Psychological Distress Because of Asking about Suicidal Thoughts: A Randomized Controlled Trial among Students

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ABSTRACT
To investigate the effect of the questions from the Beck Scale for Suicide Ideation on psychological well-being among healthy participants.

Methods:
A randomized controlled study. 301 participants completed the same four questionnaires on psychopathology. The experimental group additionally answered 21 items of the Beck Scale for Suicide Ideation. The control group answered 19 items on Quality of Life.

Results:
The experimental group showed a significant smaller decrease of negative affect compared to the control condition. When analyzing participants with an increase in distress, 80% were part of the experimental group.

Conclusions:
For most participants, answering questions about suicide does not affect their mood. A small group of participants did react with some distress to the questions about suicide. As the questions about suicide were administered immediately before the questions about negative affect, the questions about suicide could have worked as a negative mood challenge. Future experimental research should further investigate the effect of questions about suicide among healthy participants, especially on the long term.

INTRODUCTION
In the Netherlands, safety for participants in research has been regulated by law since 1999 (Ministry of Health, 1999). (Para) medical studies have to be approved by medical ethic committees. Normally, committees approve asking about psychopathology via questionnaires. But committees become more stringent on the topic of suicidality. An international survey among medical committees showed that the main concern is that asking about suicide might reinforce such thoughts or acts (Lakeman & Fitzgerald, 2009). Several studies, both experimental and observational, have examined this possible iatrogenic effect of questions about suicide ((Biddle et al., 2013; Crawford et al., 2011; Cukrowicz et al., 2010; Gould et al., 2005; Harris et
al., 2011; Mathias et al., 2012; Reynolds et al., 2006). Two of these studies showed that asking about suicide in high risk populations (borderline, adolescents who have experienced in-patient care, chronically suicidal patients) did not result in any differences in mean scores on mood and suicidality (Reynolds et al., 2006; Mathias et al., 2012). The same result was found after a much more intense suicide intervention. 30 suicidal participants answered several questionnaires and were exposed to images of suicide. No increase in suicide ideation was found after the tests. The authors concluded that research among individuals at high risk is possible when good safety procedures are in place (Cukrowicz et al., 2010). The pooled results of four different studies on the experiences of vulnerable participants in qualitative research on the topic of suicidality showed that most participants actually benefited from participating in the study (Biddle et al., 2013). A systematic review showed that positive reactions following participation in psychiatric research are generally more common than negative ones and that no long-term effects of distress or effects on functioning were found (Jorm et al., 2007).

In clinical settings, asking about suicidality is part of daily treatment. When developing screeners for suicide risk, research is conducted among the general population, i.e., participants who are not in a protected treatment environment. The possible iatrogenic effects of suicide screeners (questionnaires, interviews) in the general population have not yet been sufficiently studied according to Gould et al. (2005). She conducted a study on the effect of screening for suicidality among adolescents. In the experimental group, 1172 adolescents completed numerous questionnaires, which included 22 questions on suicidality. The control group (n = 1170) was asked the same questions as the experimental group, but the questions about suicide were omitted. Mood and suicidality were assessed before and after answering the questions. On average, adolescents in the experimental condition showed no more stress or change in mood when compared with the control group. Also, adolescents at risk for suicide (high scores on depression questionnaires, substance abuse) showed no more change in depression or suicide ideation after answering questions about suicide when compared to the controls. The same results have been found among Taiwanese students (Harris et al., 2011). 259 students were divided at random into either the experimental or the control group. Students in the experimental group answered seven questionnaires about psychopathology on the computer. One questionnaire contained several questions about suicide. The control group completed the same questionnaires as the experimental group, but answered questions on quality of life instead of the questions about suicide. Psychological distress was demonstrated as change on the Positive and Negative Affect Schedule (PANAS) conducted before and after the other questionnaires. In this study too no effect on negative or positive affect because of the questions about suicide was found. Participants that scored highly on the depression questionnaires did experience a negative mood change, but this effect was seen in both the experimental and the control group. In the current study, we replicated the study of Harris among Dutch students. We were particularly interested in possible distressing effects of answering the self-report version of the Beck Scale for Suicide Ideation (BSS, Beck et al., 1979). The BSS is one of the most widely used self-report questionnaires in suicide research (Brown, 2013). Similarly to Harris we hypothesized that asking about suicidal ideation via the BSS would not result in higher negative affect or lower positive affect when compared to the control group. We also hypothesized that
even when selecting high risk students (high score on depression, loneliness or negative affect at baseline) still no effect of questions about suicide would be found. As it is known that a small percentage of participants (generally <10%) in psychiatric research does get distressed (Jorm et al., 2007; Biddle et al., 2013) we also investigated the distribution of these expected 10% of participants among the experimental and the control groups.

