between genders, Dejong et al. (2010) focused on

the level of lethality associated with suicidal behavior, both attempted and completed suicide.

They compared individuals who completed suicide with those who were hospitalized for either

low lethality or high lethality attempts and found males were more likely to complete suicide

whereas females were more likely to attempt suicide (both low and high lethality). This finding

is consistent with the mortality statistics indicating that men are more likely use firearms or other more lethal means than women (Ajdacic-Gross et al., 2008). Similarly, Moscicki (1994) reported males complete suicide at a rate approximately 4 times that of females, although females attempt suicide as much as 3 to 4 more than males. Much of the confusion regarding gender differences in the literature appears to be due to the failure to distinguish between suicide completion and attempts.

In addition to the nature of suicidal behavior under investigation, characteristics of the samples used in the investigation of suicide risk may impact observed gender differences. Wenzell et al. (2011) suggested that studies on suicide tend to be limited to women already at high-risk for suicidal ideation and behavior, who likely differ from women within the general population. Similarly, gender differences in high-risk samples are expected to differ from gender trends within the population as a whole (Wenzell et al.).

Race/Ethnicity. Differences in suicidal ideation and suicide completion vary across racial/ethnic groups (Brener et al., 1999; Hazell, 2001; Beck, Steer Kovacs & Garrison, 1985; Dorgan, 2011). Comparison of suicide across racial/ethnic groups has found differences in both suicidal ideation and rates of suicide completion. Brener et al. (1999) found individuals of African-American or Hispanic race/ethnicity demonstrated increased suicidal ideation. However, it appears they may be less likely to act upon suicidal ideation than other ethnic groups (Hazell, 2011; Beck, et al., 1985). Other populations have been identified at higher risk for death by suicide, with a disproportionate number of American Indian and Alaska Native people dying by suicide (Dorgan, 2011).

Rates of suicide have also found to vary among different nations or nationalities (Kim, Kim, Kawachi, & Cho, 2011). Comparison of different nations reveals that Japan and Korea

have some of the highest suicide rates per capita relative to other countries in the world (WHO, 2011). Kim et al. (2011) compared cultural changes in Korea and Japan in relation to the suicide rates in each country. They found the increasingly aging population and economic climate of these countries tend to fluctuate with suicide rate over time and suggested that honor related to the ability to provide for one's family was a major risk for suicide in working-age populations, particularly in Japanese culture.

Beyond race, ethnicity and nationality, culture is a complex construct that influences suicidal ideation and behavior in many ways. Many cultural differences have been explored as a potential explanation for the differences in suicide rates among nations. Existential themes within a culture may influence suicide rates. For example, many religions view suicide as morally wrong and individuals who endorse a religious affiliation have fewer suicide attempts than those who do not (Dervic et al., 2004).

Socioeconomic Status. Socioeconomic status (SES) has been implicated as a factor that influences suicidal ideation and behavior. Unemployment, poverty, and homelessness have been identified as potential triggers for suicidal ideation (Qin, Agerbo, & Mortensen, 2003). Increases in income have been associated with lower rates of suicidal behavior (Chuang & Huang, 2007; Neumayer, 2003). Stack (1983) suggested that financial security is associated with increased freedom and life satisfaction and lower stress, which potentially explains why financially secure individuals are less likely to attempt or complete suicide. On the other hand, poverty may be linked to risk for suicide more indirectly. Birtchnell and Masters (1989) suggested it is the increased risk for depression, a risk factor for suicide, which increases the suicide risk for individuals living in poverty.

Dejong et al., (2010) found individuals who completed suicide were more likely than those who attempted to have experienced recent job stress and financial problems. However, the groups did not differ in regards to experience of recent interpersonal conflict, divorce, or romantic breakup. These authors suggested economic crisis brings increased risk of suicide due to widespread financial struggles and occupational stress. The difference in experience of occupational and economic problems may account for the disparity in suicide by men and women, suggesting that men are more prone to worry about occupational and economic problems (Brodsky et al., 2001).

On a larger scale, the wealth of a nation may also indirectly influence suicide at an individual or societal level. At the individual level, higher educational attainment has been associated with lower risk of death by suicide (Willis, Coombs, Drentea, & Cockerham, 2003). A positive correlation between unemployment and suicide has been demonstrated (Milner et al., 2012). Interestingly, there was a differential effect by gender for the relationship between unemployment and suicide rates. Milner et al. (2012) suggested societal gender norms may influence the impact of job loss on individual self-esteem and perceived self-worth, which influence suicidality. At the societal level, countries with more financial resources dedicated to health care have lower rates of suicide (Minoiu & Andres, 2008). Milner et al. (2012) found countries with increased spending on health care had lower rates of suicide, particularly in Asian and east-central European regions. This may be reflective of increased spending on suicide prevention, but may also reflect overall greater well-being compared to countries with fewer resources dedicated to health-care. Milner et al. suggested there might also be more complex explanations underlying this finding, which simply demonstrates the relationship between

increased spending and lower suicide rates but does not specifically identify where funds are allocated.

Social Support. Individuals without a social support network may be at increased risk for suicide. Among older adults, Vanderhorst and McLaren (2005) found higher levels of depression and suicidal ideation in individuals with fewer social support resources. Similarly, individuals who endorse feelings of loneliness, both subjectively (a personal feeling) and objectively (living alone or lacking social support), appear to be at increased risk for suicidal ideation (Stravynski & Boyer, 2001). Individuals who report feeling like a burden to one's family often endorse feelings of hopelessness, a symptom of depression that is related to higher risk for suicidal ideation (Jahn, Cukrowicz, Linton, & Prabhu, 2011).

Although belonging to a group has been suggested as a protective factor for some, in other cases group membership is associated with higher rates of suicide completion. When compared to the general population, both prisoners (Fazel, Grann, Kling, & Hawton, 2011) and police officers (Mishara & Martin, 2012) have higher rates of suicide completion. Similarly, children within the welfare system (Katz et al., 2011) and individuals who reside in rural areas (Zaheer et al., 2012) are at higher risk for suicidal behavior and completed suicide.

Diagnostic Variables. There is strong evidence linking the presence of a psychiatric diagnosis with increased risk for suicide in individuals. In fact, nearly every psychiatric diagnosis has been associated with an increased risk for death by suicide (Harris & Barraclough, 1997). Analysis of the national comorbidity survey (NCS 1990 to 1992) and the national comorbidity survey-replication (NCS-R) suggested that over 80% of individuals who exhibited suicidal thoughts or behaviors met diagnostic criteria for one or more DSM disorders (Kessler, Berglund, Borges, Nock, & Wang, 2005).

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Mood disorders are most commonly associated with suicide (Mann, 2002) and major depressive disorder (MDD) has been identified as a major risk factor (Beautrais, 2001). Individuals with MDD are more likely to make medically serious suicide attempts and have an elevated risk for eventual death by suicide (Beautrais, 2004). Similarly, suicide attempts among individuals with bipolar disorder are frequently associated with depressive episodes (Oquendo & Mann, 2000).

Although MDD is often present in individuals who attempt or complete suicide, it is not a sufficient factor to explain the complexity of suicidality, and not all individuals who have depression exhibit suicidal ideation or behaviors. "More than 90 percent of attempters or victims have a psychiatric disorder, [however] most psychiatric patients do not attempt suicide" (Baca-Garcia et al., 2007, p. 192). Based on the NCS and NCS-R data, Kessler et al. (2005) reported approximately 34 to 51% of individuals with MDD exhibited suicidal ideation or behaviors.

Even within individuals who exhibit suicidal behavior, depressive symptoms failed to differentiate severity of the gesture. In a sample of adult psychiatric patients, Dejong et al (2010) found that depressive symptoms did not differentiate between individuals who attempted suicide from those who completed suicide with the exception of higher reporting of suicidal ideation among the latter. Furthermore, in some studies, symptoms of depression and hopelessness were not predictive of suicidal ideation (Shahar, Bareket, Rudd, & Joiner, 2006) or eventual death by suicide (Wenzel et al., 2011).

Individuals with substance use problems are more susceptible to suicidal ideation and behavior. Kessler et al. (2005) found that 19.4% of individuals who experienced suicidal ideation and 49.5% of individuals who attempted suicide met DSM criteria for a substance use disorder. Substance use can impact suicidal behavior both directly and indirectly. Direct effects are due to

the effects of the alcohol or drugs themselves. For instance, individuals are at a higher risk for impulsive behavior when under the influence of alcohol due to the disinhibition experienced when intoxicated. Disinhibition is particularly dangerous for individuals with suicidal ideation (Joiner, 2005). Moeller, Barratt, Dougherty, Schmitz, and Swann (2001) defined impulsivity as "a predisposition towards rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to the impulsive individuals or to others" (p. 1784). It is possible that an individual under the influence of alcohol or drugs will exhibit more lethal suicidal gestures due to a higher propensity for impulsive actions, putting them at a higher risk for death, whether intended or not. Although many individuals who attempt suicide describe having a plan, in their review of data from a national survey, Kessler, Borges, and Walters (1999) found the probability individuals would attempt suicide without a plan was 25.2%. This finding suggests many attempts may be related to impulsive actions. Use of drugs or alcohol prior to suicide was more common in individuals who completed suicide than those who attempted (Dejong, 2010).

There may also be an indirect relationship between substance use disorders and suicidal behavior due to comorbidity of substance use disorders and other Axis I disorders. The nature of the relationship between psychiatric diagnoses and suicidal ideation or behavior remains unclear and is likely more complicated than the direct causal relationship initially expected. Shahar et al. (2006) suggested the correlation between psychiatric diagnoses and suicidal ideation and behavior is due to other related variables. For example, they proposed suicidal ideation increases symptoms of hopelessness and depression, or that the relationship exists due to the influence of another variable, such as impulsivity or substance use. There is a significant overlap between substance abuse and other axis I diagnoses. Hersen, Turner, and Beidel (2007) found that 44% of

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individuals in treatment for substance abuse had a history of MDD. In non-clinical samples, Pfaff et al. (2007) found depressive symptoms predicted suicidal ideation and history of suicidal attempts, and individuals who engaged in binge drinking (consuming high quantities of alcohol in a short time frame) had a higher number of previous suicide attempts.

Other Suicide-Relevant Variables. Individuals who have attempted suicide in the past are at increased risk for future attempts (Sokero, 2005) or death by suicide (Coryell and Young, 2005; Joiner, Conwell, Fitzpatrick, Witte, Schmidt, Berlim, et. al., 2005). In a 14-year follow up study, Suokas et al. (2001) found history of suicide attempt was a strong predictor of death by suicide. However, when comparing individuals who attempted suicide with individuals who completed suicide, Dejong et al. (2010) found those who attempted suicide were more likely than individuals who completed suicide to have a history of other suicide attempts. This finding suggests there may be a significant group of individuals who repeatedly engage in suicidal attempts and may not intend to complete suicide. Baca-Garcia et al. (2007) found that individuals who attempted suicide were more likely to demonstrate recurrent suicidal behavioral, gestures, threats, or self-mutilating behavior than controls. Whether due to repeated attempts within the same population or a trend of attempting before completing suicide, past history of suicidal behavior is a significant risk factor for future suicidal behavior. Joiner et al. (2005) controlled for many predictors, such as hopelessness and psychiatric disorders, and suggested past suicidal behavior was the strongest predictor of current suicidal symptoms, including ideation, plan, and intent.

Biological Factors. Suicidal ideation and behavior may have a heritable quality. Individuals with a family history of suicide are more likely to report suicidal ideation, intent, or engage in suicidal behaviors (Juhnke, Granello, & Granello, 2011). Genetic links have been

demonstrated with higher correlations of suicide risk factors found in monozygotic twins when compared to dizygotic twins (Cho, Guo, Iritani, & Hallfors, 2006). The transmission of suicidal ideation and behavior among family members points to underlying biological influences or a physiological component.

Baca-Garcia et al (2007) argued that "psychosocial comparisons and personality traits may be more important in suicide attempts than biological variables and confer much higher suicide risk than any of the biological factors that have been studied so far" (p. 196). However, an interactionist position suggests development is multidimensional and individual constructs are less informative than the relationships and interactions that occur among multiple variables. Therefore, it is likely that psychosocial stressors and biological influences of suicide interact and mutually influence each other.

Investigations of physiological differences in individuals who have attempted or completed suicide have often focused on physical changes in individuals who have experienced stressful life events. Over-activity of the HPA-axis in response to stressful events has been suggested as an explanation for the increased risk of suicide in some groups (Lopez, Vazquez, Chalmers, & Watson, 1997). For example, alterations in stress responses associated with the HPA-axis have been found in individuals who experience child abuse, which potentially leads to an increase in suicide due to diminished role of the HPA-stress response (McGowan, Sasaki, D'Alessio, Dymov, Labonte, et al., 2009).

Due to significant evidence linking MDD and suicidal behavior, other physiological studies have focused on momaminergic neurotransmissions. Changes in seratonin, norepinephrine, and dopamine have been linked to symptoms of depression (Bunney & Davis, 1965) and suicide (Mann, 2003). Furthermore, postmortem examinations of the brains of

individuals who have died by suicide reveal differences in the number and affinity of monoaminergic receptors (Gross-Isseroff, Biegon, Voet, & Weizman, 1998).

Psychosocial Factors. Psychosocial stressors are well-documented factors related to suicide (Agerbo, Nordentoft & Mortensen, 2002; Blakley, Collings, & Atkinson, 2003; Mann et al., 1999; Brodsky et al., 2001). Categories of psychosocial stressors include: acute stressing life events, chronic stressing life events, and lifelong adverse experiences (Baca-Garcia et al. 2007). Consistent with previous findings (Mann et al., 1999; Weyrauch, Roy-Burne, Katon & Wilson, 2001), Baca-Garcia and colleagues found that, relative to controls, individuals who attempted suicide had significantly higher rates of acute stressing life events, such as partner problems, work-related problems, problems with primary support group, social environment, housing, work, and economy.

