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Mental illness and substance abuse (non-)disclosure to a supervisor: A cross-sectional study on beliefs, attitudes and needs of military personnel.

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3 **Mental illness and substance abuse (non-)disclosure to a supervisor: A cross-sectional**
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5 **study on beliefs, attitudes and needs of military personnel.**
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55 **Keywords:** Disclosure, Mental illness, Sustainable employment, Military, Stigma
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Abstract

Objectives. Research suggests that military personnel frequently delay disclosing mental illness (MI), including substance abuse, to supervisors. This delay causes missed opportunities for support and workplace accommodations which may help to avoid adverse occupational outcomes. The current study aims to examine disclosure related beliefs, attitudes, and needs, to create better understanding of personnel's disclosure decision-making. **Design.** A cross-sectional questionnaire study among military personnel with and without MI. Beliefs, attitudes, and needs regarding the (non-)disclosure decision to a supervisor were examined, including factors associated with (non-)disclosure intentions and decisions. Descriptive and regression (logistic and ordinal) analyses were performed. **Setting.** The study took place within the Dutch military. **Participants.** Military personnel with MI (N=324) and without MI (N=554) participated in this study. **Outcome measure.** (Non-)disclosure intentions and decisions. **Results.** Common beliefs and attitudes pro non-disclosure were the preference to solve one's own problems (68.3%), the preference for privacy (58.9%), and a variety of stigma related concerns. Common beliefs and attitudes pro disclosure were that personnel wanted to perform well at work (93.3%) and the desire to act responsibly towards work colleagues (84.5%). The most reported need for future disclosure (96.8%) was having a supervisor who shows understanding for mental illness. The following factors were associated both with non-disclosure intentions and decisions: higher preference for privacy (OR(95%CI) = 1.99(1.50–2.65)_{intention}, 2.05(1.12–3.76)_{decision}) and self-management (OR(95%CI) = 1.64(1.20–2.23)_{intention}, 1.79(1.00–3.20)_{decision}), higher stigma related concerns (OR(95%CI) = 1.76(1.12–2.77)_{intention}, 2.21(1.02–4.79)_{decision}), and lower quality of supervisor-employee relationship (OR(95%CI) = .25(.15–.42)_{intention}, .47(.25–.87)_{decision}). **Conclusion.** To facilitate (early-)disclosure to a supervisor, creating opportunity for workplace support, interventions should focus on decreasing stigma and discrimination

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3 and align with personnel's preference for self-management. Furthermore, training is needed
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5 for supervisors on how to recognize, and effectively communicate with, personnel with MI.
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7 Focus should also be on improving supervisor-employee relationships.
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10 11 **Article Summary**

12 13 **Strengths and Limitations of this study**

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16 • Disclosure of mental illness to a supervisor was examined in the military, a context in
17
18 which little research has been done on this topic.
- 19
20 • This study included a group that is usually hard to study, namely military personnel
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22 who have not disclosed.
- 23
24 • This study included both personnel with and without mental illness, providing
25
26 insights for interventions for personnel who may develop mental illness in the future.
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28 • The sample is not representative for the entire military, due to the sampling method.
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30 • Due to the cross-sectional design of the study, no causality can be presumed.
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Introduction

The decision for workers whether to disclose their mental illness (MI), including substance abuse, to their supervisors can have far-reaching consequences for their sustainable employment (1-4). Disclosure can lead to workplace support and accommodations, which can prevent worsened symptoms and sick-leave, and non-disclosure can lead to missed opportunities for this support (2, 3, 5). However, disclosure can also lead to being stigmatized and discriminated against (6, 7).

The disclosure dilemma is expected to be even more prominent for trauma-prone occupations, such as the military, where workers are expected to be 'strong' and disclosure may yield less positive outcomes (5, 8). Additionally, workers in these high-risk occupations are exposed to stressors at work, increasing their risk of developing MI (9). Previous research in the military showed that there is a high preference for solving one's own problems (10), there are stigma related concerns and military personnel tend to delay seeking help (6, 11, 12). Together this might cause a delay in disclosure to a supervisor. To facilitate (early-)disclosure, so that personnel can receive support which can prevent adverse occupational outcomes (2, 3, 5), more insight is needed into the (non-)disclosure decision.

