

# **Evaluation of Male-Specific Psychoeducation for Major Depressive Disorder Compared to Cognitive Behavioral Therapy Psychoeducation: A Randomized Controlled Investigation in Mentally Distressed Men**

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**Abstract**

**Background:** Research suggests that male-specific psychotherapy approaches for major depressive disorder (MDD) that consider traditional masculinity ideologies (TMI) and their impact on men's MDD may achieve improved treatment efficacy and reduced therapy dropout. However, to date, randomized controlled studies examining male-specific psychotherapy for MDD or specific therapy aspects remain lacking.

**Aim:** To evaluate a male-specific psychoeducation for MDD in a randomized controlled investigation.

**Methods:**

An anonymous online study on men's mental health examined 152 self-reporting mentally distressed cisgender men ( $M_{\text{age}} = 25.5 \pm 9.1$ ) from German-speaking countries of Europe. After completing baseline assessments of state self-esteem, state shame, positive/negative affect, depressive symptoms, and endorsement of TMI, men were randomly assigned to read either a male-specific ( $n = 78$ ) or a cognitive behavioral therapy oriented (CBT;  $n = 74$ ) psychoeducation text for MDD. Subsequently, participants rated its usefulness and completed follow-up assessments.

**Results:** Men in the male-specific psychoeducation condition showed a decrease in shame and negative affect as compared to men in the CBT-based psychoeducation condition. Furthermore, in the male-specific psychoeducation condition an increase in prototypical depression symptoms was identified as compared to the CBT-based psychoeducation condition, whereas male-typical externalizing depression symptoms tended to decrease, although not statistically significant. The psychoeducation condition overall had no influence on TMI.

**Conclusion:** Male-specific psychoeducation for MDD targeting TMI may help depressed men feel less ashamed about their MDD and experience less negative affect about their condition than CBT-based psychoeducation. Furthermore, male-specific psychoeducation for MDD may elicit a shift from detrimental male-typical externalizing depression symptoms to more prototypical depression symptoms, which warrants further investigations in future studies.

**Keywords:** Major depressive disorder (MDD), men's mental health, male-specific psychotherapy, psychoeducation, traditional masculinity ideology (TMI)

**Public Significance Statement**

Over 100 million men worldwide suffer from major depressive disorder (MDD), for which cognitive behavioral therapy (CBT) is considered the first line treatment. However, men may exhibit poorer treatment efficacy as well as a higher therapy dropout, which can be attributed to their endorsement of traditional masculinity ideologies (TMI). The present evaluation of a male-specific psychoeducation provides a central building block on the way to CBT-based male-specific psychotherapy for MDD. In the present study, a male-specific psychoeducation for MDD was able to cause a stronger reduction in shame and negative affect in comparison to CBT-based psychoeducation. This suggests that male-specific psychoeducation for MDD may better reduce MDD-related shame and negative affect while eliciting a shift from male-typical externalizing depression symptoms toward prototypical depression symptoms, which can subsequently be addressed in therapy.

## Introduction

Over 100 million men worldwide are currently affected by major depressive disorder (MDD; World Health Organization, 2017). MDD is characterized by its cardinal symptoms of depressed mood and anhedonia. In addition to either depressed mood or anhedonia, at least four out of the following seven symptoms must be present for at least two weeks and cause functional impairment in important areas of daily living: concentration problems, weight loss, psychomotor agitation, feelings of worthlessness or excessive guilt, fatigue, insomnia, or suicidal ideation (American Psychiatric Association, 2013). Especially in men, however, differential symptoms such as anger, aggression, irritability, excessive substance use, or risky behavior are discussed under the term of male-typical externalizing depression symptoms (Cavanagh et al., 2017; Martin et al., 2013; Rice et al., 2013; Walther, Grub, Ehlert, et al., 2021; Walther & Seidler, 2020).

It is understood that many men reject prototypical depression symptoms, such as depressive mood or fatigue, due to their incompatibility with traditional masculinity ideologies (TMI) and instead exhibit male-typical externalizing depression symptoms more in line with TMI (Eggenberger et al., 2021; Martin et al., 2013; Rice et al., 2013). TMI are socially constructed norms of how men are expected to be or behave, revolving around the two foci “be in control” and “be unlike women” (Levant & Richmond, 2016). The inability to live up to these idealized standards and norms leads to the experience of masculine gender role conflict (GRC; O’Neil, 2013). Internalization of TMI as part of gender socialization processes (Levant, 2011; Rudman & Fairchild, 2004) may then manifest itself in gender differences in the presentation of depressive symptoms. For example, because anger is the only socially accepted and permitted negative emotion for men (Fields & Cochran, 2011), depressed men exhibit significantly more aggression and anger as compared to depressed

women (Winkler et al., 2005). Similarly, depressed men as compared to depressed women more frequently report externalizing behaviors such as alcohol and drug abuse, risk taking, and poor impulse control (Cavanagh et al., 2017). Many men feel ashamed to express depressive symptoms due to the stigmatization of mental health problems (Berger et al., 2013; Mackenzie et al., 2019; Vogel et al., 2011), and therefore often mask these prototypical depression symptoms with male-typical externalizing depression symptoms. In line with this, men as compared to women exhibit higher levels of shame, self-stigma, negative affect, and reduced self-esteem in relation to suffering from MDD due to self-attributed inadequacy and GRC (Cheung et al., 2004; Dubreucq et al., 2021; Latalova et al., 2014; Shepard & Rabinowitz, 2013). Furthermore, it was shown that stronger TMI predicted higher depressive symptomatology, which was mediated via shame proneness (Rice et al., 2016).

However, internalized TMI may not only manifest as gender differences between men and women but are also reflected among men with varying levels of TMI. For example, men with strong endorsement of or conformity to TMI are consistently found to exhibit increased levels of male-typical externalizing depression symptoms (Eggenberger et al., 2021, 2022; Rice et al., 2013; Walther et al., 2022). And while men show up to 4-fold higher suicide rates in comparison to women (Hedegaard et al., 2020), men with strong endorsement of TMI have a more than twofold higher risk of dying by suicide as compared to men with low endorsement of TMI (Coleman et al., 2020; Walther, Grub, Tsar, et al., 2021).

Because gender differences and TMI seem to influence symptom presentation in MDD, several male-specific diagnostic instruments for depression have been developed (Brownhill et al., 2003; Diamond, 2008; Magovcevic & Addis, 2008; Rice et al., 2013). These

developments led to the inclusion of male-typical externalizing depression symptoms in screening and diagnostic tools, which improved identification of men at risk for MDD, but gender differences in therapy efficacy or dropout have so far not been addressed.

Although psychotherapy for MDD treatment has been proven to be effective (Munder et al., 2019), mixed findings exist on whether men and women are able to profit equally from psychotherapeutic treatment. On the one hand, similar psychotherapy efficacy and satisfaction have been reported among men as compared to women (Hoyer et al., 2006; Seligman, 1995; Thase et al., 1994). Also, a meta-analysis does not confirm gender differences in the effectiveness of CBT in adult MDD (Cuijpers et al., 2014). On the other hand, there are reports of poorer psychotherapy results or reduced satisfaction with treatment among male clients (Hartmann & Zepf, 2010). Furthermore, primary studies highlight male gender as a predictor for worse outcomes of group therapy or internet-based cognitive behavioral therapy (CBT) for MDD (Donker et al., 2013; Ogrodniczuk, 2007). Men also seem to show reduced therapy expectations for CBT for MDD (Víšlă et al., 2019) and reduced initial therapeutic alliance in couples therapy (Bartle-Haring et al., 2012; Halford et al., 2016) in comparison to women. Overall, the available literature suggests that there are gender differences in how men and women start, perceive, and engage in CBT for MDD, while unanimous support for differential efficacy is lacking.

Another related issue present potential gender differences in dropout of CBT for MDD. Again, a meta-analytic investigation suggests similar dropout rates in men and women attending individual psychotherapy for MDD (Cooper & Conklin, 2015). Primary studies, however, often identify increased male therapy dropout (Pederson & Vogel, 2007) or increased dropout of male clients over the course of treatment (Simon & Ludman, 2010). Nevertheless, it remains undisputed that overall, the dropout rate in psychotherapies for

MDD are high, around 20%, and call for more personalized treatments aligned to client characteristics.

In light of the extensive literature suggesting that men, particularly those with strong TMI, are a challenging client population for psychotherapy, many scholars elaborated on the topic and offered recommendations for counseling men (American Psychological Association Boys and Men Guidelines Group, 2018; Englar-Carlson & Kiselica, 2013; Mahalik, 1999; O'Neil, 2015; Scher, 1990; Seidler et al., 2018). However, there is very little research that applies and systematically evaluates a male-specific treatment modality for male MDD clients.

One study investigated a male-specific CBT-based group psychotherapy for MDD in men (Primack et al., 2010). This 8-week group intervention focused on four mechanisms of change i) increasing social support, ii) provision of CBT skills, iii) provision of information about MDD and the impact of TMI, and iv) changing the perception of norms and stigma related to MDD and mental health treatment. Due to the low number of included men ( $n = 6$ ), quantitative evaluation is of limited use. However, men's general positive feedback to the intervention revealed that the discussion of male gender role socialization, TMI and their impact on MDD was described as being the most helpful part of the intervention.

Another study examined the potential adjunct effect of a gender-role re-evaluation component in addition to psychotherapy following a value-based integrity model in recently separated men (Nahon & Lander, 2008, 2010). Emotional expression and psychological well-being significantly improved in both groups, whereas GRC did not change in either group, suggesting no beneficial adjunct effect of the gender-role re-evaluation component.

Nevertheless, the process of gender role re-assessment in a structured way, that allows to reconstruct the client's own masculinity, still presents an promising therapeutic element to



soften overly strong endorsement of TMI in male clients. Worldwide, experts working with depressed men in clinical settings agree that male-specific adaptations to psychological treatments for MDD are warranted and that the elaboration on male-specific aspects of MDD and the impact of masculinities on symptom presentation or therapy engagement together with the client are to be integrated (American Psychological Association Boys and Men Guidelines Group, 2018; Seidler et al., 2019).

