The role of language in suicide reporting: Investigating the influence of problematic suicide referents

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Background: Although suicide experts recommend using neutral suicide referents in news media reporting, this recommendation has not yet been tested empirically. This recommendation, based on the empirically yet untested assumption that problematic suicide referents carry meaning that is inappropriate from a prevention perspective, may lead to a different perspective on suicide, termed "framing effects." For example, in German-speaking countries, the neutral term *Suizid* (suicide) is recommended. Conversely, *Freitod* ("free death") and *Selbstmord* ("self-murder") convey associative meanings related to problematic concepts such as free will (*Freitod*) and crime/murder (*Selbstmord*), and are therefore not recommended.

Method: Using a web-based randomized controlled trial focused on German speakers ($N = 451$), we tested whether the news media's use of *Suizid*, *Selbstmord*, and *Freitod* elicits framing effects. Participants read identical news reports about suicide. Only the specific suicide referents varied depending on the experimental condition. Post-reading, participants wrote short summaries of the news reports, completed a word-fragment completion test and a questionnaire targeting suicide-related attitudes.

Results: We found that the news frame primed some frame-related concepts in the memory and also increased frame-related word choice. Importantly, we found that participants reading the free will-related *Freitod* frame showed greater attitudinal support for suicide among individuals suffering from incurable diseases.

Conclusions: This study highlights the importance of how the news media write about suicide and supports the language recommendations put forward by suicide experts.

1. Introduction

Suicide is one of the leading causes of death worldwide (Wasserman and Wasserman, 2009). Approximately 800,000 persons die from suicide each year, which is more than one suicide per minute (World Health Organization [WHO], 2017b). The media are considered a key factor in suicide prevention (Cheng et al., 2014; Cheng and Yip, 2012; Mann et al., 2005; Niederkrotenthaler et al., 2014; Phillips, 1974; Stack, 2005). Therefore, media guidelines have been developed to increase responsible reporting on suicide (Bohanna and Wang, 2012; Pirkis et al., 2006; WHO, 2017a) and have been shown to effectively improve the quality of actual suicide reporting (Niederkrotenthaler and Sonneck, 2007; Scherr et al., 2016). A specific and important element of these guidelines is the use of neutral language. For example, some guidelines recommend using the phrase "fatal suicide attempt" instead of "successful suicide" (e.g., WHO, 2017a). Yet, in terms of logical reasoning, the two phrases are interchangeable and provide the same information (see Kahneman, 2011). However, both phrases convey different associative meanings that may lead to different interpretations of the event: It is likely that different thoughts get activated when news users read about a "*successful* suicide" or a "*fatal* suicide attempt." This may influence how individuals perceive suicide.

This phenomenon has been intensively addressed by framing research (Entman, 1993; Scheufele and Tewksbury, 2007). Framing effects describe the phenomenon whereby specific aspects of an event or issue will be more salient than other aspects when particularly stressed in a news message so that a specific problem definition, causal interpretation, moral evaluation, or treatment recommendation will be promoted in the minds of the audience of that message (Entman, 1993). Thus, journalists reporting on suicide select, accentuate, or exclude aspects of the respective suicide that may evoke a specific, and sometimes, a substantially constricted, perspective on suicide (see Scheufele and Tewksbury, 2007).