Although the (non-)disclosure decision is complex and has far-reaching consequences, research on this matter is scarce and mostly qualitative, especially in the military (3, 6, 11, 13). Research has shown that the supervisor plays an important role, where supervisor attitude and behavior can form both a barrier as well as be a facilitator for disclosure (6, 14, 15). Furthermore, "The model of employee decision-making about disclosure of a mental disorder at work" proposes that there is a default position of non-disclosure, caused by fear of stigma, wanting to maintain boundaries, and maintaining confidentiality (16). This model proposes that a triggering incident is needed before a disclosure decision is made (16).

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3 The aim of the current study is to gain insight into the (non-)disclosure decision to a
4 supervisor in the military, and to confirm and expand earlier qualitative findings (6). As
5 personnel with and without MI have shown to have different views on treatment seeking (10,
6 12), the current study will examine both actual disclosure decisions in personnel with MI as
7 well as future disclosure intentions for those without MI. The research questions are: (1)
8 ‘What are beliefs, attitudes, and needs of military personnel regarding disclosure to a
9 supervisor?’, (2) ‘Do disclosers, differ from non-disclosers, and if so, how?’, and (3) ‘What
10 factors are associated with non-disclosure to a supervisor?’.

23 24 **Method**

25 26 **Design**

27
28 A cross-sectional observational design with an online questionnaire. Comparisons
29 were made based on past disclosure decisions for personnel with MI and on disclosure
30 intention for those without MI. Data collection happened simultaneously with a study on
31 treatment seeking for MI (12). The strobe-checklist was used to report this study (17).

32 33 34 35 36 37 38 39 40 **Setting**

41
42 This study took place within the Dutch military, where healthcare is organized
43 internally. There are sanctions for use of soft and hard drugs. However, when substance
44 abuse is reported to a mental health professional, there are confidentiality agreements (10).

45 46 47 48 49 50 51 52 **Patient and public involvement**

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54 Different stakeholders from the Dutch military (psychologists, psychiatrists, policy-
55 makers and military personnel) were involved in the development of the questionnaire. They
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3 provided advise on the language used in the questionnaire to ensure that it was military
4 appropriate language. They also provided advise on the best way to recruit participants.
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10 11 **Participant recruitment**

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14 Active-duty military personnel who have been on deployment in the past 5 years were
15 recruited. To ensure that both personnel with and without MI would be present in the sample,
16 existing data from a questionnaire personnel receive after deployment was used to select a
17 sample. This questionnaire includes scores of depression, aggression, alcohol abuse and
18 PTSD. Clinical cut-off scores were used to identify personnel with and without an indication
19 of MI. Next, a stratified sample, based on gender, age, military division and rank of personnel
20 was approached, half with indication of MI (N=1000) and half without (N=1000).
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30 Data were collected between January and February 2021. All personnel were invited
31 at the same time, both by e-mail and a letter. Reminders were sent after 3 and 5 weeks. It was
32 made clear that the responses to the questionnaire would be anonymous.
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39 **Measures**

40 41 *Demographics*

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43 Gender, age, marital status, education-level, type of work (operational or not),
44 military department, rank, and years of service were assessed.
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48 49 *Mental illness*

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51 **Current MI.** To assess current MI, following measures were used; (a)Hospital
52 anxiety and depression scale (18), (b)ASSIST-LITE for substance abuse (19), (c)AUDIT-C,
53 for alcohol abuse (20), and (d)PTSD checklist for DSM-5 (21). For psychometric properties
54 and cut-off scores, see appendix A.
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3 **Self-reported MI.** Personnel were asked whether they have (had) MI. Group
4 membership (i.e., current/past MI or no MI) was determined based on this. If personnel
5 reported having (had) MI, they received a list of 15 possible types of MI (see appendix B)
6 and were asked to indicate whether it concerned current or past MI, in line with earlier
7 research (12, 22, 23). They were asked whether the MI was work-related (yes/no) and to rate
8 the severity of their symptoms (during the worst time) on a scale of 0 –10.
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19 *(Non-)Disclosure intentions and decisions*

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21 Personnel with MI were asked whether they had disclosed to their supervisor (yes/no).
22 Personnel without MI were asked, in case they would develop MI in the future, whether they
23 would disclose this to their supervisor, using a 4-point scale ranging from very-unlikely to
24 very-likely.
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33 *Beliefs, attitudes and needs*