### **Aim of the Present Study**

Therefore, we identified CBT-based psychoeducation for MDD as a central element in male-specific psychotherapy for MDD and as an ideal starting point to evaluate male-specific therapy adaptations. Standard CBT-psychoeducation on MDD includes information on i) prevalence and symptomatology of MDD, ii) the interconnectedness of thoughts, emotions and behaviors and typical depression spirals, iii) often encountered comorbidities, iv) psychological therapy approaches, and v) pharmacological therapy approaches. A male-specific psychoeducation should additionally include information on vi) prototypical and male-typical externalizing MDD symptoms, and vii) gender role socialization, TMI, GRC, and their relation to MDD as well as psychotherapy. For example, in a male-specific psychoeducation for MDD, the ego-centeredness of certain problems (e.g., unemployment in men who see their family role primarily as "protector and provider") can be identified by the client himself as well as the therapist and may be used for reflection and cognitive restructuring later in therapy. Such a male-specific psychoeducation should further aim to reduce feelings of shame, negative affect, and self-esteem by challenging socialized messages related to men's mental health stigma. Through a standardized male-specific psychoeducation about MDD and related masculinity issues, men may also feel more willing

to share prototypical depression symptoms instead of exhibiting male-typical externalizing depression symptoms. Following these ideas, we formulated the following hypotheses (H):

- H1: Male-specific psychoeducation, as compared to CBT-based psychoeducation, leads to a stronger increase in state self-esteem.
- H2: Male-specific psychoeducation, as compared to CBT-based psychoeducation, leads to a stronger reduction in state shame.
- H3: Male-specific psychoeducation, as compared to CBT-based psychoeducation, leads to a stronger reduction in negative affect.
- H4: Male-specific psychoeducation, as compared to CBT-based psychoeducation, leads to a shift from male-typical externalizing depression symptoms to prototypical depression symptoms.
- H5: Male-specific psychoeducation, as compared to CBT-based psychoeducation, leads to a stronger reduction in TMI.

## **Methods**

### **Study Design and Sample**

This pre-registered anonymous online study entitled Men's Mental Health in Times of COVID-19 was approved by the local ethics committee of the Faculty of Arts and Social Sciences of the [blinded] (Authorization No. 21.2.4). A priori defined study hypotheses, statistical analyses, and the study specific data set can be retrieved from OSF according to the Open Science standards (Walther & Grub, 2021; <https://osf.io/q4pw3>; Registration DOI: 10.17605/OSF.IO/Q4PW3). The study's aim was to examine men's mental health in times of COVID-19 and to provide participants with feedback on their results regarding MDD risk as

previously described elsewhere (Walther et al., 2022; Walther, Grub, Tsar, et al., 2021).

Recruitment of male participants was performed through distribution of advertisements on social media platforms restricted to men of 18 years or older in the countries Germany, Switzerland, Austria, Lichtenstein, Luxembourg, and Belgium. Irrespective of their general health status, all self-identified adult men having sufficient German-skills to complete the online survey were eligible to participate in the study. Recruitment period took place from March 15<sup>th</sup> 2021 to April 2021 28<sup>th</sup> in the midst of the third wave of the COVID-19 pandemic in German-speaking Europe. Men were incentivized to participate in the study by the announced individual automated feedback of their test scores (e.g., MDD risk or endorsement of TMI).

A link directed participants to the survey website, Unipark (EFS Release 21.2; Tivian XI GmbH; Cologne, Germany, <https://www.unipark.com>). After providing written informed consent at the beginning of the survey, participants had to agree to the data privacy statement in order to continue. All participants were then asked whether or not they currently felt psychologically distressed. Participants subsequently went on to complete the baseline survey and were then randomized via a randomization function (random rotation) to either be exposed to the experimental condition with the male-specific psychoeducation for MDD or the control condition of CBT-based psychoeducation for MDD. Participants were given time to read the psychoeducational text at their own convenience and, when finished, participants were asked whether they found the psychoeducation for MDD helpful. Finally, participants completed the follow-up survey with the psychometric instruments asked at the outset for pre-post comparisons.

In total, 1087 people expressed interest in this study over the recruitment period by visiting the starting page of the online questionnaire. A little more than half of the initially

interested participants (n = 597, 54.92%) were subsequently excluded for one of the following reasons: declaration of consent not provided, data privacy agreement not provided, self-reported insufficient German language skills, gender requirements not fulfilled, age of minority and/or incomplete data in the baseline questionnaires. Of the 490 remaining participants, 238 completed follow-up assessments after having been presented with one of the two psychoeducation texts, of which 152 previously reported being currently mentally distressed. This resulted in a final sample of 152 men, of which 78 men were randomized to the male-specific psychoeducation for MDD condition and 74 men were randomized to the CBT-based psychoeducation for MDD condition. Figure 1 presents the participant flow.

### **Psychoeducation Conditions**

The CBT-based psychoeducation for MDD presenting the control condition followed the official manual for MDD treatment (Hautzinger, 2006, 2011, 2013). In this condition the psychoeducation text was 677 words long and started by describing MDD prevalence and specific sociodemographic characteristics associated with MDD risk and then went over to describe prototypical MDD symptomatology. Next, often encountered comorbidities were explained followed by highlighting the framework of thought-emotion-behavior interconnectedness and the therapeutic goal to increase positive activities with strong reinforcement potential. Further, the increase of social skills to enable more positive interpersonal experience is elaborated as well as the identification and modification of dysfunctional thoughts. Finally, the treatment of MDD by CBT or pharmacology is discussed and the fact that each therapy must be individually designed.

The male-specific psychoeducation for MDD (experimental condition) is in its core also a CBT-based psychoeducation for MDD with male-specific adjustments. The male-specific psychoeducation text was with 808 words 131 words longer than the CBT-based psychoeducation. Identical as in the control condition started by describing MDD prevalence and specific sociodemographic characteristics associated with MDD risk, but then more attention is given to gender differences in depression prevalence and the fact that men have higher rates of alcohol use disorder and completed suicide for it, which may indicate unrecognized underlying MDD. Thereafter, reference is made to male-typical externalizing depression symptoms and prototypical depression symptoms, whereas men due to their endorsement of TMI and the incompatibility with prototypical depression symptoms tend to exhibit externalizing symptomatology. Next, gender role socialization is explained and how it together with endorsement of TMI affects the experience of MDD as a man and its expression. Finally, it is discussed how altered symptom presentation and the endorsement of TMI also affects CBT and that there is a need to consider male gender in therapy.

As shown in Figure 2, the main difference in the psychoeducation texts lies in the central part of elaborating on MDD symptomatology, where in the male-specific condition the focus lies on male-typical externalizing MDD symptoms and the influence gender role socialization, TMI, or GRC may have for symptom experience and presentation as well as therapy engagement. By contrast, the CBT-based psychotherapy discussed prototypical MDD symptoms and often encountered comorbidities as well as CBT and pharmacotherapy in more detail. Both psychoeducation texts can be found in the Supplementary.

## **Instruments**

### ***Sociodemographic information***

Sociodemographic information was assessed at the beginning of the study asking about the sufficiency of German skills followed by questions on gender identity, age, nationality, relationship status, sexual orientation, education, and the household's yearly gross income. In addition, a subjective social status estimate and a subjective general health estimate was obtained and participants provided information by self-report on whether they were currently suffering from any psychological disorder, whether they were currently engaging in any form of psychotherapy or using psychopharmacologic medication. For detailed further descriptives of the sample see Table 1.

### ***State Self-Esteem Scale (SSES-15)***

The State Self-Esteem Scale (SSES) originally is a multidimensional scale to assess short-term fluctuations in self-esteem (Heatherton & Polivy, 1991). The instrument asks people on a 5-point Likert scale from 1 (*not at all*) to 5 (*extremely*) how they feel at the moment regarding three dimensions: performance, social aspects, and appearance. For example, a statement of the SSES of the performance dimension is "I feel confident about my abilities", while of the social dimension another statement is "I feel worried about what other people think of me". For the present study the German translated and validated version consisting of 15 items was used (Rudolph et al., 2020). The SSES-15 showed in its German version good internal consistency and was negatively correlated to depression symptoms or general psychopathology measures (Rudolph et al., 2020). Individuals with an MDD as compared to healthy controls also exhibited consistently lower SSES-15 scores in all

three subdomains and the total score. Good internal consistency was found in the present study, with Cronbach's  $\alpha = .85$  and McDonald's  $\omega = .91$ .

### ***Experiential Shame Scale (ESS-11)***

The Experiential Shame Scale (ESS-11) presents an instrument to assess state shame and contains three categories: physical phenomena, emotional phenomena, and social phenomena (Turner, 2014). The scale consists of 11 items, which are rated on a 7-point Likert scale ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The items, for example, ask participants to rate the extent to which they were feeling: very warm vs. very cool, pale vs. flushed, or calm vs. highly aroused. An available German version by Rüscher & Brück (2003, unpublished) was used. The ESS-11 showed an acceptable ( $\alpha = .76$ ,  $\omega = .83$ ) internal consistency in the present study.

### ***Positive and Negative Affect Scale (PANAS-20)***

The Positive and Negative Affect Scale (PANAS-20) measures positive and negative mood with two subscales each consisting of 10 items (Watson et al., 1988). The items are answered on a 5-point Likert scale (1 = *very slightly or not at all* to 5 = *extremely*). The participants indicate how much they experienced each particular emotion "right now". In the present study, a German translated and validated version was used (Breyer & Bluemke, n.d.). In the present study, both subscales possessed good internal consistency (negative affect:  $\alpha = .85$ ,  $\omega = .86$ ; positive affect:  $\alpha = .87$ ,  $\omega = .88$ ).

***Patient Health Questionnaire – 9 (PHQ-9)***

The Patient Health Questionnaire – 9 (PHQ-9; Kroenke et al., 2001) asks about the nine prototypical symptoms of MDD as defined by the DSM-5 (APA, 2013). Participants were asked how often during the past two weeks they felt affected by certain complaints such as loss of interest on activities, depressive mood, sleep problems, fatigue, change in appetite, excessive feelings of guilt or failure, concentration problems, psychomotor retardation or agitation, and suicidal ideation. Items are rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*almost every day*). The PHQ-9 has been shown to provide a reliable and valid measure of MDD severity and MDD detection using cutoff scores (He et al., 2020; Levis et al., 2020). In the present study, the German version of the PHQ-9 was used (Kocalevent et al., 2013). Good internal consistency was found for the PHQ-9 in the present study, with  $\alpha = .86$  and  $\omega = .87$ .