Previous research outside the domain of suicide prevention provides

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evidence that even single words can elicit substantial framing effects. Using a randomized controlled trial, Simon and Jerit (2007) tested framing effects in the context of the so-called partial-birth abortion debate on a law prohibiting a form of late-term abortion. Participants read a news article describing the partial-birth abortion law. The experimental treatment condition featured a manipulated *New York Times* article. Authors used different versions of this article: The different versions were identical except for one global substitution. In the "fetus" condition of the experiment, the word "fetus" appeared 16 times throughout the article. Conversely, in the "baby" condition, the word "baby" substituted all instances in which "fetus" was used. After reading the newspaper article, participants were asked to summarize the news article using their own words and to complete some other measures, including their attitudes toward partial-birth abortion. The study revealed two important findings: First, participants reading articles in which the term "fetus" was used also employed the word "fetus" more often in their own summary writings immediately after having read the story. Interestingly, the same pattern emerged for the use of "baby" in the second condition. Hence, even simple manipulations such as replacing the term "fetus" with "baby" activate different associative networks in the memory that apparently influence subsequent information processing and reproduction. Second, the differently framed news stories influenced the participants' attitudinal support for partial-birth abortion. In fact, respondents allocated to the "fetus" condition were significantly more likely to support partial-birth abortion, which may be explained by the more technical, colder, and less empathy-arousing term "fetus"—in contrast to framing abortion as an act to end the life of an unborn baby.

This framing effect indicates that even a simple word substitution can affect participants' behaviors and expressed attitudes toward a societal issue. The broader framing literature also shows that different perspectives on and interpretations of the same phenomenon may actually persuade audiences (see Arendt and Matthes, 2014; Ludolph and Schulz, 2015).

1.1. Effects of problematic suicide referents

In the German language, the suicide referents *Freitod* and *Selbstmord* are generally considered problematic and media guidelines recommend not using them; instead, the neutral term *Suizid* is recommended (Tomandl et al., 2008). *Freitod* (English: "free death") conveys associative meanings related to the concept of free will and rational decision making, whereas *Selbstmord* (English: "self-murder") refers to crime, which can be explained by religion-laden, moral interpretations of suicides (Tomandl et al., 2008). Although the terms *Suizid*, *Selbstmord*, and *Freitod* refer to the same type of event, the terms convey different associative meanings. Of interest, *Freitod* conveys associative meanings whereby humans can freely and rationally choose from several behavioral options, which may prove problematic.

In fact, research has shown that individuals in a suicidal crisis exhibit an emotional and intellectual narrowing, thus hardly lending support to the free-will and rational-choice assumptions (Sonneck et al., 2012). According to Shneidman (1987), when in a suicidal crisis this perceptual state can be understood as a "transient psychological constriction of affect and intellect" (p. 170). Related to this issue is the fact that a suicidal person's cognitive state represents a state of ambivalence (Shneidman, 1987). For example, a suicidal individual may make suicide plans and, at the same time, hope to get rescued by others. Thus, research indicates that suicidal individuals are in a special, constricted condition that does not support the "free" and "rational decision" argument.

The psychological mechanism behind framing effects. Each time our brain encodes, for example, the term *Freitod* in a news report, our brain reactivates the neural representations of this concept (i.e., suicide) in the memory. In addition, the brain—as "associative machinery" (Kahneman, 2011, p. 363, p. 363)—also reactivates concepts that are

mentally linked to the target concept. These include attributes that link suicide with being painful, negative, or irreversible, but can also be attributes linked to aspects such as freedom, self-determination, and the relief of pain. Mental associations between concepts are strengthened by the simultaneous activation of concepts (Greenwald et al., 2002). Therefore, when news consumers are repeatedly exposed to specific suicide referents such as *Freitod*, associative meanings that are conveyed with this specific referent (e.g., free will, rational, heroic) will become more salient in their mind, and therefore, will become more tightly associated with the target concept (i.e., suicide). Stated differently, after reading a news article in which suicide is repeatedly framed in a specific way, the news content will prime (i.e., reactivate) the reader's mental concepts related to the frame. This may influence subsequent suicide-related thinking, feelings, and behaviors. Importantly, previous research suggests that activated associations can influence human behavior, even when they occur outside of conscious awareness (Bargh et al., 1996).

