

**The Effects of a Mixed Educational-and Contact Intervention on Prolonged Grief Stigma:
An Experimental Study**

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Abstract

Background: Prolonged grief disorder (PGD), a disturbance characterized by severe, persistent and disabling grief response, is recently added to the *International Classification of Diseases 11* (ICD-11). Establishing diagnoses for pathological grief may however elicit stigmatizing public reactions (i.e. public stigma). Additionally, while there is evidence that educational- and contact interventions are effective in reducing public stigma of a wide range of disorders, no studies (to our knowledge) have investigated the effects of an intervention on public stigma in PGD yet.

Method: We recruited 464 adults from the general population (73% female; mean age: 26.05 years) that were randomly allocated to an educational- and contact intervention condition or a control condition. Subsequently, all participants read a vignette about a person with PGD, and we assessed: 1) characteristics ascribed to a person 2) emotional reactions to the person, and 3) desire for social distance.

Results: Participants in the video intervention group rated a person with PGD as less sensitive and indicated fewer anger-related emotional reactions towards a person with PGD, compared to the group not receiving an intervention. However, we did not find a significant effect for the remaining stigma indicators.

Conclusions: Public stigma for PGD can be reduced with educational- and contact interventions. Further research is required to investigate long- term effects, and to understand what the active ingredients of the interventions are to optimize effects of interventions to reduce public stigma for PGD.

Keywords: Prolonged grief, intervention, public stigma, mental health literacy, vignette

The Effects of a mixed Educational-and Contact Intervention on Prolonged Grief Stigma: An Experimental Study

The process of coping with major negative life events (such as bereavement) is generally assumed to unfold in a certain way. The general public expects that bereaved people will eventually be able to cope with the loss of a loved one and move on with their lives (Silver & Wortman, 1980; Tait & Silver, 1989). However, for some bereaved people grief can become persistent, severe and disabling. Diagnoses characterized by such grief reactions have recently been added to diagnostic handbooks.

First there is prolonged grief disorder (PGD), which is a formal psychiatric diagnosis of the *International Classification of Diseases 11* (ICD-11; World Health Organization, 2018). It is a disturbance in which, following the death of a partner, parent, child or other person close to the bereaved, there is persistent and pervasive grief response characterized by longing for the deceased or persistent preoccupation with the deceased accompanied by intense emotional pain. A different disorder with the same name will be added to the *Diagnostic and Statistical Manual of Mental Disorders* (fifth edition: DSM-5-TR).

Labelling people with severe grief reactions a diagnosis provides a good starting point for research and an impetus for the development of treatment for prolonged grief (Doering & Eisma, 2016). Diagnostic labels may, however, elicit a mental health stigma. Stigma is defined as the co-occurrence of labeling, separation, status loss, stereotyping, and discrimination in a context in which power is exercised (Link & Phelan, 2001). Public stigma refers to the phenomenon of large social groups endorsing negative stereotypes about and acting against a stigmatized group (Corrigan et al., 2005). Public stigma is associated with reduced help seeking from mental health services and with self-stigma (Clement et al., 2014). Self-stigma is a different form of stigma that

occurs when affected individuals internalize public stigma. As a result of this internalization they come to believe that they are less valuable because of their disorder in the same way as they are described by others (Gonschor et al., 2020). This self-stigma leads to a negative self- image (Hanschmidt et al., 2016; Livingston & Boyd, 2010), and is also associated with depression and suicidality (Carpiniello & Pinna, 2017). The present study focuses on public stigma.

Commonly used indicators of public stigma are negative attributions, emotional reactions and preferred social distance. Attributions are the characteristics ascribed to a person (Link & Phelan, 2001). Negative emotional reactions have been observed towards people suffering from a wide range of mental disorders (Pescosolido et al., 2010; Schomerus et al., 2012). Angermeyer and Matschinger (2003) distinguished three types of emotional reactions to people with a mental illness: fear, anger and pro-social emotions. Preferred social distance indicates a person's willingness to interact with a person in different social relationships (Link et al., 1987).

A recent vignette-based experiment has demonstrated the existence of public stigma towards people with PGD (Eisma, 2018). In this study, a general population sample judged a person with PGD (in comparison to a person without PGD) to be less competent, warm, and emotionally stable, and as more sensitive and dependent. People with a PGD diagnosis also elicited more anger, anxiety and pro-social reactions and a stronger desire for social distance. These effects were moderate to large in size and consistent across all indicators of stigma.