***Male Depression Risk Scale (MDRS-22)***

The Male Depression Risk Scale (MDRS-22) measures male-typical externalizing depression symptoms (Rice et al., 2013). The total 22 items, load on the following six factors: *Emotion Suppression* (“Suppression”; e.g., “I suppressed my negative feelings”), *Drug Use* (e.g., “I used drugs to cope”), *Alcohol Use* (e.g., “I needed to have easy access to alcohol”), *Anger and Aggression* (“Anger”; e.g., “I overreacted in situations involving aggressive behavior”), *Somatic Symptoms* (“Somatic”; e.g., “I had regular headaches”), and *Risk Taking* (e.g., “I drove dangerously or aggressively”). Participants are asked using an 8-point Likert scale ranging from 0 (*not at all*) to 7 (*almost always*) whether they have experienced the complaints within the past month. In the present study, the validated German version of the MDRS-22 was used (Walther, Grub, Ehlert, et al., 2021). In the



present study, good internal consistencies were found for the total score ( $\alpha = .88$ ,  $\omega = .94$ ) and all subscales (all  $\alpha \geq .80$ ,  $\omega \geq .81$ ), except for the *Risk Taking* subscale which showed questionable ( $\alpha = .62$ ,  $\omega = .64$ ) reliability.

### ***Male Role Norms Inventory – Short Form (MRNI-SF)***

The Male Role Norms Inventory – Short Form (MRNI-SF) measures traditional masculinity ideologies using 21 items with seven subscales (Levant et al., 2013). Participants indicate agreement with each statement about traditional masculinity ideology on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The dimensions of the seven subscales of the MRNI-SF represent *Restrictive Emotionality* (“Restricted Emotions”), *Self-Reliance Through Mechanical Skills* (“Self-Reliance”), *Negativity Toward Sexual Minorities* (“Heterosexism”), *Avoidance of Femininity* (“Avoid Femininity”), *Importance of Sex, Toughness*, and *Dominance*. For the present study, the German translated and validated version was used (Kömlenac et al., 2021). Good internal consistencies were found for the MRNI-SF total score ( $\alpha = .94$ ,  $\omega = .98$ ) as well as all individual subscales (all  $\alpha \geq .81$ ,  $\omega \geq .82$ ) in the present sample.

### **Statistical analysis**

The statistical analysis consisted of the three parts described in the following, using the software *R* (version 4.1.2; R Core Team, 2020) including the packages *psych* (Revelle, 2020), *car* (Fox & Sanford, 2019), and *MKinfer* (Kohl, 2020). For all analyses, a significance level of  $\alpha = .05$  was used while controlling the familywise error rate with a Holm-correction for multiple testing (Holm, 1979). Because of the leptokurtic and skewed distribution of some questionnaire scores and their respective changes from pre ( $t_1$ ) to post ( $t_2$ )

psychoeducation (Supplementary Table S1, Figure S1), non-parametric bootstrapping with 10,000 replications was used for inferences instead of the  $t$ -distribution. Furthermore, where heteroscedasticity across groups was indicated by a Brown-Forsythe test for unequal variance ( $p < .05$ ; Brown & Forsythe, 1974), the degrees of freedom were approximated with the Welch-Satterthwaite procedure (Welch, 1947).

In a first part of the analysis, the sample composition was analyzed by calculating descriptive statistics for participants' sociodemographic information and their questionnaire scores at  $t_1$ , additionally stratified by psychoeducation condition (CBT-based vs. male-specific). Correlations and psychometric properties of the questionnaire scores at  $t_1$  were further estimated. In a second part, mean changes in questionnaire scores pre and post psychoeducation ( $t_2 - t_1$ ) were compared between the two psychoeducation conditions using one-tailed two-samples  $t$ -tests, according to the pre-registered directed hypotheses. In a third part, potential moderation effects of endorsement of TMI (high vs. low MRNI-SF) on the association between psychoeducation condition and participants' change in questionnaire scores was analyzed with a three-way mixed effects ANOVA (between factor 1: CBT-based vs. male-specific psychoeducation; between factor 2: high vs. low TMI; within factor 1:  $t_1$  and  $t_2$ ). Five extreme multivariate outliers (Mahalanobis distance  $> 36.12$ , the cutoff value for  $\chi^2(14)$  and  $p = .001$ ) were excluded for the ANOVA (observations from the CBT-based condition: 28, 63, and 88; observations from the male-specific condition: 89, and 138).

## Results

### Descriptive Statistics

Men's age ranged from 18 to 63 years, with a mean age of 25.5 years ( $SD = 9.1$ ). The majority was from Germany (74.3%), completed a secondary education (72.4%), self-identified as heterosexual (67.1%), and was currently single (67.8%). Regarding their mental health, about one-third self-reported to be currently diagnosed with a psychiatric disorder (34.2%), slightly less stated to be formally diagnosed with a depressive disorder (28.3%), and about one-fifth reached the cutoff for moderate depressive symptoms (PHQ-9 score  $\geq 9$ ; 19.1%). Furthermore, less than one-third were currently using psychotherapy (28.9%) and even fewer were currently taking psychiatric medication (18.4%). No statistically significant differences were found between men in the two psychoeducation conditions, except those men in the male-specific psychoeducation condition had higher scores on the MRNI-SF at  $t_1$  ( $M = 43.7$ ) as compared to men in the CBT-based psychoeducation condition at  $t_1$  ( $M = 37.2$ ). However, this difference did vanish after controlling for multiple testing. A more detailed overview of the sample composition is presented in Table 1.

### Group Comparisons

Mean changes in the individual questionnaire scores ( $t_2 - t_1$ ) were compared for men in the two different psychoeducation conditions using one-tailed bootstrapped  $t$ -tests. As shown in Table 2 and Figure 3, men who received the male-specific psychoeducation condition, as compared to men who received the CBT-based psychoeducation, showed a stronger decrease in state shame (ESS-11; small effect with  $d = 0.29$ ), negative affect (PANAS neg.; small effect with  $d = 0.38$ ), and a stronger increase in prototypical depression symptoms (PHQ-9; small effect with  $d = 0.23$ ). After applying a correction for multiple

testing, only the decrease in negative affect remained statistically significant. When the individual TMI (MRNI-SF) and externalizing depression symptoms (MDRS-22) domains were included, men in the male-specific psychoeducation condition also showed a stronger decrease in the *Dominance* domain of the MRNI-SF (small effect with  $d = 0.28$ ). However, this effect did not survive a correction for multiple testing. More detailed results for the subscale analyses can be found in the Supplementary (Table S3).

### **Moderation Analysis**

A potential moderation effect of TMI was examined with a mixed three-way ANOVA including the factors psychoeducation condition (between factor 1), high vs. low TMI (between factor 2), and timepoint of measurement (pre vs. post psychoeducation; within factor 1). As shown in Table 3, a significant interaction effect between psychoeducation condition and timepoint of measurement was found for men's negative affect (PANAS neg.; small effect with partial  $\eta^2 = .03$ ). Post-hoc analyses with pairwise bootstrapped  $t$ -tests further revealed that men in the male-specific psychoeducation condition showed a reduction in negative affect before vs. after the psychoeducation, with a small effect of  $d = 0.33$  (Supplementary Table S4). Thus, these results indicate that men's negative affect was reduced when receiving the male-specific psychoeducation, but not when receiving the CBT-based psychoeducation. No statistically significant effects were found for any of the other questionnaires (Supplementary Table S5).

## Discussion

### Summary of Results

Men who received a male-specific psychoeducation, in comparison to a CBT-based psychoeducation, showed a stronger decrease in state shame and negative affect (H2, H3), as well as a stronger increase in prototypical depression symptoms (H4). Mixed three-way ANOVAs further revealed a significant interaction effect between psychoeducation condition and timepoint of measurement for negative affect. Post-hoc tests showed that only men in the male-specific psychoeducation condition showed a reduction in negative affect, but not men who received the CBT-based psychoeducation. No influence of the psychoeducation condition was identified for self-esteem (H1), male-typical externalizing depression symptoms (H4) and TMI (H5).

### Integration of Findings

Given the lack of male-specific psychotherapy interventions for MDD, the present investigation of male-specific psychoeducation for MDD provides an important guidepost for further research in the field. Never before has a randomized controlled investigation empirically compared standard CBT-based psychoeducation for MDD with male-specific psychoeducation for MDD. Our findings of greater reductions in shame (H2) and negative affect (H3) in the male-specific psychoeducation condition as compared to CBT-based psychoeducation should be interpreted in light of the compelling need for replication of these findings. Nonetheless, male-specific psychoeducation for MDD appears to have great potential to more effectively reduce feelings of shame, self-stigma, and negative affect associated with MDD in men in comparison to standard CBT-based psychoeducation. This appears especially important when considering that men, particularly young men, exhibit

high levels of shame, self-stigma, and negative affect associated with suffering from MDD and show higher MDD-related rumination than women when experiencing higher levels of shame (Cheung et al., 2004; Dubreucq et al., 2021; Latalova et al., 2014; Mackenzie et al., 2019). The process of reducing self-stigma by gaining more insight into the respective mental illness, for example, by psychoeducation, seems to be mediated by shame (Hasson-Ohayon et al., 2012). Thus, reducing feelings of shame and negative affect associated with MDD through a simple, male-specific adaptation of CBT-based psychoeducation addressing TMI may further reduce a man's self-stigma, support therapy engagement, and, ultimately, recovery from MDD. This perspective receives additional supported from the finding that the association between stronger TMI and higher depressive symptoms seems mediated by shame proneness (Rice et al., 2016).

Furthermore, theoretically specified factors within psychoeducation for MDD (e.g., increased knowledge about MDD symptoms and potential disease course) have been shown to have positive effects on MDD outcomes (Morokuma et al., 2013; Shimazu et al., 2011; Tursi et al., 2013). However, in contrast to the present study that has been carried out online with a prespecified psychoeducation text, it seems reasonable to assume that in a psychotherapeutic setting, nonspecific factors of psychoeducation, such as modulation of patient expectations or therapeutic alliance, can have powerful effects that may be even greater when specifically tailored to the individual man suffering from MDD (Donovan et al., 2009). The potential enhancement of positive effects due to nonspecific factors of male-specific psychoeducation for MDD compared with CBT-based psychoeducation for MDD need to be investigated in future randomized clinical trials.

