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Addressing mental illness stigma in German higher education: study protocol for a mixed-methods evaluation of a psychosocial setting-based intervention

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ABSTRACT

Introduction Mental illness stigma is associated with a range of negative consequences, such as reduced help-seeking for mental health problems. Since stigma affects individual, social, and structural aspects, multilevel interventions such as the Canadian programme The Working Mind have been proven to be the most effective. Given the solid evidence base for The Working Mind, it is our aim to implement and evaluate culturally adapted versions of the programme in German higher education, targeting students, employees and managers.

Methods and analysis We will evaluate the programme with regard to its effect on mental illness stigma, openness to mental health problems, willingness to seek help, and positive mental health outcomes. Further, we will investigate the programme's effectiveness dependent on gender and personal values, various mechanisms of change, and factors facilitating and hindering implementation. The study uses a sequential explanatory mixed-methods evaluation design (QUAN → qual) that consists of three steps: (1) quasi-experimental online survey with programme participants, (2) focus groups with programme participants, and (3) qualitative interviews with programme stakeholders. The quantitative data collected in step 1 will be analysed using 2×3 analysis of variances and a parallel multiple mediation analysis. The results will inform the qualitative data to be collected in steps 2 and 3, which will be analysed using qualitative content analysis.

Ethics and dissemination The study was approved by the local Ethics Committee (Ethics Committee of University Medicine Greifswald; BB 098/23). Participants have to provide written consent before taking part in a focus group or interview. As for the online survey, participants have to give their consent by agreeing to an online data protection form before they can start completing the survey. We will publish central results and the anonymised data in an Open Access Journal. Further, the statistical code will be included as a supplement to the paper(s) documenting the results of the study.

Trial registration number DRKS00033523.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The intervention (The Working Mind) addresses workplace mental illness stigma on multiple levels.
⇒ A sequential (QUAN → qual) mixed-methods design is used to evaluate the intervention.
⇒ The intervention will also be evaluated with regard to a behavioural outcome measure, the utilisation of support offers.
⇒ The study is monocultural.
⇒ The results may be affected by self-report bias.

INTRODUCTION

Background

Mental illness stigma is associated with various negative consequences for those affected.[1] Stigmatisation is commonly defined as a complex process in which an individual is labelled as different, stereotyped, separated, and can thus be affected by status loss and discriminated against.[2] Crucially, a power differential is required for stigmatisation to unfold.[2] Stigma contains cognitive, affective, and/or behavioural components.[3] It can manifest on different levels, for example, the societal level (structural stigma), the general population level (public stigma) or the intrapersonal level (personal or self-stigma).[4] Structural mental illness stigma is reflected, for example, in the lower allocation of resources for mental healthcare compared with physical healthcare.[5] Public mental illness stigma may be reflected in denying housing opportunities to someone with a mental illness.[6] Self-stigma is a form of personal stigma.[7] It consists of being aware of and agreeing with public stigma, applying it to oneself and experiencing harm as a consequence,[8] such as reduced help-seeking.[1] In addition to mental health (self-)stigma, the specific (self-)stigma of seeking help constitutes a major barrier to seeking support offers.[1] Finally, stigma can be experienced in different ways[4]: while, for instance, the housing example describes the experience

of endorsed stigma, the stigma of seeking help may often refer to anticipated stigma.

In Germany, more than a quarter of the population experiences mental illness over the course of 1 year.[9] Despite this prevalence, mental illness remains stigmatised, in particular certain disorders such as schizophrenia spectrum disorders or substance use disorders.[10] One factor that may contribute to society's negative perception of individuals living with mental illness may be the potential impact on work performance during acute phases of these conditions. Given the high value German culture ascribes to work,[11 12] an assumed decrease in productivity could have a negative influence on how people living with mental illness are perceived in the workplace. For instance, individuals living with depression are often unfairly labelled as lazy and disorganised, decreasing their chances of being hired or put forward for promotions.[13 14] This underscores the importance of interventions that also have the potential to change structural factors in the work context or other settings where performance is salient, for example, in higher education.

Evidence-based interventions targeting mental illness stigma

In order to reduce mental illness stigma, current research and practice rely primarily on interventions that combine elements of psychoeducation and/or contact with people with lived experience of mental illness.[15] The aim is to educate people about the background, symptoms, progression, and support options, and also to show that anybody can be affected by these illnesses.[6 15–18] Interventions that combine several approaches and work on several levels (relationship and behavioural prevention) are considered particularly effective; even short interventions (1–2 sessions) are sufficient to achieve significant effects.[15–17] However, the number of high-quality studies on multicomponent interventions addressing multiple levels remains low.[15 16]

Moreover, many interventions target specific disorders (eg, schizophrenia), which can be helpful for people living with this disorder but might not work for others (eg, people living with addiction or depression). From a societal perspective, a shift towards destigmatising mental illness needs to consider the entire spectrum of mental illness. Consequently, the mental health continuum model describes positive to negative mental health across mental illnesses via gradually increasing impairment.[19–23] Mental health is viewed functionally—positive mental health means well-being and satisfaction, whereas negative mental health means social withdrawal and low quality of life. Research shows that the continuum concept is significantly associated with the reduction of stigma in correlative and interventional studies[19 20]—even for various highly stigmatised illnesses (eg, eating disorders, addiction and schizophrenia). Importantly, the mental health continuum model posits that a diagnosis of mental illness can coexist with positive mental health, which aligns well with the two continua model of positive mental health and mental illness.[24]

The mental health continuum model also constitutes the centrepiece of the intervention The Working Mind (TWM). TWM is aimed at reducing stigma in the work context, encouraging open exchange and supporting the use of help.[22 23 25] In addition to its psychoeducational approach, the programme relies on the stigma reduction strategy of contact. This is done in the form of video clips in which people with lived experience describe aspects of their mental health journey, including experiences with stigmatisation.[25] Beyond the content aimed primarily at reducing mental illness stigma, TWM fosters positive mental health by teaching coping skills and thus strengthening mental health literacy[25] (for more detailed information on the programme, see the 'Intervention' section).