The attempted suicide group also reported more chronic stressors including separation or divorce, difficult working conditions, household move, difficult relationship with in-laws, economic changes, being fired, and lack of social activities (Baca-Garcia et al., 2007). Previous studies have also demonstrated links between chronic life stressors and suicidal ideation or behavior (Mann et al., 1999; Qin, Agerbo & Mortensen, 2003). Similar to prior work (Brodsky et al., 2001; Dube et al., 2001). Baca-Garcia and colleagues reported that individuals who had attempted suicide more frequently endorsed life-long adverse stressors including: early separation from mother or father; childhood physical, sexual, and emotional abuse; and physical and sexual abuse in adulthood.

Warning Signs

Suicidal ideation has been identified as a warning sign for future suicidal behavior. An individual who often writes about death, expresses feelings of guilt, has an obsession with death,

or expresses thoughts of suicide or self-harm is believed to be at imminent risk for suicidal behavior (Rudd et al., 2006). In addition to suicidal ideation, certain behaviors may indicate imminent risk for suicide. Jobes, Rudd, Overholser and Joiner (2008) suggested that at-risk individuals may suddenly display changes in personality, eating or sleeping patterns and have difficulty functioning at school or work. In addition, they may demonstrate reckless behavior, social withdrawal, mood changes, and increased drug or alcohol use (Jobes et al.). Changes in affect have been described as an intense and unusual affective state that may accompany these behaviors and impairment in social and occupational functioning (Rudd et al., 2006). A suicide note represents high risk for suicidal behavior and may demonstrate the severity of an individual's intent. Dejong et al. (2010) found that individuals who completed suicide were significantly more likely to leave a note than individuals who attempted suicide.

Communication of suicidal intent is a significant warning sign for suicidal behavior. Hawton, Houston, and Shepherd (1999) found individuals communicated suicidal ideation either indirectly through increased discussion of death in general, or directly by speaking about their thoughts to individuals in their social networks prior to suicidal behavior. Isometsa (2001) found as many as one half of individuals communicate intention explicitly to other people prior to completing suicide. This has been referred to as a significant "red flag" that indicates the potential for more lethal suicidal behavior (Maris, Berman, & Silverman, 2000, p. 267). Combined with the recent findings that many individuals who complete suicide are not in contact with health services (Renaud, et al., 2009), the role of the social network has become an important focus for intervention and prevention of suicide. Owen and colleagues (2012) explored the reactions of family and friends when facing either direct or indirect communications of suicidal intent. They found communication of suicidal intent fluctuated in the months prior to

suicide. Exploration of reactions by family and members of an individual's social network revealed "pragmatic failure" because family members had difficulty judging sincerity and often minimized emotions due to "cultural prohibition on talking directly about suicide" (Owen et al., 2012, p. 425).

Some studies have investigated the stability of risk for suicidal ideation in high-risk individuals. Some studies suggest the suicide rate in high risk samples significantly declines following hospitalization (Hazell, 2011); however, others suggest elevated risk of suicide remains for as long as 20 years in high risk samples (Angst et al., 2005; Suominen, Isomesta, Ostamo, & Lonnqvist, 2004).

Protective Factors

In addition to risk factors and warning signs, protective factors are important to consider in the investigation of suicide. Juhnke, Granello, and Granello (2011) defined protective factors as more than "just the opposite of risk factors, but are circumstances that, even in the presence of considerable risk, can act preventatively to help reduce suicide" (p. 16). Protective factors have not been researched as extensively as risk factors, but the National Strategy for Suicide Prevention identified several protective factors. These include: clinical care for mental, physical, and substance abuse disorders; access to clinical interventions for help-seeking, restricted access to means for suicide; familial and community support; problem solving skills; conflict resolution training; and cultural or religious beliefs that discourage suicide (Juhnke, et al., 2011). Accoridng to Sharaf, Thompson, and Walsh (2009), interventions targeting enhancement of self-esteem and family support have demonstrated decreased rate of suicide.

Positive social relationships or perceived belongingness are important protective factors for suicidal ideation and behavior. Among college students, individuals in a romantic

relationship or belonging to a social fraternity were less likely to report suicidal ideation (Brener et al., 1999). In a qualitative study that used focus groups with an inpatient sample, Ghio et al. (2011) found that many patients described interpersonal factors as the major reasons influencing their decision to attempt suicide. Some of the common factors included: loneliness, living alone, feeling a lack of empathy from others, and recurrent interpersonal conflicts.

Luoma and Pearson (2002) found marriage rates are negatively associated with suicide rates, suggesting stable social relationships provide protection against suicide. Other findings have not consistently found marital status to predict suicide (Dejong, 2010). It is possible marriage quality is a more important factor to consider. Relationship satisfaction should be explored to understand the relationship between marital status and suicidal ideation and behavior.

Integration of Risk Factors and Warning Signs

Understanding individual risk factors and warning signs can help describe qualities of individuals who have attempted or completed suicide, but often oversimplifies suicidal behavior and is limited in clinical application. Many critics have suggested the need for a more complex understanding of how these factors interact to predict suicidal behavior. "There is an ever-expanding list of risk factors for suicide, yet lack of psychological sophistication and excessively high false-positive rates limit the predictive value for clinicians working with individual patients" (Fowler et al., 2012, p. 568). In contrast, some scholars argue that the complexity of human behavior may exceed our ability to predict it accurately. The American psychiatric association's guidelines on suicidal behavior (2004) suggest prediction of suicide and suicide attempts appears impossible due to their rarity. Many researchers conclude that regardless of our

ability to predict suicide accurately, it is highly unlikely that any one risk factor or warning sign will be sufficient.

One of the earliest models of suicide was proposed by Durkheim who provided a sociological explanation of suicidal behavior (Durkheim, 1897). He explored the difference in suicide rates within a culture, specifically by comparing Protestants and Catholics. He believed the stronger social control of Catholicism resulted in lower suicide rates. He subsequently described two cultural forces that influenced a population's suicide rate: social integration and social regulation. Social integration refers to the attachment people have to their social groups, which results in common goals and shared beliefs. Durkheim suggested an average amount of social integration was ideal while exceedingly low levels were particularly dangerous and associated with increased rates of suicide. He suggested Protestant society had low levels of social integration and this disorganization was responsible for the increased suicide rates observed. Durkheim also proposed that social regulation, defined as the restraints and limits imposed onto individuals by societies, influences suicide rates within a population. Stack (1983) suggested religious groups who condemn suicidal behavior demonstrate this principle because the group can discourage suicide based on this imposed belief.

Research continues to examine the principles initially proposed by Durkheim. Masmura (1977) explored the relationship between social integration and suicide and suggested the two co-varied with each other. Milner et al. (2012) used Durkheim's framework to explore socio-economic determinants of suicide. They identified limitations of the framework Durkheim proposed, including failure to operationally define key constructs and overlap among social integration and regulation. However, Milner et al. suggested that Durkheim's theory continues to influence contemporary research and identified two key themes that are important in suicide

research: (a) the influence of society on individuals impacts suicidal behavior and (b) geographical, cultural, social, and economic characteristics of a society influence suicide rate.

O'Connor, Sheehy, and O'Connor (1999) used cluster analysis to classify completed suicides into subtypes. They found individuals who completed suicide formed three clusters, which did not significantly differ by demographic variables or method of suicide. The first cluster was primarily comprised of individuals without a psychiatric diagnosis or contact with health care professions. This cluster was most likely to be employed, live alone and complete suicide on their first attempt. Cluster two was made up of individuals with a diagnosis of depression, as well as other physical or psychological problems. They were less likely to be living alone and exhibited the highest incidence of marital or relationship problems. Moreover, two thirds of individuals in this cluster had previously attempted suicide. Individuals in the third cluster were almost all diagnosed with a depressive illness and many were on medication. Similar to the second cluster, approximately two thirds had attempted suicide before and a high proportion endorsed alcoholism or a diagnosis of schizophrenia. Individuals in this group had the highest incidence of physical health problems and were often not working at the time of their death. O'Connor et al. concluded that this analysis presents a more comprehensive picture of suicide and evidences that suicides do not conform to simpler models that focus on individual risk factors.

Fowler et al. (2012) suggested that psychological vulnerabilities distinguish individuals who attempt suicide in the face of negative life events from those who do not and should be the focus of intervention. Based on Maltsberger's (2004) model of suicide crisis, they investigated a psychodynamic model for understanding suicidal behavior. In "The descent into suicide," Maltsberger proposed a model of suicide that considers the psychological components common

to suicide attempters. For example, these individuals are believed to transition rapidly and chaotically through psychological states, often in response to common stressors such as loss of an attachment figure, narcissistic injury, and failure to live up to perfectionistic standards. Fowler et al. demonstrated that consideration of these psychological aspects as measured by Rorschach data increased their ability to predict suicidal behavior in high-risk individuals.

Still another model used to understand the complexity of suicidal behavior is the interpersonal theory of suicide proposed by Joiner, Van Orden, Witte, and Judd (2009). According to this theory, an interaction of three factors is related to increased risk for suicidal ideation and behavior: perceived burdensomeness, failed belongingness, and acquired capability for self-harm. Failed belongingness is a concept similar to Durkheim's (1897) concept of social integration. Individuals who feel connected and attached within a larger social structure are at decreased risk for suicide. Acquired capability for self-harm may develop through direct or indirect experience, for example, through familiarity with bodily harm through occupational experience, history of suicide-attempts or self-harm behaviors, use of intravenous drug use, or witnessing violence or harm that occurs during war (Joiner et al., 2009).

Suicide in Children and Adolescents

There are many myths regarding child and adolescent suicide. In summarizing some popular myths, Juhnke et al. (2011) suggested many people believe childhood is a relatively carefree time of life and children do not commit suicide. Similarly, due to a common the belief that children do not comprehend the finality of death, many people fail to take it seriously when children exhibit suicidal ideation or behavior. In regard to adolescent suicide, common myths include: talking about suicide to adolescents increases suicide risk, most adolescents who attempt suicide have intent to die, talking about suicide is mainly a cry for attention, all adolescents who

complete suicide must be depressed, and prevention programs are sufficient to prevent teen suicide (Juhnke et al.).

Juhnke et al. reviewed risk factors specifically relevant to understanding child and adolescent suicide, reporting as many as 75 different risk factors that have been identified in the literature. From this comprehensive list and review of empirical support for each individual risk factor, they suggested 6 that are particularly important to consider when working with children and adolescents. These factors are: biological risk factors, emotional risk factors, cognitive risk factors, behavioral risk factors, environmental risk factors, and triggering conditions.

In addition to risk factors, some common warning signs for children and adolescents include: increased focus on death, withdrawal from friends and family, talking about or threatening to hurt or kill oneself, seeking access to means for suicide, personality change or severe mood swings, difficulty concentrating, declining performance at school, giving away possessions, writing goodbye letters or a will, having no purpose in life, and reporting feelings of anxiousness, anger (Lazear, Roggenbaum, & Blase, 2003). There is considerable overlap in risk factors and warning signs across populations of different ages, suggesting many common elements for suicidal ideation and behavior across age groups. However, some risk factors are specifically emphasized in the literature investigating child and adolescent suicide.

Juhnke et al. (2011) identified bullying as one of the major risk factors in child and adolescent suicide. They defined bullying as "any physical or emotional abuse that a child or adolescent may endure in or outside of school" (p. 17). Bullying has been identified as an important risk factor for certain populations, including gay and lesbian youth. In addition to traditional bullying, Juhnke et al (2011) reported that cyber-bullying, which "can consist of any number of aggressive activities toward another in an online environment, including harassment,

denigration, impersonalization, trickery, and exclusion," is a serious problem for youth today (Juhnke et al., 2011, p. 17).

Suicide Clusters

Research has demonstrated a tendency for suicide to occur in clusters within social networks, analogous to contagion effects of infectious diseases (Gould, 1990). Clusters of suicide have been well documented (Mercy et al., 2001; Juhnke et al., 2011; Haw, 1994; Hanssens, 2011). Transmission of suicide has been observed throughout social networks (Johansson, Lindqvist, & Eriksson, 2006; Gould, Jameson & Romier, 2003; Phillips & Carstensen, 1988), age groups (Gould, 1990), psychiatric units of hospitals (Haw, 1994), and ethnic groups (Hanssens, 2011). Some suggest there is sufficient evidence for the existence of suicide contagion and propose that many clusters go unreported to protect the institutions in which they occur (Hazell, 1993).

In the face of such evidence many people are still reluctant to consider suicide contagion and question why point clusters are extremely rare or do not happen in some circumstances. For example, Joiner (1999) noted that although suicidality tends to run in families, there are no documented cases of a familial point cluster. The tendency for point clusters to occur within institutional settings to the exclusion of larger communities has also been pointed out (Joiner).

Perhaps one of the biggest difficulties noted in the body of literature on suicide contagion and suicide clusters is the confounding of terms and lack of standardized definition of "cluster" (Hazell, 1993). Similar to the terms associated with research on suicide in general, there is a wealth of language specific to the study of transmission of suicidal behavior. Many of the words used to describe clustering of suicides are poorly defined and used interchangeably. This lack of conceptual clarity and confounding of constructs has clouded the true nature of such phenomena

and likely contributes to the multiple viewpoints cited in the body of literature. It is important to distinguish a suicide cluster from suicide contagion to prevent confusion within the research.