These findings have been replicated in similar Dutch, German and Australian experiments (Eisma et al., 2019; Gonschor et al., 2020; Dennis et al., 2021). Another study by Johnson et al. (2009) supports the external validity of these findings. This study has demonstrated that people who experience more severe grief symptoms perceive more stigma in their social environment.

Given the consistency of these findings, and the potential negative consequences of public stigma, it appears to be useful to investigate how public stigma can be reduced. Public stigma towards people with PGD may result from misconceptions about mental illness. Members of the general public often endorse such misconceptions. For example, the findings of a recent nationally representative study on mental illness stigma indicate that only 42% of Americans aged 18-24 believe that people with a mental illness can be successful at work. Furthermore, 26% of Americans from the same age group believe that others have a caring attitude towards people with a mental illness and 25% believe that people with a mental illness can recover from their illness (Fox et al., 2018). The outcomes of this study are in line with common misconceptions about people with a mental disorder, which include beliefs that they are dangerous, violent or behave unpredictably. Other misconceptions are that people with a mental illness are incompetent and cannot look after themselves (Gaebel et al., 2017)

One factor that could counter such misconceptions is mental health literacy. Mental health literacy refers to knowledge and attitudes regarding mental health that aid in recognition, management and prevention of mental health issues (Jorm et al., 1997). The findings above indicate that there is a low level of knowledge about mental health in the community (Jorm et al., 2006; Bartlett et al., 2006; Farrer et al., 2008). Many individuals are unable to identify symptoms of common disorders, such as depression (Jorm et al., 2006), and they fail to endorse treatment strategies endorsed by professionals (Parker et al., 2001; Jorm et al., 2006). Increased knowledge and positive attitudes are related to better mental health literacy. There is evidence that interventions that improved mental health literacy in the general population could lead to a better recognition of mental disorders and a stronger belief that treatments for mental disorders are effective (Jorm et al., 1997).

In a systematic review and meta- analysis done by Morgan et al. (2018) educational interventions, which aim to reduce stigma by providing factual information which contradicts inaccurate stereotypes, were shown to reduce public stigma of a wide range of disorders across 20 studies. Educational interventions work because they directly replace information about mental illness that is incorrect, with the facts. This type of intervention appears grounded in Allport's idea that prejudice stems from insufficient knowledge and stereotypes (Ahuja et al., 2017). Contact interventions involve exposure with people who have a severe mental illness and are thought to work by increasing empathy and reducing anxiety (Pettigrew & Tropp, 2008). Several studies have shown an inverse relationship between having contact with someone who has a mental illness and endorsing psychiatric stigma (Link and Cullen, 1986; Penn et al., 1994; Holmes et al., 1999; Penn et al., 1999).

To the best of our knowledge, there are no studies that have aimed to reduce public stigma for PGD yet. Both type of interventions have proven to be effective in their own way. Therefore, the aim of this study is to use a mixed educational- and contact intervention, in the form of a video, to reduce public stigma. It provides information on the diagnosis and treatment of PGD (educational aspect of the intervention) and personal experiences (the contact aspect of the intervention). One group will receive the intervention and the other group will not. A comprehensive set of public stigma indicators will be used to assess stigma (attributions, emotional reactions towards the individual, and preferred social distance from the individual). The expectation is that the first group will demonstrate less public stigma in response to a vignette of a person with PGD, presented after the video intervention.

Methods

Sample and Procedure

The Ethics Committee of the Faculty of Behavioural and Social Sciences provided ethical approval for this Bachelor thesis study (PSY-2122-S-0087). We recruited a convenience sample of participants, proficient in the English language, mostly from the Dutch and German adult (age ≥ 16 years) population. Participants who did not complete the entire survey were excluded. Recruitment took place online in Facebook groups and with social media web-links, and via advertisements in public places (e.g., the streets in the city centre of Groningen). First-year students at the University of Groningen could participate in exchange for course credits (SONA points). Potential participants were also approached in public places in Groningen. They received a flyer with a QR code to be scanned by their phone that provided them direct access to the study. The full link to the study was also included on the flyer as an alternative to the QR code for participants to type into their web browsers.