Importantly, TWM not only uses several approaches to stigma reduction but also addresses several levels: public stigma, self-stigma, and, to some extent, structural stigma. Since TWM is aimed at employees and managers in general, that is, regardless of their mental health state, public stigma constitutes the programme's primary focus. When internalised by people living with a mental illness, public stigma turns into self-stigma, as described above. Therefore, TWM may also—indirectly—reduce self-stigma in participants living with a mental illness, particularly because participants are encouraged to actively reflect on their own mental health throughout the programme. Reduced structural stigma at the level of the organisation may be a distal outcome of TWM, fostered by participants' exchange around workplace structures and practices beneficial to mental health. An adaptation for students (The Inquiring Mind)[26] has also been developed, which takes into account the special circumstances of student life, for example, the campus environment and coping with study-specific stressors such as exam periods. Both programmes have already been successfully evaluated several times: meta-analyses point to moderate reductions in stigma and increases in resilience[23 25 26] across 3 months following the programme. Following the programme, participants also reported increasing openness to discussing mental health problems and willingness to seek help for mental health problems when needed.[23 25 26] However, the programme has not yet been evaluated using a control group and outside the Canadian context.[23] Given both the prevalence of mental illness stigma in Germany and the central role of work in German culture described above, interventions such as TWM seem necessary.

Differential effectiveness of interventions targeting mental illness stigma

Further, it is widely acknowledged that a given intervention may be more beneficial for some participants than for others.[27] For instance, interventions aimed at reducing public stigma appear to be more effective for specific target groups, such as students and employees, than for community members.[3 17]

Gender

Participants' gender may also exert an influence on programme efficacy: More specifically, traditional (Western) gender norms demand that men restrain their emotions and do not express vulnerability,[28] resulting in higher levels of stigmatisation of mental health problems and help-seeking.[29] Both a meta-analysis and a scoping review on the effectiveness of antistigma interventions also point to differential effectiveness depending on participants' gender.[15 16] In addition to the differential endorsement of stigma, antistigma interventions' effectiveness may be impacted by gender-specific manifestations of mental distress and illness[30 31] as well as gender-specific use of coping strategies such as help-seeking,[32] the latter being of particular relevance to TWM due to its focus on promoting help-seeking behaviour. While no gender differences emerged regarding the effectiveness of TWM in the Canadian context,[23 25 26] the question remains whether the same applies to the German context. Due to the traditional gender norms for men described above, it seems possible that men in Germany could be more prone to stigmatisation processes (eg, public stigma, public stigma of seeking help) than women, and that the workshop, therefore, has a stronger effect on them.

Personal values

Recently, research on mental illness stigma has also taken into account that the process of stigmatisation is influenced by personal values. Personal values, such as benevolence, can become more salient or decrease in importance depending on 'what matters most' in a specific situation.[33 34] Using well-established questionnaires based on the Theory of Human Values developed by Schwartz,[35 36] hypotheses on connections between mental illness stigma and personal values have been tested. Lannin *et al*[37] found an effect of Schwartz' self-transcendence values on reducing public stigma of help-seeking behaviour and thus reducing self-stigma of help-seeking behaviour (public stigma of help-seeking behaviour functioned as a mediator). Rieckhof *et al*[38] go a step further, developing a new questionnaire (Value-based Stigma Inventory, VASI) that involves aspects of personal values and mental illness stigma and shows negative correlations of stigma with self-transcendence values. Therefore, it can be assumed that participants with a higher endorsement of self-transcendence report lower stigmatising attitudes. Moreover, research shows that contextual cues can increase the salience of specific values, and if there is a fit between personal values and context, they can facilitate value-oriented behaviour and increase well-being.[39 40] These findings underline that personal values can represent intraindividual differences and could influence the effects of the workshop. TWM aims to increase interpersonal dialogue and support regarding mental health and may, therefore, be connected to liberal values such as self-transcendence and benevolence. Because of the person-programme-environment fit, it may thus be more effective for people who endorse said values.

Mechanisms of change in interventions targeting mental illness stigma

Knowing for whom a programme works is crucial—as is knowing how it works.[41] Over the last years, the study of possible mechanisms of change (or mechanisms of action) has increasingly made its way into evaluation research, both in the field of clinical[42 43] and behaviour change interventions.[44 45] Chen[46 47] has proposed a conceptual framework for studying such mechanisms: a so-called change model. A change model encompasses three causally linked components: the intervention, intervention determinants, and intervention outcomes.[47] Determinants are mechanisms that are influenced by the intervention and in turn influence the outcomes,[47] that is, they correspond to the aforementioned mechanisms of change.

In the field of interventions targeting mental illness stigma, research into mechanisms of change is scarce, as a recent meta-analysis points out.[3] Existing basic and interventional research suggests that contact may reduce public stigma by increasing empathy towards people with a mental illness, by reducing intergroup anxiety, and, to a smaller extent, by increasing knowledge in the sense of mental health literacy.[48 49] In the case of TWM, more specifically, Szeto *et al*[26] point to the central role of the continuum model of mental health. Therefore, increasing continuum beliefs may be another mechanism through which the programme could bring about change.

A comprehensive evidence base shows that programmes such as TWM are effective in reducing stigma and promoting positive mental health in multiple settings.[15 17 23 25 26] However, the programme has not yet been transferred to and evaluated in other cultural contexts. In addition, the field benefits from an evaluation of the programme's theoretical underpinnings in the sense of a change model[46 47] to examine mechanisms of change.

Study objectives and research questions

Against this background, our study aims to implement and evaluate a culturally adapted version of TWM in Germany. In order to adequately investigate the different study objectives, we will pursue a comprehensive mixed-methods evaluation strategy. First, we will evaluate the programme regarding its effect on mental illness stigma, openness to mental health problems, and the willingness to seek help. We will also examine the programme's effect on positive mental health outcomes (resilience and subjective well-being). Second, we will investigate whether the programme's efficacy depends on participants' gender and personal values. Third, we will test and explore possible mechanisms of change regarding public stigma, which may serve as a starting point for developing a change model according to Chen.[46 47] Lastly, we will explore factors facilitating or hindering the programme's implementation in the higher education setting to be able to improve the implementation process and enable

continuity. This leads us to the following research questions and hypotheses:

Primary research questions

1. Does TWM reduce mental illness stigma?

H1. Participation in TWM leads to reduced mental illness stigma.