Earlier definitions of suicide cluster defined the construct as a group of suicides that occur together in space and time at a rate higher than statistically expected. For example, Berman and Jobes (1994) defined a cluster as multiple suicidal behaviors or suicides that occur within an accelerated time frame and geographical area. More generally, Hazell (1993) provided an epidemiological definition of cluster, as "a closely grouped series of events, or cases of disease or other health-related phenomena with well defined distribution patterns in relation to time, space, or both" (p. 653).

Some definitions name a specific number of cases that must occur to constitute a suicide cluster such as a minimum of 2 or 3 proposed by Davidson (1989). Others suggest a cluster is "any excessive number of suicides" or suicides that are "nonrandomly bunched" (Joiner, 1999, p. 89). Although many do not mention the role of suicide attempts, Joiner (1999) included attempted suicide within the definition but noted that a group of suicide attempts is not in itself sufficient to qualify as a suicide cluster (Joiner, 1999). Other researchers have proposed that the social climate of a community is an essential component of a suicide cluster. For example, Hazell (1993) suggested the distinction between attempted and completed suicide is not important, but a cluster should include "any circumstance in which clustering has been hypothesized" in a community (p. 654). Similarly, O'Carroll and Mercy (1990) suggested community perception of a suicide cluster is an essential component to the definition. Repetition of a particular method of suicide is considered by some to indicate a cluster (Church & Phillips, 1984; Goldney, 1986), but is not generally considered a necessary component to the definition (Hazell, 1993).

In 2008, The United States Department of Health and Human Services defined suicide cluster as the process by which suicidal behavior or suicide influences an increase in suicidal behavior by others. Such a definition lacks conceptual clarity from suicide contagion, which is "the social, or interpersonal, transmission of suicidality from one victim to another" (Joiner, 1999, p. 90). Joiner (1999) distinguished suicide clusters from contagion by focusing on the information provided by each construct. "A cluster implies nothing about *why* the cluster came to be, only *that* it came to be…By contrast, contagion refers to a possible explanation of *why* a cluster developed" (p. 89). Hazell (1993) described suicide contagion as "a process by which one suicide may facilitate another imitation" (653). Use of the word imitation in this definition implies that contagion is specific to copycat suicide. Imitation is one hypothesized mechanism for suicide contagion and is most commonly associated with the media (Gould, Wallenstein, & Davidson, 1989). This view of suicide contagion excludes other hypothesized etiological mechanisms. A more general definition of suicide contagion implies that there is potentially an underlying mechanism that influences development of a suicide cluster (Joiner).

In general, scholars appear to agree upon (a) the need to distinguish between suicide contagion and suicide cluster, (b) the importance of providing a clear definition of constructs, and (c) some of the important criteria for suicide clusters and suicide contagion. Similar to many definitions used in previous work, the current study will define a suicide cluster based on the CDC 1988 definition as "a group of suicides or suicide attempts, or both, that occur closer together in time and space than would normally be expected on the basis of statistical prediction or community expectation" (CDC, 1988).

Suicide contagion will be defined as the social transmission of suicide by which one person's suicide influences another person to either attempt or complete suicide (O'Carroll &

Potter, 1994). For the purposes of the proposed study, this will consider a copycat suicide as a type of suicide contagion that is "a unique event where individuals attempt or complete suicide following the announcement of a celebrity suicide, which can temporarily increase in a specific area or even the entire country's suicide rate during a specific time period" (Jeong 2012, p. 958)

Types of Clusters. Two types of suicide clusters are commonly referred to, including mass clusters and point clusters. Point clusters are also called local clusters and involve suicides relatively contiguous in space and time that typically occur within small communities that experience an increase in suicides above a baseline rate observed in the community and surrounding area (Mesoudi, 2009). The prototypical setting for point clusters is within institutions or schools. Brent et al. (1989) described a point cluster that occurred in a high school of 1500 students, involving 2 completed suicides within 4 days, 7 attempted suicides and 23 students reporting suicidal thoughts. They noted the importance of social contiguity in the point cluster and found individuals who were close to the victims were more likely to develop suicidal behaviors than other students.

Mass clusters are often referred to as media clusters. They include an increase in suicide grouped more in time than space, which is attributed to publicizing of actual or fictional suicides (Joiner, 1999). Failing to find evidence for associations between fictional suicides (for example, movies within which a character dies by suicide) and an increase in suicidal behavior of adolescents (Simkin, Hawton, Whitehead, & Fagg, 1995) or adults (Berman, 1988), some researchers argue that it should not be included within the definition of mass suicide. In a study that investigated the impact of the media on suicide in 42 published studies, Stack (2003) suggested copycat suicide was 14.3 times more likely to be observed in studies investigating

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celebrity suicides and 4.0 times more likely to be observed in studies investigating fictional suicides.

Although mass suicide clusters have been documented in many cases, they do not always occur when predicted. Phillips and Carstensen (1988) pointed out the inconsistency of increased suicide rates following a publicized suicide, suggesting they are hard to predict. However, they also observed that adolescents are particularly impacted by publicized suicides and more likely to participate in mass clusters. Similarly, Gould, Jamieson, and Romer (2003) suggested that youth are particularly susceptible to the contagion effects that stem from reporting of a suicide in the media. A significant body of literature has documented the occurrence of copycat suicides. (Simkin et al., 1995; Stack, 2003; Chen et al., 2010; Berman, 1988). The amount and type of media coverage (television versus newspaper) has been found to influence copycat suicide (Stack, 2003). In addition to celebrity suicides, Chen et al. found that media coverage of suicides by prominent political figures may contribute to copycat suicides. Mass suicides may involve an increase in suicides over a time period, or happen concurrently. A horrific example of mass suicide is the Jonestown massacre of 1978 that involved poisoning of over 900 people in Guyana.

Explanations for clusters. Similar to research on suicide in general, investigators have tried to identify risk factors and underlying mechanisms of suicide contagion. The underlying mechanisms of cluster suicides remain largely unknown. Joiner (1999) suggested that suicide contagion is a vague concept that has defied analysis, partly because of the failure to find a reasonable theory. Due to the complexity of human behavior, causal relationships are often evasive to psychological researchers. The rarity of suicide clusters and nature of the construct does not lend itself to randomized control trials, making studies on causality beyond our reach.

Thus, the informed scientist should interpret hints at underlying causality with skepticism, knowing the difficulties of such empirical investigation. Information regarding specific factors underlying suicide clusters are primarily gathered post-hoc and thus limited to the methodological limitations and restricted generalizability. Reliable information on the factors contributing to suicide contagion are important not only to increase our understanding of such phenomenon, but also to help guide development of policies and targeted interventions to reduce suicidal behavior (Ali, Dwyer, & Rizza, 2011).

O'Carroll and Mercy (1990) suggested the perception of a suicide cluster within the community can increase the risk for contagion due to the emotional reaction of fear and anxiety. Johansson, Lindqyist, and Erickson, (2006) proposed that a suicide cluster is analogous to a contagious disease, one that is transmitted through infection of vulnerable individuals and results in an "epidemic" in the form of a suicide cluster. Clark (1990) suggested that communities are more likely to attribute deaths to "epidemic" or contagion when they consider the suicide "pointless," such as when the deceased was considered healthy, normal, and popular.

The infectious disease model suggests that contagion is the method of transmission within a suicide cluster and focuses on elements of suicidal behavior that may influence transmission among social groups. One of the ways suicide is believed to be transmitted throughout a community is through the media. Publicity of a suicide within the media has been linked to copycat suicides and has been well established as a major risk factor for mass clusters (Gould et al., 1989). Many postvention strategies involve the media as an important part of a community response to encourage "information to be disseminated and reported on in a sensitive and responsible manner" (Cox et al. 2012, p. 211).

Suicide Clusters in Adolescents. Although adolescent suicide clusters represent a relatively small proportion of adolescent suicides, they have received considerable attention in the academic literature. Suicide clusters have been well documented, particularly among adolescents (Gould et al., 2003). The potential for suicide contagion or cluster suicides is a major concern following a youth suicide. Although there is little consensus regarding the underlying mechanisms, certain patterns have been observed.

Peer Influence. As a time of transition, adolescence is a period in life when individuals often turn to peers for support and validation. Adolescents are at particular risk for suicidal behavior after a peer suicide within their community (Gould, Wallenstein, & Kleinman, 1990; Gould, Wallenstein, Kleinman, O'Carroll, & Mercy, 1990). This social influence has been suggested as one of the major factors underlying suicide clusters in adolescents (Ali et al., 2011).

There is some disagreement in the literature regarding the impact of peer influence on suicide clusters in adolescent peer groups (Mercy et al., 2001; Ali, et al., 2011). Although some researchers suggest a causal link between the occurence of suicide within a social network and increased suicidal behavior, others suggest the relationship between peer influence and suicidal behavior is more complex and may be over-estimated due to methodological limitations of previous work (Ali et al., 2011).

Having a close relationship with the victim of suicide is associated with an increased risk of suicidal behaviors in the victim's peers. Ho, Leung, Hung, Lee, and Tang (2000) found that adolescents who had been exposed to a peer's suicidal act (attempt or completed suicide) reported significantly more suicidal behaviors than those who were not exposed. Mauk and Gibson (1994) suggested that the three closest friends of a suicide victim are most impacted by the suicide, due to the traumatic nature of having a close friend complete suicide.

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Some suggest a direct relationship between social relationships and suicide clusters. Due to strong evidence demonstrating the spread of suicidal behaviors within close peer groups, social modeling has been considered as a specific factor that influences this transmission through imitation (Gould et al., 1989). Hazell (1993) suggested individuals are more likely to imitate behaviors of close friends, which explains the increased risk for transmission of suicidal behavior within close groups of peers. Although social modeling has been proposed as an explanation for the development of suicide clusters, others have pointed out that imitation fails to determine who will imitate the suicide and lacks explanatory power in this case (Joiner, 1999).

Peer influence may contribute to a suicide cluster more indirectly through selective affiliation. Joiner (1999) proposed individuals close to a victim of suicide are at higher risk for suicide themselves due to selective affiliation, which suggests that individuals seek friendships with others who have similar qualities to themselves. "People who possess similar qualities or problems, including suicide risk factors, may be more likely to form relationships with one another" (p. 91). Joiner (1999) proposed that suicide clusters are related to an interaction of person-based risk factors, social contiguity, lack of social support, and experiencing of severe negative life events. Overall, the evidence suggests the transmission of suicidal behavior is related to closeness to the victim, but this may be confounded by selective affiliation and premorbid factors (Joiner).

In a study investigating adolescents who attempted, but did not complete suicide, Ali et al. (2005) concluded that transmission of suicidality is related to familial factors more so than peer relationships. Although suicide attempts are included within the definition of suicide clusters, they are not sufficient criteria for defining a cluster. Attempted suicide impacts a community differently than completed suicides, thus making it inappropriate to generalize

findings to social networks of individuals following a completed suicide. A link between suicidality and social network may not have emerged due to the population chosen for the study. Nevertheless, after controlling for environmental factors and peer selection in adolescents, Ali et al. found suicide of a family member increased risk for suicide more than suicide of a peer, suggesting that familial factors may be more important than peer influence for individuals who attempt suicide.

Social Networks

Another unique aspect of peer interactions in recent years has been the recently evolved online "communities" or social networks such as Facebook and Twitter. The development of new technology is outpacing the research exploring this phenomenon. For example, many previous articles exploring online social networking focus on MySpace, which in recent years has been abandoned for Facebook. In turn, Facebook is currently at risk of replacement by other recent additions to the online social networking tools (Twitter, Pinterest). With technology expanding at a rate faster than the science to understand it, exploratory research provides the opportunity to investigate more general themes of users, rather than site-specific phenomenon that will likely change as quickly as it came.

Social networks exist both on and offline. Following the introduction and widespread popularity of online social networking sites, the term "social networking" is often used to refer to online communication that occurs on social networking sites, such as Facebook or Twitter. The traditional definition of a social network is a group of friends, colleagues, or other personal connections of an individual (Christakus & Fowler, 2009). In contrast, online social network systems (SNS) have been defined as "web-based services that allow individuals to (a) construct a public or semi-public profile within a bounded system, (b) articulate a list of other users with

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whom they share a connection, and (c) view and traverse their list of connection and those made

by others within the system" (Boyd & Elliason, 2007). Thus, the term social network is used

both to refer to offline (in-person) and online (web-based) interactions that occur among a group

of people. While there is a certain amount of overlap that exists between on and offline social

networks, the true nature of similarities and differences between each type of social network is

not fully understood (Subrahmanyam, Reich, Waechter, & Espinoza. 2008).

Recent work has sought to understand the degree of similarity as well as the different

influence online and offline social networks have on adolescents and emerging adults. For

example, Koh and Kim (2003) suggested a major difference between online and in-person social

networks lies in the type of influence each has on members within the network. Influence within

a social network refers to whether an individual can impact another individual. The influences of

individuals on members of online SNS was found to be primarily unidirectional, suggesting

individuals have impact on the SNS, but the reverse was not supported.

Another line of inquiry comparing on and offline social networks seeks to explore

whether online SNS are analogous to an in-person community. Reich (2010) noted the term

"community" has "expanded to include online groups in which participants may never meet face

to face" (p. 689). Reich suggested that use of the term "community" may be misleading and

sought to understand whether interactions that occur online engender a psychological sense of

community (PSC), which was defined by McMillan and Chavis (1986) as "a feeling that

members have of belonging, a feeling that members matter to one another and to the group, and a

shared faith that members' needs will be met through their commitment to be together" (p. 9). In

a mixed-methods approach using data from focus groups ($N = 33$) and survey data ($N = 361$),

Reich used top-down and bottom-up analysis to explore whether the following criteria of PSC

were met: membership, influence, immersion, shared emotional connection, and integration and fulfillment of needs. Although online SNS provide some aspects of community (e.g personal investment, some expression of identity, influence on the community, shared values, shared emotional connection), Reich reported that they failed to meet other criteria (e.g. emotional safety, influence, and fulfillment of needs) and thus concluded that online SNS reflect networked individualism rather than online communities.

