



## Thirteen Reasons Why: The impact of suicide portrayal on adolescents' mental health



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### ABSTRACT

We aimed to investigate the influence of media portrayals of suicide on adolescents' mood, focusing on the case of *13 Reasons Why*, a webseries that raised concerns for approaching suicide explicitly for an audience mostly composed of adolescents. There is already evidence of an increase in suicide-related Internet searches shortly following its release. Our study included 7004 individuals aged 12–18 years. Participants were recruited through posts on *13 Reasons Why*-themed social media groups. Volunteers filled an online questionnaire made available throughout May 2017 (54–71 days after the show was released). The questionnaire collected data on socio-demographic characteristics, mood (sadness and lack of motivation) in the month previous to watching the series, and prevalence of self-harm, suicidal ideation, or suicide attempts. Changes in mood were considered the main outcome; the variable was derived from a question asking about feelings of sadness and lack of motivation after watching the show. Overall, 23.7% reported worsening in mood after watching *13 Reasons Why*. This rate was higher among individuals who, before watching the series, experienced more frequent and intense feelings of sadness and lack of motivation (OR 2.73 for frequent or daily feelings; OR 3.61 for intense feelings) or reported suicidal ideation/self-harm/suicide attempt (OR 1.38), even after controlling for sex and age. In times of easy access to digital content and binge-watching, the way mental health issues are portrayed in fiction needs to be carefully debated and thought out.

### 1. Introduction

Suicide is a major public health problem, with vast social, economic, and emotional consequences; over 800,000 people die by suicide every year, 78% of whom in low- and middle-income countries. Statistics on suicide in adolescence are especially concerning: suicide was the second leading cause of death among those aged 15–29 year-old worldwide in 2015 (World Health Organization, 2018).

Despite its well-known public health implications, the extent to which it is safe to inform, discuss, and portray suicide within society is yet unknown. For instance, in many countries, legislators have made it illegal for journalists to report the cause of death by suicide, mainly based on the idea that suicidal behavior might spread after portrayal in the media. The World Health Organization recently published detailed guidelines on how to properly approach suicide in the media and what

should be avoided when doing so (World Health Organization, 2017). However, to the best of our knowledge, there is no direct evidence to support or refute the hypothesis that suicidality might be influenced by the media, nor in what direction that effect will strike (Sisask and Värnik, 2012).

In this study, we aimed to investigate the influence of the portrayal of suicide in a recent, popular webseries (*13 Reasons Why*) on mood and behavior. This series raised concerns for approaching the theme of suicide explicitly for an audience mostly comprised of adolescents (American Foundation for Suicide Prevention, 2017; Arendt et al., 2017; Butler, 2017; Canadian Mental Health Association, 2017; International Association for Suicide Prevention, 2017; Rosman, 2017; Stafford, 2017). Evidence has already shown an increase in suicide-related internet searches shortly after the series release (Ayers et al., 2017). A large survey of more than 20,000 adolescents reported

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decreased ideation among most viewers after watching the show; however, a history of depression or suicidality was associated with worsening suicidality after watching the show (Zimerman et al., 2018). A recent study commissioned by the producers of *13 Reasons Why* interviewed 5400 adolescents, young adults, and their parents and reported beneficial effects of the show on coping with depressive feelings and suicidal thoughts (Lauricella et al., 2018). We provide evidence from an independent study that investigated the association between watching the series and change in depressive mood among adolescents. We hypothesized that vulnerable adolescents with a history of sadness and lack of motivation would more frequently experience worsening in mood after watching *13 Reasons Why*.

## 2. Methods

### 2.1. Participants and procedure

Brazilian adolescents (age 12–18 years) were recruited through posts on *13 Reasons Why*-themed social media groups (e.g., Facebook and WhatsApp) requesting voluntary participation in the study. Those who volunteered were redirected to an online questionnaire available on the Google Forms platform from May 5 to May 22, 2017 (54–71 days after the show was released). The form first informed potential participants about the study privacy and data handling policy. All data were collected anonymously. Anyone could fill out the questionnaire; however, the informed consent statement was worded “If you have watched the series and agree to participate, fill out the form and click submit”. After completing the questionnaire, participants were advised to contact a support institution if necessary. The study was approved by the Ethics Committee of Hospital de Clínicas de Porto Alegre (protocol #2016–0464).