2. Does TWM foster openness to mental health problems?

H2. Participation in TWM leads to increased openness to mental health problems.

3. Does TWM increase the willingness to seek help for mental health problems?

H3. Participation in TWM leads to increased willingness to seek help and, if affected personally, to increased utilisation of support offers.

Secondary research questions

4. Does TWM promote positive mental health?

H4. Participation in TWM leads to higher resilience.

H5. Participation in TWM leads to higher subjective well-being.

5. Does the effect of TWM on mental illness stigma differ according to participants' gender and personal values?

H6. The effect of participating in TWM on mental illness stigma is moderated by gender.

H7. The effect of participating in TWM on mental illness stigma is moderated by personal values.

6. What mechanisms in TWM bring about change regarding mental illness stigma?

H8. The effect of participating in TWM on mental illness stigma is mediated by mental health literacy.

H9. The effect of participating in TWM on mental illness stigma is mediated by agreement with continuum beliefs.

H10. The effect of participating in TWM on mental illness stigma is mediated by empathy towards people with mental illness.

H11. The effect of participating in TWM on mental illness stigma is mediated by intergroup anxiety towards people with mental illness.

Exploratory research question

What factors promote and hinder the (sustainable) implementation of TWM in the higher education setting?

METHODS AND ANALYSIS

Trial design

Our choice to use a mixed-methods trial design is guided by the principle of pragmatism,[50] our overarching goal being to comprehensively evaluate different facets of TWM. While our study primarily focuses on the programme's efficacy, as reflected in the primary research questions, we also seek to elaborate on these results and expand the study's focus by investigating questions of a more exploratory type. Therefore, the two main purposes of our mixed-methods design are complementarity and expansion.[51] In line with this rationale, we have chosen a sequential exploratory design (QUAN → qual), which encompasses three steps: (1) a quasi-experimental online survey, (2) focus groups, and (3) qualitative interviews with stakeholders. While step 1 pertains to the 'QUAN' phase, steps 2 and 3 form the 'qual' phase. The findings from the quantitative and qualitative phases will be connected in the intermediate stage of the study[52], such that the findings of step 1 will influence both steps 2 and 3. A visual model depicting the trial design can be found in figure 1.

In the online survey, we will collect quantitative data in three waves: preintervention, postintervention and at 6-month follow-up. As the intervention is being carried out in a different cultural context for the first time, our focus at this stage will be to evaluate the intervention as such rather than contrasting it with other active treatments. Consequently, we have chosen a quasi-experimental design with a passive control group.

In step 1, we will focus on answering the efficacy-focused research questions, that is, questions 1–5. Additionally, this step will help to identify 'candidate mediators' and mechanisms (of change)[41] targeted in question 6.

The focus groups with intervention participants will take place approximately 1 month after the intervention. Participants will be stratified according to target group (students, employees and managers) and, if possible, gender (women, men; other gender identities will not be used for stratification purposes).

In step 2, we will focus on both elaborating and expanding the quantitative results obtained in step 1. The goal of the elaboration process will be to develop a deeper understanding of the quantitative data, for example, by obtaining a more fine-grained understanding of mechanisms of change. The goal of the expansion process will be to develop a broader understanding of the quantitative data, for example, by giving participants the opportunity to freely share their experiences with the programme (thus expanding the range of programme 'outcomes').

The qualitative interviews with stakeholders will take place after the first implementation round, that is, after the first 6-month follow-up assessment. Programme stakeholders will include people working in mental health and psychosocial services at the German universities in which the programme will be implemented. Further, representatives of the universities' personnel department and the staff council will be contacted for an interview.

In step 3, our sole focus will be stakeholders' perspectives on factors facilitating and hindering the sustainable implementation of the programme, that is, research question 7. Although the target group of this step is different from that of steps 1 and 2, the previously obtained results provide an important basis for answering question 7. Therefore, development[51] may be considered the third function of our mixed-methods design.