Despite the differences, there are some similarities between on and offline SNS (Boyd & Ellison, 2007). The most common use of online SNS is to connect with friends from an individual's social network of friends they know in person (Lenhart & Madden, 2007). Individuals report searching online for friends they know in person at a much higher frequency than searching for strangers online to meet (Lampe, Ellison, & Steinfield, 2006). In addition, offline connections or relationships are often maintained through communication in online SNS (Ellison, Steinfield, & Lampe, 2007). Similarly, Subrahmanyam et al. (2008) emphasized that adolescents use online social networking sites primarily to strengthen relationships that exist in the offline world and are less likely to interact with unknown individuals online.

In their research on in-person social networks, Cristakus and Fowler (2009) demonstrated the importance of social networks in adult populations. They investigated the direct and indirect influences within complex social networks and demonstrated the significant impact of peer influence. Christakus and Fowler described the spread of emotions throughout social networks as contagious and have demonstrated that individuals who are generally happy tend to cluster within social networks. Longitudinal investigation of networks demonstrated a temporal relationship such that happiness in one individual successfully predicted happiness in direct friends (one degree of separation) and was observed to spread throughout the network.

Christakus and Fowler have extended these findings to investigate the spread of health behaviors, financial status, and mate selection. In fact, behaviors such as eating, smoking, consumption of alcohol, and weight loss were correlated to six degrees of separation. Based on the findings of multiple social network analyses, Christakus and Fowler concluded that social networks influence our ideas, health, relationships, politics, emotions, and behavior.

Online Social Networks. Although most researchers would not claim to understand the phenomenon of online SN, few can deny the impact it currently has and is likely to continue having on upcoming generations. An estimated 73% of adolescents engage in online social networking (Lenhart & Madden, 2007). Many adolescents are "immersed" in an online world; that is, in addition to a significant dedication of leisure time spent online, some adolescent users reported feeling a strong need or compulsion to use sites (Koh & Kim, 2003).

Understanding the nature of use provides a road map to understanding the ways online SNS are likely to impact adolescent communication and interactions. To understand how adolescents are making use of these online tools, researchers initially investigated trends in online social networking. Adolescents most often cited "connection" as the most common and most significant reason for using online SNS. "The data overwhelmingly suggest that these sites address a need for connection with other" (Reich, 2010, p. 698)

Interestingly, emotional investment in online SNS is believed to be relatively low. Although adolescents spend a considerable amount of time engaging in online communication, they do not report worrying about whether the site will disappear or feelings of sadness if they had to stop using SN sites (Reich, 2011). In fact, aside from staying in contact or connecting with peers, adolescents commonly describe using SNS to "combat boredom" (Reich, 2010, p. 696).

Many researchers have found aspects of SNS potentially beneficial to users. Ali et al. (2011) described evidence of online social interactions resulting in positive health outcomes and health related behavior, such as obesity, smoking, alcohol use, and risky-behaviors in adolescents. Participation in online SNS has been linked with increased self-esteem in individuals with limited peer support (Valkenburg et al., 2006) and many online SNS users are developing online spaces for community organizations to keep in touch and share information about upcoming events. "Interaction on SNS by an existing community or group could strengthen connections to those within the communities" (Reich, 2010, p. 703).

Another potential benefit of online SNS is the potential to honor or celebrate members of a particular group (Reich, 2010). Individuals reported feeling special when friends post to their walls, leaving comments or pictures for them. In addition, online SNS provide a social context to share interests, media, and promote important issues with ease (Reich).

In contrast to the potential and realized benefits of online SNS, many authors argue SNS has potentially negative effects on adolescents. Reich (2010) indicated that some individuals reported many problems with online SNS, such as drama, misunderstandings, and aggravation of problems. Some individuals described using online tools to manipulate others and used online public posts to present false images of self. In addition, although participants commonly discussed the benefit of connection, many described and expressed concern with the insincerity felt in online "friendships" (Reich)

Of particular concern, some have questioned the potential for online SNS to be an outlet for cyber-bullying, or vulnerability for students that feels scary or unsafe. Adolescents commonly reported feeling "emotionally unsafe" in online social communities (Reich). Although

this feeling was common in adolescents, the desire to connect with others appears to override concerns for emotional safety or fear of negative experiences online.

Integration: Suicide Clusters and Online SN in Adolescents

A significant body of literature has demonstrated the occurrence of suicide clusters and has found adolescents are particularly susceptible to suicide contagion. Research indicates that youth aged 15-24 are 2 to 4 times more likely to experience suicide contagion than older age groups (Davidson, 1989; Gould et al. 1990). Media reporting of suicide influences suicidal behavior in three ways: (a) through imitation or copycat suicides, (b) potential increases in suicides of individuals within a community, and (c) by normalizing suicide as a potential escape from pain (Thom et al., 2011). Guidelines have been established for the reporting of a suicide in the media to minimize the potential for copycat or mass clusters, however there is limited focus on communication that occurs online (CDC, 2011). For example, it is suggested media reports should avoid sensationalizing the suicide or prominence of the deceased, omit depicting individuals grieving or memorliazing (memorials, funerals, etc) the death, avoid discussion of specific details, and include education about suicide and suicide prevention. Overall, suicide should be reported in a manner similar to other crimes, with minimal details and focus on intervention and resources available.

Recent evidence suggests a changing nature in some of the factors influencing suicidal behavior, particularly in adolescents. The nature of rapid communication has changed significantly in recent years due to the development of multiple forms of communication tools in online communities. Early research on the Internet suggested its development impacted communication in a manner analogous to the introduction of the telephone in the early 20th

century (Kraut et al.,1998). Due to the rapid expansion of these technological tools, their impact as a new means of communication remains a mystery.

"The role of the internet in suicide prevention and suicide risk is poorly understood" (Juhnke et al., 2011, p. 19). Previous work has demonstrated the transmission of suicidal behaviors within in-person social networks, but the role of online social networks following an adolescent suicide remains unclear. Harris, McLean, and Sheffield, (2009) found that the internet is used by some individuals seeking support and can provide connections and a sense of belonging, while other individuals use the internet to seek pro-suicide web sites that provide support and encouragement for suicidal behaviors. Kemp and Collings (2011) explored the networking structure of Internet sites related to suicide, reporting that there are many "pro-suicide" websites on the Internet, but they are rare and overshadowed by sites dedicated to prevention efforts for individuals experiencing suicidal ideation.

Recent expansions in technology have surpassed the rate of development of empirical evidence regarding the impact of such sites. Although the impact of online social networks has been explored to some extent, the potential risk and benefit of online social networking following the death of a peer is not understood. Due to the potential for suicidal behaviors to be transmitted within in-person social networks, one must wonder what happens when these social networks exist online. In the only published study examining the role of online social networking and short message service (SMS) or text messaging on suicide, findings suggest these new technologies are an important part of transmission of suicidal behavior and need to be examined in depth. Robertson (2012) reported that the media followed all guidelines and made very little reference of or did not publicize developments of suicides in the cluster. However, a significant

amount of communication occurred via online social networking and SMS, which was "widespread among young people in the community" (p. 242).

According to Robertson (2012), online social networking and SMS were commonly used by young people to exchange information about a suicide and news of suicides "spread rapidly and far beyond each school that was directly affected" (p. 241). Guidelines for responsible reporting of a suicide in mass media are possible, but there is little or no information regarding control over mass communication that occurs over the Internet. In the suicide cluster investigated by Robertson, many factors believed to contribute to suicide contagion were found in online social networking and SMS communication. Social networking and SMS allows for rapid transmission of information. Parents and school officials interviewed by Robertson reported that many students learned of the suicides within hours of the event and a considerable amount of the information shared was incorrect. A particular concern was spreading of rumors, which ranged from the number of completed suicides, the method that was used, to the possibility of a suicide pact (Robertson). Although research investigating the direct impact of online and text communication has not been completed, findings regarding the impact of mass media reporting about suicidal behavior would suggest such communication may increase the transmission of suicidal behaviors. Robertson concluded the rumors were a factor that fueled further communication on social networks and SMS conversations, likely contributing to fear and anxiety that spread through the community.

Robertson (2012) also suggested that the specific content of some communication was potentially a contributing factor to subsequent suicides. For example, specific memorial sites were created online to share photos, videos, and slideshows to memorialize the deceased and the content was "overwhelmingly positive" (p. 241). Robertson concluded that individuals were

memorialized through the funerals but also through communication that occurred online in social networking, which may have contributed to the suicide contagion.

A major problem in the current postvention approach is a failure to account for other forms of communication that have gained popularity in recent years. The findings of Robertson (2012) highlight the potential for communication that occurs online and via SMS as an important factor to explore when investigating suicide contagion. Widespread use of modern technology makes geographical regions less relevant in the investigation of suicide clusters due to the potential spread of contagion over the internet and mobile phones. This suggests the current definition regarding "time and space" must take into consideration the globalization of communication, which complicates the identification of suicide clusters that have been spreading beyond the walls of the traditionally defined community (Robertson, 2012).

With the expansion in communication made possible by new technologies, particularly online SNS, it is possible a new type of suicide cluster has emerged: online network cluster. A new model is necessary to understand the transmission of suicide because point and mass clusters fail to account for the new means of communication that break down barriers that once existed between communities. Former classification of suicide cluster is based on former methods of communication that are less influential on adolescents in the new millennium. Due to new technology increasing the communication and decreasing distance among members of distinct communities, a new classification of influence is likely overdue.

The Current Study

There is a need to clarify the impact of online SN on adolescents in general and following a social crisis, such as a suicide cluster. Rapid expansion of technology in recent years has surpassed the demonstrated scientific knowledge and many questions regarding the impact of

such technologies remain largely unanswered. Although there are specific policies for school districts and also the media when reporting a suicide, *implementation* of policies governing communication that occurs online following the same event remains largely controversial. Such policies may be necessary, but it is difficult if not impossible to write informed policies without first answering some critical questions. Policies created without some understanding of the potential risk and benefits of online SNS are likely to be ineffective and in the absence of strong empirical support will likely be rejected in exchange for freedom of expression.

There are many challenges that exist in the quest to understand and predict suicide and some methodological limitations are hard to avoid. Previous work is largely based on samples of high-risk individuals that fail to generalize (Hazell, 1993). Similarly, there is a need to operatioanlize the terms under investigation to clarify differences between suicidal ideation, intent, attempt, and completion to allow comparison across studies (Hazell, 1993).

The importance of a social network has been established in the investigation of suicidal ideation and behaviors. Many interventions are based on studies that have been conducted on high-risk samples that are identified through their contact with health care services, as many as half of individuals who attempt or complete suicide are not in contact with the healthcare professional prior to their attempt or complete suicide (Renaud, 2009). Individuals often communicate their intent to engage in suicidal behaviors to members of their family or within their social network, providing an important new venue for intervention efforts. The current study followed the lead of previous studies and investigated the experiences of individuals within a social network following a suicide cluster.

The current qualitative study investigated the unique contribution of online SNS use on adolescent reactions following a suicide cluster. As an exploratory study, adolescent attitudes

and experiences were investigated using the CQR approach. Whereas the goal of previous work was to quantify the impact that specific variables have on adolescent behavior, the qualitative nature of the current study allowed us to explore and describe and understand the complexity of multiple issues that contribute to unique individual experiences and the broader social environment following a suicide contagion. A major strength of qualitative methods is their ability to systematically answer different types of questions in more depth than those available to empirical investigations (Green & Britten, 1998).

Online SNS have been described as means to connect with friends in a general sense. Analysis of adolescent responses in a semi-structured interview was conducted to explore whether adolescents experienced connection or felt emotionally unsafe while using an online SNS during a time of emotional crisis in their in-person social network. Due to the finding that emotional investment in SNS is low and online SNS did not share many similar characteristics with a personal sense of community, findings from Reich (2010) suggest adolescents would not rely upon online SNS during a time of turbulence in their personal world. In contrast, the "immersion" described by Koh and Kim (2003), the overlap between on and offline social networks, and strong evidence of using online SNS to stay connected with real-life friends suggests adolescents may engage in coping and grieving in an online SN. The qualitative nature of this study sought to clarify the relationship between peer influences in the online community following a suicide contagion.

APPENDIX B

DETAILED METHODOLOGY

Relevant History of the Suicides

A high school senior and varsity athlete held in high esteem by peers died by suicide. The school followed suggested protocol to inform students of the death. One month later, a student in the middle school, another athlete, died by suicide using the same method as the previous death. Subsequently, there were multiple reported suicide attempts, including one attempt on school property. Community mental health agencies were dispatched to conduct suicide assessments in the school gymnasium and noted a high level of reported suicidal ideation. The local media reported on the deaths and the suicide attempt that occurred on school property. The use of social networking to memorialize the first suicide was one hypothesized as a potential factor underlying the subsequent death and attempts.

Sample and Participant Selection

The proposed study utilized a small subsample of participants ($N = 10$) from a larger project investigating social factors and adolescent outcomes among 257 high school students from a small community in the southern United States. The community had experienced a suicide contagion one year before the data collection. The participants of the larger study reported an average age of 15.9 years and predominately European-American (57.5%) and Hispanic/Latino (19.7%) ethnicity. The sub-population under investigation reported an average age of 16.7 years and predominately European-American (90%) and Hispanic descent (10%). Frequency characteristics of the overall sample and the sub-sample are presented in Table E.1. Population characteristics of the larger school district and state totals are also included in Table E.1 for comparison.