The experimental study was programmed in Qualtrics. Participants were informed that the study aimed to gain a better understanding of social reactions towards people experiencing grief. The procedure (e.g., data handling, the voluntariness of participation and anonymity) was explained and all participants provided online informed consent. Participants first filled out a background questionnaire on demographic information (e.g., gender, nationality) and whether they had experienced the death of a close other in the past three years. Participants were then randomly allocated to the intervention condition or the control condition. The intervention comprised an educational and contact-based video (see Materials). The control group did not watch a video. Next, both groups read a vignette (see Materials) describing a bereaved individual with PGD. Following the vignette, participants filled out questions assessing public stigma towards the person in the vignette. At the end of the study, a manipulation check was administered by asking participants in the experimental group questions about the content of the

video and all participants about the content of the vignette. In addition, participants were asked if they already knew anything about complicated grief and what they believed the aim of the study was. As a final step, participants received a debriefing, informing them about the true study aims (see Appendix A), and they were thanked for their participation.

In total, 826 people participated. Participants who did not complete the entire survey (cut-off > 81%) were excluded since these people did not fill out the manipulation check or the required questions needed for our dependent variables. 361 participants (44%) did not complete the full questionnaire. One participant did not give consent to participate, their data was deleted. Therefore, the final number of participants is 464.

A total of 116 (25%) of the participants identified as men, whereas 339 (73%) of the participants identified as women, 4 (1%) as non-binary and 5 (1%) selected other. The age of participants ranged from 16 to 85 ($M = 26.05$, $SD = 12.13$). Educational levels were divided into lower (primary school, high school, vocational education) and higher education (college or university) and the majority of participants had an educational level of college or university (57%). The sample consisted of 229 (49%) Dutch participants, 123 (27%) German participants and 112 (24%) participants with other nationalities; amongst these, dual nationalities were also included. Table B1 (See Appendix B) depicts sample characteristics.

Materials

Intervention Video

The intervention video showed an expert and a person who experienced complicated grief symptoms. The video (see References for the link to the video) was created by the American Psychiatric Association (2020) and covers different aspects of complicated grief. The video provides information about symptoms of complicated grief. It explains how a complicated grief

treatment, a 16-sessions manualised proven-effective treatment for complicated grief, works. The expert explains that the woman in the video yearns strongly for her son and could not engage in meaningful activities anymore, this can also be seen in the person in the vignette. The video (American Psychiatric Association, 2020) is not designed to target stigma. Yet, it could serve as a stigma intervention because it combines two types of stigma interventions by providing accurate information about complicated grief and its treatment (education intervention) and by showing someone who has suffered from complicated grief herself (contact intervention) (Gronholm et al., 2017).

Vignette

This study used a vignette, which is a frequently used method to examine stigma (Link et al., 2004), to assess public stigma towards a person with a complicated grief diagnosis. The vignette that was used is based on previous studies on public stigma towards PGD such as Dennis et al. (2021) and Eisma et al. (2019). The vignette, shown in Table 1, depicts a fictional person named Mark who experiences severe grief and has received the diagnosis of complicated grief, following the loss of his wife. We chose to name the diagnosis complicated grief instead of PGD since the term complicated grief was also used in the intervention video. Both intervention and control groups received this vignette. The vignette was based on the PGD criteria by Maercker et al. (2013) but is also compatible with the criteria for PGD in the ICD-11 (World Health Organization, 2019) and the criteria for PGD in the Diagnostic and Statistical Manual of Mental Disorders (5th edition Text Revision; DSM-5-TR; American Psychiatric Association. Unpublished Manuscript). The vignette contains the time criterion and five symptoms for PGD. The disturbances following the death should last at least 12 months (according to the DSM-5-TR) and cause impairments in daily functioning, yearning for the deceased, trouble accepting the

loss, anger, and difficulties engaging in new activities. The time since the loss was set to more than two years, which is longer than the time criterion of 12 months. Spousal bereavement was used because this type of loss is common and yields a relatively strong grief response (Eisma et al., 2019).

Table 1*Vignette*

Fifty-year-old Mark has lost his wife to a stroke more than two years ago. He finds this extremely difficult and does not function well at work nor at home. Since the loss he yearns strongly for his deceased wife. Mark has difficulties accepting the loss and experiences strong feelings of anger. He withdraws socially and engages in few activities. On the basis of this behaviour a mental health professional diagnoses him with a complicated grief.

Instruments

A self-constructed background questionnaire was administered before the vignettes were presented. All participants were presented with the public stigma questionnaires after the vignette.