1.2. Previous research on suicide referents

There is a lack of empirical evidence regarding framing effects in the suicide domain. To our knowledge, there is only one study investigating news framing (but not framing effects) in the context of suicide prevention. Arendt (2017) conducted a content analysis of German-speaking suicide coverage using data from the period 2004–2016. The study also investigated how often the public used the terms for information-seeking via Google's search engine. The latter was used as an indicator of the popularity of a given suicide referent within a given period, acting as an indicator of the public's use of the terms. Analyses revealed that *Selbstmord* was the most frequently used term in the news and by the public. Of interest, the use of the neutral term *Suizid* in both the news and by the public has increased in recent years, nearly approaching the *Selbstmord* level. Importantly, the highly problematic term *Freitod* has also been regularly used. Although it is important to note that the use of *Freitod* was at a low level (compared to the other two terms), the regular and ongoing use of this specific term was deemed to be particularly problematic.

1.3. Hypotheses and the research question

There is a lack of causal evidence regarding framing *effects*. The question is whether news reporting using a specific suicide referent causally influences readers' suicide-related thinking and behavior. We hypothesized that reading news reports using a specific frame would prime this frame in the reader's mind, as indicated by a standard word-fragment completion test (Hypothesis 1) and that it would influence the reader's word choice in a subsequent writing task (Hypothesis 2). Furthermore, given the lack of empirical work, we asked whether reading different frames would influence suicide-related attitudes (Research Question 1). Thus, we particularly focused on the term *Freitod*. As outlined above, the associative meaning related to rational and free decision making in suicidal individuals is particularly problematic.

2. Method

We conducted a web-based randomized controlled trial testing the effects of different suicide referents.

2.1. Participants

In total, 451 individuals who enrolled via a non-commercial online access panel (Leiner, 2012; see details on the process below) represent the sample of the present study. Of this total, 48.1% were female. The participants ranged in age from 18 to 85 ($M = 46.37$, $SD = 15.73$). Among the participants, 16.4% indicated that they had no high school

diploma, 19.3% reported having a high school diploma, and the majority (64.3%) indicated having a college degree.

2.2. Experimental manipulation

We utilized four experimental conditions. Participants allocated to the control condition ($n = 110$) read three news articles that reported on murders. The three intervention conditions read three news articles about suicides (headlines: "Bullying-victim Tim chose suicide," "Discovery of a dead body in Perlacher forest: Police assume suicide," "Suicide: Trucker run over by a truck after withdrawal of driving license"). All news articles were taken from actual news coverage but were adapted regarding their structure and length for the purpose of the present study. All intervention conditions received the same three identical suicide-related news articles in which *only* the specific suicide referents were different across conditions (see Simon and Jerit, 2007): In the "Suizid" condition ($n = 111$), the neutral word *Suizid* appeared 15 times (5 times in each article). In the "Selbstmord" condition ($n = 113$), the problematic word *Selbstmord* appeared 15 times, as did the problematic referent *Freitod* in the "Freitod" condition ($n = 117$). The articles used for the intervention groups matched those of the control group in terms of length and style. A visual depiction of the experimental manipulation is provided in the Appendix.

2.3. Measures

2.3.1. Priming

We used a word-fragment completion test to measure priming effects (Rajaram and Roediger, 1993). After reading all articles, participants were asked to fill in the gaps in order to complete several words (all presented in lower-case letters) as part of a word puzzle. We used a total of eight word puzzles (e.g., "b l _ m _" = > "b l <u>u</u> m <u>e</u>"; English: flower), presented in a random order. Two of the eight puzzles were the target puzzles: "f r e _ _ _ _" and "_ r e i _ _ _", which could be completed with the target term *freitod*, but also by using many other German words. This implicit memory test can reveal an "introspectively unidentified (or inaccurately identified) trace of past experience" (Greenwald and Banaji, 1995, p. 5) outside of individuals' conscious awareness (see McNamara, 2005). Thus, the words that participants generate indicate the accessibility of concepts in the memory (Koopman et al., 2013). The majority of the sample did not provide the target word (85.6%), 9.3% completed one word fragment with the target word, and 5.1% completed both word fragments with the target word.

