

**Does a mixed education and contact-based literacy intervention affect public stigma  
towards Prolonged Grief Disorder? An experimental study**

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PSB3E-BT15: Bachelor Thesis  
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January 27, 2022

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### Abstract

**Background:** In 2018, prolonged grief disorder (PGD) was incorporated in the International Classification of Diseases 11 (ICD-11) as a new diagnostic entity. A formal diagnosis of PGD might be beneficial to facilitate treatment access for individuals with severe grief reactions. However, diagnoses can result in stigma (i.e., public stigma and self-stigma). Public stigma towards individuals with mental illness is associated with a variety of negative consequences. A mixed education and contact-based video intervention was implemented to test whether it might reduce public stigma towards individuals with PGD. **Methods:** In total, four hundred and sixty-four adults participated and were randomly allocated to either the intervention condition or the control condition. Participants in the intervention group received the video intervention prior to a vignette, depicting an individual with PGD, whereas participants in the control condition only received the vignette. Subsequently, all participants had to answer questions that assessed indicators of public stigma regarding the person described in the vignette. The two groups (intervention group vs. no intervention group) were compared on the following indicators of public stigma: five attributions; emotional reactions (i.e., anger, pro-social, and fear); and preferred social distance. **Results:** Participants in the intervention group attributed the person, depicted in the vignette, as less sensitive and indicated fewer anger-related emotional reactions than participants in the control condition. No other group differences emerged. **Conclusion:** This study demonstrates that a brief intervention can reduce public stigma for PGD. However, the inconsistent results suggest that future research should focus on examining the effects of more intensive and targeted stigma interventions.

**Keywords:** prolonged grief disorder (PGD), complicated grief, public stigma, self-stigma, mental health literacy, contact interventions, educational interventions



**Does a Mixed Education and Contact-based Literacy Intervention Affect Public Stigma towards Prolonged Grief Disorder? An Experimental Study**

In 2018, prolonged grief disorder (PGD) was included in the International Classification of Diseases 11 (ICD-11; World Health Organization, 2018). According to the ICD-11, PGD is defined as “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 characterised by longing for the deceased or persistent preoccupation with the deceased accompanied by intense emotional pain (e.g. sadness, guilt, anger, denial, blame, difficulty accepting the death, feeling one has lost a part of one’s self, an inability to experience positive mood, emotional numbness, difficulty in engaging with social or other activities)” (6B42 *Prolonged Grief Disorder*, n.d., para. 1).

In March 2022, the Diagnostic and Statistical Manual of Mental Disorders, fifth edition, text revision (DSM-5-TR), will include PGD as a diagnostic entity (Prigerson et al., 2021). While the ICD-11 and the DSM-5-TR both use the term PGD, the diagnostic criteria are different. For example, in the DSM-5-TR, bereavement reactions must persist at least twelve months after the death to meet the diagnostic criteria, while in the ICD-11, bereavement reactions must last at least six months (Prigerson et al., 2021).

While a formal diagnosis of PGD may be beneficial to facilitate treatment access of people with severe grief reactions (Gonschor et al., 2020), a potential negative consequence of such a diagnosis can be stigma towards individuals with PGD (Eisma et al., 2019). The ontological roots of the term “stigma” date back to the ancient Greeks, who used it to represent slavery marks, illustrating ownership and inferior status within society (Tzouvara & Papadopoulos, 2014). According to the American Psychological Association, stigma can be defined as a negative social evaluation of a characteristic of an individual, which can lead to unjust

discrimination against the stigmatized individual and social exclusion (*APA Dictionary of Psychology*, n.d.-b).

Research on mental health stigma (i.e., stigma for mental health conditions) has shown that stigma is a complex process that manifests at multiple levels in our social environment (Fox et al., 2018). Mental health stigma comprises two interacting processes: public stigma and self-stigma (Livingston & Boyd, 2010). Public stigma refers to negative stereotypes toward individuals with mental illness, prejudice, and acting against the stigmatized individuals (Corrigan & Watson, 2002; Eisma et al., 2019). In comparison, self-stigma has been defined as an individual's own beliefs, feelings, and behaviors regarding social devaluation (Fox et al., 2018). Additionally, enacted stigma (e.g., experiencing stereotypes, prejudice, and discriminatory behaviors) (Cechnicki et al., 2010; Quinn & Earnshaw, 2013), and internalized stigma (e.g., implementation of negative stereotypes and prejudice to the self) (Bos et al., 2013; Corrigan et al., 2006) fall into the category of self-stigma (Fox et al., 2018). Another type of stigma, namely perceived stigma, refers to perceptions of stereotypes (societal beliefs), prejudice (feelings), and discrimination (behaviors) regarding individuals with mental illness (Griffiths et al., 2008). Perceived stigma is shared by stigmatized individuals and individuals who stigmatize (Fox et al., 2018). The current study focuses on the relationship between PGD and public stigma.