### 2.2. Study instrument

The questionnaire assessed depressive mood and suicidality in the month prior to watching the series and after watching the series. Further questions focused on individual reactions and experiences related to the content of the show, as well as sociodemographic characteristics.

Changes in mood after watching the series were considered the main outcome; the variable was derived from a question asking about feelings of sadness and lack of motivation. The options were: (i) “I felt way more demotivated, sad and unenthusiastic”; (ii) “I felt demotivated, sad and unenthusiastic”; (iii) “I felt no difference in terms of sadness and lack of motivation”; (iv) “I felt a little more motivated, happy and cheerful”; (v) “I felt way more motivated, happy and cheerful”. We classified subjects into two categories: “no change or better mood after watching the series” (iii, iv, v) and “worsening in mood after watching the series” (i, ii).

Mood before watching the series and suicidal ideation/self-harm/suicide attempt were considered factors. The first was derived from the question “In the month prior to watching the show, have you been sad, lacking in motivation, and unwilling to do anything?”. Options were: (i) “Yes, I had daily very intense feelings”; (ii) “Yes, I had daily mild feelings”; (iii) “Yes, I often had intense feelings”; (iv) “Yes, I often had mild feelings”; (v) “Yes, I had rare but intense feelings”; (vi) “Yes, I had rare mild feelings”; and (vii) “I did not feel that way”. We then classified subjects into three categories: “no or rare feelings” (vi, vii), “frequent or daily feelings” (ii, iv), “rare/frequent/daily intense feelings” (i, iii, v).

The suicidal ideation variable was derived from the question “Have you ever thought about taking your own life or hurting yourself on purpose? Have you ever done this?”. Options were: (i) “I have never thought about taking my own life and I have never hurt myself on purpose”; (ii) “I have already thought about taking my own life but have never hurt myself on purpose”; (iii) “I have tried to take my own life and have hurt myself on purpose”; (iv) “I have thought about taking my own life and have

hurt myself on purpose”; and (v) “I have hurt myself on purpose but have never thought about taking my own life”. Individuals were considered to belong to the suicidality group when choosing any option from ii to vii.

The impact of the series was investigated qualitatively through an open-ended question inquiring about feelings toward the main character.

### 2.3. Data handling and analysis

We excluded individuals outside the target age range and those with missing or inconsistent data on the questionnaires. Changes in mood were classified into two variables: “no change or better mood after watching the series” and “worsening in mood after watching the series”. We used chi-square statistics to investigate the association between worsening in mood after watching and: 1) intensity and frequency of feelings of sadness and lack of motivation prior to watching the series; and 2) previous suicidal ideation or suicide attempt.

When there were more than two categories, we tested for pairwise differences using chi-square tests with Bonferroni-corrected alpha (to 0.016). We performed a binary logistic regression to ascertain whether these factors were associated with worsening in mood after watching the series when controlling for age and sex. Statistical analyses were carried out in IBM SPSS Statistics for Windows, Version 25. Missing data were excluded listwise.

Words chosen by the participants to express their feelings towards the main character were analyzed using NVivo 11. Content clouds were created to visualize the frequency of words across groups by changes in mood: 4294 valid cases from the “no change or better mood after watching the series” and 1351 valid cases from the “worsening in mood after watching the series” group could be included. Since the question was open-ended, many participants answered it with sentences and not only five words related to feelings as requested. Nevertheless, we included all entries due to the ability of the software to detect frequency of mentioned words, which was the main goal of the analysis. The 38 most frequent words were used to plot the clouds. The more prominent the representation of a word in the cloud, the higher its frequency in responses. Words highly similar in meaning were grouped (e.g., sad/sadness, happy/happiness), and words with no evident relation to feelings were excluded.