2.3.2. Word choice

After participants read one news article, we asked them to provide a one-sentence summary of the story (see Simon and Jerit, 2007). We coded whether participants used one of the three suicide referents by using word-recognition software. A sum score was calculated over the three article summaries for each suicide referent (possible range of the measure: 0–3): *Suizid* ($M = 0.41$, $SD = 0.83$), *Selbstmord* ($M = 0.86$, $SD = 1.11$), and *Freitod* ($M = 0.26$, $SD = 0.68$).

2.3.3. Suicide attitudes

After the priming and word-choice measures, we asked a series of questions regarding suicide-related attitudes similar to previous studies (see Biblarz et al., 1991; Domino et al., 1982; Ma-Kellams et al., 2016). Three dimensions were of particular interest. First, we measured *attitudes toward suicide of individuals suffering from incurable diseases* in order to ensure that floor or ceiling effects would most likely be avoided. For example, it has been shown that the public generally considers severe terminal illness as a more acceptable motive for suicide than suicide more generally, which is highly stigmatized and rejected by the public (Ritter and Stompe, 2008; Niederkrotenthaler et al., 2014). Therefore, attitudes toward the suicide of individuals suffering from incurable diseases may be more malleable in the direction of a

"positive" assessment by media frames. When considering terminally ill persons, individuals may perceive a very restricted set of behavioral alternatives (e.g., suffering from the incurable disease with low quality of life for an unknown time or to die by suicide without further suffering; see Chapple et al., 2006; Stolz et al., 2017). Participants were asked to rate four items (e.g., "Suicide is an acceptable means when suffering from an incurable disease") on a 7-point scale ranging from *totally disagree* (1) to *totally agree* (7). The sample showed moderately strong support for the suicide of individuals suffering from incurable diseases ($M = 5.11$, $SD = 1.39$, $\alpha = .81$).

Second, we measured *general attitudes toward suicide*. We used three items that focus on the phenomenon of suicide *per se* (e.g., "Everybody has the right to suicide"). Compared to attitudes toward suicide of individuals suffering from incurable diseases, the concept of general attitudes toward suicide is located on a more abstract level and thus may be more stable over time (i.e., harder to change). Participants showed moderately strong support for suicide *per se* ($M = 5.21$, $SD = 1.59$, $\alpha = .83$).

Third, we measured *policy attitudes toward suicide prevention*. Participants were asked to rate 11 statements about the importance of suicide prevention (e.g., "Suicide prevention is an important socio-political endeavor") on the same 7-point scale. Items targeted a diverse set of elements including high financial support for crisis-intervention centers or restrictions in firearm laws. Eight participants provided incomplete data for this scale's items and thus could not be used for analysis. The sample showed moderate support for suicide prevention ($M = 5.13$, $SD = 1.10$, $\alpha = .85$). All items can be obtained from the first author upon request.

2.4. Procedure

Participants were enrolled via a non-commercial online access panel (Leiner, 2012). In total, 628 participants clicked on the first page of the web-based study. All participants were informed about the option of being able to quit the study at any time without any negative consequences. After the introductory pages (including an informed consent page), we utilized a screening procedure using the 10-item Hopelessness Scale developed by Krampen (1994), which is based on Beck and Steer (1988). Previous studies (Beck et al., 1990; McMillan et al., 2007) have shown that this scale is a reliable predictor of suicidal behavior. $N = 49$ participants did not provide data to all hopelessness items and quit the study before a hopelessness score could be calculated. Of those participants who provided complete hopelessness data, a score was computed in real time. Participants with increased hopelessness scores (i.e., score $\geq$ 34) were excluded from further participation ($n = 76$) (see Till et al., 2017) in order to avoid unnecessary distress arising from the intervention material. These participants were provided with the contact details of local crisis-intervention hotlines and an e-mail address of a psychologist. Of the remaining 503 participants, a 451 participants provided complete data that was relevant for testing our hypotheses (i.e., they read the articles, provided summaries, and took the word-fragment completion test). Hypotheses were tested using this final sample ($N = 451$).