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35 Based on a recent qualitative study on disclosure within the Dutch military (6), a
36 study in the German military (11) and literature reviews on disclosure (2, 3), 24 statements
37 pro disclosure and pro non-disclosure were developed, see Table 2 in the results section.
38 Stigma was found to be a main barrier to disclosure in our qualitative study (6). Therefore,
39 several stigma related statements were included. Participants were asked to indicate on a 4-
40 point scale to what extent they agreed with the statements, ranging from completely disagree
41 to completely agree.
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51 Personnel without MI were asked additional questions about their needs regarding
52 disclosure if they would develop MI in the future. Based on findings from the earlier
53 qualitative study (6), they were given seven options (e.g. a supervisor who shows
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3 understanding for MI) and were asked to rate these on a 4-point scale ranging from ‘Not at
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5 all’ to ‘Very much’, see Table 2 in the results section.
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10 **(Previous) experience**

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12 **Familiarity.** Participants were asked about MI in their surroundings using an
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14 adaptation of the Level of Contact Report (24), following earlier research (23, 25). The total
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16 score was used.
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19 **Previous experience.** Participants were asked whether they had previous experience,
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21 and/or seen experiences of others, with disclosure to a supervisor. If yes, they were asked
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23 whether this experience was positive or negative.
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28 **Work context**

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30 **Unit cohesion.** A three-item measure was used for perceived unit cohesion (26). For
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32 example ‘*the members of my unit are cooperative with each other*’. Items were measured on
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34 a 5-point scale ranging from ‘Completely-disagree’ to ‘Completely-agree’. Mean scores were
35
36 used. Participants with MI were asked about unit cohesion at the time they experienced MI
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38 (26).
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42 **Relationship supervisor.** A six-item measure for the relationship with the supervisor
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44 from the Questionnaire on the Experience and Evaluation of Work (QEEW) was used. This
45
46 questionnaire is the most used and validated questionnaire for work experiences in the
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48 Netherlands (27). Items were measured on a 4-point scale with answer categories ‘Always’,
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50 ‘Often’, ‘Sometimes’ and ‘Never’. Mean scores were used, with higher scores indicating
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52 better relationship quality. Participants with MI were asked about the relationship at the time
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54 they experienced MI.
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Statistical analyses

For beliefs, attitudes, and needs surrounding (non-)disclosure, descriptive analyses were performed. Chi-square tests and Mann-Whitney U-tests were used for comparisons between those who disclosed/intended to disclose and those who did not, as variables were not normally distributed.

To examine factors associated with (non-)disclosure, two separate analyses were performed. For personnel with MI, a logistic regression was performed with non-disclosure decision as the dependent variable (0=disclosure, 1=non-disclosure). For personnel without MI, an ordinal regression was performed, as disclosure intention had more than two categories. As the assumption of proportional odds was violated at first, the categories 'very unlikely' and 'unlikely' were merged, resulting in the dependent variable non-disclosure intention with categories 1=Very-likely, 2=likely, and 3=(Very)-unlikely. To prevent loss of information 'likely' and 'very-likely' were not combined. Fear of negative career consequences, social rejection, discrimination, self-stigma, shame, fear of receiving blame, fear of gossip and confidentiality concerns were combined into one (mean) measure of stigma, as they are all aspects of stigma (28). Together these items formed a reliable scale ($\alpha_{\text{with MI}}=.89$, $\alpha_{\text{without MI}}=.91$). There were no missing data, as forced response answers were used during data acquisition. All analyses were performed using SPSS.

Ethical considerations

Written informed consent was obtained from all subjects/patients. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients

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2
3 were approved by the Tilburg School of Social and Behavioral Sciences Ethics Review
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5 Boards (approval number RP324) and the Dutch Military Ethics Review Board.
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10 **Results**

11 **Participant characteristics**

12 ***Response rate***

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15 After removing duplicates (caused by personnel going on multiple deployments)
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17 and personnel who had left active service from the original sample, a total of N=1627 eligible
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19 respondents were left. Of those, 63% (N=1025) started the questionnaire, and 54% (N=878)
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21 fully completed it and were used for further analysis. Compared to personnel who completed
22
23 the questionnaire, those who did not complete it included more females
24
25 ($\chi^2(1, N=1008)=6.01, p=.014$), more lower and middle education level
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27 ($\chi^2(2, N=1008)=7.25, p=.027$), and more non-commissioned officers
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29 ($\chi^2(2, N=1006)=8.26, p=.016$). The majority quit while answering mental health questions.
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39 ***Non-disclosure (intentions)***