## 3. Results

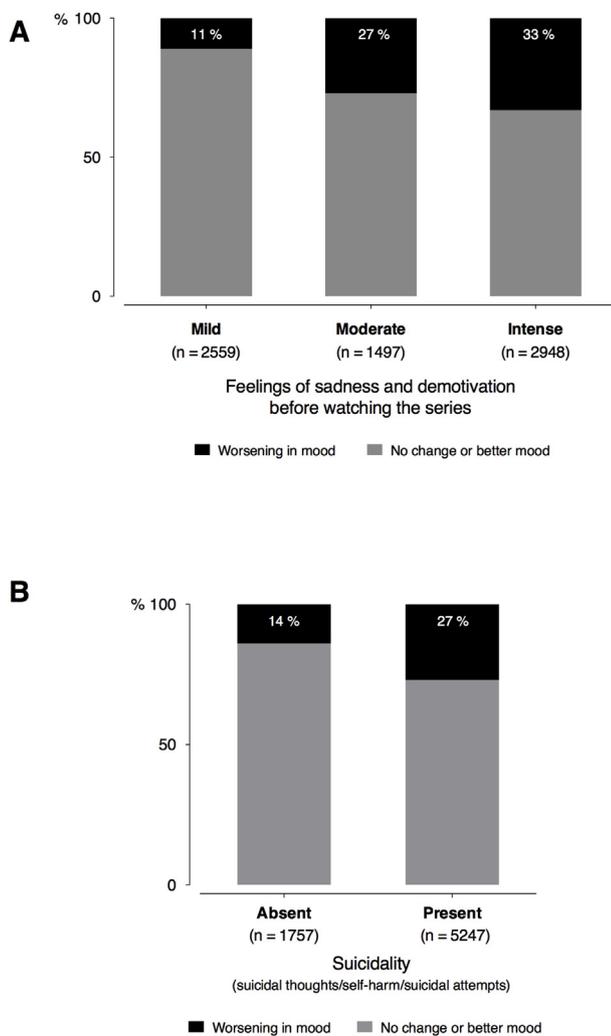
### 3.1. Sample characteristics

The questionnaire was completed by 9878 individuals, of whom 7004 were included in the present study. Of the 2874 participants excluded, 1879 were aged > 18 years and 995 completed age or sex information inappropriately (e.g., selected more than one option or did not report age and sex) or had missing data. Sample characteristics are described in Table 1.

Descriptive statistics on mental health as assessed by our form are shown in Table 1. The prevalence of previous suicide attempts was higher in females than in males (12.8% vs. 8.6%,  $\chi^2 = 15.4$ ,

**Table 1**  
Sample characteristics.

Age in years, mean $\pm$ SD	14.8 yrs $\pm$ 1.85
Female sex, n (%)	5870 (84)
Feelings of sadness and demotivation before watching the series	
Mild (absent or rare)	2559 (37)
Frequent Moderate (frequent or daily)	1497 (21)
Intense (regardless of frequency)	2948 (42)
Suicidal ideation, n (%)	3444 (49)
Self-harm, n (%)	2397 (34)
Suicide attempt, n (%)	849 (12)



**Fig. 1. Worsening in mood** stratified by feelings of sadness and lack of motivation (mild, moderate, intense) before watching the series (A) and suicidality (presence or absence of suicidal thoughts/self-harm/suicidal attempts). (B) Chi-square,  $p < 0.0001$ . *Mild*: absent or rare feelings of sadness and lack of motivation; *Moderate*: frequent or daily feelings of sadness or lack of motivation; *Intense*: severe feelings of sadness or lack of motivation, regardless of frequency.

$p < 0.001$ ). This prevalence was highest at the ages of 17 (16.8%) and 16 years (13.9%) and lowest at the ages of 12 (7.7%) and 13 (8.7%). Only 25% of the sample reported never to have had any suicidal behavior or ideation.

**Table 2**

Binary logistic regression – predictors of mood worsening after watching the series (N = 7004).