Some of these participants did not provide data for *attitudes toward suicide of individuals suffering from incurable diseases* and *general attitudes toward suicide* ($n = 4$) as well as *policy attitudes toward suicide prevention* ($n = 8$). These participants quit the study before the attitudes-related questions were asked. Therefore, data imputation strategies could not be implemented. Analyses related to the research question were conducted with the remaining participants (i.e., $N = 447$ for *attitudes toward suicide of individuals suffering from incurable diseases* and *general attitudes toward suicide*; $N = 443$ for *policy attitudes toward suicide prevention*). Post-participation, all participants were debriefed and received links to and the contact details for suicide-prevention resources.

2.5. Ethics statement

The Ethics Committee of the Faculty of Social Sciences of the Ludwig-Maximilian University Munich (Number GZ 17–02, dated 11 July 2017) approved this study. All participants provided written consent to participate in the study.

3. Results

3.1. Randomization check

There were no differences regarding the level of formal education, χ^2 (6) = 6.78, p = .342, or the participants' gender, χ^2 (3) = 2.60, p = .457, between experimental groups. Furthermore, there were no age differences, F(3, 447) = 0.71, p = 546. Importantly, there were no differences in hopelessness between the experimental groups prior to the experimental treatment, F(3, 447) = 1.14, p = .334. These findings can be considered an indicator for successful randomization with regard to above variables.

3.2. Analysis

Hypothesis 1 assumed a priming effect from reading differently framed news reports. We predicted that participants allocated to the "Freitod" condition would show substantial traces of past reading experiences related to *Freitod*, indicated by the word-fragment completion test. This prediction was supported, as indicated in Table 1. As expected, those allocated to the "Freitod" condition completed the target word fragments significantly more often with *Freitod*. Interestingly, there was also a weak effect observed for the "Suizid" and the "Selbstmord" conditions (when compared to the control condition), indicating spreading activation effects. That is, reading about suicides framed in a specific way activated a frame-related associative cluster in the memory as indicated by the more frequent use of the word *Freitod* in the word puzzles.

Hypothesis 2 predicted that the words chosen to summarize the previously read news articles would be influenced by the way in which the suicides were framed in them. To test our assumption, we ran a 4 (experimental condition; between-subjects factor) × 3 (suicide referent; within-subjects factor) mixed analysis of variance (ANOVA). The results indicated significant main effects of experimental condition, F(3, 447) = 146.94, p < .001, η^2 = .50, and of suicide referent, F(2, 894) = 65.64, p < .001, η^2 = .13. More importantly, the main effect of the experimental condition was qualified by a significant interaction between experimental condition and suicide referent, F(6, 894) = 61.02, p < .001, η^2 = .29. This indicates that the frequency of

Fig. 1. Frequencies of suicide referent usage in the four experimental conditions. None of the three suicide referents were used in the control condition (murder). Conversely, participants tended to use the specific suicide referent that they had recently read in the news reports. Reading example: Participants allocated to the "Suizid" i.e., condition showed the highest mean in the frequency of word usage of the word *Suizid* (M = 1.29) compared to the word *Selbstmord* (M = 0.80), and the word *Freitod* (M = 0.05). Error bars represent 95% confidence intervals. The referents translate into "suicide" (Suizid), "self-murder" (Selbstmord), and "free death" (Freitod).

usage of a specific suicide referent in the text-summary task depended on the experimental condition. Fig. 1 visualizes this interaction effect, showing a large effect on the later word choice after reading the differently framed news reports. In all three treatment conditions, participants most frequently used the suicide referent that appeared in the news reports, supporting Hypothesis 2.

Research Question 1 asked whether different suicide frames would elicit attitudinal effects. First, we tested the effects on suicide attitudes related to the suicide of individuals who had been suffering from incurable diseases. We ran a one-way ANOVA and found small yet significant differences between the four experimental conditions, F(3, 443) = 3.23, p = .022, η^2 = .02. As is visually presented in Fig. 2, participants allocated to the "Freitod" condition expressed significantly higher support for suicide in individuals suffering from incurable diseases. Participants in the "Freitod" condition (M = 5.44, SD = 1.28) showed more positive attitudes than participants in the "Suizid" condition (M = 4.99, SD = 1.42), t(224) = 2.49, p = .013, d = 0.33, the "Selbstmord" condition (M = 4.91, SD = 1.40), t(225) = 2.97, p = .003, d = 0.40, and the Control condition (M = 5.09, SD = 1.43), t(222) = 1.96, p = .051, d = 0.26.

