It is illegal to post this copyrighted PDF on any website. Effect of Educative Suicide Prevention News Articles Featuring Experts With vs Without Personal Experience of Suicidal Ideation: A Randomized Controlled Trial of the Papageno Effect

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ABSTRACT

Objective: Media stories on how to cope with suicidal crises have been shown to reduce suicidal ideation, but studies investigating if effects differ depending on delivery by individuals with or without personal experience of suicidality are lacking. The present study aimed to examine effects of news articles featuring interviews with experts with vs without personal experience of suicidal ideation.

Methods: In a web-based, double-blinded, randomized controlled trial conducted in April and May 2017, a total of 545 adults recruited from the general population were randomly assigned to read a news article featuring an interview with a suicide expert disclosing personal experience of suicidal ideation, the same article without disclosure of personal experience, or an article unrelated to suicide. The primary outcome was change from baseline suicidal ideation score (assessed by a subscale of the Reasons for Living Inventory); the secondary outcome was change from baseline in a measure of suicide-prevention-related knowledge (assessed by items from various questionnaires). Data from the 527 participants analyzed were collected using online questionnaires before and after exposure.

Results: Participants in the 2 intervention groups reported a decrease in suicidal ideation (Group 1 [article without personal experience of ideation]: P < .001, d = -0.16; 95% Cl, -0.25 to -0.07; Group 2 [with personal experience]: P < .001, d = -0.25; 95% Cl, -0.33 to -0.16) and an increase in suicide-prevention-related knowledge (Group 1: P < .001, d = 0.72; 95% Cl, 0.64 to 0.81; Group 2: P < .001, d = 0.70; 95% Cl, 0.62 to 0.79) after article exposure. There were no differences between the 2 intervention groups.

Conclusions: Educative news articles featuring interviews with suicide prevention experts who disclose or do not disclose their personal experience of suicidality seem to be effective for suicide preventive education in the general public in accordance with the Papageno effect.

Trial Registration: German Clinical Trials Register, identifier: DRKS00015781

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S tudies suggest that the effects of mass media portrayals of suicidality depend upon specific reporting characteristics and might include both harmful and beneficial effects.^{1,2} According to the Werther effect,³ sensationalist suicide reports in newspapers can trigger so-called imitational suicides.^{2,4} In contrast, the potential of some media portrayals highlighting how to cope with suicidal ideation to reduce suicidal behavior has been labeled the Papageno effect.^{5,6} In the first study of this phenomenon, Niederkrotenthaler and colleagues⁵ found that news reports focusing on constructive ways of coping with adverse circumstances were associated with a decrease of suicides in the population. Recent randomized controlled trials found further support for this effect, demonstrating a reduction of suicidal ideation or an increase in protective factors after exposure to news articles,⁷ fictional films,⁸ or educative websites⁹ featuring individual accounts of how to cope with suicidality⁷⁻⁹ as well as general educative information on suicide prevention.⁹ These effects appeared most pronounced among individuals with some degree of vulnerability to suicide (relative to other study participants), as indicated by their baseline suicidal ideation scores.^{8,9} Importantly, individuals with suicidality scores potentially indicating clinically relevant suicidal ideation were excluded from these studies.^{8,9} Educative suicide prevention websites with individual stories on how to master a suicidal crisis have also been found to increase suicide-prevention-related knowledge,⁹ which is another important component of suicide prevention efforts and is often a key target domain in media awareness campaigns.¹ So far, there have been no experimental studies that included individuals vulnerable to suicide in their sample to assess any effects on suicidality or suicide-prevention-related knowledge.

In recent years, the important role of individuals with personal experience of suicidal ideation has been increasingly acknowledged within suicide prevention, and the involvement of suicide attempt survivors and other individuals with personal experience of suicidal ideation or loss to suicide has been highlighted as relevant for progressing the field of suicide prevention.¹⁰ Consistent with this development, media increasingly cover individuals with personal experience of suicidal ideation who share their stories in order to help prevent suicide.^{11,12} So far, it remains unknown whether stories featuring individuals with and without personal experience of suicidal ideation differ with regard to their impact on the audience.