Background Questionnaire

To assess background information, a self-constructed questionnaire was implemented, asking participants about their gender (female, male, non-binary, other, prefer not to say), age (in years), nationality, education level (primary school, high school, vocational education, college/university) and whether they study psychology. Participants also answered questions about their religion (yes, actively practising/yes, but not practising/no), employment status

(student, full-time, part-time, unemployed, incapacitated, retired, housewife/houseman – multiple answers possible), and whether they experienced bereavement within the last three years (yes/no).

Stigma Questionnaires

Following the vignettes, the participants were asked to complete the following public stigma measures. In total, three components of public stigma were assessed (Link & Phelan, 2001): attributions, emotional reactions towards the individual, and preferred social distance from the individual.

Attributions

Participants were asked to indicate on a Likert scale ranging from (1) “*completely agree*” to (4) “*completely disagree*”, to what extent they agreed or disagreed with statements about the fictional person Mark. They were asked whether they agreed that Mark is competent, warm, emotionally stable, dependent, and sensitive. These items were previously used in studies by Eisma (2018) and Eisma et al. (2019) and are based on research by Angermeyer and Matschinger (2003) on public stigma in depression and research on personality characteristics especially associated with grief severity (Denckla et al., 2011; Wijngaards-de Meij et al., 2007). The items that were used here measure different types of attributions, both positive and negative attributions. Therefore, the reliability could not be computed.

Emotional Reactions

The emotional reactions scale comprises a 13-item self-report measure containing 3 subscales assessing stigma-related emotional reactions (von dem Knesebeck et al., 2017). The three subscales consist of the following stigma-related emotional reactions: anger, prosocial emotion, and fear (Angermeyer & Matschinger, 2003). As previous studies found low

reliabilities for the fear and prosocial emotion subscales (Eisma, 2018; von dem Knesebeck et al., 2017), a more reliable version of the scale adapted by Eisma et al. (2019) was implemented. The anger subscale includes 4 items (e.g., “*I feel annoyed by this person*”), the fear subscale 5 items (e.g., “*I feel uncomfortable*”) and the prosocial emotion subscale 4 items (e.g., “*I am concerned about this person*”) (Dennis et al., 2021). Participants were asked to rate the items on a 4-point Likert scale, ranging from (1) “*completely agree*” to (4) “*completely disagree*”. The internal consistencies of the three subscales ranged from low to good (anger $\alpha = 0.813$; prosocial $\alpha = 0.538$; fear $\alpha = 0.865$).

Preferred social distance

Preferred social distance from the described person was measured with the Social Distance Scale (SDS; Link et al. 1987). The SDS consists of statements about whether they would like to interact with the described person in various roles (e.g., a co-worker, neighbour, colleague), indicating the preferred social distance towards this person. Here, higher scores indicate that participants prefer less social distance towards the person. Participants were asked to indicate whether they agree or disagree with statements about Mark on a 4-point Likert scale, ranging from (1) “*completely disagree*” to (4) “*completely agree*”. The reliability was good, $\alpha = 0.825$.

Manipulation check

To assess whether participants in the experimental condition watched the video attentively, the following two questions were posed to these participants at the end of the study: “What did Stephanie suffer from?” and “Which family member did Stephanie lose?”. Subsequently, to assess whether the vignette was understood correctly, each participant

(experimental and control group) was asked the following two questions at the end of the study: “When did Mark lose his wife?” and “What was Mark’s diagnosis?”

Questions about complicated grief knowledge and study aim

In addition to the manipulation check, participants were also asked about their level of knowledge regarding the term complicated grief, as well as what they believed the aim of the study was. This was done by asking participants to answer the question: “Before the study, did you already know about complicated grief?”. Participants could then indicate their level of knowledge with “Yes I knew a lot about it”, “I knew a little bit about it”, “Yes I have heard the term before” or “No, I have not heard about it before”. Then, they were asked to fill in their answer to the question: “What do you think the aim of this study was?”. Finally, the participants got a debriefing explaining the true study aims.

Analyses

A randomisation check was carried out to check whether the groups were equivalent on relevant characteristics. The two groups were compared on the background variables (gender, age, nationality, education, employment status, religiosity, and experience of bereavement). A t-test was performed for the continuous variable ‘age’ and chi-square tests were performed for the remaining categorical variables. Subsequently, assumptions of MANOVA (i.e., normality, linearity, homogeneity of variances) were checked. Next, the effect of the intervention (vs no intervention) was tested with a between-group MANOVA. There were nine dependent variables: the five attributions, three forms of emotional reactions and the preferred social distance. Non-parametric tests (Kruskal-Wallis tests) were run as well due to a violation of assumptions. Furthermore, as a sensitivity check, the main analyses were rerun with and without the participants who got at least one of the manipulation check questions wrong, to investigate

whether this influenced the results. A two-sided significance level of 0.05 was used in the analyses. Partial η^2 's were calculated to measure effect size. An effect size of 0.01 was viewed as small, 0.06 as medium and 0.14 as large (Cohen, 1998).