Due to the sensitive nature of research on suicide and the potential for exploration of participant suffering to contribute to heightened distress or increased risk for suicide (Lakerman

& FitzGerald, 2009), ethical considerations took precedence over randomized selection of participants for the qualitative portion of the study. Our research protocol utilized consultation with one of the high school counselors who identified students who would be appropriate for the qualitative portion of the larger study. The high school counselor contacted 30 students who fit criteria for participation provided by the investigators. These criteria included: students who attended the high school or middle school where the suicides occurred, students who knew one of the students who completed suicide, or students who were identified by the school counselor as "at-risk" following the suicide cluster, but were not currently experiencing suicidal ideation. Out of 30 students contacted for participation, 10 individuals responded and agreed to participate in the qualitative portion of the study. All students in the school district were offered free psychological services at a local mental health clinic.

Measures

Background information questionnaire (Riggs & Jacobvitz, 2002). The background information questionnaire was developed for this study. This questionnaire requests information about basic demographics (e.g., age, gender, ethnicity, grade level, relationship status, number of people living in their household, income level) and family background information (e.g., number of siblings, adoption status, parental divorce, and death of family members).

Qualitative interview. A semi-structured interview was developed for this study. As an exploratory study, questions were written to be general and allow for a participant-directed investigation of their experiences and reactions following the deaths within their community. Questions were based on review of the current literature on grief related to suicide and were designed to explore student reactions in general, followed by more specific inquiry into the role of online SNS. The interview from a published CQR study on complicated grief among

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psychologists related to client suicide was used as a template for the interview in the current study (Darden & Rutter, 2011). In addition to the 12 main questions, the interview included some optional probe questions to encourage elaboration of a particular response (See Appendix E.1). Hill et al. (1997) suggested using 1-2 cases to pilot an interview and revise questions as necessary, but due to time constraints for collecting data within the school, all participants were interviewed within a short time period, which did not allow for revision of interview questions.

Procedure

Prior to the onset of the study, researchers obtained approval from the school superintendant and the university Institutional Review Board (IRB). In collaboration with school officials, researchers recruited participants for the larger study over the course of one month by distributing a description of the study and parental consent forms to students in social studies classes, which were targeted because these classes are inclusive and not based on academic performance. After parental consent was obtained, data collection was conducted during a typical class period by a doctoral student in counseling psychology. Students who elected not to participate or did not have parental consent were given an alternate activity (e.g. a writing assignment administered by the teacher). Students completed an assent form prior to administration of measures.

Students in the sub-population returned a second parental consent form for the qualitative interview and were called from class to complete an interview conducted in a private office. After introducing the study and obtaining participant assent, the interviewers completed all 10 interviews over the course of four days. Participants in the subsample also completed the packet of questionnaires as part of the larger study, either in their social studies class or directly following their interview. As an incentive for participation, all participants in the large study

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were offered entrance into a drawing for an 8GB IPod Touch, and two ITunes gift cards (worth $20 each). Participants who chose to enter the drawing provided relevant contact information that was immediately separated from the data. Undergraduate research assistants entered quantitative data into SPSS, including demographic information. Interviews were transcribed into Microsoft Word and qualitative data analysis was managed by a carefully chosen research team using consensual qualitative research protocol (Hill et al., 1997).

Interviewers and Judges

Similar to other qualitative methods, consensual qualitative research (CQR) relies upon consensus of a team of researchers to support validity. One of the appealing aspects of CQR is the use of a team of individuals from diverse backgrounds working together to reduce potential for "group-think". The creation of a safe, open environment that fosters critical evaluation of team members' ideas throughout the process is an essential feature of CQR because it encourages inclusion of the diverse opinions of multiple team members and avoids one person dominating key themes that emerge in the analytic process.

The interview team was comprised of two interviewers, both doctoral students in Counseling Psychology with previous experience conducting semi-structured Interviews. To avoid personal impressions influencing data analysis, the interview team did not participate in data analysis. A 1-hour training was provided to the interviewers to establish consistency in interviewing techniques with the interview used for the current study.

The data analysis team included four females including the first author, who was a doctoral candidate in counseling psychology. Each individual was carefully chosen based on her unique contributions to the overall team dynamic and aside from gender, the team reflected a diverse range of individuals. Team members varied by racial/ethnic background, age, nationality,

and educational background. The youngest team member was 17 years old and a university sophomore fulfilling research requirements of a program for intellectually gifted youth. Two female team members completed Bachelor's degrees and were in the process of applying for Master's training in Psychology or Social Work. All team members have profiles on social networking sites. The auditor was a White male with a doctoral degree in school psychology.

Data Analysis

The design of the current study followed the consensual qualitative research (CQR) methodology illustrated by Hill and colleagues (1997; 2005). CQR provides an organized approach to qualitative research by providing a clear process for researchers to follow, with multiple points for feedback from individuals outside the original team (Hill et al., 1997). Arriving at consensus is a critical feature of this design, and was achieved with the primary research team and the auditor. Overall there is a linear trajectory; however the process was circular and involved multiple points of feedback from the auditor that challenged the team to reconsider and improve domains and core ideas throughout the process. The overall process starts general and moves to more specific understanding of the data. Hill et al. suggest CQR is a method of summarizing data rather than interpreting data, which would be considered potentially eisegetical, or introducing your biases into the work, rather than exploratory.

The primary research team transcribed the interviews following a standardized protocol that removed identifying information but included language fillers (e.g., like, um, you know), description of long silences, and description of emotional tone. Throughout the data analysis process, the team referred to the original audio file when clarification was necessary, or to discern emotional tone of an interviewee.

The interview data was broken down into themes or domains. Research team members each suggested potential domains based on the 2-3 interviews they had transcribed to come up with a "start list" (Miles & Huberman, 1994). All team members then independently coded each of the 10 interviews, meeting for the purpose of reaching consensus after each one. The start list of domains was modified based on introduction of new transcripts to ensure the domains appropriately reflected the original data. Once the domains were chosen and interviews coded into domains, the research team abstracted core ideas. The core ideas are designed to capture the content of the data in more concise words (Hill et al., 1997). Similar to the process of coding domains, research team members wrote core ideas individually, then met as a team to reach consensus. The auditor examined the resulting consensus version of each case to assess accuracy of the domain, coding, and wording of the core ideas. The team members then discussed the auditor's comments and again reached consensus.

The cross analysis involved studying the core ideas across all cases to reveal similarities which were then allocated to categories. Categories and domains were continuously revised until the team agreed that the data were accurately represented. Following most recent recommendations for description of frequency, labels were applied to the categories to denote the rate of occurrence, or frequency (Hill et al., 2005). general applied to categories that occurred in 9 or 10 cases; typical applied to 6 to 8 of the cases; variant applied to 3 to 5 cases and rare applied to 2 or fewer cases. The auditor then reviewed the cross analysis, and his suggestions were discussed by the primary team and integrated if agreed upon by consensus, leading to a revised cross analysis.

Due to the small sample size ($n = 10$), the stability check that involves temporarily excluding two cases before cross analyzing the data was omitted. Rather than excluding cases

during the initial review, four cases were re-analyzed after domains were established from using 10 cases. According to Hill and colleagues (2005), the stability check is no longer necessary providing a homogenous sample was assembled. Documentation of procedure and use of quotes and/or core ideas are considered sufficient to confirm findings and provide evidence of trustworthiness. Over the course of analysis, team members noted variables that may be considered heterogeneous, which were considered for sub-group analysis and are presented in the results.

APPENDIX C

COMPLETE/UNABRIDGED RESULTS

The findings uncovered a phenomenological understanding of the students' experiences in the aftermath of a suicide cluster using the CQR process. Research team members summarized interview discourse domain-by-domain and agreed upon contextually rich descriptions and quotations summarizing the student experiences across domains. Given the sensitive nature of this subject matter, confidentiality is protected by intentionally not assigning case numbers to supporting comments. Note that "interviewee" or "student" is used to refer to the research participant and "deceased" is used to refer to one of the individuals who died by suicide.

During the process of creating domains, the team considered many options before agreeing on the final 4 domains: The Suicide, Impact, Perception of School Environment, and Recovery. Over the course of data analysis, 8 different domains considered: understanding and knowledge of the suicide, coping strategies, memorialization, online interactions, in-person interactions, relationship to the deceased, impact/experience of the suicides, and personal experiences/other losses. Understanding and knowledge of the suicide was retained and called the suicide. Coping strategies and memorialization were combined to become the recovery domain. Due to significant overlap with further analysis, other domains were combined and relabeled to comprise the impact and perception of school environment domains. When discussing expectations for the data prior to examination of the interviews, the team initially anticipated social networking would emerge as an independent domain. However, analysis of the students' experiences and feedback from the audit of domains revealed that the social factors were represented within the four other domains. Examination of the categories that emerged within the social factors domain revealed considerable overlap between social factors and the other existing domains. Thus team members individually re-coded core ideas from the social factors domain to integrate them into the other domains. The team met to discuss similarities and

differences in recoding and reached consensus on reclassification of core ideas. Below the four

domains and their sub-domains (categories) are described in detail and Tables E.2 through E.5

document the general (9 or 10 cases), typical (6-8 cases), variant (3-5 cases), and rare (1 or 2

cases) frequencies for each of the 4 domains. Frequency labels chosen reflect the

recommendations provided by Hill and colleagues (1997).

The Suicide

This domain reflects how students initially learned about the suicide, sought details about

the deaths, and their subsequent understanding of what happened. In general, there were two

broad categories comprising this domain: Sources of information and understanding of the

suicide. Table E.2 presents the categories, frequencies, and representative core ideas or

quotations that comprise this domain.

Sources of information. The sources of information category details how interviewees

initially learned about the suicide and where they sought further information. It contains two sub-

categories: initially found out and sought further details.

Initially found out. In the sub-category initially found out, interviewees described how

they first learned of the suicide(s). Typically, interviewees first learned of the suicide at school

from the official announcement. Many of the interviewees referred to the "piece of paper" that

the official announcement was read from. For example, "some guy came into my classroom and

read a piece of paper saying that my friend had just died the previous morning." In spite of the

school's efforts to follow the standard protocol, there were instances of students learning about

the suicide outside of the official announcement via social networking or text messaging. One

interviewee discussed the experience of learning about the death of a sibling online. S/he felt

very strongly that death is not something that should be revealed online and expressed anger and

regret. "I was mad because the way I found out. I just didn't think it was appropriate to put a post on Facebook at all." Another interviewee mentioned immediately sending a SMS to his/her partner, who subsequently found out before the official announcement reached the class s/he was in.

   Sought further details. In the sub-category sought further details interviewees described interactions that occurred in person and online to investigate the details surrounding the death. Interviewees commonly indicated that they immediately checked Facebook for confirmation of the school's announcement, One interviewee commented, "as soon as we found out I just ran out of the room crying and I got on my phone and I looked (on Facebook) and his mom had posted something like 'he's dead it's not a joke'" and another stated, "I went to (his Facebook page) just because I wanted to see really if it was real."

   Some interviewees described going to great lengths to find out more information about the details surrounding the death. Although they initially learned of the suicide from school officials, interviewees did not mention asking teachers, counselors, or school officials for any more details about the suicide. While many messages of condolences were posted on Facebook, these did not satisfy the curiosity regarding what happened. One interviewee went through the previous days of posts on Facebook and commented, "I scrolled all the way through … the posts he had posted three days before it happened." A few interviewees reported there was a certain level of detail students would post publically (online), but further details were sought out in person or via text message. When asked how s/he learned details, one interviewee stated, "I just texted people because everybody was posting depressing things but nobody wanted to say it on Facebook". Online SNS was also used by interviewees who were not close to the deceased to

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learn who s/he was and to search the deceased's list of online friends to identify peers who might know more about the death.

Interviewees were more likely to trust information they obtained from peers belonging to the same social circle as the deceased over information obtained online. Peers of the deceased were thought to have knowledge about the suicide that was considered more credible than other sources and thus were often sought out as sources of information when online material was insufficient or vague. Similarly, one interviewee identified him/herself as a trusted source and described dispelling rumors based upon his/her relationship with the deceased. When peers asked about the motivation behind the second suicide, s/he described being able to "dispel rumors" that the deaths were linked.

Understanding of the suicide. The understanding of the suicide category includes interviewee's thoughts about the suicides and subsequent conclusions. It reflects the interviewee's personal understanding of the suicides and the events that followed. It was typical for interviewees to describe their current understanding of the suicide, offering their thoughts and conclusions. There was considerable variance in the details described by the interviewees, with little agreement upon the events leading up to the suicide. A few (3-5 cases) discussed feeling uncertain about the details of the death(s). They discussed their awareness of the potential for their information to be false, often describing rumors that circulated and wondering which ones were true.

However, it was just as common for interviewees to feel more certain in their understanding, although these interviewees did not agree in their understanding of the death. It was rare (1 to 2 cases) for interviewees to question whether the death was a suicide or an accidental death. On the other hand, it was rare (1 to 2 cases) for interviewees to express belief

that the deceased's friends were to blame for the suicides. For example, one interviewee often expressed anger and assigned blame to the deceased's friends, whom s/he believed should have prevented the suicide.

Impact

The impact domain includes consequences resulting from the experience, such as: emotional, behavioral, cognitive, philosophical, and interpersonal changes. It also includes interviewee's thoughts on the impact social networking had during the time following the suicides. Table E.3 presents the categories, frequencies, and representative core ideas or quotations that comprise this domain.