METHODS
Design
The study was a randomized controlled trial conducted at the VU University in the Netherlands.

Participants
Eligible participants had to be 18 years or older, registered as a student at a Dutch University and fluent in Dutch.

Experimental Procedure
We replicated the design of Harris et al (2012). From 15th April 2012 until 25th April 2012, participants were recruited at the student computing facility of the faculty of Psychology and Education of the VU University Amsterdam. Participants were told they were attending a study to validate different questionnaires that measure emotional problems. They were offered 3.5 euro or course credits for participation. They were randomly assigned to a computer cubicle and provided their informed consent. Each cubicle had an anonymous link to either the experimental or the control group on its desktop. In both groups, the participants were asked to fill in seven questionnaires (fig 1). The two groups differed only in the fifth questionnaire. In the experimental group the fifth questionnaire contained 21 questions from the BSI. The control group answered 19 questions on Quality of Life as the fifth questionnaire.

[FIGURE 1]
Special care was taken to debrief the participants in both groups. The total study (questionnaires and debriefing) took approximately 30 minutes per student.

Questionnaires
The Positive and Negative Affect Schedule (PANAS (Watson & Clark, 1988)) Psychological distress was demonstrated as a change in score on the pre (T0) and post (T1) measurement of the PANAS. Both the Positive affect (PA) and the Negative affect (NA) sub-scales have been found to be able to detect change in mood (Watson & Clark, 1988). Total scores ranged from 10-50.

Centre for Epidemiological Studies Depression Scale (CES-D (Redloff, 1977))
The CES-D is a self-report questionnaire that measures depressive symptoms in the general population. The scores range from 0- 60. Internal consistency is good (Redloff, 1977).

World Health Organization Quality of Life Abbreviated (WHOQOL-BREV, (Skevington et al., 2004)
The instrument measures the following broad areas: physical health, psychological health, social relationships, and environment (Skevington et al., 2004).
De Jong Gierveld Scale for Loneliness ((De Jong-Gierveld, 1987))
The loneliness scale is widely applied and cited for scientific usage (Jong Gierveld & Tilburg, 2010). The scale consists of 11 items. Minimum score is 11, maximum score is 55.

Beck Scale of Suicide Ideation (BSI, (Beck et al., 1988))
Our intervention involves using the Beck Scale for Suicidal Ideation (BSI), a well validated and widely used instrument (Beck et al., 1979). The BSI consists of 21 self-report items. The first 19 items measure the severity of actual suicidal desires and plans. Item 20 assesses the number of previous suicide attempts and item 21 the severity of the last suicide attempt.

Social Support Questionnaire (Kempen & Eijk, 1995)
We measured social support with a 12 item version of the Social Support Questionnaire (Kempen & Eijk, 1995). A high score reflects a low level of perceived social support.

Debriefing
After the task, participants were taken into a separate room for a structured debriefing. Participants were asked how they experienced the questions in general, if they had trouble with any of the questionnaires, and if their mood changed because of answering the questions. If a participant reported a change in mood, a note with the telephone number of the specialized psychologists was provided with a clear invitation to contact the psychologist if the participant kept feeling negative. No participant contacted the specialized psychologist during or after the study.

Approval From Medical Ethics Committee
Approval from the Medical Ethics Committee of the VU University Medical Center was requested and obtained (registration number 2012/121).

Statistical Analysis
To analyze the effect of answering questions about suicide on Negative Affect (NA) at T1, a univariate ANCOVA was performed. The fixed factor was the group, and NA at T0 was used as a covariate. We conducted the same analysis for different selections of high risk participants. (CESD >15, CESD >22, Loneliness >30, NA T0 > 22). The same analyses were carried out for the sub-scale Positive Affect (PA). Finally, we looked at the distribution over the groups of participants who reported a positive change of NA of at least 1.5 standard deviation above the mean change in NA.

RESULTS
301 participants were included in our study. All data assumptions were met. The control and the experimental groups showed comparable demographics and scores at baseline Average mean (SD) on the BSS in the experimental group was 0, 9 (2). 14 participants scored >2 on the BSS.