Results

Assumptions Check

The following assumptions were checked using the software program SPSS (Version 26.0): (1) linearity, (2) normality, (3) homogeneity of variances and (4) homogeneity of variance-covariance matrices, (5) absence multicollinearity and (6) absence of outliers.

The scatterplot matrix shows a violation of the linearity assumption (1): the dependent variables are not linearly related to each other, no other form of distribution became visible. Normality assumptions (2) were violated for all the variables: the Shapiro-Wilk's test shows significant results for all of the dependent variables ($p < .001$), therefore the null hypothesis that the group is normally distributed is rejected. Levene's test showed no significant differences in variances for eight of the nine dependent variables, only the anger variable does not meet the assumption of equal variances (3). The assumption of homogeneity of variances-covariances matrices (4) was not violated (Box's $M = 54.387$, $p = .187$). Multicollinearity (5) was assessed by comparing bivariate correlations, no correlations above .8 were found, which means that the assumption of absence of multicollinearity is met. Lastly, the absence of multivariate outliers (6) was assessed by obtaining Mahalanobis distances. Three multivariate and 15 univariate outliers were detected.

Non-parametric tests (Kruskal-Wallis tests) were run after the planned MANOVA, because of violation of assumptions. Only the parametric tests results are reported in the main

analysis section since both tests indicate similar results: $H(1) = 5.82, p = .016$ for the attribution “I would describe Mark as: sensitive” and $H(1) = 5.64, p = .018$ for the emotional anger subscale.

Randomization Check

To check whether the two groups (intervention vs. no intervention) are equivalent, they were compared on all background characteristics. There were no significant differences between the two groups on age ($t(462) = -0.97, p = .331$), nationality ($\chi^2(2) = 2.68, p = .262$), education level ($\chi^2(3) = 6.32, p = .097$), currently studying ($\chi^2(1) = 0.58, p = .447$), proportion of psychology students ($\chi^2(4) = 6.51, p = .164$), and having experienced bereavement in the past three years, ($\chi^2(1) = 2.13, p = .145$), and English speaking abilities ($\chi^2(2) = 3.07, p = .216$). Fisher’s exact test was used to determine if there was a significant association between the gender of the two groups and the employment status. No significant effect was found on gender ($p = .662$) and on employment status ($p = .415$). However, the two groups differed significantly on religion, ($\chi^2(2) = 10.11, p = .006$) (see Appendix B2). There were significantly more non-actively religious people in the intervention group.

Manipulation Check

Participants who were in the intervention group ($n = 198$) had to answer two manipulation check questions about the video. The question ‘What did Stephanie suffer from?’ was answered correctly with the answer “Complicated Grief” by 196 participants (99%). A percentage of 95% (i.e., 188 participants) answered the question ‘Which family member did Stephanie lose?’ correctly by saying “Her son”. Additionally, all participants had to answer two questions about the vignette. The question ‘When did Mark lose his wife?’ was answered correctly by 78% of all the participants, saying “More than two years ago”. Lastly, 81% of the participants correctly answered the question ‘What was Mark’s diagnosis?’ with “Complicated

Grief”, indicating that the majority of the participants read the vignette well and paid attention to the video. Main analyses were rerun without the participants who had both manipulation check questions for the video and/or both questions for the vignette wrong (see sensitivity analysis).

Main Analysis

The MANOVA revealed a significant main effect of the educational and contact-based intervention (yes vs. no) on indicators of public stigma (Pillai’s Trace = .044, $F(9, 454) = 2.31$, $p = .015$, $\eta_p^2 = .044$). Univariate tests demonstrated that there was a significant difference between the intervention and no-intervention group on the emotional anger-subscale ($F(1, 462) = 8.478$, $p = .004$, $\eta_p^2 = .018$), and on the attribution “I would describe Mark as: sensitive”, ($F(1, 462) = 4.809$, $p = .029$, $\eta_p^2 = .010$). Furthermore, comparing the means of the two conditions showed that participants in the intervention group rated Mark as less sensitive and indicated fewer anger-related emotional reactions towards him (see Appendix B).