Furthermore, we tested whether the experimental manipulation elicited an effect on general attitudes toward suicide. We ran a one-way ANOVA and did not find significant differences between the four experimental conditions, F(3, 443) = 0.83, p = .476, η^2 < .01. Therefore, there were no framing effects on general attitudes toward suicide.

Table 1

Suicide-related implicit memory test: Chi-square statistic of the prevalence of completing the target word fragments with "freitod" among participants reading the freitod-framed or other news articles.

		Number of Completed Word Fragments with "Freitod"			χ^2	Cramer's V	p
	n	0	1	2			
Experimental Condition					58.99	.26	< .001
Murder	110	109	1	0			
Suizid	111	100	8	3			
Selbstmord	113	100	10	3			
Freitod	117	77	23	17			
Totals	451						

Note. Reading example: 23 participants allocated to the "Freitod" condition completed one word fragment with the word *Freitod*; and 17 participants allocated to the "Freitod" condition completed two word fragments with the word *Freitod*.
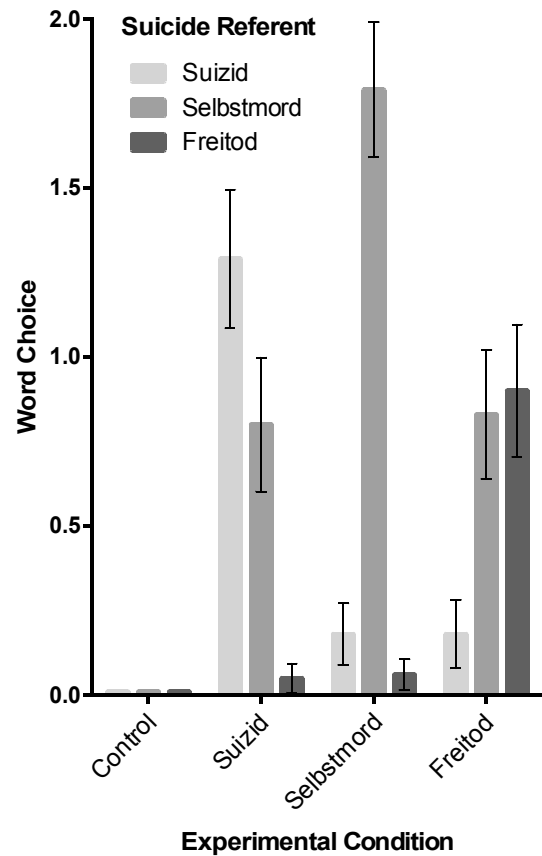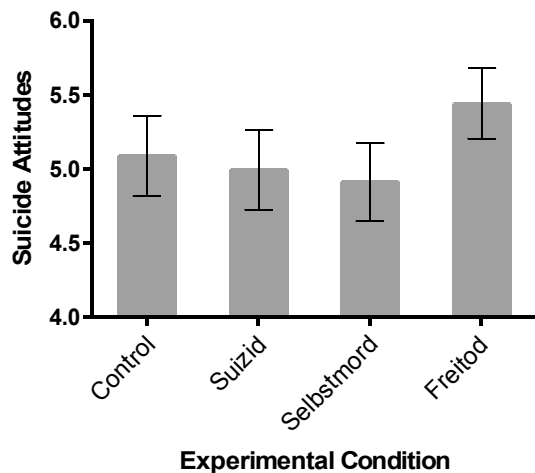
Fig. 2. Attitudes toward the suicide of individuals suffering from incurable diseases as a function of experimental condition. Higher scores indicate more favorable attitudes. Error bars represent 95% confidence intervals. The referents translate into "suicide" (Suizid), "self-murder" (Selbstmord), and "free death" (Freitod).