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Till et al It is illegal to post this copyrighted PDF on any website. Papagno effect.^{5,6} We recruited 656 German-speaking

- **Clinical Points**
- News reports on constructive ways of coping with suicidality appear to decrease suicidal ideation and increase suicide-prevention-related knowledge in the general public, but it is still unclear which characteristics determine these effects.
- Experts with and without personal experience of suicidal ideation appear effective in reducing suicidal ideation and increasing suicide-prevention-related knowledge in a general audience.
- Media education highlighting ways of coping with suicidality is an effective component of suicide prevention.

To bridge this research gap, we conducted a web-based randomized controlled trial. We examined the effects of news reports on the topic of suicide prevention compared with a control group. The news reports featured an interview with a suicide expert and differed with regard to the expert's disclosure of personal experience of suicidal ideation. We evaluated the impact of the articles on suicidal ideation (the primary outcome) and suicide-prevention-related knowledge (secondary outcome).

HYPOTHESES

The following primary hypotheses were tested:

- H1: Suicide prevention news articles featuring an interview with a suicide expert who either disclosed or did not disclose personal experience of suicidal ideation will reduce suicidal ideation compared with the control article, which did not mention suicide.
- H2: The reduction in suicidal ideation will be greater in the group exposed to the article featuring an expert with personal experience of suicidal ideation than in the other intervention group.
- H3: The reduction in suicidal ideation will be greater among individuals with higher baseline suicidal ideation than among those with lower suicidal ideation.

For the secondary outcome, the following hypotheses were tested:

- H4: Both suicide prevention articles will increase suicide-prevention-related knowledge among audiences compared with the control group.
- H5: The increase in suicide-prevention-related knowledge will be greater in the group exposed to the article featuring an expert with personal experience than in the other intervention group.

METHODS

Participants

A web-based, double-blinded, randomized controlled trial was conducted in April and May 2017 to test for the

Papagno effect.⁵⁶ We recruited 656 German-speaking individuals aged 18 years or older who had registered on SoSci Survey¹³—a noncommercial online panel—via e-mail. The e-mail included an invitation to participate in an online study on the effects of health-related awareness material.

Power Analysis

On the basis of the results of a power analysis with G*Power version 3.1.9.2,¹⁴ an analysis of variance (ANOVA) model with 2 repeated measures, 6 groups (Group 1, Group 2, and the control group comparing low vs high baseline suicidal ideation), and an assumed correlation of 0.79 among repeated measures^{8,9} would require a total sample size of 270 participants to detect an effect of 0.21 found in related previous studies.^{8,9} More specifically, a sample size calculation with GLIMMPSE version 2.2.4¹⁵ estimated that an equivalent linear mixed model would require a minimum sample size of 168 participants.

Materials and Procedure

We conducted a web-based, double-blind, randomized controlled trial with 2 intervention groups and 1 control group. Among our nonclinical population, at the beginning of the trial, we measured participants' suicidal ideation and suicide-prevention-related knowledge. After completing the 2 measures, the participants were automatically randomly allocated to 1 of 3 groups based on an allocation ratio of 1:1:1 to achieve equal group sizes.

Participants of Group 1 were exposed to an online news article featuring an interview with a suicide expert on suicide prevention. In this interview, the expert states that suicidal ideation affects many people in society, offers advice on how to cope with suicidal thoughts, explains how families and friends can support individuals in crisis, and debunks the most common misconceptions about suicide. The article contained 497 words, was headlined Coping With Suicidal Crises, and included 2 pull quotes ("Suicide announcements should always be taken seriously" and "If you suspect someone may be thinking of suicide, it is important to ask them directly about it") that highlighted the interview's key messages. Participants of Group 2 were exposed to the same news article; however, in this version (685 words), the expert reports personal experience when asked by the journalist if she had ever experienced a suicidal crisis herself. The expert then explains that she was in a suicidal crisis as a young adult and got help at that time by contacting a crisis-intervention center. In addition to the pull quotes used in the other intervention article, this version of the article included 1 additional pull quote saying, "One evening I wanted to take my own life. I can still hear the Samaritan's 'Don't do it' in my ear." In both articles, the expert encourages individuals in suicidal crisis to seek professional help. Participants of the control group read a news article of similar layout, style, and length (519 words), featuring an expert interview unrelated to suicide or mental health. In this article, the expert talks about prevention



It is illegal to post this copy strategies for seasonal influenza. All articles were written by the authors (B.T., F.A., S.S., T.N.) and were modeled after articles published in 2 Austrian newspapers.* All articles comprised 2 pages and included no pictures.