Individuals with mental illness often face more than the respective symptoms and distress, as both, public stigma and self-stigma are thought to affect them (Evans-Lacko et al., 2011). First, societal misconceptions, namely public stigma, about mental illnesses are associated with negative consequences (Corrigan & Watson, 2002). Common stigmatizing attitudes towards individuals with mental illness are: they are dangerous and therefore might be feared and excluded from society (i.e., fear and exclusion); they are not capable of making their own decisions and rely on the help of others (i.e., authoritarianism and benevolence)

(Angermeyer & Matschinger, 2003; Brockington et al., 1993; Taylor & Dear, 1981). The behavioral components (discrimination) of public stigma include avoiding individuals with mental illness (social avoidance), withholding of help, housing opportunities, and employment, as well as coercive treatment (Corrigan & Watson, 2002). Previous research established that social devaluation, discriminatory behaviors against individuals with mental illness, and a lower employment rate (including income) are often accompanied by stigma (Evans-Lacko et al., 2011; Sharac et al., 2010). In addition, public stigma may prevent individuals with mental illness from seeking professional help to avoid being labeled as mentally ill (Corrigan, 2004). Second, self-stigma, sometimes described as “second illness” (Huggett et al., 2018), can have detrimental effects on well-being (Evans-Lacko et al., 2011). Self-stigma is associated with reduced self-esteem and self-efficacy, which in turn are associated with quality of life (Corrigan et al., 2010; Corrigan et al., 2006). In addition, internalizing societal misconceptions (i.e., self-stigma) is associated with social withdrawal and shame (Rüsch et al., 2014) and increased suicidality may be an adverse effect of self-stigma (Carpiniello and Pinna, 2017).

Research on stigmatization of individuals with mental illness found several associations between stigma and adverse consequences (Fox et al., 2018). Public stigma towards individuals with mental illness is associated with various mental disorders (Fox et al., 2018). As PGD is a comparatively new diagnostic entity within the ICD-11, available research regarding negative consequences of public stigma is limited. However, associations between public stigma and the aforementioned consequences may be similar for individuals suffering from PGD (Eisma et al., 2019). Regarding PGD, several vignette-based experiments examining public stigma consistently showed that a person described as having PGD symptoms elicited more stigmatizing reactions (i.e., public stigma) than a person without PGD symptoms (e.g., Eisma, 2018; Eisma et al., 2019; Gonschor et al., 2020). In these

studies, public stigma was measured on commonly used indicators of public stigma. Namely, negative attributions, negative emotional reactions, and preferred social distance toward individuals with mental illness (Corrigan et al., 2012). Individuals with PGD (i.e., diagnosis and symptoms), depicted in the vignettes, elicited more negative attributions, more negative emotions, and a higher preferred social distance than individuals without PGD diagnosis (Eisma, 2018; Eisma et al., 2019; Gonschor et al., 2020). Furthermore, another study that investigated stigmatization and treatment receptivity in a sample of recently bereaved adults demonstrated that severe grief symptoms may be associated with perceived stigma by close others (i.e., family and friends) (Johnson et al., 2009). In this study, perceived stigma entailed expected and actual negative responses of family and friends (Johnson et al., 2009). In addition, another study suggests that public stigma may lead to a decline in social support, which is considered essential in coping with bereavement (Burke & Neimeyer, 2013). Taking together the potential negative consequences of stigma, it is important to examine the origins of stigma and potential interventions to reduce it.

Stigma can have multiple sources; one source of stigma is lack of knowledge about mental illness (Shirvastava et al., 2012). The term mental health literacy (MHL) refers to knowledge and beliefs regarding a diagnosis and the treatment of a mental illness that aid recognition, management, or prevention (Furnheim & Swami, 2018; Gong & Furnham, 2014; Jorm et al., 2006). MHL is not solely about knowledge; it is a matter of connecting knowledge to possible action to improve mental health (Jorm, 2012). Literacy interventions to combat mental health stigma comprise the following three approaches: protests, education, and contact (Corrigan, 2004). Protest, or social activism, addresses injustice, stereotypes, discrimination and incorporates a moral appeal (Morgan et al., 2018). In comparison, educational approaches focus on replacing inaccurate stereotypes about mental illness with accurate facts (Gronholm et al., 2017). Contact interventions consist of exposure to reduce