Effect of the BSS on the NA Scale
For the total sample we found a significant effect of the group on the mean of NA at T1, F (1.295) = 7.36, p < 0.01, effect size = 0.3. When controlling for NA at T0, NA at T1 was significantly higher in the experimental group when compared to the control group. No effect for the different subgroups was found.
Effect of the BSS on the PA Scale
The same analyses with the five different subgroups of participants were done for the scores on the PA. No significant effects were found for the group on PA T1.

Distribution of Participants That Showed Elevated NA
To investigate the clinically relevant rise in affect, we selected participants that showed an elevation of NA of 1.5 standard deviation above the mean change in NA (i.e., a change score of 3.9 or higher). 24 participants met this criteria. 19 of these participants were part of the experimental group. The distribution over the group and whether or not a participant scored 1.5 standard deviation above the mean was significant ($\chi^2; (1) = 11, p = 0.001$). Seven participants in the experimental group scored higher than the highest score on the control group. Three participants in the experimental group showed an increase of NA of 20% (= increase of 10 points or higher). Multivariate analyses showed that the 24 participants with elevated NA were characterized by significant higher scores on loneliness compared to the other 273 participants.

DISCUSSION
Our study suggests that the answering of questions about suicide does result in distress for a small minority of more vulnerable individuals. For most participants, answering the questions about suicide of the Beck Scale for Suicide Ideation does not affect their mood, but when looking at the distribution of participants who showed significant elevation of NA, most (80%) were part of the experimental group. Our results differ from other studies that showed no negative effect of questions about suicide.

A possible explanation for the effect found could be that in our study, the questions about suicide worked as a negative mood trigger, as the BSS was administered just before the questions on negative affect. Several studies have shown that negative mood can be induced in healthy participants by listening to negative self-statements, or thinking about an event that was upsetting for them personally((Martin, 1990)). No negative long-term effects of these mood induction methods are documented. A follow-up study should replicate the design with a few questionnaires between the BSS and the negative affect scale to further investigate any possible priming or trigger effect of the BSS.

Another explanation could be found in the Theory of Terror Management (Greenberg et al., 1992). The theory states that self-esteem protects people from the anxiety that awareness of their vulnerability and mortality would create. In our present study, we ask participants first about their level of loneliness, perceived social support, and then about suicide. If a participant is reminded that he has no friends and that he actually is lonely, and then is reminded about his own mortality via questions about suicide, according to the Theory of Terror Management it should come as no surprise that mood decreases.

Strengths and Limitations
The strength of this study is the experimental design and the relative large sample size, which made it possible to investigate the effect of answering the BSS. A limitation of this study is that, as all of the participants studied at the university, our results cannot be generalized as applying to all 18-24 olds. Furthermore, the sample of this study scored relatively high on the psychopathology questionnaires. 30% of
our sample scored above the cut-off score of 16 on the CESD, which is comparable to other studies among undergraduates (Regestein et al., 2010) but high compared to the general population (Redloff, 1977). Also, given the small number of participants in the different subgroups (for example, only 48 participants scored CESD >22), we need to be cautious about the robustness of our findings. Most importantly, we did not include a follow-up. Now it would be of interest to know if the effect of the questions lasts for hours or perhaps days. Although a systematic review found little indication of any longer-term harm to participants, subsequent research should include long term follow up.

**IMPLICATIONS AND CONCLUSIONS**

Most participants, even participants at high risk, showed no distress from answering questions about suicide. We did find that a small group of participants reacted with distress to the questions about suicide. This group was characterized by higher but not extreme scores on loneliness, depression, perceived lack of social support and negative affect at baseline. Although experimental studies should investigate whether our effect was as a result of negative priming, and whether it has any long effect, researchers should be aware of the possible adverse effect of suicide research and make sure to develop an adequate safety protocol. Both researchers and Medical Ethical Committees should consider the likelihood and impact of distress against the importance of new research when using the BSS.

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**AUTHORS’ CONTRIBUTIONS**

AK was the initiator of the study. DP drafted the manuscript. All authors contributed to implementation of the study, and to the manuscript writing.

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**Figure 1. Design of the study**

Randomised: N = 301

Experimental (n = 150)
- PANAS T0
- CES-D
- Loneliness
- Social support
- BSI
- PANAS T1
- Demographics
- Debriefing

Control (n = 151)
- PANAS T0
- CES-D
- Loneliness
- Social support
- WHOQOL
- PANAS T1
- Demographics
- Debriefing