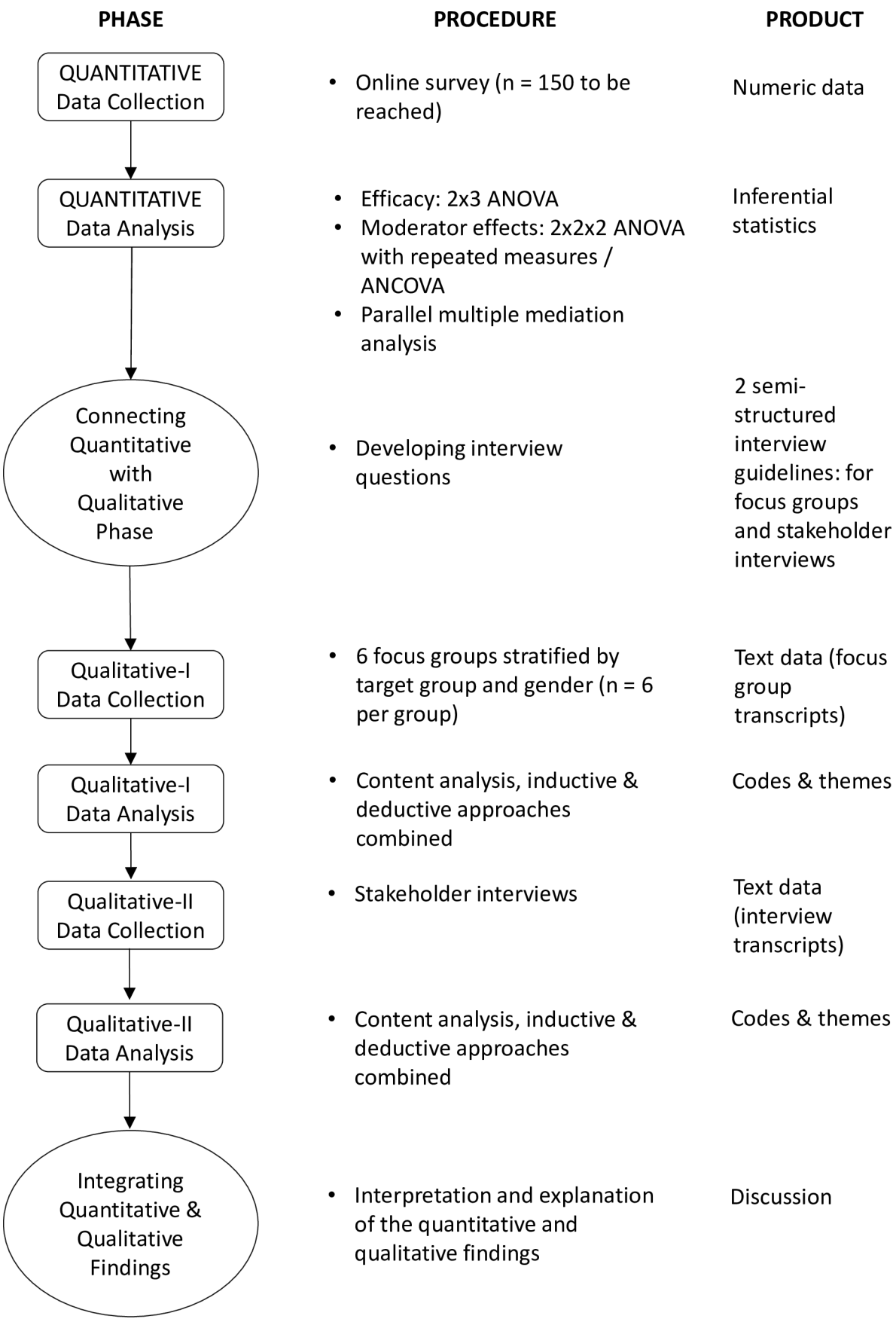

Figure 1 Visual model depicting the mixed-methods trial design. ANOVA: analysis of variance. ANCOVA: analysis of covariance.

Patient and public involvement

The programme's target groups, that is, students, employees, and managers, have been involved in the entire research process. They were included in the development of the study design, and the study was designed based on their needs and priorities. The research questions regarding stigmatising attitudes, mental health literacy and openness were derived from panel discussions and expert interviews. They were also part of the process of culturally adapting the programme (including focus group discussions, translations, etc). Further, the target groups were involved in the adaptation process of two of the outcome measurement instruments used in this study (Opening Minds Scale–Workplace Attitudes (OMS-WA) and Intergroup Anxiety Scale (IAS); see the 'Data collection' section). Programme participants will also be involved in the choice of outcome measures in the qualitative parts of the study. As described above, they will be asked to reflect on the ways in which the programme may be beneficial to them, either personally (step 2) or as seen from their professional perspective (step 3). Moreover, they will be part of the recruitment of participants by forwarding invitations and presenting the study to their peers, and in a similar way, they will also be part of the dissemination, as leaflets and factsheets will be created that summarise the main findings of the study in lay language to be disseminated to the public. To ensure their continued involvement in the research, the study was connected to an internal advisory board at the university (consisting of representatives of all groups) that reflects on and discusses the progress of the study.

Sample size

We have calculated the sample size based on the anticipated mean effect for research question 1. An a priori power analysis for a 2×3 analysis of variance (ANOVA) (intervention vs control; preintervention, postintervention, and follow-up assessment) with repeated measures with a power of 0.80, α=0.05 and an anticipated medium effect size (d=0.38; see meta-analysis on TWM[23]; indicates a required total sample of n=50, which means approximately n=25 per group (ie, control and intervention groups) if the groups are equally populated. As we will carry out the intervention in different target groups, the required number of participants increases: For the three target groups, this results in a total planned sample of 25×2×3=150 people, of whom around a third are to be reached again for follow-up.

For the focus groups, participants of the intervention group will be stratified according to target group (students, employees, management) and, if possible, gender (male, female), thus ideally resulting in six groups of six people each (n=36).

Participant eligibility criteria

To be included in the study, participants have to be aged 18 years or older, to be members of a German higher education institution, and to belong to either of the intervention target groups: students, employees or managers. Given the focus of our intervention, managers are defined as having personnel responsibility. Individuals who do not meet these criteria will be excluded from the study.

Participant timeline

In the following, we will describe the different steps of the study procedure. Figure 2 provides a schematic overview of the schedule.

Participant acquisition and enrolment

Since the intervention is aimed at students and staff of German universities and piloted at the University of Greifswald (a medium-sized town in the northeast of Germany), participants for the intervention group are currently being acquired via the university's channels. The intervention has been included in the catalogue of health offers available to all members of the University of Greifswald. In addition, the intervention dates are being included in the university calendar, and flyers are being distributed across the campus. The employee and manager versions of the programme are also being advertised via central university mailing lists, whereas the student version will be advertised via various student Instagram channels. University members interested in taking part can enrol via the catalogue. Control group participants will be acquired via other German universities' channels, for example, mailing lists.

Assessments and interventions

Participants of both groups will be invited to a quantitative preintervention assessment (t_1) a few days prior to the intervention. As described above, the student and employee versions of the programme will take place on 1 day, whereas the manager version of the intervention will be spread over 2 days (max. 2 weeks apart). At the end of the intervention, only the intervention participants will be informed about the focus groups and asked to indicate whether they consent to the research team contacting them about participating. Quantitative postintervention assessment (t_{2QUAN}) will take place shortly after the intervention for both groups; qualitative postintervention assessment (t_{2QUAL}) will take place approximately a month after the intervention. Finally, a quantitative follow-up assessment (t_3) will take place around 6 months postintervention for both groups. The study, that is, first participant enrolment, started on 1 February 2024, after trial registration (31 January 2024) and submission of the first version of this protocol (31 January 2024). The study is planned to end on 30 June 2025.