anxiety and increase empathy towards individuals with mental illness (Morgan et al., 2018). Moreover, contact-based interventions can employ a direct (i.e., in-person contact) or indirect approach (Corrigan, 2004). In a meta-analysis, anti-stigma interventions (i.e., protest, education, and contact) were assessed on the following outcome measures of public stigma: attitudes, affect (i.e., fear and anger), and behavioral intentions (i.e., avoidance) (Corrigan et al., 2012). The results revealed that protest was not associated with public stigma change (Corrigan et al., 2012). Instead, education and contact are reported to influence stigma significantly (Corrigan et al., 2012). Furthermore, contact yielded a significant effect on behavioral intentions, but not in affect, while education significantly improved behavioral intentions and affect (Corrigan et al., 2012). Another approach to combat mental health stigma is to combine education and contact interventions. Moreover, mixed education and contact-based interventions were found to significantly reduce stigmatizing attitudes as well (Morgan et al., 2018).

In the present study, we seek to examine the effects of a mixed education and contact-based literacy intervention on public stigma towards PGD. The experimental group will receive a video-based mixed education and contact-based literacy intervention, while the control group will not receive an intervention. Subsequently, all participants will be provided with a vignette, that depicts a person with PGD diagnosis and symptoms. We expect that participants in the experimental condition will indicate fewer negative attributions, less negative emotions, and a smaller preferred social distance towards individuals with PGD than participants in the control group.

## **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  $\geq 16$  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 (5<sup>th</sup> 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*

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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.

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### **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  $\eta^2$ '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 present study examined whether a mixed contact and education-based literacy intervention reduces public stigma towards individuals with PGD. In our experiment, the

intervention and control group receiving no intervention were compared on the following indicators of public stigma towards an individual with PGD: five attributions (i.e., competent, warm, emotionally stable, dependent, sensitive), emotional reactions (i.e., anger, pro-social, fear), and preferred social distance. In concordance with our expectations, the results revealed a comparatively small overall effect. Post-hoc analyses detected an effect for the attribution “sensitive” and for the anger-related emotional reactions. Participants in the intervention group described Mark as less sensitive and indicated fewer anger-related emotional reactions towards him than participants in the control group. Furthermore, in contrast with our expectations, there was no significant difference between the two groups on the remaining seven dependent variables (pro-social-related emotional reactions, fear-related emotional reactions, the attributions: competent, warm, emotionally stable, and dependent, and the preferred social distance). A further sensitivity analysis, excluding thirty participants that answered more than one of the manipulation check questions wrong, revealed significant effects for the attribution “emotionally stable”, the attribution “sensitive” and for anger-related emotional reactions, indicating the robustness of the effects that were found (i.e., for the attribution “sensitive” and anger-related emotional reactions).

Whereas previous research has found that contact and education-based interventions can reduce public stigma towards individuals with mental illness (Corrigan et al., 2012), the results of the present study solely detected a small effect on two (of nine) indicators of public stigma. There are multiple potential explanations for these findings. First, in a meta-analysis it was found that direct contact interventions yielded stronger effects in stigma reduction than video-based contact interventions (Corrigan et al., 2012; Griffiths et al., 2014). As we implemented a mixed education and contact-based intervention in the form of a video it might contribute to our inconsistent findings. Second, our intervention was not tailored towards a specific target group. Previous research has found that public stigma is most likely reduced

when the intervention is tailored according to a specific target population (Corrigan, 2004). More precisely, it was found that education-based interventions yielded greater effects for adolescents, whereas contact-based interventions for adults (Corrigan et al., 2012). Third, we faced a few technical issues, namely, we set a timer for the video intervention and the vignette. However, a substantial minority of participants was not able to answer the whole survey as they could not proceed after either the video or the vignette was presented, resulting in a smaller sample size and a decrease in power.