Related to this research question, we also tested whether different suicide frames would elicit an effect on policy attitudes toward suicide prevention. We ran a one-way ANOVA and did not find a significant main effect of experimental condition, $F(3, 439) = 1.18$, $p = .316$, $\eta^2 = .01$. The ANOVA result indicates that different news frames did not influence general policy attitudes toward suicide prevention. Taken together, the attitudinal effects of framing were consistently smaller than the effects on the cognitive accessibility of the different concepts.

3.3. Additional analyses

We calculated a series of bivariate correlations. First, we calculated a correlation between the priming measure and the word-choice measures related to the three suicide referents. We found a positive correlation between the priming measure (i.e., the number of completed word fragments with "freitod") and the *Freitod* word choice, r (449) = .29, $p < .001$. Conversely, we obtained no substantial correlations between the *Freitod*-related priming measure and the *Suizid* word choice, $r(449) = -.04$, $p = .372$, and the *Selbstmord* word choice, $r(449) = -.01$, $p = .817$. This indicates that the priming of *Freitod*-related traces in the individual's memory was related to word choice in a subsequent situation.

Second, we calculated correlations among the word-choice measures related to the three suicide referents. We found that the *Freitod* word choice was negatively related to the *Suizid* word choice, r (449) = -.14, $p = .002$, and to the *Selbstmord* word choice, r (449) = -.19, $p < .001$. This indicates that the use of one frame tended to displace the use of other (competing) frames. Stated differently, the more often a person used *Freitod*, the less often this person used *Suizid* or *Selbstmord*.

4. Discussion

The present study tested whether the use of problematic suicide referents would elicit framing effects and thus influence how individuals interpreted suicide. Using a randomized controlled trial, we found that the news media's reliance on a specific suicide referent primes its corresponding concept in the memory and increases its usage (word choice) in a subsequent situation. This outcome supports findings revealed by a previous observational study (see Arendt, 2017). As the data of the present study indicate, news framing effects can be considered a double-edged sword for suicide prevention: The use of a recommended neutral term in suicide news reports substantially

increased the readers' use of the same term—a beneficial framing effect on the behavioral level. Conversely, the use of a problematic suicide referent like *Freitod* by the news media increased the readers' use of this problematic term as well. The study also tested for attitudinal effects. Although the present study's findings related to attitudinal effects were mixed, our analysis revealed effects on attitudes toward the suicide of people suffering from incurable diseases; when reading about *Freitod*, support for suicide in such cases was stronger. As the suicide of individuals suffering from incurable diseases is a controversial topic towards which attitudes might fluctuate over time (see Stolz et al., 2017), this attitudinal dimension may be especially prone to framing effects. We did not find framing effects on general attitudes toward suicide and policy attitudes toward suicide prevention.

Although the present study tested only a limited set of attitudinal concepts, this finding supports a cautious perspective on language use. There are several other outcomes that may be influenced by framing effects. Although not tested in the present study, the use of the *Freitod* frame may, for example, influence the perceived severity of suicidal behavior or how suicidal people are perceived. For example, it is possible that the perceived severity of suicidal behavior may decrease when news consumers are primed with the *Freitod* frame. Individuals may accept to a higher extent that others engage in suicidal behavior when they believe this to be guided by a "rational" decision based on "free will." Furthermore, when primed with the free-will concept, a different (e.g., heroic, self-determined) person perception may emerge. The test of a richer set of consequences is a valuable goal for future studies. Future studies may also want to replicate the present findings with suicide referents and/or phrases in other languages.