Sensitivity Analysis

The manipulation of the video condition showed two participants that answered both manipulation questions wrong. These two participants were deleted. Furthermore, 28 participants answered both questions for the vignette wrong and were also deleted. With a sample size of $N = 434$, a new MANOVA was run. A significant main effect was found (Pillai’s Trace = .050, $F(9, 424) = 2.49$, $p = .009$, $\eta_p^2 = .050$). Univariate analyses indicated significant effects for the emotional reaction anger ($F(1, 432) = 7.66$, $p = .006$, $\eta_p^2 = .017$), on the attribution “I would describe Mark as emotionally stable” ($F(1, 432) = 4.13$, $p = .043$, $\eta_p^2 = .009$) and on the attribution “I would describe Mark as: sensitive” ($F(1, 432) = 4.70$, $p = .031$, $\eta_p^2 = .011$). Means indicated that participants in the intervention group reported fewer anger-related emotional

reactions towards Mark, rated him as less sensitive and less emotionally stable, than participants in the control group.

Attrition Analysis

Out of the dataset of 826 people 121 people were deleted because they did not fill out any background characteristics, the remaining 705 participants were divided into two groups: one group that completed the survey (for at least 81%) and one group who did not complete the survey.

To check whether there were any differences between the group of participants who didn't complete the study and those who did complete the study, both groups (the attrition group $n = 241$ vs. the group who completed the survey $n = 464$) were compared on background characteristics.

Significant differences between the two groups were found on the following background characteristics: percentage of students ($\chi^2 (1) = 6.35, p = .012$); studying psychology ($\chi^2 (4) = 68.25, p < .001$); educational level ($\chi^2 (3) = 18.77, p < .001$); experience of bereavement in the past three years ($\chi^2 (1) = 7.57, p = .006$) and nationality ($\chi^2 (44) = 97.17, p < .001$). Fisher's exact test (with the Monte Carlo estimate for the p-value) is used to compare the two groups on employment status: significant differences were found between the group who completed the survey and those who did not complete the survey ($p = .031$).

Bar graphs and post hoc tests indicated that there are significantly more students, more first-year psychology students, more participants with an educational level of 'high school' and 'college/university', and more participants who experienced bereavement in the past three years in the group who completed the survey. Additionally, regarding employment status, there were

significantly more students and more people working full time in the group who completed the survey.

Analysis of Participants' Comments

Amongst all responding participants, the following comment themes seemed to be most common. Ten participants did not understand the word “willingness” concerning the question about how they felt about Mark on the social distance scale questions. For example, participants found it difficult to respond to the question “How would you feel as a worker on the same job as someone like Mark?” with the answer options ranging from “definitely willing” to “definitely not willing” on the Likert scale. One participant mentioned that the timed vignette took longer than he/she expected. Five participants indicated feeling forced to answer questions towards Mark and found that the forced-choice format sometimes did not correctly represent their opinion. They had wished for a neutral option. Four participants also felt like they wanted to elaborate more on their responses towards Mark on the stigma scales (e.g., they would have liked to have given a reason why they did not want to rent a room to him, because of his age, etc.), but they were unable to do so. Four participants would have liked to have received more information about Mark in the vignette (i.e, how Mark is usually as a person, habits, tidiness, etc.) to relate to him more and give a more representative response to the questions.

Discussion

The aim of the present study was to assess whether the use of a mixed educational- and contact intervention reduces public stigma towards people with PGD. A multivariate group comparison demonstrated a significant difference in public stigma responses in the intervention group compared to the group not receiving an intervention. Further univariate analyses revealed that the significant effect could be attributed to effects on the emotional response anger and the

attribution of sensitivity. Specifically, the participants in the intervention group described the person in the vignette with PGD as less sensitive and they felt less angry emotional reactions towards this person, compared to the control group. These effects are partly in line with the expectation that educational- and contact interventions reduce stigma in PGD. However, we did not find a significant effect for all nine dependent variables.

The significant effects of the present study are comparable with the small-to medium effects on stigma that were found in the systematic review and meta-analysis by Morgan et al. (2018). This systematic review and meta-analysis focuses on what interventions are effective in reducing public stigma towards people with a severe mental illness, defined as psychosis, schizophrenia or bipolar disorder. Contact interventions and education interventions both led to small- to medium reductions in stigmatizing attitudes and desire for social distance. However, it should be considered that we also found a number of null results on other attributions, emotional responses and desired social distance. A possible explanation for the difference in findings may be the content of the video. The video educates viewers and provides contact with a person who was diagnosed with complicated grief. Participants in the intervention group may describe the person with PGD in the vignette as less sensitive than the control group, because the video shows a woman who recovered from complicated grief. The video could have also raised empathy, which could explain why the participants in the intervention group felt less angry emotional reactions towards the person with PGD.