Intervention

TWM[23] is a Canadian group-based intervention with the primary aims of reducing stigmatisation of mental illnesses and people affected by these illnesses and promoting help-seeking. Its secondary aim is to strengthen positive mental health by providing adaptive coping strategies and relevant help options so that stress can be dealt

	STUDY PERIOD					
	Enrolment	Allocation	Post-Allocation			
TIMEPOINT	$-t_1$	0	t_1	t_{2QUAN}	t_{2QUAL}	t_3
PARTICIPANT ACQUISITION						
ENROLMENT:						
Informed consent	X					
Allocation		-				
INTERVENTIONS:						
The Working Mind			←	→		
Control						
ASSESSMENTS:						
Primary outcomes						
Mental health stigma (OMS-WA; prognostic pessimism (1 item); SSMIS-SF-Agreement; VASI; SSOSH; SSRPH)			X	X	X	X
Openness towards mental health problems (IASMHS, Scale: Psychological Openness)			X	X	X	X
Willingness to seek support (list)			X	X	X	X
Utilisation of support offers (list)						X
Secondary outcomes						
Resilience (BRS)			X	X	X	X
Subjective well-being (WHO-5)			X	X	X	X
Mental health literacy (MHLS for students; MHL-W-G for employees and managers)			X	X	X	X
Continuum beliefs (CBS)			X	X	X	X
Empathy (3 items)			X	X	X	X
Intergroup anxiety (IAS)			X	X	X	X
Covariates						
Gender			X		X	
Personal values (PVQ 21)			X		X	X
Mental distress (PHQ-9)			X	X		X
Experience with mental illness (treatment) (4 items)			X		X	
Age			X			
Education			X			
Professional situation			X			
Field of study/work			X			

Figure 2 Schedule of participant acquisition, enrolment, interventions and assessments. IAS, Intergroup Anxiety Scale; IASMHS, Inventory of Attitudes to Seeking Mental Health Services; MHL-W-G, Mental Health Literacy Tool for the Workplace; OMS-WA, Opening Minds Scale–Workplace Attitudes; PHQ-9, Patient Health Questionnaire-9; SSMIS-SF, Self-Stigma of Mental Illness Scale–Short Form; SSOSH, Self-Stigma of Seeking Help; SSRPH, Stigma Scale for Receiving Psychological Help; VASI, Value-based Stigma Inventory.

with more effectively. As a result, mental illnesses may develop less frequently and take a less severe course. The programme is based on a combination of psychoeducational, contact-based, and coping-oriented elements and thus reflects the current state of research (see the 'Introduction' section). As described above, there are different versions of the intervention. Given the target groups of our study, we will implement the culturally adapted student, employee, and manager programme versions. Table 1 lists the programme modules for each target group.

The information will be delivered using a PowerPoint presentation along with a facilitator guide. Furthermore, participants will receive a handout and additional print information on specific topics (eg, a resilience guide). All the original materials have been translated into German and adapted culturally. Intervention facilitators have a professional background in mental health and have successfully completed a week-long facilitator training for the intervention.

The intervention will be provided in small face-to-face groups of up to 15 people. The intervention will take place on the premises of the University of Greifswald; a first round is planned from February 2024 onwards.

Each module is around 1 hour long, resulting in a total duration of around 4 hours. The programmes for students and employees are carried out in 1 day while the programme for managers is divided into two sessions of 4 hours each.

Measures

In the following, we will provide an overview of the constructs to be examined in our study. All the constructs listed below can also be found in figure 2.

Outcomes

The study's primary outcomes, examined in research questions 1–3, encompass mental illness stigma (H1), openness to mental health problems (H2), and willingness to seek help/utilisation of support offers (H3).

Secondary outcomes relate to research questions 4 and 6. Research question 4 comprises positive mental health outcomes: resilience (H4) and subjective well-being (H5). Research question 6 comprises possible intermediary outcomes (ie, mechanisms of change): mental health literacy (H8), mental health continuum beliefs (H9), empathy towards people with mental illness (H10), and intergroup anxiety towards people with mental illness (H11).

We will aggregate individual participant data by calculating mean values. Due to our aim to measure changes in outcomes, we will examine the variables listed above:preintervention (quantitative), postintervention (quantitative and qualitative), and at 6-month follow-up (quantitative). The only exception will be the utilisation of support offers, which we will only collect at follow-up.

Table 1 The Working Mind (TWM) programme modules for the different target groups

Module #	Students	Employees	Managers
1	Mental health and stigma	Mental health and stigma	Mental health and stigma
2	The mental health continuum tool	Mental health in the workplace	Mental health in the workplace
3	Self-care and building resilience	Self-care and building resilience	Self-care and building resilience
4	Creating a supportive campus		Supporting your team

Covariates

Several measures will be collected and examined as potential moderators of programme outcomes. As stated in research question 5, we will examine gender (H6) and personal values (H7) as potential moderators. Further, we will collect other sociodemographic and contextual variables identified as relevant factors of influence in the literature[15–17 19 23 26 53]: age, education, professional situation, field of study/work, current level of mental distress, as well as direct and indirect experience with mental illness and treatment options.

Again, we will aggregate individual participant data by calculating mean values. All covariates will be collected preintervention. Mental distress will additionally be measured at quantitative postintervention and 6-month follow-up, personal values will additionally be measured at 6-month follow-up. Gender, personal values, and experience with mental illness (treatment) will additionally be collected at qualitative postintervention. An overview can be found in figure 2.

Data collection methods

Quantitative data will be collected via online questionnaires, using the online platform SoSci Survey. Qualitative data will be collected in focus groups and interviews using semistructured interview guidelines. As the findings of step 1 will inform the subsequent steps of data collection, the interview guidelines will be finalised after analysis of these data. Both the online questionnaire and the interview guidelines will be uploaded to the OSF (https://osf.io/qrjce/?view_only=562269481229499c9467d750b7021e4c). The interview guidelines can also be found in online supplemental files 1,2. Student research assistants supporting both quantitative and qualitative assessment will be trained for the different tasks involved. Participants in the intervention group will receive a voucher worth €10 for each completed questionnaire and €30 for taking part in a focus group to increase participation rates.

In the following, we will briefly describe the psychometric features of the quantitative measurement instruments used. If not stated otherwise, we will calculate the sum scores for each of the instruments.

Primary outcomes (questions 1–3)

(H1) Mental illness stigma will be examined with various questionnaires to adequately capture the construct's multifaceted nature.