Emotional. The emotional category is comprised of both the immediate reactions to the news of the suicide and the long-term effects on the interviewee's emotional state. In general (9 to 10 cases), interviewees described having an emotional reaction in the days following the suicides, as well as one year later as they discussed the suicides during the interview. Sadness, hurt, and loss were typical (6 to 8 cases) emotional labels used by interviewees, followed by shock, anger, or guilt, which were variant (3 to 5 cases). Interviewees most commonly indicated shock was the initial emotion, followed by a wider range of emotions over the course of their grieving process. Some interviewees (3 to 5 cases) noted an increased sensitivity in themselves and others, coupled with a fear of more suicides. Rarely (1 to 2 cases) interviewees reported feeling overwhelmed, which was described as overcome by emotions, as well as by the volume of support messages received via SMS text and social networking.

Behavioral. The behavioral category includes actions taken or changes in behavior following the suicides, as well as behavioral change attributed to new learning experiences. Some interviewees noted a drop in grades (3 to 5 cases) or described withdrawing from typical

activities, such as going to school. Withdrawal ranged from finding it hard or uncomfortable to return to school to missing several weeks of school. For example, one interviewee stated, "I didn't come for 3 weeks. I tried to come in between those three weeks and it was like everybody just swarmed me." However, it was more typical (6 to 8 cases) for interviewees to describe some sort of positive change in themselves after having gone through this experience. These positive changes were sometimes articulated, such as being more likely to intervene when witnessing bullying, or sometimes vague. More specifically, 3 to 5 interviewees described becoming active in suicide prevention. This included tending to friends that appear upset, as well as those who appear happy. One interviewee commented that, "it gets you to wake up and pay attention to your friends and don't ignore a text that they're upset…awareness is essential that could save somebody's life whether you know it or not."

Cognitive. It was general (9 to 10 cases) for interviewees to look forward with new insight into life, death, and the reality of suicide. Following the suicides, interviewees described new awareness about the reality of suicide, particularly suicide in adolescents. A few (1 to 2 cases) explicitly described a understanding of bullying as potential risk factor for suicide. Some interviewees (3 to 5 cases) reported a new awareness of the reality of death, as reflected in the comment, "I don't take (life) for granted anymore. I feel it's more precious now." Some interviewees (3 to 5 cases) looked back and described wishes they had for things to be different, or looked to the future and described their plan to honor the deceased.

Philosophical. It was typical (6 to 8 cases) for interviewees to describe a shift in philosophical or spiritual domains. Some described attending church more often, while others expressed a new appreciation for life and other existential concepts.

Interpersonal. The interpersonal category reflects any effects the suicides had on the interviewees' relationships with friends and family. They typically (9 to 10 cases) described feeling closer and more connected to friends and family, particularly fellow students and community members. Some interviewees (3 to 5 cases) also described experiencing tension in relationships with family or friends.

Social networking. While interviewees discussed the impact of the suicides, many of them also described the role of social networking. At times it was difficult to discern whether interviewee's were talking about an online or in-person interaction. There were mixed reactions about the impact of social networking, most interviewees described both positive (6 to 8 cases) and negative (6 to 8 cases) aspects. In general, interviewees often alluded to, "Facebook can go either way. It can be good, neutral, and bad."

Unaffected. For each of the areas described, there were a few interviewees that did not believe they experienced change. Some interviewees reported lack of impact overall (3 to 5 cases), which included: little or no impact on grades (1 to 2 cases), lack of interpersonal impact (3 to 5 cases), and/or no reported change in spirituality (3 to 5 cases).

Experience of the interview. Interviewees were asked about the impact of the interview, specifically their experiences participating in the current study. It was variant (3 to 5 cases) for interviewees to comment on their experience of being interviewed. Those who did tended to reflect back over the year and describe surprise at their lack of emotionality or recovery that has happened. One participant stated, "I'm surprised I'm not crying, but I'm doing pretty good."

Perceptions of School Environment

Initially this domain was included within the Impact domain, but over the course of the CQR process it was viewed as a unique aspect of impact that reflected interviewees perceptions

of social processes. The perceptions of the school and community environment following the suicides reflects the group dynamics and social norms interviewees perceived during the time of grieving. Table E.4 presents the categories, frequencies, and representative core ideas or quotations that comprise this domain.

Positive impact. It was typical (6 to 8 cases) for interviewees to comment on positive changes observed within the social context of the school. These included reduced bullying, or increased support and intervention for students being bullied. Many interviewees (3 to 5 cases) detailed a sense of increased connection and unity of the school body. Some considered this a lasting change (3 to 5 cases), whereas others viewed it as a temporary shift, after which cliques reemerged (3 to 5 cases).

Negative impact. Some interviewees described events that occurred within the school or community in the year after the suicides and attributed them to the social climate. For example, one interviewee described an unrelated incident involving 2 students who discussed having a hit list, which for the interviewee brought up the previous grief and hindered coping. It was typical (6 to 8 cases) for interviewees to comment on what they perceived was a negative impact arising from online interactions. For example, one interviewee described a negative interaction that happened on Facebook, which s/he said "triggered a school wide protective response." S/he added that although the students in the school were highly impacted by the negative comments, the teachers and school officials were not aware of what happened.

Reminder of the suicides. It was *typical* for interviewees to describe difficulty with many of the reminders that occurred over the course of the year (6 to 8 cases). These ranged from peers discussing the suicides to physical reminders of the school such as a class that was shared with

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the deceased. Certain people, such as friends or siblings of the deceased, also reminded some interviewees of the suicides.

Emotional climate of the school. It was typical (6 to 8 cases) for interviewees to report being significantly impacted by the emotional climate of the school. One interviewee commented, "death was walking in the hallways everyday. It was very quiet, sad and mean just walking down the hall." Some believed the school environment hindered their own coping due to "dwelling" on the deaths, while others responded by judging the sincerity of grief expressed in individuals who were not believed to be close with the deceased.

Perceptions of the school interventions. Interviewees discussed many efforts to memorialize the deceased, which were included in the Recovery domain. In addition to the memorial service and organized events, students attempted to engage in several activities to honor the deceased at school. Suicide postvention guidelines advise schools and institutions to avoid memorializing individuals. Interviewees described feeling confused about the school's response to their efforts to organize memorial events and stated it felt they were expected to "be over" the deaths too quickly.

Recovery

The recovery domain is comprised of interviewee accounts of things that were helpful or that hindered their grieving process. It includes behaviors interviewees engaged in to reduce the frequency or intensity of pain, to grieve the loss, or gain a sense of what happened (cognitively, emotionally, and spiritually). Interviewees' acceptance and grieving process ranged on a continuum spanning from denial of the death (prolonged relationship with the deceased) to avoidance, acceptance and realization of the loss. Table E.5 presents the categories, frequencies, and representative core ideas or quotations that comprise this domain.

Support seeking. Support seeking was general among the interviewees (9 or 10 cases), who referred to social support from peers, family members, and professionals within the mental health field as an essential part of coping process. It was typical (6 to 8 cases) for interviewees to seek support from peers, and to seek support in an online context, but variant (3 to 5 cases) for interviewees to seek professional support, or feel helped by providing support to others. Interviewees reported they felt most comfortable seeking support from peers who had a similar relationship to the deceased. Other interviewees felt most understood by people with similar experiences or backgrounds. For example, one participant noted "[s/he] found it helpful to talk with someone who had also lost a sibling and it was nice to talk to someone who really did understand." Social networking was frequently referred to when discussing social support. Many interviewees reported feeling a sense of support by viewing the responses of other students online.

Avoidance. Interviewees described emotional, behavioral, and cognitive activities engaged in to avoid the grief reaction. Behavioral avoidance was variant (3 to 5 cases) and typically involved staying home from school or leaving class early to return home. There was a significant range in behavioral avoidance from minimal disengagement (i.e. low motivation to clean room or attend class) to missing 3 weeks of school. Cognitive avoidance includes preference to avoid thinking about the situation and was variant among interviewees. Similarly, emotional avoidance was a variant response style in interviewees. Avoidance of interaction online or via SMS text was rare (1 or 2 cases), but was salient to the interviewee(s) discussing it.

Realization of the loss. The process of coming to terms with the death and realizing the loss was a rare response (1 or 2 cases). Attending the gravesite, going to the funeral, and visiting

the Facebook page of the deceased were identified as activities the interviewee(s) engaged in during their process of realizing the death.

Prolonged relationship with the deceased. Interviewees described having continued communication with the deceased, some in person and many online, which maintained a sense of connection after the death. A variant number of interviewees (3 to 5 cases) discussed talking to the deceased and regularly visiting the grave. It was typical (6 to 8 cases) for interviewees to maintain an online connection with the deceased. This included viewing pictures, writing messages to the deceased as though he is reading them, and sending birthday greetings or messages on the anniversary of the death.

Memorialization. It was typical (6 to 8 cases) for interviewees to engage in activities designed to preserve memories and celebrate the deceased's life. Memorialization was done in person at the deceased's funeral or gravesite (rare), together at a student organized school event (variant), or online (typical). It was most common for interviewees to discuss sharing information and sharing memories on the deceased's Facebook page, or on a special memorial website created for the deceased.

Factors that hindered coping. It was general for interviewees to describe aspects that hindered their coping processes. Online interactions were a hindrance to recovery for a typical number of interviewees (6 to 8 cases). As one interviewee stated, "Facebook is horrible…it hinders everybody's recovery and everybody's state of mind." Constant reminders of the deceased (3 to 5 cases) on your personal Facebook page or the negative comments and lack of respect (1 or 2 cases) were described as the ways Facebook negatively impacted the grieving process.

Questions about the expectations for appropriate grieving were a hindrance for a variant number of interviewees (3 to 5 cases). Interviewees communicated uncertainty about whether they "should" grieve if they were not in the same social circle with the deceased, and some anger was expressed toward other students who were upset but not close friends with the deceased. It was rare, but 1 or 2 cases discussed struggling with calling the death a suicide and engaged in research about accidental asphyxiation. Interviewees also noted some other aspects related to the death that hindered coping, including the age of the deceased, and their view that he was generally happy. Anger or blaming was coded as a hindrance to coping, which was rare (1 or 2 cases) but salient for the interviewee(s) who expressed it. Similarly, although rare, (1 or 2 cases) the subsequent deaths were discussed as a major hindrance to recovery by a couple interviewees.

Personal experiences and other losses. It was rare (1 or 2 cases) for interviewees to discuss personal experiences that may have impacted their grieving process and rare (1 or 2 cases) for interviewees to describe other losses that came up when they discussed the most recent suicide. Both personal experiences and previous losses were considered factors that may influence the interviewee's process of grieving.

APPENDIX D

COMPLETE/UNABRIDGED DISCUSSION

This study sought a deeper appreciation for the experiences of adolescents following a suicide cluster, with a particular focus on the role online social networking. The research questions guiding this study explicitly queried the role of social networking. An important part of the CQR process involves team members reflecting upon their expectations of the findings prior to analyzing the data. Team members discussed an expectation of the emergence of an online domain or realm that is separate from the in-person interactions. Over the course of the CQR process, a domain was created reflecting the focus on online interactions as a separate context or aspect of adolescent interaction, but the process led to a very different place. While online interaction appears to be another context, one with less adult presence and minimal monitoring, it is embedded in and central to adolescent experience and could not be meaningfully separated. Rather than being a separate aspect of communication, online interaction was fully integrated with each domain and experience described.

The increasing popularity and use of online social networks presents some challenges in the face of an adolescent suicide. The social network websites provide channels for rapid dissemination of information. Although many interviewees reported hearing about the suicide from "a piece of paper" read by school officials, the typical response was to immediately turn to a source of social networking (SMS text, online SNS) for confirmation and to share that information with peers. Similar to previous findings suggesting adolescents often wonder "why" in the aftermath of a suicide (Parrish & Tunkle, 2005), many interviewees described looking at pre-suicide pictures and posts to learn more about the deceased in a quest to understand what lead to the suicide. The reality of the suicide was experienced through misinformation, rumors, and pieces of information obtained online and by text. On a positive note, there appears to be a certain level of social expectation or cultural norms within the online world. Specifically,

interviewees described types of commenting and posts that were considered appropriate for online social networks (e.g. – posting condolences, expressing grief, providing social support), but indicated that questions about the suicide itself were often asked of peers in an in-person or individual SMS text message. Violations of these standards were referred to as "disrespectful," such as when a student posted a picture of the deceased from the viewing at his funeral. There appears to be an emerging online culture and the interviewees discussed engaging in discussion in person, acknowledging the public nature of the online world.

Results suggested that interviewees have certain impressions of online and in person interactions that almost create a hierarchy of preference. For example, when seeking information, interviewees described looking for confirmation of the death online, but seeking details from peers in person or via text message. Thus there is reliance upon the immediacy of online communications, but a certain point at which confirmation is sought from people with more credibility. Another consideration may be the awareness of the public nature of some communication, with in-person conversations viewed as most private, then SMS text and online communication as more public. The safety of communication is closely associated with the degree of publicity, suggesting adolescents may feel safer having in-person conversations about topics they feel uncertain about.

Interviewees appeared acutely aware of the reduced adult presence in the online world. Interviewees discussed how adults were not aware of the negative interactions happening online, and noticed teachers were often unaware of the underlying tension that existed in the classroom as a result of negative online interactions. Although many of the interactions were viewed as supportive, when students posted negative comments or violated social expectations online, the interviewees reported reacting in person. There was a spillover from online interactions to in-

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person confrontations that resulted from interactions in the online SNS. Furthermore, the negative comments made online were destructive to interviewees, but they did not report these interactions to trusted adults. This is analogous to many concerns about cyber-bullying. The social climate of an online context can significantly impact the in-person experiences of an adolescent community – both positively and negatively. In the current study, the online forum primarily served to unite the student body in their grief and provided a safer place for expression of condolences. The findings of this study highlighted the potential benefits of online interactions in the aftermath of a suicide, particularly the shared experiences and place for support, but also the confirmed the fear that people may be hurt or offended by negative remarks. Therefore it will be important to monitor online forums paying close attention to the potential negative impact of destructive negative statements and potentially even contributing to suicide contagion.