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41 Of those with MI (N=324), 24.4% indicated not having disclosed their MI to their
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43 supervisor. Of those without MI (N=554), 15.6% did not intend to disclose if they would
44
45 develop MI in the future.
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50 ***Sample characteristics***

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52 Sample characteristics can be found in Table 1. For personnel with MI, there was a
53
54 significant association between marital status and non-disclosure decision
55
56 ($\chi^2(1, N=324)=5.53, p=.019$) with more people with a partner within the non-disclosers group.
57
58 Those who had not disclosed, reported significantly lower symptom severity (M=6.01)
59
60

compared to those who had disclosed ($M=7.38, U=5885.5, Z=-5.37, p<.001$). For personnel without MI, there were no significant differences in demographics based on non-disclosure intentions. Information on reported MI can be found in Appendix B.

Table 1. Characteristics of the sample separated by military personnel with and without mental illness.

	Military personnel with mental illness			Military personnel without mental illness		
	Disclosure N=245	Non-disclosure N=79	Total N=324	Disclosure intention N=467	Non-disclosure intention N=87	Total N=554
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Demographics						
Sex						
Male	215 (87.8)	68 (86.1)	283 (87.4)	430 (92.1)	79 (90.8)	509 (91.9)
Female	30 (12.2)	11 (13.9)	41 (12.7)	37 (7.9)	8 (9.2)	45 (8.1)
Age						
<20	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
21-30	15 (6.1)	12 (15.2)	27 (8.3)	55 (11.8)	10 (11.5)	65 (11.7)
31-40	81 (33.1)	26 (32.9)	107 (33.0)	149 (31.9)	41 (47.1)	190 (34.3)
41-50	76 (31.0)	19 (24.1)	95 (29.3)	134 (28.7)	18 (20.7)	152 (27.4)
51-60	68 (27.8)	21 (26.6)	89 (27.5)	119 (25.5)	17 (19.5)	136 (24.6)
>60	5 (2.0)	1 (1.3)	6 (1.9)	10 (2.1)	1 (1.2)	11 (2.0)
Marital Status						
Partner (vs. Single)	183 (74.7)	69 (87.3)	252 (77.8)	394 (84.4)	76 (87.4)	470 (84.8)
Educational Level						
Low	26 (10.6)	4 (5.1)	30 (9.3)	49 (10.5)	2 (2.3)	51 (9.2)
Medium	136 (55.5)	39 (49.4)	175 (54.0)	242 (51.8)	48 (55.2)	290 (52.4)
High	83 (33.9)	36 (45.6)	119 (36.7)	176 (37.7)	37 (42.5)	213 (38.5)
Work related context						
Type of work						
Operational work	188 (76.7)	67 (84.8)	255 (78.7)	258 (55.3)	50 (57.5)	308 (55.6)
Military branch						
Marine	20 (8.2)	2 (2.5)	22 (6.8)	75 (16.1)	16 (18.4)	91 (16.4)
Army	119 (48.6)	47 (59.5)	166 (51.2)	196 (42.0)	40 (46.0)	236 (42.6)
Air-force	69 (28.2)	15 (19.0)	84 (25.9)	120 (25.7)	15 (17.2)	135 (24.4)
Military-police	16 (6.5)	4 (5.1)	20 (6.2)	21 (4.5)	5 (5.7)	26 (4.7)
Staff	20 (8.2)	11 (13.9)	31 (9.6)	53 (11.3)	11 (12.6)	64 (11.6)
Other	1 (.4)	0 (0.0)	1 (.3)	2 (.4)	0 (0.0)	2 (.4)
Ranks						
Military personnel	29 (11.8)	15 (19.0)	44 (13.6)	26 (5.6)	8 (9.2)	34 (6.1)
Non-commissioned officers	132 (53.9)	33 (41.8)	165 (50.9)	225 (48.2)	32 (36.8)	257 (46.4)
Officers	84 (34.3)	31 (39.2)	115 (35.5)	216 (46.3)	47 (54.0)	263 (47.5)
Years of service (M (SD))						
Years	22.25 (9.08)	21.42 (9.92)	22.05 (9.28)	22.20 (9.62)	20.11 (9.98)	21.86 (9.70)
Mental health related context						
Past or current (self-reported) mental illness						
Past mental illness	194 (79.2)	62 (78.5)	256 (79.0)	N/A	N/A	N/A
Mental illness/substance abuse work related						
Yes	167 (68.2)	48 (60.8)	215 (66.4)	N/A	N/A	N/A
Severity of symptoms						
Mean severity (M, SD)	7.38 (1.87)	6.01 (2.07)	7.05 (2.01)	N/A	N/A	N/A

Note: Military personnel with mental illness were asked about their type of work and rank at the time their mental illness started.