Public mental illness stigma in the workplace/study context will be assessed with the OMS-WA.[23 25 26 54 55] The OMS-WA exists in different versions tailored to different contexts; given our target groups, we will use the student,[26] employee[23 25 55], and manager version.[54] While the student version measures stigmatising attitudes related to the study context (and the phase of life associated with it), the employee and manager versions measure stigmatising attitudes in the workplace. The student version comprises 23 items, the employee version 22, and the manager version 11, such as 'people/employees with a mental illness could snap out of it if they wanted to.' Participants are asked to rate the items on a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. Since the OMS-WA is central to our study and the versions we will use have not yet been translated into German, we translated them using a forward-back translation procedure, consulting an expert panel and pretesting them with the target group. Internal consistency is good to excellent for the English student version ($0.88 \leq \alpha \leq 0.92$)[26] and excellent for the employee version ($\alpha = 0.90$).[54] Validation of the manager version is reported to be in progress.[54] A comprehensive validation study on the employee version is currently under review[56]; the student version will be validated subsequently.

Public mental illness stigma (context-unspecific) will be assessed with the German version of the Self-Stigma of Mental Illness Scale–Short Form[57 58] Agreement subscale. Whereas the scale as a whole was developed to measure self-stigma in people living with a mental illness, the Agreement subscale captures public stigma (which represents a necessary component of self-stigma). Participants are asked to rate the five items, such as 'I think most persons with mental illness are dangerous.' on a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. Studies across multiple clinical samples and languages indicate good construct validity of the scale; internal consistencies for the Agreement subscale are acceptable ($72 \leq \alpha \leq 0.79$[57]). The use of the subscale for a general workplace/student sample will be discussed in the context of the study's limitations.

In addition, we will examine prognostic pessimism, that is, the view that people with mental illness are unlikely to recover, which represents another important component of mental illness stigma.[59] Prognostic pessimism will be assessed with a single item measure based on the one used by Lebowitz and Ahn.[60] It asks participants to rate, on a 7-point Likert scale from 1='not at all permanent'

to 7='very permanent', how permanent they consider a mental illness to be.

Value-sensitive mental illness stigma will be assessed with the VASI.[38] Participants are asked to rate the 15 items, such as 'It damages my reputation if a mental illness becomes known in my family.' on a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. The items form five subscales: Self-Realisation, Personal Enrichment, Reputation, Meritocratic Values, Security. Rieckhof *et al*[38] report good internal consistency (α=0.88) and good convergent and construct validity of their questionnaire.

Public stigma of seeking help will be assessed with the German version of the Stigma Scale for Receiving Psychological Help.[61] Participants are asked to rate the five items, such as 'Seeing a psychologist for emotional or interpersonal problems carries social stigma.' on a 4-point Likert scale from 0='strongly disagree' to 3='strongly agree'. Internal consistency for the scale is good (α=0.81)[61] and the original study indicated good construct validity[62]; however, information on its validity remains sparse.

Self-stigma of seeking help will be assessed with the German version of the Self-Stigma of Seeking Help scale.[61] Participants are asked to rate the 10 items, such as 'I would feel worse about myself if I could not solve my own problems.' on a 5-point Likert scale from 1='strongly disagree' to 5 'strongly agree'. Internal consistency for the scale is acceptable to good (0.80≤α≤0.84).[61 63] Information on the validity of the German version is not yet available, but the original version has proven valid in terms of construct, criterion, and predictive validity.[64]

(H2) Openness towards mental health problems will be assessed with the German version of the Inventory of Attitudes to Seeking Mental Health Services[65] Psychological Openness subscale: Participants are asked to rate the eight items, such as 'There are certain problems which should not be discussed outside of one's immediate family.' on a 5-point Likert scale from 0='disagree' to 4='agree'. Internal consistency for the Psychological Openness subscale is acceptable (α=0.70).[61] Convergent validity for the original scale was demonstrated by Mackenzie *et al*.[66]

(H3) Willingness to seek help will be assessed by asking participants to rate how likely it would be for them to use different support offers, using a 6-point Likert scale from 1='not at all likely' to 7='very likely'. They will be provided with a list of 8–10 (depending on the target group) support offers discussed during the intervention and asked to rate the likelihood for each of the offers.

Utilisation of support offers will be assessed by asking participants if they have used one or more support offers (0='no', 1='yes'). Participants will be able to choose from the options provided when assessing their willingness to seek support, and they will also be able to state any other support offers they have sought out in a free text box.

Secondary outcomes

(H4) Resilience will be assessed with the German version of the Brief Resilience Scale (BRS)[67] Participants are asked to rate the six items, such as 'I tend to bounce back quickly after hard times.' on a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. Internal consistency for the scale is good (α=0.85).[67] The BRS is moderately correlated with optimism and social support, indicating convergent validity.[67]

(H5) Subjective well-being will be assessed with the German version of the WHO-5 Well-being Index (WHO-5).[68] Participants are asked to rate five items, such as 'I have felt calm and relaxed'. Participants are instructed to refer to the last 2 weeks, answering the items using a 6-point Likert scale from 0='all of the time' to 5='at no time'. Internal consistency for the scale is good to excellent (0.89≤α=0.92).[68] The WHO-5 is moderately correlated with somatic well-being, indicating convergent validity.[68]

(H8) Mental health literacy will be assessed using the Mental Health Literacy Scale (MHLS)[69] for students and the German version of the Mental Health Literacy Tool for the Workplace (MHL-W-G)[70] for employees and managers. As regards the MHLS, there is currently no validated German translation available; therefore, we will use the German translation developed and piloted in an unpublished bachelor's thesis.[71] Depending on the item, participants are asked to rate the 35 items on either a 4-point Likert scale from 1=very unlikely/unhelpful to 4='very likely/helpful' or a 5-point Likert scale from 1='strongly disagree/definitely unwilling' to 5='strongly agree/definitely willing'. They are, for instance, asked to rate statements such as 'To what extent do you think it is likely that the diagnosis of Drug Dependence includes physical and psychological tolerance of the drug (ie, require more of the drug to get the same effect)?'. Internal consistency for the English version of the scale is good (α=0.83), and correlations with help-seeking intentions—although in the low range—point to construct validity.[69] The MHL-W-G assesses workplace-related mental health literacy based on four vignettes. Participants are asked to rate their competence on the basis of four items per vignette, that is, 16 items in total, using a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. Internal consistency of the scale is good to excellent (0.88≤α≤0.92).[67] The scale is moderately correlated with general health literacy and related variables; therefore, construct validity can be assumed.[70]

(H9) Continuum beliefs will be assessed with the newly developed (German) Continuum Beliefs Scale.[72] Participants are asked to rate the nine items, such as 'Now and again most of us have symptoms of a mental illness.' on a 5-point Likert scale from 1='strongly disagree' to 5='strongly agree'. As the scale has been developed as part of an ongoing project,[72] psychometric validation is still outstanding.