The news media are pervasive in contemporary societies and therefore they are capable of influencing the dominant associative meanings of a society's perspective on suicide. Not only is the news known to play a key role in creating and strengthening common misconceptions about suicide, it also has the potential to increase suicide-related knowledge and debunk suicide myths (see Arendt et al., 2017). When considering the fact that responsible reporting in the news media is associated with decreased suicide rates (Etzersdorfer and Sonneck, 1998; Niederkrotenthaler et al., 2014; Niederkrotenthaler and Sonneck, 2007), media interventions should continue to promote a reduction in the use of problematic terms and phrases by increasing journalists' awareness relating to the possible detrimental consequences of not doing so. To our knowledge, the present study is the first to evaluate the impact of different suicide referents, which is one of the WHO's (2017a) specific recommendations in the media guidelines on suicide reporting. Previous studies have focused on the overall effectiveness of media guidelines (e.g., Niederkrotenthaler and Sonneck, 2007; Scherr et al., 2016), but have not tested any of the specific recommendations in these guidelines.

4.1. The problem of the negation of frames

How can responsible reporting be promoted? In fact, suicide experts can actively promote the use of a suggested term or phrase (e.g., "The term *Suizid* and the phrase *fatal suicide attempt* are desirable") or promote the non-use of a problematic term or phrase (e.g., "The term *Freitod* and the phrase *successful suicide* are NOT desirable"). Framing research provides a tentative answer: It seems to be advisable to positively promote the use of a neutral term (e.g., "Use *Suizid*") instead of promoting the non-use of a problematic term (e.g., "Don't use *Freitod*"). This is based on the fact that the negation of a frame always implies its activation in the memory, which is an undesired consequence of negation. Thus, human information processing activates a frame's corresponding mental concepts first and then negates it *afterwards* (Kaup et al., 2006; Kaup et al., 2007). Importantly, the activation of the mental concepts strengthens corresponding associations in the memory (Greenwald et al., 2002). For example, promoting the non-use of "successful suicide" reactivates the concepts *successful* and *suicide*, and

possibly other related (undesired) concepts held in the memory, and thus strengthens their mental links, which is an undesired outcome.

Although negations seem to be necessary when educating journalists about language-related aspects of the responsible portrayals of suicides, media guidelines should emphasize examples of *how one should* rather than *how one should not* report. The present evidence emphasizes that the use of negation should be set to the bare minimum. The promotion of how journalists *should* write about suicide needs to be the main focus in both quantitative and qualitative terms.

4.2. Limitations

This study has a number of limitations. First, we did not test the effects of competitive frame environments. We only tested the framing effects of articles that included one type of suicide referent, respectively. Future research may want to test whether and how effect sizes change if more than one suicide referent is used in a news article. Second, we only tested the effects of a single exposure situation (i.e., reading three articles within one experimental session). This decreases external validity. We were also not able to test how long-term regular exposure to specific frames influences word choice and suicide-related attitudes. Third, we did not test the effects of different frame dose levels. There may be different effects for different numbers of word occurrences. It is possible that a specific dose level is necessary to overcome an effect threshold (see Arendt, 2015). Fourth, due to our screening procedure, our sample only included participants with low levels of hopelessness. Thus, we are unable to provide evidence for framing effects in highly vulnerable individuals. Fifth, we only tested the framing effects of single German words. Future research should test possible framing effects of different suicide referents in other languages. Studies may also investigate whether the use of recommended (i.e., neutral) suicide referents within a country interacts with the country's suicide rate. It is possible that countries with high suicide rates (e.g., South Korea) tend to use more suicide referents that guidelines do not recommend for use.

4.3. Conclusion

The present study provides empirical evidence that supports suicide experts' concerns regarding the use of problematic suicide terms and phrases. Importantly, the German language, like other languages, has more than one single word for suicide—words with different connotations—and as this study shows also with different framing effects. Thus, it is highly important that language-related disparities are reflected in future efforts of developing media guidelines for suicide reporting. Our analyses revealed that even single words used to describe suicides in media reports can have an effect on audiences. Recommendations related to the specific wording used to portray suicide in media reports appear to be an essential part of media guidelines for suicide reporting.

Data statement

Data were collected via a web-based study. The data are saved as an SPSS file and can be obtained upon request.

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