Short communication

Crisis text patterns in youth following the release of 13 Reasons Why Season 2 and celebrity suicides: A case study of summer 2018

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ABSTRACT

There is considerable debate in the public arena and among the professional mental health community around the media’s role in increasing suicide risk following exposure to suicide-themed media in youth. A recent example involves the concerning reaction to the release of Netflix’s controversial hit teen-suicide drama 13 Reasons Why. This follow-up study examined the association between the release of 13 Reasons Why Season 2 (13RW2), which coincided with two celebrity suicides, and national trends in crisis-related text conversations. We implemented an interrupted time series design to examine changes in daily counts of crisis texts aggregated at the national level following two events: (1) the release of 13RW2 and (2) celebrity suicide deaths of Anthony Bourdain and Kate Spade. We also performed a sub-analysis of suicide-related crisis conversations following each event. Crisis conversation volume was 42% higher after the release of 13RW2 for 6 of the 18 days of the study period, while crisis text usage was 51% higher for 9 out of the 18 days after the publicized celebrity suicide deaths. Both the release of 13RW2 and the celebrity suicides in the summer of 2018 were followed by an abrupt, but transient rise in crisis help-seeking among adolescents. Media outlets should consider pairing suicide-themed content with crisis support services as a core best practice to reduce the risk of population-level adverse reactions to suicide portrayals or coverage.

1. Introduction

The publicized suicide deaths of celebrities and media portrayal of deliberate self-injury are often associated with increased symptomatology among those who are currently suffering from mental health impairments (Ayers et al., 2017, Cooper et al., 2018). In 2018, several noteworthy events including the release of 13 Reasons Why Season 2 (13RW2), a popular fictional show that grapples with adolescent suicide, and the deaths of two celebrities, Anthony Bourdain and Kate Spade, sparked a public debate about how these events are publicized and portrayed in the context of steadily rising suicide rates in the U.S., now the second leading cause of death among persons 10–24 years of age (CDC, 2016).

Recent research estimated that one suicide might potentially influence up to 135 individuals (Cerel et al., 2018); whereby, adolescents are the most susceptible to imitating suicidal behavior following exposure to a death by suicide (Poland et al., 2019). Text-based crisis counseling services are a rather new and under-researched platform that offers youth in crisis access to cost-free and immediate help. Limited research has shown high acceptability among youth for these texting services and a subsequent reduction in suicide rates when used (Sindahl et al., 2018, Ranney et al., 2018).

Results from emerging research examining the relationship between the release of 13 Reasons Why Season 1 and increased suicides in youth have been mixed. For example, a recent intervention analysis comparing national suicide rates in adolescence (10–17 years), emerging adulthood (18–29 years), and early-to-mid adulthood (30–64 years) groups before and after the release of Season 1 revealed an increase in suicides for male adolescents (10–17 years) post-release (Bridge et al., 2019). Similarly, in a time series analysis of suicides among young people (<30) from Ontario, Canada in the 4 years before the release of Season 1 and afterwards (April to December 2017),
the model predicted 224 deaths. However, 264 suicide deaths were observed in the province of Ontario during the follow-up period, or 18% more than expected (Sinyor et al., 2019). On the other hand, a recent meta-analysis demonstrated inconsistencies in the current evidence-base for suicide in viewers exposed to fictional media due to a number of methodological (e.g., aggregate designs, ecological fallacy, publication bias) and data limitations (Ferguson, 2018). More recently, Arendt et al. conducted an in-depth analysis of 729 viewers (18–29 years) of Season 2 and showed that the fictional portrayal of suicide-themed content could have both adverse and health-promoting effects (2019).

The objective of this quasi-experimental study was to explore national help-seeking patterns in youth following the release of 13RW2 and the widely publicized celebrity deaths in the summer of 2018 to examine how these events are temporarily related to trends in Crisis Text Line (CTL) usage. Our current study is a follow-up to previous work, which identified a significant decline in CTL usage following the release of 13RW Season 1 (Thompson et al., 2019). CTL is a non-profit organization that provides a nationally available and confidential text message service for individuals in crisis and is featured in 13RW Season 2 as a resource for viewers. We hypothesized that the release of 13RW2 and the two celebrity deaths would result in an immediate and temporary spike in crisis conversations, a proxy for help-seeking behavior. Text message-based crisis support services offer an unprecedented opportunity to connect at-risk adolescents with effective, accessible crisis services at no cost.

2. Data

Anonymized CTL text messaging data was obtained from January 20 to October 31, 2018, for the entire US (n = 584,157) (Fig. 1). Crisis conversations spanned a range of topics, including “Depression,” “Sadness,” “Anxiety” to “Suicidal Thoughts” (Crisis Trends, 2018). Due to privacy concerns, for the purpose of this analysis, crisis texts were aggregated to include daily counts of CTL conversations for any reason, and a smaller subset of crisis texts were analyzed that were tagged by crisis counselors as “suicidal thoughts.” At the end of each crisis conversation, CTL administers an optional survey that collects demographic information on the caller. Survey responses (n = 187,776) showed that 8 out of 10 texters were under the age of 24; whereby individuals ages 14–17 years were the largest user group of CTL (40%), followed by the 18–24 (25%) and the ≤ 13 age groups (15%), respectively.