(H10) Empathy will be assessed with a three-item scale used in previous stigma research[73 74] which we have

translated into German. Participants are asked to rate items such as 'If a person with a mental health problem I knew was feeling sad, I think that I would also feel sad.' on a 7-point Likert scale from 1='strongly disagree' to 7='strongly agree'. Internal consistency of the empathy scale is good (ω=0.87). The scale has been shown to correlate with behavioural facets of stigma,[73] which could be interpreted as a first hint to criterion validity.

(H11) Intergroup anxiety will be assessed with the IAS.[49 75] The IAS instructs participants to imagine a situation in which they are to interact with people with a mental illness, and where they themselves are the only person without a mental illness. Subsequently, they are asked to rate to what extent they experienced certain emotions compared with a situation in which they interacted with people without mental illness. As regards the specific items, we will rely on Potts *et al*,[49] whose version we have translated into German (for a detailed description of the translation process, see OMS-WA): Participants will be presented with a list of 13 adjectives (ie, items) to be rated on a 5-point Likert scale from 0='not at all' to 4='extremely'. Positive emotions will then be reverse scored, and all items will be averaged. According to Potts *et al*,[49] the scale shows good internal consistency (α=0.86) and associations with related constructs such as intergroup contact, which they interpret as evidence for construct validity. Individuals reporting personal experience with mental illness treatment and elevated levels of mental distress will not be asked about intergroup anxiety.

Assessment of potential covariates

(H6) Gender will be assessed by asking participants which gender they identify with, the response options being 1='female', 2='male', 3='non-binary', 4='gender-fluid', 5='agender'. Alternatively, participants can also use a text box to fill in the gender that they identify with.

(H7) Personal values will be assessed with the Portrait Values Questionnaire 21 (PVQ21, ESS21)[66], adapted in a gender-neutral form.[38] There is some evidence[76 77] that partial scalar invariance of this short form exists for seven of the ten values postulated by Schwartz[35] in his Theory of Human Values. Higher order measures of values (self-transcendence, self-enhancement, conservation, and openness to change) have shown more acceptable model fits.[77] Personal values measured with PVQ21 have been shown to be stable over a 3-year period, similar to personal traits.[78] The PVQ21 consists of 21 items presented in the form of short verbal portraits that describe a person's goals, aspirations, or desires that point explicitly to each value, for example: 'It's important to them to be rich'. The respondents are asked to rate the similarity on a scale from 1='very similar' to 6 = 'not similar at all'.

Age, education, professional situation, and field of study or work will each be assessed with single items. Age will be assessed by asking participants to indicate their age in years. Education will be assessed by asking participants to indicate their highest school-leaving certification, with the response options ranging from 1='none' to 11='doctorate', including a free text box for certifications/qualifications not listed (not all response options listed as they are specific to the German education system). Professional situation will be assessed by asking employees and managers to indicate their current professional situation, with various nominally scaled response options provided: 1='full-time employed', 2='part-time employed', 3='partially retired', 4='marginally employed', 5='occasionally employed', 6='in vocational training/an apprenticeship', 7='in voluntary service', 8='on parental leave/leave of absence', including a free text box. Students will be asked whether they pursue gainful employment alongside their studies, with the following nominally scaled response options provided: 1='no', 2='yes, full-time employed', 3='yes, part-time employed', 4='yes, self-employed', 5='yes, marginally employed'. Field of work will be assessed by asking employees to indicate their field of work, with the following response options provided: 1='administration', 2='academic staff', 3='other'. Students will be asked to indicate their field of study by choosing one of the following response options: 1='social sciences', 2='arts', 3='teacher training', 4='mathematics, sciences', 5='medicine, health sciences', 6='humanities', 7='economics, law'.

Mental distress will be assessed with the German version of the Patient Health Questionnaire-9 (PHQ-9),[79] a screening instrument for depression. Participants are asked to rate nine items describing different symptoms of depression, such as 'Feeling down, depressed or hopeless' on a 4-point Likert scale with the response options 1='not at all', 2='several days', 3='more than half the days', 4='nearly every day'. The internal consistency of the scale is good (α=0.89). The PHQ-9 has been shown to negatively correlate with various indicators of positive mental health, which can be considered an indicator for convergent validity.[80]

Experience with mental illness (treatment) will be assessed with four questions capturing different types of experience. Participants are asked (1) whether they are currently in treatment for mental illness, (2) whether they have been in treatment for mental illness at some point in their life, (3) whether someone from their immediate social environment has been in treatment for mental illness, and (4) whether they have already worked with someone with a mental illness. The items are to be answered in a yes-no response format (0='no', 1='yes'); for questions 3 and 4, the option 2 = 'I don't know' is also provided. Participants who answer questions one and/or two with 'yes' will additionally be asked about the type of treatment they have sought, with the response options (multiple answers possible) being 1='medical treatment (psychiatric treatment, eg, psychotropic drugs'), 2='psychotherapeutic treatment (eg, talk therapy)', 3='art, music and/or sports therapy', 4='self-help group', 5='counselling and/or coaching services (eg, educational counselling, life counselling)', 6='online therapy and/or telephone therapy'.

Data management

Participants will enter the quantitative survey data via the platform SoSci Survey. SoSci Survey works with SSL encryption (HTTPS) of the data when filling out the questionnaire and when retrieving the collected data. These data will then be stored pseudonymously on the file servers of the University of Greifswald. Plausibility checks of the data (eg, range checks) will be carried out before data analysis. The statistical analysis of the quantitative data will be carried out using the software R. After collection of the 6-month follow-up data, the quantitative data will be completely anonymised.

The qualitative focus group and interview data will be audiotaped, stored on the file servers of the University of Greifswald and transcribed manually. The data will be anonymised in the transcription process, and the audio files will be deleted once the transcription is completed. The qualitative data will be analysed using MAXQDA.