Another impact the public nature of online social networking has is to display the grief process of many students. This highlighted social pressures that exist following the loss of a peer. The interviewees described feeling a sense of pressure not to grieve unless they were close friends with the deceased. This mirrors previous research that found adolescent survivors of suicide reported they "questioned their entitlement to grieve compared to others they deem to be closer to the deceased, such as family members" (Bartik 2013, p. 215). Although some interviewees also perceived a decreased in bullying, it is evident the social pressure to conform to an unknown expectation for grieving created a tense school environment. Interviewees who were close to the deceased reported feeling angry at other students for constantly posting on the deceased's Facebook page, and attributed these behaviors to attention-seeking. Other interviewees described feeling obligated to "be sad" at school and were uncertain whether it was acceptable to laugh or when observation of the death would be over. On one hand, interviewees

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described a desire for more organized memorial events at school, but on the other hand interviewees did not like the sense of "dwelling" on the suicides or the focus of conversation being on the suicide within the student body.

The effectiveness of the school's intervention was not under investigation, but many interviewees commented on the inconsistencies of the messages they perceived. The school followed a prepared crisis intervention plan primarily informed by recent research emphasizing the need to minimize the memoralization and focus on the suicide(s). After a certain time period, perceptions of interviewees fluctuated from perceiving school officials as supportive and encouraging of the grief process, to unsupportive and expecting students to return to "business as usual." Regardless of media recommendations, it is clear a social world existed online that was a primary source of information for interviewees. This may be a helpful forum for many students and a chance to experience and normalize the grief reactions, but close attention must be paid to emerging sites.

Following the suicide cluster, many interviewees expressed having a new awareness of the reality of suicide in adolescents. Postvention at the school focused on increasing awareness about warning signs in peers and reducing negative social interactions and bullying. Facebook's partnership with the national suicidal hotline (prevention) provides a connection between an online world and outreach resources to assist students seeking support in the online realm. In addition to providing resources to adolescents, the Facebook website now provides an accessible means to report concerns users may have about friends with lesser social ramifications than in-person interventions. Although the CDC suggestions for media are not enforceable online, partnerships between popular social media websites and organizations like the suicide hotline

can encourage open communication about the potential dangers of certain online communications.

Implications

Intervention. A "one-size-fits-most" postvention strategy was not supported by the interview data of this study. The majority of participants discussed the nature of their relationship to the deceased and how it related to their experiences and needs after the deaths. Thus, it appears closeness to the deceased is an important variable to consider and provides insight into the unique needs of students. For example, students found more meaningful support from individuals with experiences similar to their own. Furthermore, interviewees who did not know the deceased well often described feeling uncertain whether they were entitled to having a grief reaction. The unclear social expectations for grieving were associated with anger on the part of students who were close to the deceased (e.g., feeling angry towards students engaging in memorialization or attending grief counseling when they were not part of the deceased's social circle). In students who did not know the deceased well, they were unsure how to "move on" without being disrespectful to other students who were still sad and grieving. This uncertainty and heightened emotionality within the school is a potentially dangerous combination. Some adolescents looked to assign anger or blame in the aftermath of a peer suicide. This, combined with the belief that students who were not close to the deceased may not feel entitled to grieve the loss (Bartik, 2013) may create tension between those who feel angry and do not understand the need for others to grieve, regardless of whether they were close to the deceased.

The typical social norms of the school were interrupted by the non-normative event of a suicide, which created a sense of uncertainty in students. Many students identified this as a positive aspect and appeared more open to learning about topics such as bullying and depression.

Postvention strategies often discuss the warning signs for suicide and appropriate responses. Based on the information of this study, it is important to educate students on the variations of grief responses. This study highlights the importance of educating students on expected grief reactions and the potential for the loss of a peer to trigger previous unresolved loss. Students would likely benefit from normalization of the expected emotional reactions and the different reactions to grief.

Social Networking Policies and Suicide Reporting. The initial reaction of shock to learning of a student's death was expected, but an overwhelming number of participants referred to checking Facebook to confirm the death. The immediate reaction of the interviewees was to share the information, using the internet – a tool of mass, immediate communication. Aside from confirming the death online, further details were often sought in-person, which held more credibility than the online social commentary. The transmission of information via online SNS and SMS messaging occurred significantly faster than the preferred personal dissemination of the death. Thus, school officials must act very quickly to maintain control over the method and context of informing students.

Specific policies exist for school districts and also the media when reporting a suicide. However, implementation of policies governing communication that occurs online following the same event remains largely controversial. Such policies may be necessary, but it is difficult, if not impossible, to write informed policies without first answering some critical questions. Policies created without some understanding of the potential risk and benefits of online SNS are likely to be ineffective and in the absence of strong empirical support will likely be rejected in exchange for freedom of expression. Research has demonstrated a link between copycat suicides and glorifying suicides in the media (Stack, 2003). Online memorial sites should be closely

monitored and the publication of details regarding the method or glorification of a suicide should

be regarded with caution due to the potential for subsequent suicide. Interviewees perceived the

school's response as inconsistent, largely due to the reluctance to organize public memorials for

the deceased. Online SNS served as an alternate forum for memorialization, which in the absence

of monitoring may contribute to suicide contagion.

Future research. Hill and colleagues (2005) encouraged researchers to apply the CQR

method to foster in-depth understanding to inform future investigation of a construct. Many

themes emerging in the current study could be further examined, both quantitatively and

qualitatively, to increase our understanding of the increasing importance of social networking.

One of the key findings of the current study is the apparent integration of in-person and online

social contexts for the upcoming generations. This suggests studies examining only one of the

two contexts are likely to miss important interactions between these two domains.

Although the potential benefit of online SNS was highlighted in the findings of the

current study, in-depth exploration for the potential of online memorials to transmit suicide

among teenagers is necessary prior to implementing online support programs. Future work

should explore ways to disentangle the supportive nature of online communication from the

contagious aspects of suicide in adolescents. Evaluation of the postvention will be necessary to

further clarify the interviewees' perception of support from school officials and focus on the

impact postventions have on students willingness to seek help in a time of grief.

Similarly, interviewees frequently mentioned the nature of their relationship with the

deceased as a qualifier across every domain. The relationship they had with the deceased was

mentioned to describe their understanding of the suicide, the impact it had on them, their

recovery process. Future studies should consider the different needs of students depending on

their relationship to the deceased and the variety of experiences following a suicide or significant loss. Students exhibited different reactions to the same situation in this study, largely based on their relationship to the deceased. This could be replicated in future work to shed light on the specific postvention and intervention strategies. With the increased connection possible through online SNS, the range of impact from a suicide cluster is expanding, and it will be essential to understand the idiosyncratic reactions and needs of adolescents.

Assumptions and Limitations

CQR provides opportunity for researchers to gain a deeper understanding of research participants than other methods that examine large numbers of people using abbreviated or close ended questionnaires. Hill et al. (1997, 2005) suggest a sample size of 8 to 12 is optimal to allow for the depth of communication and data analysis valued by the CQR process. A limitation of the focus on being thorough is the sacrifice of sample size and generalizability. With a small sample, the results should be considered within context. Replication of the current study in another school district or geographical region may produce different results. General themes were the primary focus of this study with hopes to compare across different regions or samples in the future. The frequencies of responses across cases can be used to differentiate ideas that were more common among the current sample. Furthermore, the current study was conducted with adolescents in 9th through 12th grade and may not generalize to individuals of other age groups.

Conclusions

Studies on suicide have predominately focused on understanding risk factors in an effort to prevent suicide. This study demonstrates the strong need for research on the social climate of a school in the aftermath of a suicide cluster. In general, interviewees noted positive aspects of online SNS, suggesting it is a potential medium for supporting adolescents in a time of grief.

However, there is a need to understand the risks of online communication, particularly during a time of social confusion. Beyond educating students about the risk signs for suicide, this study demonstrated the need for education on different grief reactions to allow space for all students to feel safe seeking help for the emotional, cognitive, interpersonal, and developmental impact of losing a peer.

Finally, school officials should familiarize themselves with the features and resources of online SNS. For example, Facebook describes the process of reporting a friend suspected of suicide and provides links to suicide resources in the help center (Facebook Help Center, 2013). These resources would be helpful to students before, during, or after experiencing suicide within the community.

APPENDIX E

OTHER ADDITIONAL MATERIALS

Table E.1

Frequency Characteristics of Students Grade 9-12

Variables	Sub-population (N = 10)		Complete Sample (N = 257)		School District (N = 1221)		State Totals (N = 1 362 047)	
	N	%	*N*	%	*N*	%	*N*	%
Sex								
Male	4	40	107	41.3	655	53.2	697 338	51.2
Female	6	60	148	57.1	576	46.8	664 709	48.8
Ethnicity								
African American			15	5.8	89	7.3	180 356	13.2
Asian/Pacific Islander			9	3.5	31	2.5	51 621	3.7
Bi-racial/Multi-racial			26	10.0	58	4.7	21 654	1.6
Hispanic/Latino	1	10	51	19.7	267	21.8	647 066	47.5
Native American			4	1.5	11	0.9	6720	0.5
White	9	90	149	57.5	766	62.7	454 530	33.4
Grade-Level								
Freshman (9)	2	20	99	38.2	336	27.3	393 553	28.9
Sophomore (10)	1	10	74	28.6	316	25.7	346 898	25.5
Junior (11)	3	30	59	22.8	313	25.4	323 217	23.7
Senior (12)	4	40	25	9.7	266	21.6	298 379	21.9

Table E.2

The Suicide Domain

Domain / Category	Frequency	Illustrative Core Idea(s)
THE SUICIDE	*This domain reflects how students initially learned about the suicide, sought details about the death, and their subsequent understanding of what happened.*	
Sources of Information		
Initially Found Out	GENERAL	
School Officials	TYPICAL	The interviewee heard of his friend's death when someone came into the classroom and read the official notice from a piece of paper.
Friend / Peers / Rumors	VARIANT	When the interviewee arrived at school, some people said he died, but other people said he did not die. The interviewee's first period teacher informed the class, which confirmed his death by suicide.
Online Social Networking	VARIANT	Immediately upon hearing about the suicide, the interviewee sent her boyfriend a text message and he learned about the death before it was announced in his class. The interviewee expressed anger and regret that s/he found out on Facebook and stated she does not think it's appropriate to post about the death at all
Family of the Deceased	RARE	After the interviewee's parents left the house in a rush without an explanation, s/he thought something was wrong, so checked Facebook and saw "RIP *name*" posted by the deceased's cousin.
Sought further details	GENERAL	
Friends / Peers / Rumors	TYPICAL	The interviewee learned details of the suicide through good friends of the deceased. The interviewee learned details about the suicide from classmates, but believes many of the details were rumors.

(table continues)

Domain / Category	Frequency	Illustrative Core Idea(s)
Online Social Networking	TYPICAL	The interviewee turned to Facebook to find out who the deceased was and to see if they had any mutual friends s/he could ask for more details about the death.
Family of the Deceased	VARIANT	The interviewee was close to the deceased and learned details about the suicide from the deceased's parents.
Understanding of the Suicide	TYPICAL	
Rumors / Uncertainty	VARIANT	The interviewee mentioned texting with several people to clarify what happened after reading cryptic posts on Facebook because people felt awkward posting so publically. The interviewee was able to dispel a rumor when her friend came to her asking if the second suicide was done out of respect to the first.
Choking Game	RARE	The interviewee was uncertain whether the death was a suicide or an accidental death from playing a choking game.
Blaming	RARE	The interviewee believed the deceased was let down by his friends because they did not prevent his suicide. The interviewee interpreted rumors about the deceased's girlfriend breaking up with him as peers trying to assign blame.
Viewed deceased as happy	RARE	Other than the alleged text messages threatening suicide, the interviewee did not know of anything to signify suicidal behavior. S/he described the deceased as "happy" and a "class clown".

Note: General (9 or 10 cases); Typical (6-8 cases); Variant (3-5 cases); Rare (1 or 2 cases)

Table E.3

Impact Domain

Domain / Category	Frequency	Illustrative Core Idea(s)
IMPACT	*Impact of the suicides on the individual and impact of Social Networking after the suicides*	
Emotional	GENERAL	
Sadness/hurt/loss	TYPICAL	The interviewee views the hurt everyone experienced as the largest negative impact of the suicides.
Shock	VARIANT	The interviewee felt shocked after the suicide because the deceased was part of the popular group. The interviewee initially experienced shock and confusion because s/he did not notice any signs indicating the deceased might consider suicide.
Anger	VARIANT	After the suicides the interviewee found it difficult to control his/her anger towards others and was hostile over small jokes with friends. Attending counseling helped the interviewee control the anger and sensitivity.
Guilt	VARIANT	The interviewee felt guilty because s/he did not notice the deceased was upset or thinking about suicide.
Increasingly Sensitive / Fear of losing friends by suicide	VARIANT	Everyone within the school was more sensitive during the times the suicides and attempted suicides were occurring.
Overwhelmed	RARE	The interviewee stated s/he was overwhelmed by the text messages of sympathy, which s/he appreciated, but had to turn the phone off.
Behavioral	GENERAL	
Positive Changes in Self	TYPICAL	The interviewee misses the deceased, but believes that having experienced these losses has motivated positive change in who s/he is as a person.
Grades Declined	VARIANT	The interviewee's grades initially went down because s/he was preoccupied with thoughts of the deceased and skipping a lot of school.

(table continues)

(continued).