3. Methods

Following the same methodology in our previously published brief (Thompson et al., 2019), we performed an interrupted time-series analysis using autoregressive integrated moving average (ARIMA) modeling of a time series of daily crisis text counts to determine the expected number of crisis texts during the days following each event. Two separate forecasts were predicted following the release of 13RW2 for May 18 (release date) to June 4 (the post-intervention period for forecasts 1) and June 5 to June 22 (the post-intervention period for forecasts 2) following the suicidal deaths of Kate Spade and Anthony Bourdain (June 8), national celebrities whose deaths received significant media attention.
Bourdain (Fig. 2). The 18-day cut-off was chosen based on the number of days between 13RW2’s release and the celebrity deaths and is a similar length as Ayers et al. (2017)’s forecast of 13RW Season 1. Seasonality was not adjusted for in the model given the short duration of the time series. The ARIMA model (7, 0, 1) and (5, 1, 3) was used to examine the difference in observed and forecast for the expected crisis texts with 95% confidence intervals (CIs) using the astra package in R (R Core Team, 2018, Stoffer, 2017). This analysis was repeated for

Fig. 2. (A) Expected national-level CTL crisis conversations (grey line) and 95% confidence level (grey shading) compared to observed crisis conversation (black line) for the forecasted May 18 to June 22 period. Excess national-level crisis conversations were maximized on June 9 after the death of Anthony Bourdain. (B) Expected national-level CTL suicidal thought conversations (grey line) and 95% confidence level (grey shading) compared to observed crisis conversation for suicidal thoughts (black line) for the forecasted May 18 to June 22 period. Red dashed lines depict the release of 13 Reasons Why Season 2 (May 18), Kate Spade’s suicide (June 5) and Anthony Bourdain’s suicide (June 8).
national-level crisis conversations related to “suicidal thoughts” (n = 60,028). An ARIMA model (0,1,1) and (1,0,0) was used to examine the differences in observed and expected conversations. Significance was tested for different periods using a paired-t-test of bootstrapped samples of the difference for expected versus observed CTL conversations (α = 0.05). Study approval was obtained from the Institutional Review Board (IRB) at Appalachian State University (IRB #19-0174).

4. Results

An excess of approximately four times the expected volume of crisis conversations (n = 20,500 95% CI: 3700–37,300) occurred from May 18 to June 22, the entire post-intervention period. Following the release of 13RW Season 1, which noted a significant decline in CTL conversations following the release of 13RW Season 1, a significant rise in excess conversations following the suicide deaths of Anthony Bourdain and Kate Spade (6/5–6/22) were nearly 2.7 times higher than CTL conversations following the release of 13RW2 (5/18–6/4).

The subanalysis of suicidal thought-related crisis texts found similar trends with an excess of 4782 crisis conversations (95% CI: 3163–6402) or an increase of 31% suicide-related texts for the entire post-intervention period (May 18–June 22). Expected versus observed differences for CTL conversations related to suicidal thoughts demonstrated a 51% increase in excess conversations following the suicide deaths of Anthony Bourdain and Kate Spade (n = 2829, 95% CI: 1915–3742) compared to the release of 13RW2 (n = 1868, 95% CI: 1201–2535).

5. Discussion

The release of 13RW2 and celebrity suicides are temporally correlated with significant spikes in crisis conversations. Our quasi-experimental design study is the first to use high resolution, national text-based data that reveals a significant relationship between highly publicized celebrity deaths by suicide, and media portrayals of suicide and help-seeking patterns among young people. Our results build upon the research team’s prior research examining CTL conversations following the release of national-level crisis conversations related to “suicidal thoughts” (n = 60,028). An ARIMA model (0,1,1) and (1,0,0) was used to examine the differences in observed and expected conversations. Significance was tested for different periods using a paired-t-test of bootstrapped samples of the difference for expected versus observed CTL conversations (α = 0.05). Study approval was obtained from the Institutional Review Board (IRB) at Appalachian State University (IRB #19-0174).

An excess of approximately four times the expected volume of crisis conversations (n = 20,500 95% CI: 3700–37,300) occurred from May 18 to June 22, the entire post-intervention period. Following the release of 13RW2, observed CTL volume for 6 of the 18 days studied were significantly higher than expected with an excess of 4302 crisis conversations (95% CI: 2090–6514). The publicized suicide deaths of celebrities resulted in significantly more than expected CTL use for 9 out of the 18 days with an excess of 11,544 crisis conversations (95% CI: 6771–16318). Expected versus observed differences for CTL conversations following the suicide deaths of Anthony Bourdain and Kate Spade (6/5–6/22) were nearly 2.7 times higher than CTL conversations following the release of 13RW2 (5/18–6/4).

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.pmedr.2019.100999.

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