	$\beta$	S.E.	Wald	df	Sig.	OR (95% CI)
Male sex	-0.27	0.08	11.31	1	< 0.01	1.30 (1.12–1.52)
Age	-0.09	0.02	32.94	1	< 0.001	0.91 (0.88–0.94)
Feelings of sadness or demotivation						
Mild (absent or rare)			257.01	2	< 0.001	
Moderate (frequent or daily)	1.01	0.09	127.31	1	< 0.001	2.73 (2.29–3.25)
Intense (regardless of frequency)	1.28	0.08	255.79	1	< 0.001	3.61 (3.09–4.23)
Suicidality (suicidal thoughts, self-harm occurrence or suicidal attempt)	0.32	0.08	15.10	1	< 0.001	1.38 (1.17–1.63)

Nagelkerke's  $R^2 = 0.09$ .

### 3.2. Changes in mood and their relation to mood and suicidality before watching the series

When asked about changes in mood after watching the series, 32.1% of respondents reported improvement (“I felt way more motivated, happy and cheerful” - 11.2% or “I felt a little more motivated, happy and cheerful” - 20.9%), while 23.7% reported worsening (“I felt more demotivated, sad and unwilling” - 16.8% or “I felt way more demotivated, sad and unwilling” - 6.9%). Nonetheless, worsening in mood was significantly associated with feelings of sadness and lack of motivation previous to exposure ( $\chi^2(2) = 368.1$ ,  $p < 0.0001$ , Fig. 1A). Worse in mood was also associated with risk of suicide ( $\chi^2(1) = 120.9$ ,  $p < 0.0001$ , Fig. 1B). A higher proportion of those adolescents who already had more severe or frequent feelings of sadness/lack of motivation and suicidal thoughts/self-harm/suicidal attempts reported a worsening in mood after watching the series.

A logistic regression was performed to ascertain the effects of mood before watching the series and suicide risk on the likelihood of experiencing worsening mood, controlling for sex and age ( $\chi^2(5) = 449.72$ ,  $p < 0.001$ ,  $n = 7004$ ). Sex, age, feelings of sadness and lack of motivation, and reported occurrence of suicidal thoughts/self-harm/suicidal attempts added significantly to the model (Table 2).

### 3.3. Changes in mood and qualitative analysis of reported feelings towards the protagonist

The qualitative analysis was performed by comparing groups according to changes in mood after watching the series. As noted above, the 38 most frequently mentioned words are presented in content clouds (Fig. 2A and B). The top 8 words were very similar between groups, although the weighted percentages of each word were slightly different (*sadness*: 29.9 vs. 31.2%; *pity*: 10.3 vs. 6.8%; *anger*: 6.6 vs. 6.4%; *pain*: 4.7 vs. 5.0%; *loneliness*: 4.4 vs. 6.7%; *anguish*: 4.3 vs. 4.6%; *love*: 4.2 vs. 2.8%; *fear*: 3.6 vs. 4.3% for the “no change or better mood” vs. “worsening in mood” groups, respectively; these first 8 words represent 60% vs. 62% of words mentioned). Fig. 2C and D present only words ranked 9th to 38th (which represent 20% of all words for both groups) in order to evince differences between groups when not considering the 8 most frequently mentioned words. This visual representation shows that subjects who reported worsening in mood mentioned words with a negative connotation more frequently than those who reported improvement or no change in mood after watching the show.

## 4. Discussion

The primary finding of this study was the higher proportion of adolescents reporting worsening in mood after watching the webseries *13 Reasons Why* among those who already had more severe or frequent feelings of sadness and lack of motivation. Likewise, more individuals with previous suicidal ideation, self-harm behavior, or history of suicidal attempt reported a worsening in mood after watching the series.



**Fig. 2.** Content clouds of words related to feelings towards the protagonist. Clouds with words ranked 1st to 38th for those who experienced *no change or better mood* (A) and *worsening in mood* (B) after watching the series reveal similar frequencies for “anger”, “anguish”, “fear”, “loneliness”, “love”, “pain”, “pity” and “sadness”. The next words most often mentioned among participants who experienced *no change or better mood* after watching the series were “compassion”, “help” and “empathy” (C), while among those who reported *worsening in mood*, the words most frequently mentioned were “despair”, “lack of motivation” and “depression” (D).