The finding that there was no difference between groups with regard to state self-esteem led to the rejection of H1, suggesting that state self-esteem might not be influenced

by additional knowledge about male-specific MDD symptom profiles or gender role socialization processes. This finding is contrasted by research showing that a masculinity priming elicited increased self-esteem (Wong et al., 2015). However, Wong and colleagues' (2015) experimental study focused explicitly on masculinity priming as according to social identity theory. Therein, masculinity priming supports men in perceiving themselves as belonging to the group of men, leading to an increase in self-esteem due to the overall positive connotation of the male group. However, the aim of male-specific psychoeducation in the present study was not to strengthen the sense of belonging to the broader group of men, but to highlight the male-typical idiosyncrasies of MDD and to provide men with a differentiated basis for assessing their current psychological distress.

Hypothesis H4, which suggests male-specific psychoeducation for MDD to elicit a stronger shift from male-typical externalizing depression symptoms toward prototypical depression symptoms can only partly be confirmed. We hypothesized that the content of the male-specific psychoeducation for MDD challenges TMI and thus promotes a shift from male-typical externalizing depression symptoms to more prototypical depression symptoms (Walther & Seidler, 2020). Describing the link between stronger endorsement of TMI and exhibiting more externalizing depression symptoms compatible with TMI, as well as explaining the mechanism of male gender role socialization may encourage men to question externalizing depression symptoms and to admit suffering from prototypical depression symptoms. Ideally, men suffering from MDD would no longer feel the need to hide behind a mask that embodies TMI once they understand the underlying mechanisms and their harmful consequences. In the present study, however, we found only partial evidence supporting this perspective. Namely, a stronger increase in prototypical depression symptoms for male-specific psychoeducation as compared to CBT-based psychoeducation

was found. However, while the male-specific psychoeducation did lead to a greater decrease in male-typical externalizing depression symptomatology as compared to the CBT-based psychoeducation group, this difference did not reach statistical significance, potentially due to a lack in statistical power to identify small effects.

Nevertheless, it seems promising that male-specific interventions for MDD therapy are increasingly being discussed and elaborated (American Psychological Association, 2018; Seidler et al., 2019). Masculinities need to be recognized and understood as constructs based on social, cultural, and contextual norms which inform men how MDD should be expressed and tackled so as not to compromise their masculinity. Primack et al. (2010) have already attempted to resolve male-specific depression symptom representations in a group therapy format. However, testing of this intervention failed due to the lack of a control group as well as the sample size with six individuals being far too small. Similarly, Nahon and Lander (2010), in addition to a standard psychotherapy, attempted to soften rigid endorsement of TMI with a gender role re-evaluation component for recently separated men. However, no additional benefit from gender role re-evaluation could be identified, as the men in the study generally suffered from low depressive distress. For this reason, Seidler and colleagues (2021, 2022) are now attempting to soften TMI at the psychotherapist training level with a psychotherapist training program called *Men in Mind*, which ultimately supports male clients. Walther and colleagues (Walther et al., 2022) have developed a male-specific psychotherapy program for MDD, which also incorporates a male-specific psychoeducation for MDD. Their program aims to resolve strong endorsement of TMI and the associated GRC in relation to MDD and psychotherapy early in the course of therapy, thereby aiming to prevent therapy-interfering processes and to render therapy more efficacious. Taken together, the specific contents of the interventions strongly overlap and



future randomized clinical trials moving forward in evaluating these male-specific interventions are urgently needed.

### **Limitations**

Several limitations need to be considered when interpreting the results. Although only self-reporting mentally distressed men were included in the analysis, some men did not exclusively suffer from MDD. However, of the 34% men self-reporting to suffer from a diagnosed mental health disorder, 83% reported to suffer from a depressive disorder, suggesting most men who suffer from a mental health condition were suffering from MDD. In addition, 19% of all participants reached the PHQ-9 cut off point for MDD (a score greater or equal 10), suggesting that the sample consisted of a large proportion of men suffering from MDD. Since the study could be used as an opportunity to find out more about one's mental state, a strong self-selection bias can be assumed, so that men with an interest in finding out more about themselves and dealing with their mental health were more likely to take part in this online study. Thus, the results cannot be generalized to all men with mental distress. Furthermore, because of the online format of the study, psychoeducation for MDD was delivered in text form. Therefore, future studies would need to evaluate whether the same effects would result in a face-to-face setting with a psychotherapist as a counterpart delivering this content. Finally, it has to be mentioned that although the CBT-based and the male-specific psychoeducation was developed on the basis of existing manuals, psychoeducations can also be designed differently and thus can deviate from the present version. Therefore, the findings should be interpreted in light of the present versions of psychoeducation for MDD or closely aligned variants but not for psychoeducation for MDD in general.

**Conclusion**

Male-specific psychoeducation for MDD emerged to have positive effects in terms of a stronger reduction of feelings of shame and negative affect with regard to suffering from MDD. Moreover, although only partly confirmed, it seems plausible that a male-specific psychoeducation for MDD provokes a shift from initial more male-typical externalizing depression symptoms to more prototypical depression symptoms, which may be beneficial for improved MDD diagnosis and treatment. Future studies should aim to replicate these findings in a face-to-face setting and investigate whether an individualized form of male-specific psychoeducation for MDD, which is tailored to the needs of the individual depressed man, can bring about even more positive effects.

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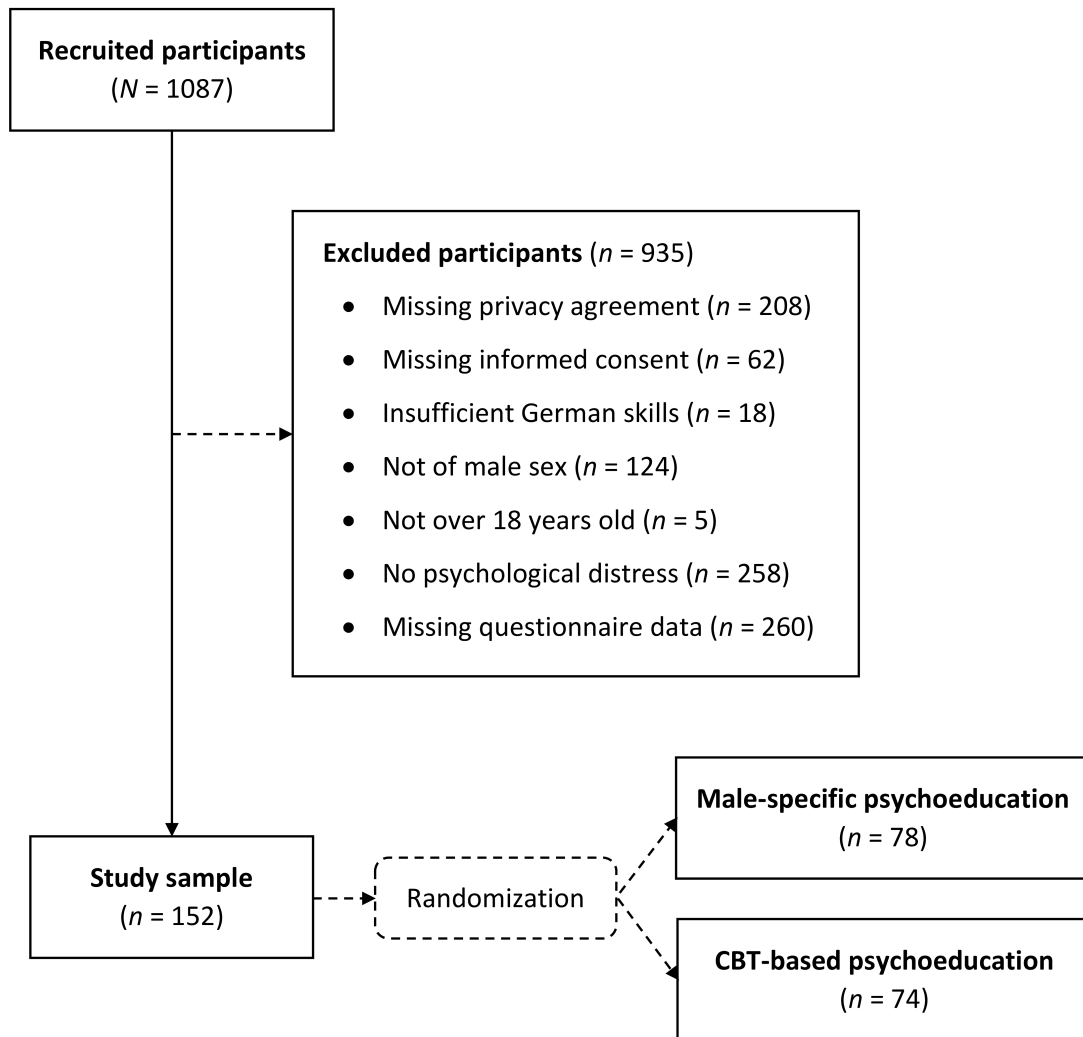
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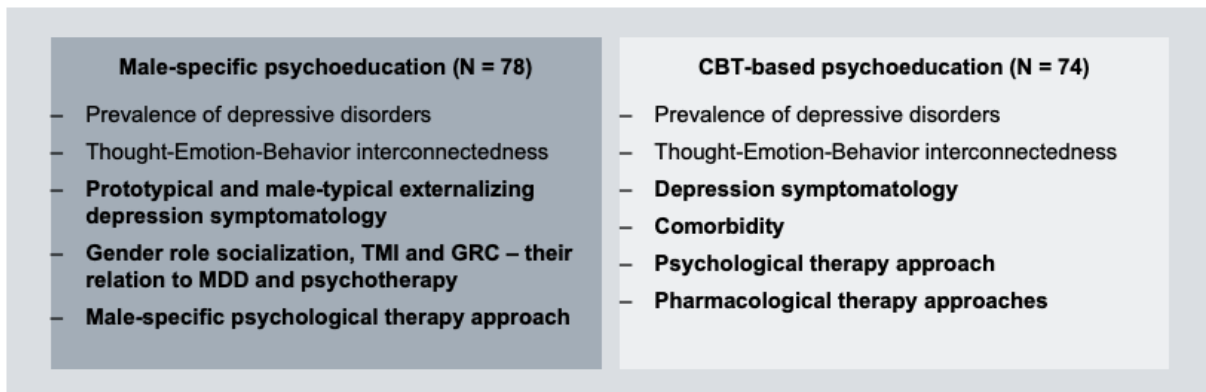
**Figure 1**  
*Overview of the Exclusion Process*