After participants read the articles, we measured their suicidal ideation and suicide-prevention–related knowledge again along with sociodemographic variables. We also administered 1 item to assess whether participants were currently having suicidal thoughts, 2 items for manipulation check, and 1 item to assess success of the blind. On the last page of the online survey, we provided contact information of organizations providing counseling for individuals in crisis. Unlike in previous studies,^{7–9} individuals vulnerable to suicide were not excluded from the study because these previous studies suggested that beneficial effects were more pronounced among individuals with higher suicidality scores in their respective sample.^{8,9}

The study was approved by the Research Ethics Board at the Medical University of Vienna (study protocol 1285/2017, April 25, 2017). Participants were informed about the aim and procedures of the study and that they could end their participation at any time during the study. Participants provided consent by clicking on "Continue" and starting the online survey. The trial was registered with the German Clinical Trials Register (identifier: DRKS00015781) and the American Economic Association's Registry for Randomized Controlled Trials (www.socialscienceregistry.org) as AEARCTR-0002100.

Primary Outcome Measure

Survival Coping Beliefs subscale of the Reasons for Living Inventory. Suicidal ideation was assessed with the 23-item Survival Coping Beliefs subscale of the Reasons for Living (RFL) Inventory¹⁶ (eg, "I am afraid of the actual 'act' of killing myself"). This subscale has been shown to be particularly sensitive to media-induced changes of suicidal ideation.⁹ Respondents rated their beliefs and expectations for *not* dying by suicide on a scale ranging from 1 (not at all important) to 6 (extremely important). Scale scores were reverse-coded, which resulted in higher scores indicating higher suicidal ideation, and mean scores across all 23 items of the scale were calculated for each participant (score range: 1–6).

Secondary Outcome Measure

Questionnaire on Suicide-Prevention-Related Knowledge. To determine participants' suicide-preventionrelated knowledge, we compiled a collection of 10 statements related to suicide prevention adopted from previous questionnaires. Five items were suicide facts adopted ghted PDF on any website. from the Revised Facts on Suicide Quiz by Voracek and colleagues,¹⁷ 3 items were suicide myths taken from extensive lists of common suicide myths,¹⁸⁻²⁰ and 2 items were created based on epidemiologic facts on suicide.²¹ All items were answerable on the basis of the information provided in the articles of the intervention groups. We administered the statements (eg, "Most suicidal individuals do not want any help") to the participants and asked them to rate the accuracy of the respective statement (true, false, or don't know). We coded whether participants correctly or incorrectly rated each of the statements as true or false. Correct responses were coded as 1, whereas incorrect responses and "don't know" answers were coded as 0. Respondents received 1 point for each correct answer. Higher scores indicate more suicide-prevention-related knowledge. Mean scores across all 10 items of the scale were calculated for each participant (score range: 0-1).

Additional Measures

Current suicidal thoughts. Respondents were asked to indicate whether they currently have suicidal thoughts with 1 single self-report item (yes = 1, no = 0).

Manipulation check. To assess if the experimental manipulation was successful, we asked the respondents to indicate whether the expert in the respective article (1) was an expert on suicide prevention (*true*, *false*, or *don't know*) and (2) has ever experienced a suicidal crisis in her life (*true*, *false*, or *don't know*). The manipulation check was performed after the repeated measurement of the main outcome variables.

Success of the blind. To assess the success of the blind, we asked respondents to indicate what group they thought they had been allocated to (*intervention group*, *control group*, or *don't know*) at the very end of the study, before the debriefing.^{22,23}

Data Analysis

To test hypothesis 3, it was necessary to compare the impact of article exposure on participants with lower versus higher baseline suicidal ideation. Because our measure of suicidal ideation does not have a validated cutoff score,¹⁶ we applied a median split of the sample, using the score for suicidal ideation (median = 2.30) observed prior to article exposure, and stratified the sample into 2 groups: 1 group including participants with lower baseline suicidal ideation (ie, suicidal ideation scores < 2.30: n = 263, median = 1.70, interquartile range [IQR] = 0.61, minimum = 1.00, maximum = 2.26) and the other group including those with higher baseline suicidal ideation (ie, suicidal ideation scores ≥ 2.30 : n = 264, median = 2.89, IQR = 0.68, minimum = 2.30, maximum = 5.78). The same approach was also used in previous research.^{8,9}