These results highlight the importance of bearing in mind how vulnerable individuals might be differentially impacted by media content. Uncovering how different ways of portraying suicide might affect mood could also improve our understanding of the general context. Although several studies support an association between irresponsible media reports of suicide and suicidal behavior, literature on the matter is limited and subject to reporting bias, has assessed mostly negative short-term effects, and has failed to investigate qualitatively the impact of representing suicide and advertising coping strategies (Sisask and Värnik, 2012).

Given the extended reach and potential impact of film and television, the frequency of depictions of suicidality in audiovisual media is noteworthy: Stack and Bowman (2011) identified portrayals of suicide in 1158 U.S. films from 1900 to 2009. Although reports of real suicides are more likely to be associated with copycat effects than fictional ones (Stack, 2003), significant associations supporting the contagious effect of films have also been reported (Gould and Shaffer, 1986; Schmidtke and Häfner, 1988). A meta-analysis on the evidence of copycat behavior after fictional suicidal portrayals suggests that heterogeneous results (i.e., supporting vs. rejecting the association) might be explained by the age of the studied sample, among other factors (Stack, 2009). Adolescents, often looking for social integration and with a higher drive for acceptance, are more prone to be influenced. A range of other factors—e.g., identification with the protagonist (Till et al., 2015)—might render people more vulnerable to fictional content. As in the case of stress, where factors that explain resilience/vulnerability and consequences to mental health are not yet fully understood (Oken et al., 2015), we are only beginning to discern those factors contributing to responses triggered by suicidal portrayals in fiction. In our study, age and previous mood state were associated with higher rates of negative outcomes in mood. In an experimental study, Till et al. (2015) found that a film portraying the protagonist's suicide led viewers to experience deterioration of mood but increase in self-worth, especially in individuals with lower suicidality scores before watching the film. While these results seem to contradict our findings, they probably point

to a different phenomenon, since in the study by Till et al. only participants with scores of suicidality and depression below the recommended cutoffs were included in the experiment for ethical reasons. Nevertheless, almost one-quarter of our subjects reported feeling lack of motivation and sadness after watching *13 Reasons Why*, which justifies the concerns prompted by the wide release and Internet broadcast of the series (Arendt et al., 2017).

However, our results should be interpreted with caution, given that our sample was mostly recruited through media network groups, the participants were all Brazilian, and the questionnaire used was not a validated instrument for assessment of mood or suicidality. Nevertheless, the results seem plausible, and this methodology allowed us to conduct a large, innovative, cross-sectional study that adds to information already gathered by ecological studies on the effects of fictional suicide portrayals on mood.

In summary, our results showed a relatively high rate of reported worsening in feelings of sadness and lack of motivation after watching *13 Reasons Why*. Furthermore, these rates were higher among individuals who already experienced frequent feelings of sadness and lack of motivation before watching the series and reported a history of suicidal ideation, self-harm, or suicide attempt. Evidence suggests that narratives on suicide that adhere to well-recognized guidelines and feature ways of coping with difficulties and suicidal thoughts might be a helpful tool for suicide prevention (Niederkroenthaler et al., 2010). Recommendations from official organizations on how suicide should be portrayed and specific material to help viewers understand and guide their discussions on the tough topics raised by the series are available (American Foundation for Suicide Prevention, 2018; Netflix, 2018). Our study suggests that parents and educators should be aware of how individual differences influence the effects of watching the series. Indeed, season two of *13 Reasons Why* starts with warnings on how the series might not be suitable for people struggling with the same issues as the characters, and suggesting that viewers watch the series with a trusted adult. It might be interesting to assess how these warnings – and the message on the importance of talking about suicide and reaching out for

help – may counterbalance the negative effects of portraying substance abuse, sexual assault, and suicide from a somewhat hopeless perspective. The importance of talking about suicide notwithstanding, our results support concerns about its graphic portrayal in season one of *13 Reasons Why* and how the series fails to convey an alternative to suicide. In times of binge-watching and easy access to digital content to viewers of all ages, the way in which mental health issues are portrayed in fiction needs to be carefully debated and thought out.

### Conflict of Interest

The authors report no conflict of interest.

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### Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jpsychires.2018.10.018>.

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