Beliefs, attitudes, and needs regarding (non-)disclosure to a supervisor

Regarding beliefs and attitudes pro non-disclosure, personnel preferred to solve their own problems (73.8%with(w/)MI, 65.2% (without(w/o)MI)) and preferred privacy

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3 (58.3%w/MI, 59.3%w/oMI). There were also high stigma related concerns, with personnel
4 reporting they saw (would see) themselves as weak due to MI (52.5%w/MI, 26.4%w/oMI),
5
6 had concerns about negative career consequences (35.5%w/MI, 24.4%w/oMI) and fear of
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8 social rejection (33.0%w/MI, 20.6%w/oMI). Only a minority reported that their supervisor
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10 had negative attitudes towards MI (9.3%w/MI, 4.9%w/oMI).
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15 As for beliefs and attitudes pro disclosure, the large majority indicated disclosure
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17 would allow them to be their true and authentic self (95.7%w/MI, 91.2%w/oMI), and
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19 believed disclosure was important due to the responsibility belonging to the nature of their
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21 work (74.7%w/MI, 90.3%w/oMI). In addition, most reported that the military has good
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23 policy for those who develop MI (72.2%w/MI, 87.9%w/oMI) and that generally supervisors
24
25 take MI seriously (82.4%w/MI, 87.7%w/oMI). Furthermore, personnel reported that it
26
27 matters for the disclosure decision whether MI influences occupational functioning
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29 (69.8%w/MI, 74.7%w/oMI) and whether work accommodations are needed (43.5%w/MI,
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31 62.8%w/oMI). Of those with MI who had disclosed, the majority indicated having had no
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33 choice, with 69% needing treatment during work hours and 46.9% having to report sick. An
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35 overview of all beliefs and attitudes can be found in Table 2.
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40 As for needs regarding future disclosure to a supervisor, the highest need was
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42 reported for supervisors who show understanding for MI (96.8%) and have life experience
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44 (93.1%), and advice about the best way to disclose (when/where/how) (88.8%). An overview
45
46 of all needs can be found in Figure 1.
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51 [PLEASE INSERT FIGURE 1 HERE]
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Table 2. Beliefs and attitudes regarding disclosure to a supervisor for military personnel with and without mental illness.														
	Military personnel with mental illness							Military personnel without mental illness						
	Total (N=324)	Disclosure (N=245)		Non-Disclosure (N=79)		Difference		Total (N=554)	Disclosure intention (N=467)		Non-disclosure intention (N=87)		Difference	
	N (%)	N (%)	M (SD)	N (%)	M (SD)	Z	Sig.	N (%)	N (%)	M(SD)	N (%)	M (SD)	Z	Sig.
Beliefs and attitudes pro disclosure														
Authenticity <i>Importance of being your true self.</i>	310 (95.7)	238 (97.1)	3.33 (.56)	72 (91.1)	3.20 (.63)	-1.49	.135	509 (91.2)	430 (92.1)	3.34 (.68)	79 (90.8)	3.18 (.66)	-2.32	.020