*Note.* N/n = number of participants

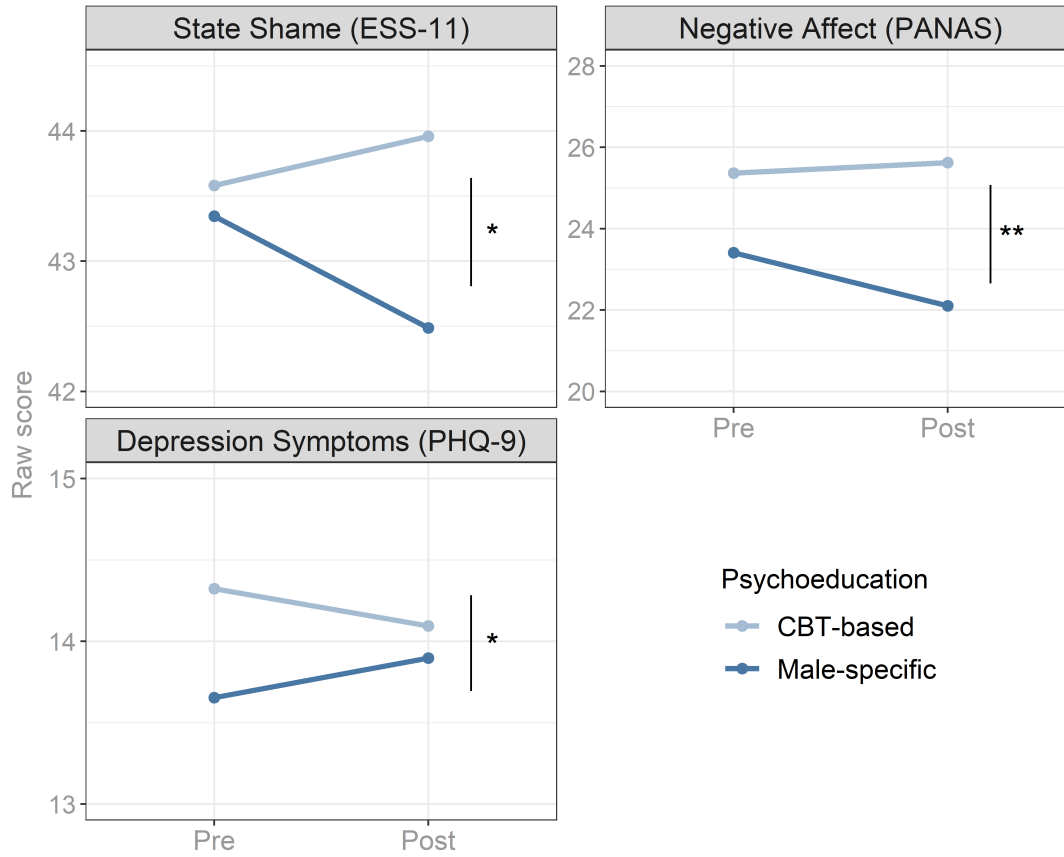
**Figure 2**

*Psychoeducation Conditions for MDD*



*Note.* N = Number of participants in condition, MDD = major depressive disorder, TMI = traditional masculinity ideology, GRC = gender role conflict, MDD = major depressive disorder, CBT = cognitive behavioral therapy.

**Figure 3**  
 Change in Questionnaire Scores from Pre (t1) to Post (t2) Psychoeducation



Note. ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (negative affect subscale); PHQ-9 = Patient Health Questionnaire – 9.

\*  $p < .05$ ; \*\*  $p < .01$

**Table 1**  
*Descriptive Statistics for the Sample*

Variable	Total sample (n = 152)	CBT-based (n = 74)	Male-specific (n = 78)	t / $\chi^2$ (df)	p-value	Effect size
<b>Age, mean (SD)</b>	25.5 (9.1)	24.8 (7.6)	26.2 (10.3)	-0.92 (150)	.359	0.15
<b>Nationality, n (%)</b>				3.25 <sup>sim</sup>	.543	0.15
Swiss	19 (12.5)	8 (10.8)	11 (14.1)			
German	113 (74.3)	55 (74.3)	58 (74.4)			
Austrian	14 (9.2)	7 (9.5)	7 (9.0)			
Other	1 (0.7)	4 (5.4)	1 (1.3)			
Belgian	5 (3.3)	0 (0)	1 (1.3)			
<b>Education, n (%)</b>				4.10 <sup>sim</sup>	.279	0.16
None completed	3 (2.0)	2 (2.7)	1 (1.3)			
Secondary education	110 (72.4)	48 (64.9)	62 (79.5)			
Tertiary education	29 (19.1)	18 (24.3)	11 (14.1)			
Other	10 (6.6)	6 (8.1)	4 (5.1)			
<b>Yearly household income, n (%)</b>				1.70 (2)	.428	0.11
< 20'000	65 (42.8)	28 (37.8)	37 (47.4)			
20'000 - 60'000	45 (29.6)	25 (33.8)	20 (25.6)			
> 60'000	42 (27.6)	21 (28.4)	21 (26.9)			
<b>Sexual orientation, n (%)</b>				4.90 <sup>sim</sup>	.205	0.18
Heterosexual	102 (67.1)	55 (74.3)	47 (60.3)			
Gay	16 (10.5)	8 (10.8)	8 (10.3)			
Bisexual	29 (19.1)	9 (12.2)	20 (25.6)			
Other	5 (3.3)	2 (2.7)	3 (3.8)			
<b>Marital status, n (%)</b>				1.93 <sup>sim</sup>	.387	0.11
Single	103 (67.8)	48 (64.9)	55 (70.5)			
In a relationship	45 (29.6)	25 (33.8)	20 (25.6)			
Separated after relationship	4 (2.6)	1 (1.4)	3 (3.8)			
<b>General health, n (%)</b>				5.18 <sup>sim</sup>	.263	0.18

Very bad	12 (7.9)	6 (8.1)	6 (7.7)			
Bad	37 (24.3)	21 (28.4)	16 (20.5)			
Fair	67 (44.1)	28 (37.8)	39 (50.0)			
Good	30 (19.7)	14 (18.9)	16 (20.5)			
Very good	6 (3.9)	5 (6.8)	1 (1.3)			
<b>Mental health †, n (%)</b>						
Psychiatric diagnosis	52 (34.2)	28 (37.8)	24 (30.8)	0.56 (1)	.455	0.07
Depression diagnosis	43 (28.3)	24 (32.4)	19 (24.4)	0.85 (1)	.355	0.09
PHQ-9 cutoff ( $\geq 10$ )	29 (19.1)	11 (14.9)	18 (23.1)	1.17 (1)	.280	0.10
Psychotherapy use	44 (28.9)	26 (35.1)	18 (23.1)	2.13 (1)	.144	0.13
Psychotropic drug use	28 (18.4)	13 (17.6)	15 (19.2)	0.00 (1)	.956	0.02
<b>Questionnaires, mean (SD)</b>						
SSES-15	41.8 (10.2)	40.3 (10.1)	43.1 (10.1)	-1.71 (150)	.092	0.28
ESS-11	43.5 (8.8)	43.6 (8.7)	43.3 (9.1)	0.16 (150)	.879	-0.03
PANAS (neg.)	24.4 (8.6)	25.4 (8.7)	23.4 (8.4)	1.40 (150)	.165	-0.23
PANAS (pos.)	23.2 (6.7)	23.0 (7.2)	23.3 (6.3)	-0.28 (150)	.791	0.05
PHQ-9	14.0 (6.0)	14.3 (5.5)	13.7 (6.5)	0.68 (150)	.501	-0.11
MDRS-22	30.6 (19.8)	30.2 (22.0)	30.9 (17.4)	-0.23 (150)	.838	0.04
MRNI-SF	40.6 (18.9)	37.2 (15.5)	43.7 (21.3)	-2.15 (141)	<b>.030*</b>	0.35

Note. *n* = number of participants; *SD* = standard deviation; *t* /  $\chi^2$  (*df*) = test statistic (degrees of freedom); SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22 ; MRNI-SF = Male Role Norms Inventory – Short Form.

<sup>sim</sup> estimated using Monte Carlo simulation; † Assessed in self-report

\* *p* < .05

**Table 2**  
*Group Comparisons For Change in Questionnaire Scores (t2 - t1)*

Questionnaire	Condition		one-tailed <i>t</i> -test			
	CBT-based <i>M</i> <sub>t2-t1</sub> ( <i>SD</i> )	Male-specific <i>M</i> <sub>t2-t1</sub> ( <i>SD</i> )	<i>t</i> ( <i>df</i> )	<i>p</i> <sup>a</sup>	<i>p</i> <sup>a</sup> ( <i>corr.</i> )	<i>d</i>
SSES-15	-0.35 (3.54)	-0.19 (4.44)	-0.24 (146)	.398	.740	0.04
ESS-11	0.38 (3.58)	-0.86 (4.86)	1.79 (141)	<b>.030*</b>	.178	0.29
PANAS (neg.)	0.26 (4.31)	-1.31 (3.95)	2.33 (147)	<b>.003**</b>	<b>.021*</b>	0.38
PANAS (pos.)	-0.76 (4.28)	0.15 (3.77)	-1.39 (145)	.065	.259	0.23
PHQ-9	-0.23 (1.47)	0.24 (2.55)	-1.41 (124)	<b>.048*</b>	.241	0.23
MDRS-22	-0.22 (3.63)	-0.63 (4.36)	0.63 (148)	.262	.740	0.10
MRNI-SF	-0.89 (2.46)	-1.32 (5.43)	0.63 (109)	.247	.740	0.10

*Note.* *M*<sub>t2-t1</sub> = change in mean score between pre (t1) and post (t2) psychoeducation measurement; *SD* = standard deviation; *df* = degrees of freedom; *corr.* = adjusted for multiple testing using the Holm method; *d* = effect size Cohen’s *d*.

SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22; MRNI-SF = Male Role Norms Inventory – Short Form.

<sup>a</sup> *p*-values were obtained through bootstrapping with 10,000 replications.