This study has a couple of clinical implications. Based on our study, we can conclude that an educational- and contact video intervention that targets public stigma for PGD may be successful to a certain extent. This study has demonstrated the principle that certain aspects of stigma for PGD could be reduced with the use of interventions. Future investigation should focus

on what the active ingredients of the intervention are. Exploring whether the contact component of the intervention or the educational component has a larger effect, could be helpful for the process of creating new interventions. Furthermore, long-term follow-up data collection is needed to gather insights on the sustainability of the anti-stigmatizing attitudes.

This study had some clear strengths. To the best of our knowledge, this is the first experimental study that has aimed to reduce public stigma for PGD. Past research has demonstrated the existence of public stigma towards people with PGD (Eisma, 2018). This present study used similar vignettes as prior studies demonstrating the existence of public stigma and considered multiple public stigma indicators, to comprehensively assess stigma (Eisma, 2018).

Nevertheless, a number of limitations should be mentioned. First, the present convenience sample is non-representative of the general population, being mostly female, highly educated and first-year psychology student, which may threaten the ability to generalize the findings. Moreover, results of the attrition analysis indicated differences on the background characteristics between the people who completed the survey and the people who did not complete it. This revealed that the people who completed the survey were significantly more often students, first-year psychology students, highly educated and bereaved in the past three years. Possible explanations for this could be that psychology students are more willing to help with research like this because they receive SONA credits for their participation. Participants who experienced bereavement in the past three years could be more invested in grief topics and might have finished the survey for this reason. Future researchers could aim to recruit a more representative sample to replicate and extend the findings of our current study.

Second, the dropout rate for this study was fairly high. Possible reasons for this could be

technical issues a number of participants in the intervention group encountered. After a certain time frame, an arrow should have appeared to click to the next page. A number of participants indicated that this arrow did not appear after watching the video. Some participants started the survey again after unsuccessfully trying to complete it the first time. This led to differences in sample sizes for both groups (video/no video). Since the smaller sample determines the power, our power was negatively affected by this issue. An indication for future research would be to resolve any technical issues before the start of the experiment. Aside from technical issues, a lack of time for recruitment resulted in a smaller sample size than we originally aimed for. An indication for future research would be to improve sample sizes by scheduling enough time for the recruitment of participants.

Thirdly, it remains to be established whether our intervention yields long-term effects, considering this present study only provides us information on short-term effects. It is also needed to examine which parts of the intervention were effective and how to apply them to real-life settings. There is need to improve evaluation methods by adjusting the general design of the study. Follow-up data collection beyond the immediate end of the intervention is an example of such a design adjustment.

Despite these limitations, the present findings show an overall significant difference in public stigma response in the intervention group compared to the no-intervention control group. To the best of our knowledge, this study was the first to use a mixed educational- and contact intervention to reduce public stigma in PGD. Future research should aim to elucidate which parts of the intervention worked and whether or not the intervention yields long-term results in reducing public stigma for PGD.

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Appendix A

Debriefing

Dear participant,

Thank you very much for participating in our study “Perceptions of Grief”. We could not fully explain the aims of the study beforehand because it may have influenced your responses to our questions. Therefore, we now explain in more detail what the aims of the study were.

What was the study about?

The study was about social reactions to severe, persistent and disabling grief, termed complicated grief. In this study, we investigated whether providing education about complicated grief and contact with a person who suffered from complicated grief via a video reduces stigma towards people who experience complicated grief.

How was this tested?

To test whether the education and contact-based intervention reduces stigma towards individuals with complicated grief, we conducted an experiment. Participants in the experimental condition were asked to watch a video, which contained an expert description of the diagnosis and treatment of complicated grief. Additionally, a person with complicated grief told about her experiences in the video. Participants in the control condition did not receive any intervention. Afterwards, both groups were asked to fill in a survey in response to a description of a person with complicated grief. The survey contained questions about negative attributions, negative emotional reactions, and desire for social distance, which together constitute stigma.