The scores for the primary outcome variable (ie, suicidal ideation) were subjected to a group (Group 1, Group 2, control group) \times time (pre-exposure, postexposure) \times baseline suicidal ideation (below vs above the median) analysis using linear mixed models with individual group differences tested with Bonferroni-corrected contrast tests. Due to

^{*}Large parts of these articles were changed and rewritten by the authors: Matt T. Um Haaresbreite am Selbstmord vorbei [Escape from suicide by a mere bair's breadth] *Vararlherger Nachrichten* May 3, 2003

mere hair's breadth]. Vorarlberger Nachrichten, May 3, 2003. Influenza: Händeschütteln in der Weihnachtszeit ist tabu [Influenza: shaking hands in winter is a no-no]. *Heute*, December 17, 2014. Retrieved from: https://www.heute.at/life/gesundheit/story/Influenza----Haendeschuetteln-in-der-Weihnachtszeit-ist-tabu—23185204

Till et al It is illegal to post this copyrighted PDF on any website Figure 1. Study Flowchart Table 1. Descriptive Demographic Statistics (Sex, Age,



their ability to account for correlations between repeated measures of the same subject and missing data, linear mixed models have been used increasingly in recent years, replacing traditional repeated measures ANOVA models in psychiatric research.^{9,24} The scores for the secondary outcome variable, suicide-prevention–related knowledge, were subjected to a group (Group 1, Group 2, control group)×time (pre-exposure, postexposure) analysis using linear mixed models along with Bonferroni-corrected contrast tests.

RESULTS

Of the 656 recruited individuals, 545 were randomized. Participants who discontinued their participation before randomization (n = 111) or who took less than 30 seconds to read their respective article (n = 18) were excluded from the study. Thus, a total of 527 participants (80.3%) were included in the final analysis (Group 1: n = 173; Group 2: n = 174; control group: n = 180). Figure 1 shows the study flowchart. There were no differences in suicidal ideation ($t_{18.54}$ = -0.09, P = .93) or suicide-prevention-related knowledge (t_{604} = -1.91, P = .06) before reading the articles between those excluded and included in the final statistical analyses.

Of the included 479 individuals who completed measures on sociodemographics, 272 (56.8%) were women and 207 (43.2%) were men. Mean age was 41.3 (SD = 14.9) years. Among the 480 participants who provided data on education, 82 participants (17.1%) indicated that they had no high school diploma, 138 (28.8%) reported high school as highest Table 1. Descriptive Demographic Statistics (Sex, Age, and Highest Completed Education) and Baseline Suicidal Ideation Across All 3 Groups^a

	Group 1:	Group 2:		
	Without	With		
	Personal	Personal	Control	
Characteristic	Experience	Experience	Group	χ^2/F^b
Female	91 (58.3)	84 (54.2)	97 (57.7)	0.64 ^c
Age, mean (SD), y	41.4 (15.3)	41.2 (14.3)	41.3 (15.1)	0.00 ^d
College	85 (54.5)	89 (57.4)	86 (50.9)	1.40 ^c
High school	43 (27.6)	41 (26.5)	54 (32.0)	1.35 ^c
Below high school	28 (17.9)	25 (16.1)	29 (17.2)	0.18 ^c
Baseline suicidal ideation score, mean (SD)	2.36 (0.9)	2.32 (0.8)	2.39 (0.8)	0.35 ^e
^a All values n (%) unless oth demographic data for Gr group (n = 169). One part baseline suicidal ideatior	erwise noted. oup 1 (n = 155 icipant provid	Number of pa), Group 2 (n = led data for ag	rticipants pro 156), and Cor e, education,	viding ntrol and

 $^b\!\chi^2$ values are from χ^2 tests, and F values are from ANOVA testing group differences.

 c_{χ^2} test result, df = 2.

^dANOVA result, df = 2, 477. ^eANOVA result, df = 2, 524.

Abbreviation: ANOVA = analysis of variance.

completed level of education, and 260 (54.2%) indicated having a college degree. See Table 1 for a detailed overview of the demographic characteristics of participants in each group. There were no significant differences in the participants' sex, age, highest completed education, or baseline suicidal ideation, as indicated by χ^2 and ANOVA tests.