\* *p* < .05; \*\* *p* < .01

**Table 3**  
*Three-Way Mixed ANOVA of Negative Affect (PANAS)*

Effect	<i>F</i> (1, 143)	<i>p</i> -value	partial $\eta^2$
Between			
MRNI-SF	0.620	.432	< .01
Condition	2.979	.087	.02
Within			
Time	3.732	.055	.03
Interaction			
(MRNI-SF) x (Condition)	2.318	.130	.02
(MRNI-SF) x (Time)	0.705	.403	< .01
(Condition) x (Time)	4.026	<b>.047*</b>	.03
(MRNI-SF) x (Condition) x (Time)	2.813	.096	.02

*Note.* MRNI-SF = Male Role Norms Inventory – Short Form (dichotomized along median); condition = experimental condition CBT-based vs. male-specific psychoeducation; time = pre vs. post psychoeducation measurement.

\* *p* < .05





# Evaluation of Male-Specific Psychoeducation for Major Depressive Disorder Compared to Cognitive Behavioral Therapy Psychoeducation: A Randomized Controlled Investigation in Mentally Distressed Men

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## Supplementary Materials

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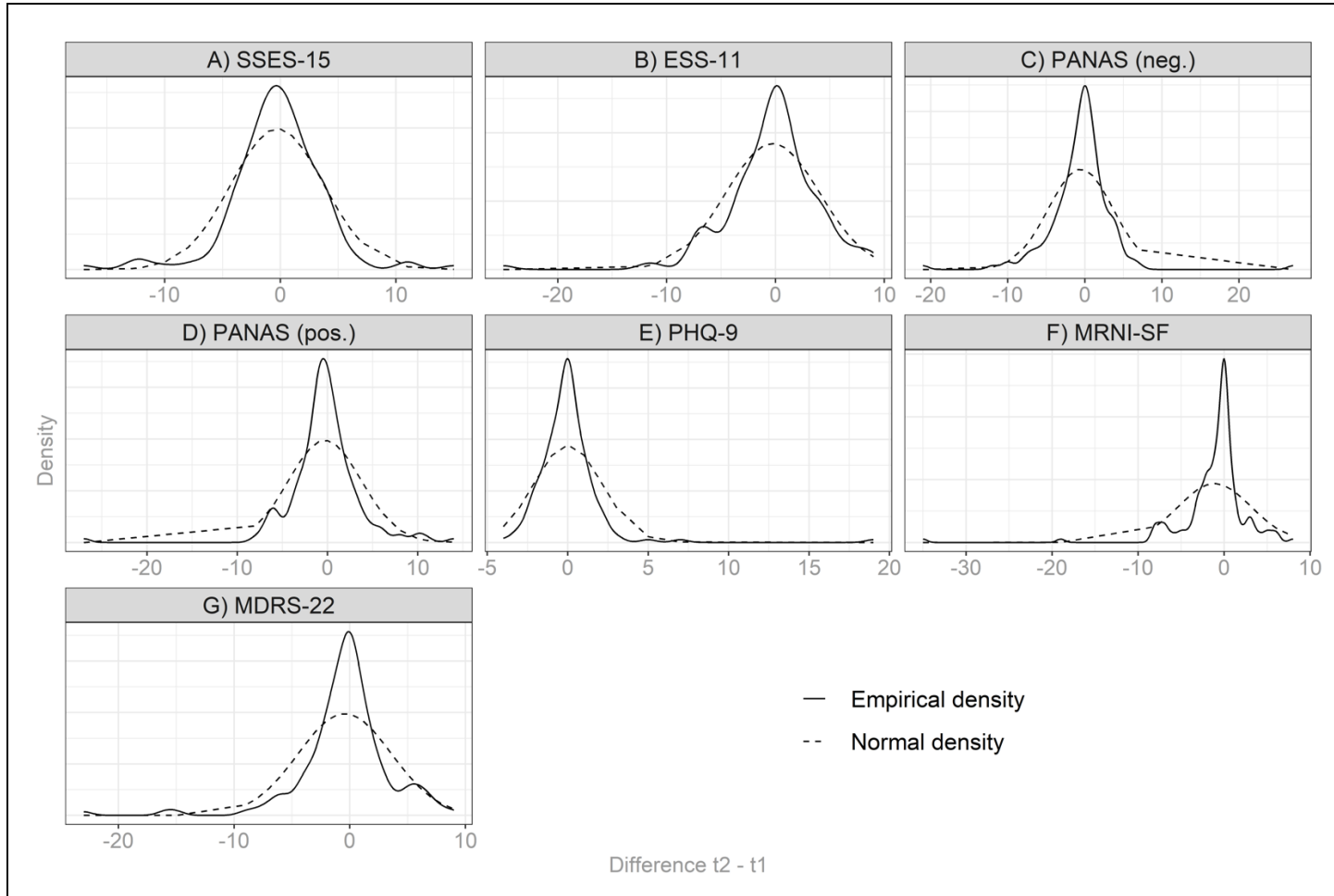
**Table S1***Psychometric Properties of the Questionnaires Before Psychoeducation (t1)*

Questionnaire	<i>n</i>	$\alpha$	$\omega$	mean (SD)	range	skewness	kurtosis
SSES-15	15	.85	.91	41.8 (10.2)	[20; 67]	0.14	-0.75
ESS-11	11	.76	.83	43.5 (8.8)	[22; 69]	0.17	0.02
PANAS (neg.)	10	.85	.86	23.2 (6.7)	[10; 42]	0.22	-0.42
PANAS (pos.)	10	.87	.88	24.4 (8.6)	[10; 50]	0.41	-0.27
PHQ-9	9	.86	.87	14.0 (6.0)	[0; 27]	0.11	-0.57
MDRS-22	22	.88	.94	30.6 (19.8)	[2; 154]	2.05	8.78
Suppression	4	.82	.83	13.8 (7.3)	[1; 28]	0.34	-0.87
Drug Use	3	.94	.94	2.7 (5.2)	[0; 21]	2.10	3.39
Alcohol Use	4	.90	.91	3.0 (5.2)	[0; 28]	2.27	5.26
Anger	4	.92	.92	3.7 (4.5)	[0; 28]	2.24	6.51
Somatic	4	.80	.81	4.6 (5.4)	[0; 28]	2.16	5.11
Risk Taking	3	.62	.64	2.8 (3.5)	[0; 21]	2.12	5.81
MRNI-SF	21	.94	.98	40.6 (18.9)	[21; 107]	1.37	1.59
Restricted Emotions	3	.81	.82	6.3 (4.0)	[3; 21]	1.39	1.42
Self-Reliance	3	.89	.89	9.8 (4.8)	[3; 21]	0.07	-0.94
Heterosexism	3	.90	.90	3.7 (2.4)	[3; 21]	4.70	24.52
Avoid Femininity	3	.93	.94	4.5 (3.3)	[3; 19]	2.34	4.62
Importance of Sex	3	.96	.96	4.3 (3.0)	[3; 20]	2.78	8.24
Dominance	3	.90	.90	4.1 (2.6)	[3; 14]	2.50	5.14
Toughness	3	.81	.82	7.9 (4.9)	[3; 20]	0.74	-0.70

Note. *n* = number of items;  $\alpha$  = Cronbach's Alpha;  $\omega$  = McDonald's Omega; SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22; MRNI-SF = Male Role Norms Inventory – Short Form.

**Figure S1**

*Density of Change in Questionnaire Scores ( $t_2 - t_1$ )*



Note. SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22; MRNI-SF = Male Role Norms Inventory – Short Form

**Table S2***Pearson's Correlation Coefficients Stratified by Psychoeducation Condition*

	1.	2.	3.1	3.2	4.	5.	6.
A) Total Sample ( <i>n</i> = 152)							
1. SSES-15	–						
2. ESS-11	<b>-.51***</b>	–					
3. PANAS (neg.)	<b>-.58***</b>	<b>.61***</b>	–				
4. PANAS (pos.)	<b>.56***</b>	<b>-.45***</b>	<b>-.36***</b>	–			
5. PHQ-9	<b>-.65***</b>	<b>.54***</b>	<b>.54***</b>	<b>-.55***</b>	–		
6. MDRS-22	<b>-.34***</b>	<b>.52***</b>	<b>.51***</b>	<b>-.32***</b>	<b>.60***</b>	–	
7. MRNI-SF	.14	-.03	-.02	.02	< .01	.12	–
B) CBT-Based Psychoeducation ( <i>n</i> = 74)							
1. SSES-15	–						
2. ESS-11	<b>-.61***</b>	–					
3. PANAS (neg.)	<b>-.63***</b>	<b>.64***</b>	–				
4. PANAS (pos.)	<b>.63***</b>	<b>-.58***</b>	<b>-.39**</b>	–			
5. PHQ-9	<b>-.70***</b>	<b>.64***</b>	<b>.59***</b>	<b>-.62***</b>	–		
6. MDRS-22	-.29	<b>.43**</b>	<b>.48***</b>	-.29	<b>.56***</b>	–	
7. MRNI-SF	.18	-.15	-.24	.07	-.15	-.06	–
C) Male-Specific Psychoeducation ( <i>n</i> = 78)							
1. SSES-15	–						
2. ESS-11	<b>-.42**</b>	–					
3. PANAS (neg.)	<b>-.51***</b>	<b>.58***</b>	–				
4. PANAS (pos.)	<b>.49***</b>	<b>-.31*</b>	<b>-.32*</b>	–			
5. PHQ-9	<b>-.61***</b>	<b>.47***</b>	<b>.49***</b>	<b>-.5***</b>	–		
6. MDRS-22	<b>-.41**</b>	<b>.64***</b>	<b>.57***</b>	<b>-.37**</b>	<b>.66***</b>	–	
7. MRNI-SF	.07	.04	.17	-.02	.10	.29	–

Note. *p*-values were adjusted for multiple testing using the Holm-method.

*n* = number of participants; SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22; MRNI-SF = Male Role Norms Inventory – Short Form.

\* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

**Table S3**

*Group Comparisons For Change in Questionnaire Scores (t2 - t1) Including Subscales*

Questionnaire	Condition		one-tailed <i>t</i> -test			
	CBT-based <i>M</i> <sub>t2-t1</sub> ( <i>SD</i> )	Male-specific <i>M</i> <sub>t2-t1</sub> ( <i>SD</i> )	<i>t</i> (df)	<i>p</i> <sup>a</sup>	<i>p</i> <sup>a</sup> (corr.)	<i>d</i>
SSES-15	-0.35 (3.54)	-0.19 (4.44)	-0.24 (146)	.398	1	0.04
ESS-11	0.38 (3.58)	-0.86 (4.86)	1.79 (141)	<b>.030*</b>	.535	0.29
PANAS (neg.)	0.26 (4.31)	-1.31 (3.95)	2.33 (147)	<b>.003**</b>	.060	0.38
PANAS (pos.)	-0.76 (4.28)	0.15 (3.77)	-1.39 (145)	.065	1	0.23
PHQ-9	-0.23 (1.47)	0.24 (2.55)	-1.41 (124)	<b>.048*</b>	.818	0.23
MDRS-22	-0.22 (3.63)	-0.63 (4.36)	0.63 (148)	.262	1	0.10
Suppression	-0.03 (2.26)	-0.04 (2.22)	0.03 (149)	.488	1	0.01
Drug Use	-0.01 (0.67)	-0.21 (1.3)	1.15 (117)	.093	1	0.18
Alcohol Use	-0.16 (1.1)	-0.28 (1.13)	0.66 (150)	.259	1	0.11
Anger	0.20 (1.03)	0.01 (1.31)	0.99 (145)	.152	1	0.16
Somatic	-0.18 (0.96)	-0.04 (1.33)	-0.73 (140)	.773	1	0.12
Risk Taking	-0.04 (1.44)	-0.08 (1.1)	0.17 (137)	.435	1	0.03
MRNI-SF	-0.89 (2.46)	-1.32 (5.43)	0.63 (109)	.239	1	0.10
Restricted Emotions	-0.09 (1.24)	0.17 (1.89)	-1.01 (134)	.820	1	0.16
Self-Reliance	-0.41 (1.39)	-0.46 (1.70)	0.22 (147)	.404	1	0.04
Heterosexism	-0.08 (0.57)	-0.08 (0.80)	-0.04 (139)	.504	1	0.01
Avoid Femininity	-0.08 (0.46)	0.01 (1.06)	-0.71 (106)	.753	1	0.11
Importance of Sex	-0.01 (0.88)	-0.19 (1.18)	1.06 (142)	.109	1	0.17
Dominance	0.01 (0.50)	-0.22 (0.98)	1.75 (116)	<b>.016*</b>	.298	0.28
Toughness	-0.22 (1.08)	-0.55 (1.89)	1.33 (150)	.092	1	0.22

*Note.* *M*<sub>t2-t1</sub> = change in mean score between pre (t1) and post (t2) psychoeducation measurement; *SD* = standard deviation; *df* = degrees of freedom; *corr.* = adjusted for multiple testing using the Holm method.

SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22; MRNI-SF = Male Role Norms Inventory – Short Form.

<sup>a</sup> *p*-values were obtained through bootstrapping with 10,000 replications.

\* *p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

**Table S4**

*Pairwise Post-Hoc Comparisons for Negative Affect (PANAS)*

Contrast	<i>t</i> (150)	<i>p</i> -value <sup>a</sup>	<i>p</i> -value <sup>a</sup> (adj.)	Cohen's <i>d</i>
male.t1 - CBT.t1	-1.40	.163	.367	0.23
CBT.t2 - CBT.t1	0.51	.570	.946	0.06
male.t2 - CBT.t1	-2.44	<b>.016*</b>	.119	0.40
CBT.t2 - male.t1	1.52	.122	.445	0.25
male.t2 - male.t1	-2.92	<b>&lt; .001***</b>	<b>.002**</b>	0.33
male.t2 - CBT.t2	-2.51	<b>.014*</b>	.129	0.41

*Note.* male.t1 = pre male-specific psychoeducation; male.t2 = post male-specific psychoeducation; CBT.t1 = pre CBT-based psychoeducation; CBT.t2 = post CBT-based psychoeducation; adj. = adjusted for multiple testing using the Holm method.

<sup>a</sup> *p*-values were obtained through bootstrapping with 10,000 replications.

\* *p* < .05; \*\* *p* < .01

**Table S5**

*Three-Way Mixed ANOVA of Study Questionnaires (A - E)*

Effect	<i>F</i> (1, 143)	<i>p</i> -value	partial $\eta^2$
A) Outcome: SSES-15			
Between			
MRNI-SF	2.429	.121	.02
Condition	1.938	.166	.01
Within			
Time	0.374	.542	< .01
Interaction			
(MRNI-SF) x (Condition)	1.328	.251	< .01
(MRNI-SF) x (Time)	0.095	.759	< .01
(Condition) x (Time)	0.258	.612	< .01
(MRNI-SF) x (Condition) x (Time)	0.269	.605	< .01
B) Outcome: ESS-11			
Between			
MRNI-SF	1.512	.221	.01
Condition	0.114	.736	< .01
Within			
Time	0.243	.623	< .01
Interaction			
(MRNI-SF) x (Condition)	0.038	.846	< .01

MALE-SPECIFIC PSYCHOEDUCATION FOR MDD

(MRNI-SF) x (Time)	0.049	.826	< .01
(Condition) x (Time)	2.300	.132	.02
(MRNI-SF) x (Condition) x (Time)	0.171	.680	< .01
<hr/>			
C) Outcome: PANAS (pos.)			
<hr/>			
Between			
MRNI-SF	3.040	.083	.02
Condition	0.061	.805	< .01
Within			
Time	0.472	.493	< .01
Interaction			
(MRNI-SF) x (Condition)	0.000	.984	< .01
(MRNI-SF) x (Time)	0.057	.812	< .01
(Condition) x (Time)	0.531	.467	< .01
(MRNI-SF) x (Condition) x (Time)	0.864	.354	< .01
<hr/>			
D) Outcome: PHQ-9			
<hr/>			
Between			
MRNI-SF	0.231	.632	< .01
Condition	0.013	.908	< .01
Within			
Time	2.490	.117	.02
Interaction			
(MRNI-SF) x (Condition)	1.863	.174	.01
(MRNI-SF) x (Time)	2.394	.124	.02
(Condition) x (Time)	3.176	.077	.02
(MRNI-SF) x (Condition) x (Time)	0.838	.361	< .01
<hr/>			
E) Outcome: MDRS-22			
<hr/>			
Between			
MRNI-SF	0.755	.386	< .01
Condition	0.486	.487	< .01
Within			
Time	0.315	.575	< .01
Interaction			
(MRNI-SF) x (Condition)	0.689	.408	< .01
(MRNI-SF) x (Time)	0.396	.530	< .01
(Condition) x (Time)	1.120	.292	< .01
(MRNI-SF) x (Condition) x (Time)	0.159	.691	< .01
<hr/>			

Note. MRNI-SF = Male Role Norms Inventory – Short Form (dichotomized along median); condition = experimental condition CBT-based vs. male-specific psychoeducation; time = pre vs. post psychoeducation measurement; SSES-15 = State Self-Esteem Scale – 15; ESS-11 = Experimental Shame Scale – 11; PANAS = Positive and Negative Affect Scale (neg. = negative affect; pos. = positive affect); PHQ-9 = Patient Health Questionnaire – 9; MDRS-22 = Male Depression Risk Scale – 22.



## Psychoedukationsbedingungen

### Kontrollbedingung:

Depressionen zählen zu den häufigsten psychischen Erkrankungen weltweit. Nach Schätzungen der Weltgesundheitsorganisation (WHO) wird die Depression im Jahr 2030 die höchste Krankheitslast bei Personen weltweit verursachen, noch mehr als Herz-Kreislaufkrankungen. Das Lebenszeitrisko an einer Depression zu erkranken liegt mit einer Wahrscheinlichkeit von 12 – 26% im hohen Bereich. Verschiedene Studien und Schätzungen stimmen darin überein, dass derzeit rund 2 – 7% der Menschen an einer ernsthaften, unipolaren Depression leiden. Das durchschnittliche Alter bei einer Ersterkrankung an einer Depression liegt zwischen 20 bis 40 Jahren und weist eine beträchtliche Streuung vom Kindesalter bis hohe Alter auf. In den letzten Jahren zeigte sich in Studien eine generelle Zunahme depressiver Erkrankungen weltweit und auch über alle Altersgruppen hinweg. Besonders jüngere Jahrgänge, Personen zwischen 18 – 29 Jahren, weisen dabei ein deutlich gesteigertes Erkrankungsrisiko auf.

Zentrale Symptome der Depression sind Niedergeschlagenheit, Freudlosigkeit, Interessenverlust, Hoffnungslosigkeit, Antriebsmangel und erhöhte Ermüdbarkeit. Zusätzlich können Symptome wie Konzentrationsschwierigkeiten, vermindertes Selbstwertgefühl, Schuldgefühle, Schlafstörungen und/oder Suizidgedanken auftreten. Üblicherweise diagnostiziert man eine Depression dann, wenn die Symptome über einen Zeitraum von mindestens 2 Wochen anhalten und damit eine Änderung der vorher bestandenen Leistungsfähigkeit einhergeht.

Nicht selten treten depressive Symptome zusammen mit einer Vielzahl an anderen psychischen Erkrankungen auf, wie beispielsweise Persönlichkeitsstörungen, Angststörungen, Zwängen, Essstörungen, Süchten, somatoformen Störungen oder chronischen (körperlichen) Krankheiten. Oftmals sind akute oder chronische Belastungen, typische Risikofaktoren (z.B. frühere Depression, Neurotizismus, geringes soziales Umfeld) und fehlende Bewältigungsstrategien (z.B. soziales Umfeld, Freizeitaktivitäten, Optimismus) im Vorfeld einer Depression festzustellen. Auch dysfunktionale Verarbeitungs- und Denkmuster spielen dabei eine zentrale Rolle.