Fourth, the video that was implemented as an intervention might have a different focus than previous public stigma interventions. A review on educational interventions suggest that interventions should distinguish between focusing on stigma reduction (e.g., informing about characteristics of individuals with mental illness) and health promotion (help-seeking behavior) (e.g., informing about treatment options and recovery) (Yamaguchi et al., 2011). As the material involved within the video emphasized the available treatment for complicated grief, it might have elicited different reactions than a video emphasizing characteristics of an individual with complicated grief. Thus, it might not have been specific (i.e., intensive) and effective enough to reduce public stigma. Fifth, as PGD is a comparatively new diagnosis it might be less familiar among the general public and thus has not well-established stereotypes as other mental health conditions. Less stigmatizing reactions might be in part explained by a lack of familiarity and therefore might contribute to finding no significant differences between the two groups on the remaining indicators of public stigma (Gonschor et al., 2020). Lastly, participation in the present study was voluntary and responses might have been susceptible to social desirability. Participants tend to present themselves in a favorable fashion when they are assessed on self-reports of attitudes as well as of personality (*APA Dictionary of Psychology*, n.d.-c). A consequence of social desirability might be that participants express

fewer stigmatizing reactions than they would in a different context. Thus, contributing to our inconsistent findings.

The present study has some potential clinical implications. As public stigma is associated with detrimental effects on mental health across a variety of mental disorders, such as reduced help-seeking (Cook et al., 2014), interventions to reduce public stigma are essential and should be further explored. Based on our inconsistent findings and the small effect sizes, we cannot determine whether this intervention has a real-world application. However, the current findings suggest that mixed education and contact-based interventions can potentially be effective in reducing public stigma. As we only assessed temporary changes and cannot determine the long-term effects, future research should investigate whether more intensive and focused interventions are effective to reduce public stigma in the long run. Besides public stigma interventions, research should be focused on interventions to reduce self-stigma, as self-stigma and public stigma are associated and may influence each other (Evans-Lacko et al., 2011). As an example, reduced self-stigma and improved stress management were associated with educational interventions as part of cognitive and behavioral therapy (Cook et al., 2014; Heijnders & Van Der Meij, 2006).

Our study had several strengths. By using an experimental design, we were able to manipulate our independent variable and could examine whether the intervention influenced public stigma towards individuals with PGD. Other strengths were that multiple validated indicators of public stigma were used as outcome measures (Angermeyer & Matschinger, 2003; Eisma et al., 2019; Link et al., 1987; von dem Knesebeck et al., 2017) and recent PGD criteria were implemented in the vignette (ICD-11; World Health Organization, 2019). In addition, a manipulation check was included to determine the effectiveness of our manipulation.

This study also had some limitations. First, we used convenience sampling, which potentially limits the generalizability of our results. In addition, our sample consisted of more females and individuals with higher levels of education in comparison to the average Dutch population. Therefore, it should be investigated whether the same effects are found in a more representative sample. Second, the dropout rate was comparatively high and could have been a consequence of how the study was completed by the participants (e.g., individuals might have been in a noisy environment, individuals might have experienced trouble with the internet connection). This dropout rate led to unequal sample sizes and therefore to a decrease in power. Third, the prosocial emotion subscale that was implemented had a comparatively low reliability. This might be partially explained by the brevity of the scale. Future research should seek to improve the internal consistency of this subscale (e.g., by including more items) (Gonschor et al., 2020). Lastly, the vignette contained little information about the person besides the diagnosis of PGD and its respective symptoms. Participants might respond differently (i.e., feel more empathy) when they receive more information about the characteristics of the person (Gonschor et al., 2020).

Based on the aforementioned limitations we can provide several recommendations for future research. A follow-up study with simple random sampling (to recruit a representative population sample) should be conducted to evaluate the generalizability of the effects that we found. As the main focus of the intervention was to educate individuals about the treatment and symptoms of PGD, possible other factors that might reduce public stigma should be considered in the future (e.g., providing information about the negative impact stigma has on individuals with PGD). Furthermore, future research should focus on more intensive forms of interventions to reduce public stigma towards individuals with PGD (e.g., education-based training interventions, in-person contact interventions, longer-lasting interventions, targeted

interventions). Longitudinal studies should be conducted as well to examine the effectiveness of mixed education and contact-based literacy interventions in the long run.

### **Conclusion**

Notwithstanding the above-mentioned limitations, the present study was the first to examine whether an information video about PGD can be used as a mixed education and contact-based literacy intervention to reduce public stigma. While we could not find significant differences between the two groups on most indicators of public stigma, we found an effect for the attribution “sensitive” and for anger-related emotional reactions towards a person with PGD. In summary, our findings suggest that future research should be devoted to conduct more intensive interventions and to investigate the long-term effects of interventions to combat the stigmatization of individuals with PGD. Additionally, tailoring future interventions according to the target population might be more likely to reduce public stigma towards individuals with 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](mailto: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](mailto: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	29 (14.7)	30 (11.3)
	year		
	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 (N (%))	Yes	84 (42.2)	113 (49.2)
	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.