Of the 480 participants who completed the items to assess success of the blind, and for manipulation check, 133 participants (27.7%) correctly guessed their group allocation, whereas 127 participants (26.5%) were incorrect and 220 (45.8%) responded with "don't know." We can assume that blinding was successful because the proportion of "don't know" answers was relatively high,²² correct and incorrect guesses were balanced,²² and the distribution was similar to other published randomized controlled trials.²³ For the 2 manipulation check items, 404 participants (76.7%) answered correctly, and there were no differences between the 3 groups ($\chi^2_2 = 4.23$, P = .12).

Table 2 displays the mean values and corresponding 95% confidence intervals for the 2 outcome variables before and after article exposure. The mean values and their corresponding 95% confidence intervals for suicidal ideation before and after article exposure stratified by baseline suicidal ideation below and above the sample median are provided in Table 3.

Suicidal Ideation

The analysis of the impact of the news articles revealed a significant group × time interaction for the primary outcome, suicidal ideation. The contrast tests indicated that participants exposed to any of the 2 news articles on suicide prevention experienced a small-sized reduction of suicidal ideation after the exposure (Group 1: contrast test after vs before exposure: Bonferroni-corrected P < .001, d = -0.16; 95% CI, -0.25 to -0.07; Group 2: contrast test after vs before exposure: Bonferroni-corrected P < .001, d = -0.25; 95% CI,

Papageno Effect of Suicide Prevention Articles <u>It is illegal to post this copyrighted PDF on any website.</u>

Table 2. Study Variables in Audience Members Before (T1) and After (T2) Article Exposure^a

Outcomes by Group	T1	T2
Primary outcome: Suicidal ideation ($\alpha = .93$)		
Group 1: Without personal experience	2.36 (2.23 to 2.50)	2.24 (2.09 to 2.40)
Group 2: With personal experience	2.32 (2.20 to 2.44)	2.22 (2.09 to 2.34)
Control group	2.39 (2.27 to 2.52)	2.38 (2.23 to 2.52)
Secondary outcome: Suicide-prevention-rel	lated knowledge	e (α=.62)
Group 1: Without personal experience	0.58 (0.55 to 0.62)	0.83 (0.80 to 0.86)
Group 2: With personal experience	0.62 (0.58 to 0.65)	0.85 (0.83 to 0.87)
Control group	0.59 (0.56 to 0.62)	0.62 (0.59 to 0.65)

^aMean values (95% confidence intervals) are provided for both outcome variables before (T1) and after (T2) article exposure as well as lowerbound (Cronbach α) sample reliabilities. For each study variable, negative items of the respective questionnaire were reversed, and mean scores across all items were calculated for each participant.

Table 3. Suicidal Ideation in Audience Members Before (T1) and After (T2) Article Exposure Stratified for Baseline Suicidal Ideation Below and Above Sample Median^a

	Baseline Suicidal Ideation Below the Median		Baseline Suicidal Ideation Above the Median		
Group	T1	T2	T1	T2	
Group 1	1.64 (1.56 to 1.72)	1.50 (1.41 to 1.58)	3.10 (2.96 to 3.23)	3.04 (2.87 to 3.22)	
Group 2	1.71 (1.63 to 1.78)	1.63 (1.54 to 1.71)	2.99 (2.87 to 3.12)	2.81 (2.66 to 2.96)	
Control group	1.70 (1.61 to 1.78)	1.68 (1.57 to 1.79)	3.02 (2.89 to 3.15)	3.02 (2.85 to 3.18	

^aMean values (95% confidence intervals) are provided for both outcome variables before (T1) and after (T2) article exposure. Abbreviations: Group 1 = without personal experience, Group 2 = with

personal experience.

-0.33 to -0.16), whereas suicidal ideation did not change in the control group (contrast test after vs before exposure: Bonferroni-corrected P = .62, d = -0.02; 95% CI, -0.11 to 0.07). A difference between the 2 intervention groups was not observed (contrast test Group 2 vs Group 1: Bonferronicorrected P = 1.00, d = 0.03; 95% CI, -0.07 to 0.14). There was no significant interaction with baseline suicidal ideation, and the same effects emerged when baseline suicidal ideation was not entered into the statistical model. Table 4 gives an overview of the results of the linear mixed models. The reduction in suicidal ideation for the 3 groups is illustrated in Figure 2. On the basis of these results, hypothesis 1 was supported, whereas hypotheses 2 and 3 were rejected, confirming a Papageno effect^{5,6} for both intervention articles.