We expect to find differences in stigma between the group who participated in the intervention (watching the video) and the group who did not watch the video. Specifically, we expect that participants who watch the video (vs. not) will attribute fewer negative traits to a person with complicated grief, will experience fewer negative emotions towards this person, and a lower desire for social distance from this person.

Why is this important?

Stigma towards mental health conditions has adverse consequences on individuals’ well-being. Prior studies have found that interventions, such as education about mental health and contact with people who have a mental health condition, can reduce stigma towards individuals with mental illness. However, it has not yet been investigated if such interventions are effective in reducing stigma for complicated grief. Examining possible stigma interventions may help to reduce stigma towards individuals with complicated grief and thereby might help to improve their well-being.

What if you want to know more?

You may always ask questions about the research. You can do so by contacting one of the students who have asked you to participate in this study or by contacting the researcher who is responsible for the execution of this study: Maarten Eisma, m.c.eisma@rug.nl, +31 (0) 50-3632306, University of Groningen, Faculty of Behavioral and Social Sciences, Department of Clinical Psychology and Experimental Psychopathology, Grote Kruisstraat 2/1, 9712 TS, Groningen. Do you have questions/concerns about your rights as a research participant or about the conduct of the research? You may also contact the Ethics Committee of the Faculty of Behavioural and Social Sciences of the University of Groningen: ec-bss@rug.nl.

Appendix B: Tables**Table B1***Sociodemographic Characteristics of the Participants*

Sample Characteristics		Intervention Video (<i>n</i> = 198)	No Intervention Video (<i>n</i> = 266)
Gender (N (%))	Male	53 (26.8)	63 (23.7)
	Female	142 (71.7)	197 (74.1)
	Non-binary	2 (1.0)	2 (0.8)
	Other	1 (0.5)	4 (1.5)
	Prefer not to say	0	0
Age in years (M (SD))		26.68 (13.2)	25.58 (11.3)
Education (N (%))	Lower education	95 (48.0)	105 (39.5)
	Higher education	103 (52.0)	161 (60.5)
Psychology student (N (%))	No	88 (44.4)	141 (53.0)
	Yes, first year	65 (32.8)	85 (32.0)
	bachelor		
	Yes, second or third year	29 (14.7)	30 (11.3)
	Yes, master	13 (6.6)	8 (3.0)
	Yes, postmaster	3 (1.5)	2 (0.8)

Table B1 (Continued)

Work status (N (%))	Student	142 (71.6)	185 (69.5)
	Full-time	30 (15.1)	47 (17.7)
	Part-time	64 (32.3)	106 (39.7)
	Unemployed	20 (10.0)	19 (7.0)
	Incapacitated	0	0
	Retired	3 (1.5)	4 (1.5)
	Housewife/houseman	3 (1.5)	6 (2.3)
Nationality (N (%))	German	57 (28.8)	66 (24.8)
	Dutch	89 (44.9)	140 (52.6)
	Other *	52 (26.3)	60 (22.6)
Religious (N (%))	Yes, I practice	10 (5.0)	24 (9.0)
	Yes, but not actively	57 (28.8)	46 (17.3)
	No	131 (66.2)	196 (73.7)
English level (N (%))	Beginner	8 (4.0)	16 (6.0)
	Advanced	51 (25.8)	83 (31.2)
	Proficient	139 (70.2)	166 (62.4)
Bereavement past three years	Yes	84 (42.2)	113 (49.2)
(N (%))	No	114 (57.6)	135 (51.0)

Table B1 (Continued)

Note. * For nationality the category “other” includes all other nationalities that are neither German or Dutch or that of participants with a double nationality.

Table B2

Means and Standard Deviations of Attributes, Emotions, and Preferred Social Distance per Intervention Group

Attributes, emotional reactions, and preferred social distance	No video (n = 266)		Intervention video (n = 198)	
	M	SD	M	SD
Warm	2.95	0.83	2.89	0.79
Competent	2.61	0.74	2.56	0.69
Emotionally stable	1.64	0.66	1.53	0.63
Dependent	2.77	0.73	2.75	0.72
Sensitive **	3.38	0.70	3.24	0.71
Anger **	1.48	0.60	1.33	0.47
Fear	1.85	0.69	1.81	0.71
Pro-social	3.09	0.52	3.07	0.54
Preferred social distance	3.34	0.53	3.26	0.52

Note. ** Significant differences were found between no video and intervention video on the attribute sensitive $p = .029$ and the emotional reaction Anger $p = .004$. Lower scores on social distance scale indicate a higher preferred social distance.