The data collected will be compiled in the data processing facility and stored on the secured server of University of Greifswald's data centre. The anonymised data will be stored beyond the end of the project, with the sole purpose of evaluating and reporting them in scientific publications. Once analysed, the anonymised dataset, aggregated at the group level, will be made accessible via the OSF.

Data analysis

The quantitative data collected in step 1 will serve to answer research questions 1–6. Hypotheses H1–5 will be analysed with a 2×3 ANOVA with repeated measures to take into account the two groups (intervention vs waitlist) and the three time points of quantitative assessment. Given a significant main effect, moderation hypotheses H6 will be tested using a 2×3×2 ANOVA with group, time point, and gender as predictors, testing the interaction effect of all three predictors. H7 will be tested using a 2×2 ANCOVA with group, time and personal values (continuous) as predictors. If the assumptions of normality and heterogeneity cannot be met, an ordinal logistic regression will be calculated. Mediation hypotheses H8–11 will be tested using parallel multiple mediation analyses.

To minimise the risk of missing values, participants are compensated for taking part in the survey. Further, the survey is set up so that participants are reminded whenever they have left any items unanswered. Before proceeding to the next question, they are asked to confirm they wish to proceed without answering said item(s). By reducing inadvertent omissions, this strategy may particularly reduce one mechanism under which missing values occur: values missing completely at random. In order to manage data missing at random, attrition will be analysed, examining selective dropout across the three time points. This procedure allows for the identification of potential auxiliary variables (eg, mental distress), which may then enable the use of the full information maximum likelihood method, provided that an appropriate analytical model can be specified with the available data.[81] Otherwise, alternative methods such as multiple imputation, using mixed-effect models, will be considered.[81]

The qualitative data collected in the focus groups (step 2) and the stakeholder interviews (step 3) will be analysed using qualitative content analysis, according to Kuckartz.[82] A combination of inductive and deductive approaches to analysis will be used.[83] More specifically, we will follow Kuckartz'[82] content-structuring approach, which encompasses seven steps: (1) initial textual work, including writing memos and case summaries; (2) deductive development of main categories based on the focus group or interview guideline; (3) coding the data based on the main categories; (4) inductive development of subcategories; (5) coding the data based on the subcategories; (6) analysing the data along the main and subcategories, including associations between categories and (7) putting into writing the findings and documenting the process. The steps described may be repeated over several cycles, thus resulting in an iterative process of data analysis.[81] We will analyse the fully transcribed focus group or interview transcripts, using the group as the unit of analysis for the focus groups. As regards the coding units, no minimum or maximum length will be specified since a coding unit equals a unit of meaning in Kuckartz' qualitative content analysis.[82] The transcripts will be coded and analysed by two researchers (ES and EN) as well as trained student assistants, such that each transcript will be coded by two coders, at least one of them ES or EN. To ensure a shared understanding of both the research questions and the method, we will organise a dedicated meeting with all German team members (ES, ST, EN and the student assistants) prior to starting qualitative data analysis. ES and EN both hold a postgraduate degree in psychology; the research assistants are undergraduate students of psychology. ES is a licensed psychotherapist and has extensive expertise regarding the systematic analysis of interview data and qualitative content analysis; EN is a psychologist and has no prior experience with qualitative content analysis but has familiarised herself thoroughly with the method on the basis of the relevant literature and under supervision of ST, psychologist, who has led and conducted several qualitative research projects.

The findings from the quantitative and qualitative phases will be integrated at the data interpretation stage[52] (see figure 1).

Data monitoring

Data monitoring committee

A data monitoring committee will not be installed, as there is no blinding to experimental manipulations, and adverse events can directly be reported to those responsible for the intervention and the study. The study information includes contact details of the trial investigators, with explicit instructions to contact them at any time.

Harms

No harm is anticipated since participation is voluntary and since previous studies have not found any iatrogenic

or non-intended effects. As mentioned above, participants will be able to report any adverse events during or after the intervention or study to the intervention facilitators or trial investigators. Potential adverse events would thus be collected non-systematically. They would be assessed conjointly with the person, as would appropriate harm reduction strategies and post-trial care. Finally, they would be quantified and reported on in scientific publications.

ETHICS AND DISSEMINATION

Research ethics approval

The project is based on the guidelines of Good Scientific Practice of the German Research Foundation and Good Clinical Practice of the German Society for Epidemiology. For the implementation of the empirical studies in the project, a vote was obtained from the local ethics committee (Ethics Committee of University Medicine Greifswald; BB 098/23).

Consent

Participants are informed and educated about both the intervention and the study prior to data collection (consent form, see Supplement 3); informed consent as defined by the Declaration of Helsinki is a condition for participation in the study. Participants have to provide written consent before taking part in a focus group or interview. As for the online survey, participants have to give their consent by agreeing to an online data protection form before they can start completing their first survey.

Confidentiality and dissemination policy

A detailed data protection concept based on the European Union's General Data Protection Regulation (EU GDPR) regulates the administrative, organisational and technical measures for processing and protecting the data and is reviewed by the University of Greifswald's data protection officer (for more information, see the 'Data management' section). This includes the open-access publication of a study protocol and central results as well as the anonymised data aggregated at the group level in the sense of open science. Further, the statistical code will be included as a supplement to the paper(s) documenting the results of the study. The project thereby follows the recommendations of the German Psychological Society on Open Science practices.

Protocol amendments

The necessity to modify the protocol will most likely arise from low participation rates. In that case, participants would be informed before taking part in the programme. Deviations from the original trial design and, accordingly, the statistical methods originally planned will be documented in both the trial registry and the journal in which the study or studies will be published.

Contributors EN was responsible for writing the original draft including creation of the visual material. ST, ES, KSD and AS reviewed the manuscript; EN, ES and ST edited the manuscript. ST, EN and ES contributed to project conceptualisation and methodology development, based on previous publications by AS and KSD. EN, ES and ST are also responsible for project administration. ST acquired funding for the project. ST supervised the project on site in Germany while AS and KSD acted as external mentors. KSD and AS provided original-language questionnaires (different versions of OMS-WA) and intervention material. All authors were involved in translating the questionnaires; ES was responsible for translating the intervention material. ST is the guarantor.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

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