Suicide-Prevention-Related Knowledge

There was a significant group × time interaction for the secondary outcome of suicide-prevention-related knowledge. Participants in the 2 intervention groups reported a large-sized increase of suicide-prevention-related knowledge after reading the article (Group 1: contrast test after vs before

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Table 4. Findings Fro		Study Variable	Primary outcome: Suicidal ideation	Secondary outcome: Suicide-prevention- related knowledge	<i>F</i> values with degrees of time (T1, T2), baseline s symbol: = not applicat	

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Figure 2. Suicidal Ideation^a Before (T1) and After (T2) Reading the Article for Different Groups

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^bScores based on the Survival Coping Beliefs subscale of the Reasons for Living (RFL) Inventory.¹⁶ Higher scores on a scale from 1 to 6 indicated higher suicidal ideation, and mean scores across all 23 items of the scale were calculated for each participant.

exposure: Bonferroni-corrected P<.001, d=0.72; 95% CI, 0.64 to 0.81; Group 2: contrast test after vs before exposure: Bonferroni-corrected P < .001, d = 0.70; 95% CI, 0.62 to 0.79), whereas a small-sized increase of suicide-preventionrelated knowledge was found in the control group (contrast test after vs before exposure: Bonferroni-corrected P < .05, d = 0.09; 95% CI, 0.01 to 0.18). The increase was significantly stronger in the 2 intervention groups than in the control group (contrast test control group vs Group 1: Bonferronicorrected P < .001, d = -0.23; 95% CI, -0.34 to -0.12; contrast test control group vs Group 2: Bonferroni-corrected P<.001, d = -0.30; 95% CI, -0.40 to -0.19), and no difference was observed between the 2 intervention groups (contrast test Group 2 vs Group 1: Bonferroni-corrected P = .41, d = 0.07; 95% CI, -0.04 to 0.17). The increase in suicide-preventionrelated knowledge for the 3 groups is illustrated in Figure 3. On the basis of these results, hypothesis 4 was supported, whereas hypothesis 5 was rejected.

Impact on Audience Members With Current Suicidal Thoughts

Of the 503 participants who completed the single item assessing current suicidal thoughts, only 11 (2.2%) indicated that they were currently experiencing suicidal thoughts (Group 1: n = 3, Group 2: n = 5, control group: n = 3). Due to the low frequencies, we were unable to include this variable into inferential statistical analyses.

DISCUSSION

This study indicates that educative news articles featuring suicide experts had a beneficial impact on readers in terms

Figure 3. Suicide-Prevention–Related Knowledge^a Before (T1) and After (T2) Reading the Article for Different Groups



^aMean values were estimated using SPSS software and based on 480 participants who completed measures on suicide-prevention–related knowledge both at T1 and T2.

^bScores based on the Questionnaire on Suicide-Prevention–Related Knowledge. Higher scores on a scale from 0 to 1 indicate more suicideprevention–related knowledge, and mean scores across all 10 items of the scale were calculated for each participant.

of a reduction in suicidal ideation and an increase in suicideprevention-related knowledge. The effect was present independent of personal disclosure of past suicidal ideation by the featured expert. Our findings are consistent with previous research on the Papageno effect,^{5–9} which describes a suicide-protective effect of media stories highlighting how to cope with adverse circumstances. Consistent with this effect, previous studies⁷⁻⁹ have shown that fictional media stories in movies as well as educative websites and news stories focusing on how to master suicidality and cope with suicidal ideation have the potential to reduce suicidal ideation and increase suicide-prevention-related knowledge. It appears that news reports featuring individuals with personal experience of suicidal ideation are no different in their effectiveness to educate the general public about suicide as compared with individuals without lived experience. In a similar vein, other public health interventions, eg, violence prevention programs, have been shown to be effective when delivered by individuals with personal experiences of violence.^{25,26} The reduction of suicidal ideation found in the present study as indicated by the score on the Survival Coping Beliefs subscale of the Reasons for Living Inventory¹⁶ suggests that expert interviews featured in the news articles may have empowered participants to modify their perceptions regarding their ability to cope constructively with suicidal ideation, which has also been found previously with educative websites for suicide prevention.9 The present findings also extend previous research on the Papageno effect. Evidence to date suggests that the suicide-protective effect is present for individual narrations on coping with adverse circumstances,⁵⁻⁸ as well as for educative narratives including both perspectives of