Der Zusammenhang von Gedanken, Gefühlen und Verhalten ist dabei ein wichtiges Konzept der Psychotherapie. Diese drei Ebenen stehen in einem direkten Zusammenhang zueinander. Die Depression ist eine affektive Störung und betrifft somit die Emotionen und Gefühlslage der Betroffenen. Aus diesem Grund wird auf Basis des Konzepts der Verwobenheit von Gedanken, Emotionen und Verhalten in der Psychotherapie versucht, durch Gedanken- und Verhaltensänderungen auf die Emotionsebene positiven Einfluss zu nehmen. Das Hauptziel auf Verhaltensebene ist der Aufbau von Aktivitäten mit grossen positiven Verstärkerpotenzial (z.B. Lauftraining, wo je länger je mehr bemerkt wird, was für Fortschritte erreicht werden) und der Aufbau sozialer Kompetenzen (z.B. besser Kommunikationsfähigkeit

eigener Bedürfnisse), da eine geringe Rate an positiven Erfahrungen einerseits auslösend und andererseits aufrechterhaltend sein kann in Bezug auf eine Depression. Auf Gedankenebene liegt vor allem das depressiv einseitig, willkürliche, selektive und übertrieben negative Denken im Fokus, weshalb das Ziel eine kognitive Umstrukturierung ist. Dabei sollen automatische Gedanken und Einstellungen, die sich negativ auf die betroffene Person auswirken, identifiziert, herausgefordert und

dann von den Betroffenen selbständig angepasst werden (z.B. Von «Ich bin ein absoluter Versager.» zu «Ich habe an gewissen Punkten in meinem Leben versagt aber an anderen war ich auch sehr erfolgreich.»).

Die kognitive Verhaltenstherapie ist bei der Behandlung von Depression das am besten untersuchte Verfahren. Unter kognitiver Verhaltenstherapie versteht man einen psychologischen Behandlungsansatz, der problemzentriert und strukturiert ist. Die Schwerpunkte bezogen auf Depressionen sind dabei die Überwindung von Inaktivität und/oder einseitigen, belastenden Aktivitäten, der Aufbau von Bewältigungsstrategien, das Auflösen dysfunktionaler Gedankenmuster und Einstellungen sowie der Aufbau von Problemlösestrategien für zukünftige Belastungen und verbesserter sozialer Kompetenz.

Nebst der kognitiven Verhaltenstherapie werden auch, je nach Schweregrad, Psychopharmaka eingesetzt, allen voran Antidepressiva. Bei einer leichten depressiven Episode sind normalerweise keine Psychopharmaka indiziert. Bei mittleren bis schweren depressiven Episoden können Psychotherapie und Pharmakologie kombiniert werden, was laut Studien den grössten Therapieerfolg mit sich führt. Allerdings werden Psychopharmaka nach wie vor kontrovers diskutiert und auch Heute noch weisen grosse Studien darauf hin, dass die Effekte von Antidepressiva eher gering sind. Einige Studien konnten zeigen, dass die Psychotherapie oder die kombinierte Therapie zu einer langanhaltenderen und stärkeren Verbesserung der depressiven Symptomatik führten als die Psychopharmakologie alleine. So ist vor allem die kognitive Verhaltenstherapie langfristig der Pharmakotherapie in der Behandlung von Depressionen überlegen.

Abschliessend festzuhalten ist, dass die Therapie von Depressionen sehr individuell ausgelegt werden müssen, um im jeweiligen Fall die effizienteste Therapieform zu wählen. Depressive Klienten und Psychotherapeuten müssen als einen kooperativen Verbund gegen die persistierenden negativen Gefühle und Gedanken angehen. Daher gilt es auch auf individuelle Präferenzen seitens der Klienten sensitiv zu reagieren und mögliche Anpassungen an bestehenden Behandlungskonzepten flexibel zu integrieren.

### **Experimentalbedingung:**

Depressionen zählen zu den häufigsten psychischen Erkrankungen weltweit. Nach Schätzungen der Weltgesundheitsorganisation (WHO) wird die Depression im Jahr 2030 die höchste Krankheitslast bei Personen weltweit verursachen, noch mehr als Herz-Kreislaufkrankungen. Das Lebenszeitrisko an einer Depression zu erkranken liegt mit einer Wahrscheinlichkeit von 12 – 16% für Männer und 20 – 26% für Frauen im sehr hohen Bereich. Generell erkranken Frauen rund doppelt so häufig an einer Depression wie Männer. Wichtig dabei zu berücksichtigen ist, dass Männer jedoch doppelt so häufig an Alkoholkonsumstörungen erkranken und eine drei bis vierfach höhere Rate an vollzogenem Suizid aufweisen. Depressionen gehören zu den Hauptrisikofaktoren um an Alkoholkonsumstörungen zu erkranken oder einen Suizid zu begehen. Deswegen gehen zahlreiche Forscherteams weltweit davon aus, dass Männer oftmals an unerkannten Depressionen leiden und anstelle klassischer Depressionssymptome männer-typische Depressionssymptome aufweisen. Diese männer-typischen Depressionssymptome werden aber von Klinikern oft nicht als solche erkannt, was dazu führt, dass viele Männer ohne Unterstützung verbleiben, was nicht selten zu sehr tragischen Resultaten wie vollzogener Suizid führt.

Aufgrund ihrer Konformität zu traditionellen männlichen Geschlechternormen sind für Männer klassische Depressionssymptome wie «depressive Stimmung», «Interesse und Freudverlust» oder «Erschöpfung» oftmals inakzeptable Symptome, die zu stark mit ihrem Maskulinitätsselbstkonzept (die Wahrnehmung wie sie als Männer sein sollten) in Konflikt stehen. Traditionelle männliche Geschlechternormen orientieren sich an den Leitsätzen «Sei in Kontrolle» und «Sei nicht wie eine Frau» und drücken sich in Geschlechtsrollennormen wie «Eigenständigkeit», «Stoizismus / restriktive Emotionalität», «Stärke» und «Anti-Femininität» aus. Daher zeigen zahlreichen Männer, wenn Sie unter psychischer Belastung stehen und üblicherweise ein depressives Syndrom entwickeln würden (z.B. aufgrund des Verlustes der Arbeit oder einer Scheidung), externalisierende Depressionssymptome (z.B. Ärger oder Gereiztheit, Emotionsunterdrückung, Alkoholkonsum, risikoreiches Verhalten). Nimmt man nun also statt den rein traditionellen Depressionssymptomen auch männer-typische Symptome zur Depressionsdiagnostik hinzu, so verschwindet der Geschlechtsunterschied zwischen Männern und Frauen, so dass beide Geschlechter eine gleich hohe Wahrscheinlichkeit haben, an Depression zu erkranken, wie eine Studie eindrucksvoll zeigte.

Für Männer ist es zentral zu lernen, dass schon in jungen Jahren Knaben und dann Männer diese männlichen Geschlechternormen zu verinnerlichen lernen. Als Mann oder Frau geboren zu sein ist eine der sozial zentralsten Unterscheidungsmerkmale in unserer Gesellschaft. Dementsprechend wird geschlechtskonformes Verhalten bei Kindern schon früh gefördert (z.B. Ansehen für Knaben die gut Fußball spielen) und geschlechtsuntypisches Verhalten wird üblicherweise sanktioniert (z.B. Mobbing von Knaben, die Ballett machen). Die Aneignung und Verinnerlichung von Werten, Einstellungen und Verhaltensweisen die mit Weiblichkeit, Männlichkeit oder beidem verbunden sind, werden als Geschlechterrollen Sozialisation bezeichnet. Wir Menschen werden kontinuierlich darin bestärkt, dass für die Frau oder den Mann angemessene Verhalten zu zeigen. Geschlechterrollennormen sind sozial

konstruierte und idealisierte Erwartungen und Verhaltensweisen, die dem einzelnen Geschlecht anhaften und die als kulturell angemessen angesehen werden. Durch die Akzeptanz und das Aufnehmen dieser Konzepte in unser Selbst, werden sie zu unseren Geschlechtsidentitäten. Aus diesen bilden wir dann unseren Selbstwert und unsere Eigenkonzepte von Männlichkeit und Weiblichkeit. Basierend auf den Geschlechtsrollenidentitäten als Mann werden Jungen und Männer gesellschaftlich darin bestärkt traditionelle männliche Rollennormen anzunehmen und darauf programmiert "in Kontrolle zu sein" und "anders als Frauen zu sein". Da an einer Depression zu leiden, depressive Gefühle zu haben oder zu weinen gemeinhin als etwas Weibliches wahrgenommen wird und als Kontrollverlust betrachtet wird, wird dies von vielen Männern abgelehnt. Denn aufgrund der Instabilität der Männlichkeit, welche von Männern erlangt und wiederholt gezeigt werden muss, ist es für viele Männer wichtiger ihr eigenes Maskulinitätsselbstkonzept zu schützen und maskulinitäts-kompatible Symptome wie Ärger oder erhöhter Alkoholkonsum zu zeigen. Dies führt jedoch zu Geschlechtsrollenkonflikten (z.B. haben Männer das Gefühl sich stark zu zeigen, wobei sie sich nicht so fühlen), welche zusätzlich Depressions-begünstigend sind.

Im Hinblick auf eine Depressionstherapie bei Männern haben diese Zusammenhänge grossen Einfluss. In der Kognitiven Verhaltenstherapie ist der Zusammenhang von Gedanken, Gefühlen und Verhalten ein wichtiges Grundelement der Therapie von Depressionen. Die Depression ist eine affektive Störung und betrifft somit die Emotionen und Gefühlslage der Betroffenen. Aus diesem Grund wird auf Basis des Konzepts der Verwobenheit von Gedanken, Emotionen, und Verhalten in der Psychotherapie versucht, durch Gedanken- und Verhaltensänderungen die Emotionsebene positiv zu beeinflussen. Wenn betroffene Männer nun aber diese depressiven Gefühle so gar nicht an den Tag legen, wird auch das entsprechende Behandlungskonzept mit dem Ziel der Verbesserung der Emotionen nicht durchgeführt. Bei Männern mit depressiven Störungen und externalisierende Symptomatik sollte daher zuerst der Geschlechtsrollenkonflikt im Hinblick auf die Präsentation von typischen Depressionssymptomen untersucht und gegebenenfalls aufgelöst werden. Durch die Aufklärung der oben beschriebenen Zusammenhänge erlangen Männer mit Depressionen bessere Einsicht in ihre depressive Störung und können die Zurückhaltung «depressive Emotionen zu zeigen» besser überwinden und somit effizienter Therapie machen. Männer können im Verlauf der Depressionstherapie ermutigt werden die rigide Adhärenz an traditionelle männliche Geschlechtnormen aufzuweichen und multiple Formen von Männlichkeit integrieren (z.B. Es ist stark und verantwortungsbewusst sich Hilfe zu holen und sich Jemandem zu öffnen, damit man nicht die Kontrolle verliert). Es ist daher wichtig den Mann und seine Symptomatik in einem geschlechtsspezifischen Ansatz zu verstehen und therapeutisch zu begleiten.