Domain / Category	Frequency	Illustrative Core Idea(s)
Withdrew	VARIANT	The interviewee avoids talking about the death with family and thought they did not understand how hard it was to return to school after the suicides.
More active Suicide Prevention	VARIANT	The interviewee now pays more attention to friends, especially when they are upset because s/he knows that awareness is important when it comes to suicide prevention.
Cognitive	GENERAL	
New awareness related to Suicide	GENERAL	The interviewee stated his/her life was not directly affected by the suicide, but it has brought up a new awareness of the frequency of suicide in adolescents.
Realization of Death	VARIANT	The interviewee described having a "reality check" that life can end at any moment and now lives one day at a time.
Remaining Desires (related to the deceased)	VARIANT	The interviewee shared a career goal with the deceased and wants to achieve that goal in his honor.
Realization of Bullying	RARE	The interviewee stated the school learned a lot about bullying and the impact it can have on someone.
Philosophical/Spiritual	TYPICAL	Since the suicides, the interviewee considers life more valuable and attends church more often.
Interpersonal (Relationships)	TYPICAL	
Strengthened	TYPICAL	The interviewee believed seeing the variety of people who loved the deceased increased connection and allowed the students to grow closer.
Negatively Impacted	VARIANT	The interviewee explained s/he has lost as well as gained friends while coping.
Social Networking (Online)	TYPICAL	
Positive	TYPICAL	The interviewee felt that Facebook united the student body because it was a medium for discussing the death.

(table continues)

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Domain / Category	Frequency	Illustrative Core Idea(s)
Negative	TYPICAL	The interviewee described a negative comment that was made about the deceased on Facebook and most students were impacted, but teachers were unaware of the incident.
Unaffected / Lack of Impact	TYPICAL	
Overall little impact	VARIANT	The interviewee was not directly impacted by the news of the suicides because s/he did not know the deceased well.
Relationships	VARIANT	The interviewee's relationship with family was not affected by the suicides.
Religion	VARIANT	The interviewee described going through some spiritual changes prior to the suicides, but reported his/her views were not impacted by the deaths.
Grades	RARE	The interviewee stated s/he did not experience a drop in grades, but was initially less motivated to do schoolwork and keep his/her room clean.
Impact of the Interview (Experience of the Interview)	VARIANT	Over the course of the interview, s/he expressed insight into the connection made between bullying and his/her fear that others will consider suicide.

Note: General (9 or 10 cases); Typical (6-8 cases); Variant (3-5 cases); Rare (1 or 2 cases)

Table E.4 Perceptions of School Environment

Domain / Category	Frequency	Illustrative Core Idea(s)
PERCEPTIONS OF SCHOOL ENVIRONMENT	*Reflects the student's perceived the effects of the suicides within the school and community.*	
Positive impact	TYPICAL	The interviewee believes the deaths influenced people to talk more openly about suicide and take steps to prevent future losses.
Reduced Bullying	VARIANT	The interviewee believes that although bullying still happens, other students are more likely to intervene
Increased Connection	VARIANT	The interviewee felt the posts on Facebook helped unified students after the deaths.
Temporary Unity	VARIANT	The interviewee believed the connections made after the suicides had a positive effect on the school environment, even though only some of them lasted.
Online	TYPICAL	The Interviewee described a negative incident that happened on Facebook and triggered a school-wide protective response and reminded students of the loss.
Reminder of the suicides via peers	TYPICAL	The hardest thing since the deaths has been talking to the deceased' siblings, or when the deceased is mentioned in conversation, because it reminds him/her of the loss.
Uncertainty about grieving (the right to grieve)	TYPICAL	The interviewee was protective of her relationship with the deceased and resented others who were grieving despite not being as close with him.
Emotional Climate	TYPICAL	Attending school after the suicide was difficult due to the depressing atmosphere The interviewee felt the deaths impacted the energy of the whole school, stating "it just felt weird to be happy" after a loss of someone in your own grade.

(table continues)

(continued)

Domain / Category	Frequency	Illustrative Core Idea(s)
Perceptions of school interventions	TYPICAL	The interviewee expressed confusion about the school's lack of participation in organizing memorial events for the deceased because they were initially supportive of coping efforts.
Highly focused on the suicides/rumors	VARIANT	The interviewee believes some people dwelled on the deaths and had difficulty letting it go. The interviewee felt that some students continued to talk about the deceased, which made it difficult to move on.
Negative Impact	VARIANT	An event that was not associated with the suicides was perceived as related due to the emotional climate and hurt of the school

Note: General (9 or 10 cases); Typical (6-8 cases); Variant (3-5 cases); Rare (1 or 2 cases)

Table E.5 Recovery Domain

Domain / Category	Frequency	Illustrative Core Idea(s)
RECOVERY	Interviewee accounts of things helped or hindered their grieving process.	
Support Seeking	GENERAL	
Peers	TYPICAL	Interviewee found talking with close friends helpful, but was unable to recall details of any conversations
Online (Facebook)	TYPICAL	Interviewee checked the Facebook pages to see how others felt about the deceased
Professional	VARIANT	After attending counseling and finding support with friends was able to "get back to normal".
Provision of Support	VARIANT	Interviewee copes by being around friends and offering support to those who need it.
Avoidance	GENERAL	
Behavioral	VARIANT	Interviewee attempted, but ultimately did not attend school for 3 weeks after the death
Emotional	VARIANT	The interviewee prefers to keep his/her feelings bottled up
Cognitive	VARIANT	The interviewee avoids thinking of the deaths to cope
Online	RARE	I.. did not visit the deceased's FB page, stating that s/he "blocked that out" S/he felt overwhelmed with constant phone calls and messages. Although s/he appreciated the sentiment, she turned off her phone because it was too much to handle.
Memorialization	GENERAL	
Funeral / Visiting Grave	RARE	S/he was amazed at how many students attended the funeral. For example, the whole Football team was there, the school sang the deceased's favorite song and many teachers were there. Although the Interviewee thought visiting the gravesite would be difficult, she found it helped her with coping

(table continues)

Domain / Category	Frequency	Illustrative Core Idea(s)
School Events	VARIANT	Interviewee recalled a balloon release that took place at the school in honor of the deceased, which showed how many people cared about him
Online	GENERAL	Interviewee described a Facebook page that someone created in honor of the deceased where people shared information about the funeral, but also provided a place for students to post messages about the deceased.
Factors that Hindered	GENERAL	
Online	TYPICAL	"Facebook is horrible…it hinders everybody's recovery and everybody's state of mind"
Constant Reminders	VARIANT	When the interviewee would log onto Facebook all s/he would see is posts about the deceased
Lack of Respect	RARE	Reading others' posts was also helpful to show others felt the same way, but some posts were rude and impacted the interviewee negatively.
Beliefs about the Deceased	VARIANT	The interviewee believed part of the difficulty was how hard it is to mourn the loss of someone so young.
"Dwelling"	VARIANT	Interviewee used to visit his grave daily, but does not go as much because it hindered coping
Expectations for Grieving	VARIANT	After a while the interviewee did not know how to feel about the suicide, s/he reported internal conflict about remaining respectful to the student and those close to him, but wanted to move on with life.
Acceptance of "Suicide"	RARE	Interviewee is bothered by calling the death a suicide and believes it was an "accidental hanging."
Subsequent Deaths	RARE	The interviewee believed students' recovery was hindered by the string of deaths and attempts because they were constant sources for grief.

Domain / Category	Frequency	Illustrative Core Idea(s)
Anger / Blaming	RARE	Expressed feelings of anger towards those who did not offer help to the deceased and believes others feel the same way
Prolonged Relationship with the deceased	TYPICAL	
Online	TYPICAL	The interviewee still regularly looks at the Facebook page of his brother The Interviewee visits the Facebook page of the deceased to view pictures and reminisce about good times
Talking to / visiting grave	VARIANT	Interviewee talks to the deceased and believes s/he can hear him/her Initially the interviewee visited his grave everyday, but stopped because s/he believed it hindered his/her coping.
Realization of the Loss	RARE	
Funeral	RARE	Going to his grave and coming to realization of his death has been the hardest and the best part. Interviewee attended both students' funerals and stated the viewing made the death a reality.
Online	RARE	Interviewee visited the deceased Facebook page to come to realization of his death
Personal Experience/Other Losses	RARE	
Personal Experience	RARE	The interviewee stated s/he continuously deals with bouts of depression and has discussed having suicidal thoughts with his/her dad
Other Losses	RARE	Interviewee described another loss that she believes helped her learned to cope with these suicides. Interviewee lost her father to a drug overdose and expressed initially losing hope and feeling alone, but ultimately being stronger and more independent because of it.

Note: General (9 or 10 cases); Typical (6-8 cases); Variant (3-5 cases); Rare (1 or 2 cases)
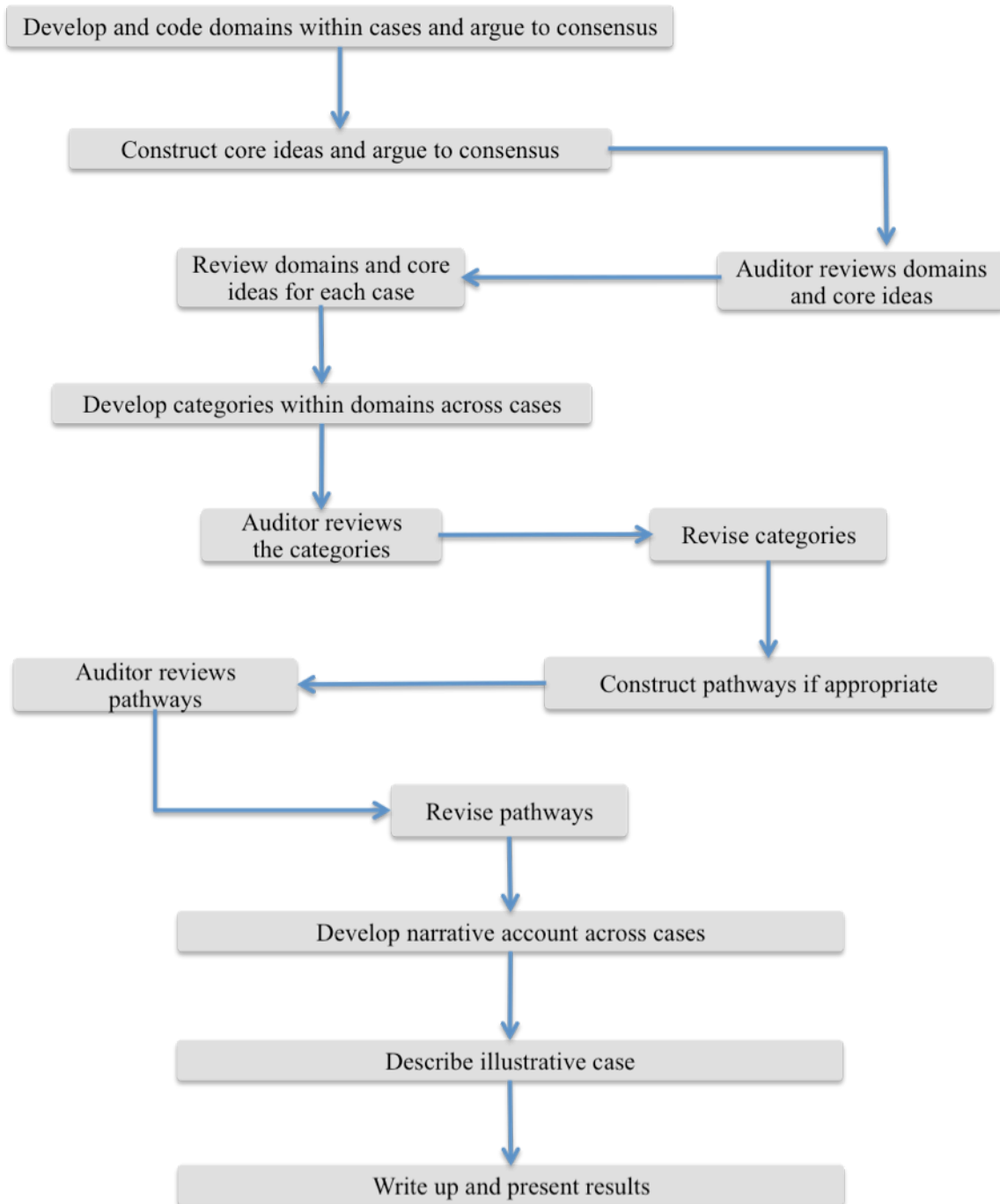
Figure E.1. Consensual qualitative research flow chart.

Appendix E.1

Qualitative Interview

1. How did you first find out about the suicides at (high school name) last year?
   a. How did you learn about the details of the student(s) death(s)?***

2. What were your initial feelings?
   a. How has that changed over the past year?

3. In coping with your loss(es), what have you found helpful?
   a. What interactions have been helpful?

4. What hindered your recovery?

5. What do you remember about the school environment after the suicide(s)?

6. How did social networking (i.e. Facebook) help or hinder your recovery?
   Were you friends with any of the students on Facebook?
   Did you visit any of their FB pages after they died?
      How soon?
      What for?
      When was the last time you looked at that FB page?
   How did the posts on the FB page impact you?
      Do you remember any specific posts?

7. How do you think the posts on Facebook impacted the school environment at _____?

8. What has been the hardest thing for you since the student(s) death?
   Did you attend any of the student's funeral(s)?

9. How has your life been affected by this death?
   School? Grades?
   Relationships with friends? Family?
   View on life? Spirituality?
   Think about death? Suicide?
   (Want positive and negative aspects)
   (Probe for emotions)

10. Have there been any positive things that happened as a result of this death?

11. Is there anything that you think is important for me to know that I have not asked?

12. As we talk, has this brought up a new awareness for you, or anything unexpected?

COMPREHENSIVE REFERENCE LIST

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