personal experience and other expert insight." In the presen study, no difference was found in terms of impact between 2 articles of the intervention groups. The article focusing on an expert without personal experience of suicidal ideation was not different in effectiveness regarding a resulting decrease in suicidal ideation and increase in suicide-preventionrelated knowledge in audiences than the article featuring an expert who told her story of mastering a suicidal crisis in the past. This finding indicates that both experts with and without personal experiences of suicidal ideation are effective in educating the general public about suicide prevention. The general focus of such stories on what can be done constructively to cope with suicidal ideation may be the key prerequisite of a suicide-protective effect of these news stories. Further studies are warranted to investigate if particular story elements have different effects in different subpopulations.

While previous studies^{8,9} have found a media-induced reduction in suicide risk predominantly among individuals with comparatively higher vulnerability, baseline suicidal ideation did not moderate the article effects in the current study, which may be due to differences in sample size and sample characteristics. The individuals included in the present study were older, more educated, and less suicidal as indicated by the scores on the Reasons for Living Inventory¹⁶ than those in previous studies.^{8,9} The present study also had a considerably larger sample size as compared with previous works in the area.^{8,9}

Limitations

With the study sample being recruited from the general population and not from a clinical population, it remains unknown whether and how our findings generalize to individuals with suicide risk. The generalizability of the results to a clinically suicidal group remains unclear and warrants further investigation. The current sample included 11 participants reporting current suicidal thoughts, thereby extending previous research that excluded individuals with current suicidal thoughts or suicidal ideation scores above a certain cutoff score.⁷⁻⁹ This number was too small for a separate subanalysis, but overall patterns appeared not to deviate from those of other participants. Second, both outcome variables were assessed before and immediately after article exposure, but not over a longer time span. It remains unclear whether the immediate increase in suicide-prevention-related knowledge resulted in a longerterm genuine knowledge improvement and whether the decrease in suicidal ideation was sustained for some time. In a previous study, an improvement of suicide-preventionrelated knowledge among users of educative suicide prevention websites and a reduction in suicidal ideation in participants with comparatively higher baseline suicidality was found immediately after website exposure and was partially maintained 1 week later.9

A further limitation of the study was the use of a convenience sample not representative of the general population in terms of age and education, with younger and

conted PDF on any website. more educated individuals being overrepresented. Moreover, 111 potential participants dropped out of the study before randomization and, following intent-to-treat principles,²⁷ were not included in the statistical analyses of the data, which may have created a selection bias. Furthermore, it is also possible that our study failed to disclose small but relevant differences between the individual groups. The sample size of the present study, however, was considerably larger than those of previous studies in the topic area. Finally, the Cronbach α estimating the reliability of the items measuring suicide-prevention–related knowledge was relatively low (see Table 2), which is a known psychometric limitation of comparable scales.^{9,17} With α = .62, however, the reliability of the current measure was still considerably higher than some comparable scales in previous studies.^{9,17}

Implications

Health professionals with and without disclosure of their own personal experience of suicidal ideation appear to be effective when educating the general public through media about suicide prevention. The present study highlights the relevance of recent national and international media recommendations for suicide reporting. These resources suggest featuring stories on suicide prevention by experts with and without personal experience of suicidal ideation.^{2,28–30} The present findings support earlier findings⁵⁻⁹ on a suicide-protective Papageno effect of media reports highlighting constructive coping with suicidality. Even small effect sizes as detected for the reduction of suicidal ideation are valuable to prevention agencies, which need to balance the risks and opportunities involved in media campaigns. Previous studies⁵ have shown, however, that, outside of educative media settings, most importantly in the news media, expert interviews are sometimes put in sensationalist contexts that are not consistent with media recommendations. We therefore recommend that experts should always ask journalists and editors to consider current media recommendations for suicide reporting,^{2,30} explain the relevance of these recommendations to journalists,³¹ and also offer to read a draft of the respective media article before publication.

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