Supervisor takes mental illness seriously <i>Supervisor who takes mental illness seriously.</i>	267 (82.4)	207 (84.5)	3.11 (.79)	60 (76.0)	2.90 (.61)	-2.88	.004	486 (87.7)	426 (91.2)	3.28 (.74)	60 (69.0)	2.83 (.78)	-5.42	<.001
Responsibility <i>Disclosure important due to the responsibility associated with the nature of the work.</i>	242 (74.7)	209 (85.3)	3.04 (.65)	33 (41.8)	2.35 (.75)	-7.26	<.001	500 (90.3)	438 (93.8)	3.28 (.59)	62 (71.3)	2.86 (.81)	-4.71	<.001
Policy <i>Military has policy which provides good solutions for those with mental illness.</i>	234 (72.2)	179 (73.1)	2.81 (.79)	55 (69.6)	2.77 (.83)	-.38	.707	487 (87.9)	422 (90.4)	3.09 (.55)	65 (74.7)	2.79 (.70)	-3.86	<.001
Effect on functioning <i>Importance of whether mental illness effects occupational functioning.</i>	226 (69.8)	193 (78.8)	3.02 (.78)	33 (41.8)	2.33 (.87)	-6.15	<.001	414 (74.7)	342 (73.2)	2.79 (.75)	72 (82.8)	2.98 (.68)	-2.11	.035
Be example <i>Wanting to be a good example to others.</i>	146 (45.1)	121 (49.4)	2.44 (.83)	25 (31.7)	2.18 (.69)	-2.61	.009	373 (67.3)	341 (73.0)	2.88 (.73)	32 (36.8)	2.23 (.80)	-6.85	<.001
Work accommodations <i>Importance of needing work accommodations.</i>	141 (43.5)	129 (52.7)	2.44 (.95)	12 (15.2)	1.72 (.88)	-5.86	<.001	348 (62.8)	303 (64.9)	2.68 (.75)	45 (51.7)	2.51 (.83)	-2.02	.044
Advice others <i>The importance of advice from others for disclosure.</i>	62 (19.1)	55 (22.5)	1.91 (.77)	7 (8.9)	1.63 (.64)	-2.73	.006	356 (64.3)	302 (64.7)	2.63 (.77)	54 (62.1)	2.52 (.71)	-1.24	.216
No choice, supervisor could see it.	95 (N/A)	95 (38.8)	2.23 (.89)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I had to report sick.	115 (N/A)	115 (46.9)	2.39 (1.04)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I needed treatment during work.	169 (N/A)	169 (69.0)	2.78 (.91)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beliefs and attitudes pro non-disclosure														
Self-management <i>The preference to solve one's own problems.</i>	239 (73.8)	170 (69.4)	2.70 (.78)	69 (87.3)	3.13 (.76)	-4.79	<.001	361 (65.2)	284 (60.8)	2.58 (.75)	77 (88.5)	3.10 (.65)	-6.05	<.001
Difficulty talking about mental illness <i>Finding it difficult to talk about mental illness.</i>	214 (66.1)	154 (62.9)	2.62 (.84)	60 (76.0)	2.86 (.80)	-2.28	.023	212 (38.3)	156 (33.4)	2.20 (.76)	56 (64.4)	2.76 (.78)	-5.93	<.001
Preference privacy <i>Preference that mental illness remains private.</i>	189 (58.3)	124 (50.6)	2.49 (.77)	65 (82.3)	3.05 (.75)	-5.55	<.001	328 (59.2)	252 (54.0)	2.58 (.78)	76 (87.4)	3.22 (.72)	-6.89	<.001
Self-stigma <i>Seeing yourself as weak due to mental illness.</i>	170 (52.5)	125 (51.0)	2.44 (.96)	45 (57.0)	2.52 (.99)	-.69	.489	146 (26.4)	95 (20.3)	1.90 (.74)	51 (58.6)	2.49 (.79)	-6.46	<.001
Shame <i>Being ashamed of the mental illness.</i>	159 (49.1)	121 (49.4)	2.40 (.96)	38 (48.1)	2.47 (1.00)	-.47	.636	129 (23.3)	85 (18.2)	1.89 (.71)	44 (50.6)	2.39 (.84)	-5.41	<.001
Gossip <i>Fearing gossip as result of disclosure.</i>	124 (38.3)	97 (39.6)	2.24 (.91)	27 (34.2)	2.18 (.89)	-.60	.547	118 (21.3)	72 (15.4)	1.88 (.68)	46 (52.9)	2.63 (.85)	-7.69	<.001
Career concerns <i>Fearing negative career consequences as result of disclosure.</i>	114 (35.2)	86 (35.1)	2.11 (.94)	28 (35.4)	2.16 (.97)	-.41	.680	135 (24.4)	86 (18.4)	1.90 (.73)	49 (56.3)	2.55 (.89)	-6.57	<.001

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<i>Unemployment.</i>	35 (N/A)	28 (N/A)	N/A	7 (N/A)	N/A	N/A	N/A	28 (N/A)	19 (N/A)	N/A	9 (N/A)	N/A	N/A	N/A
<i>Not being able to be promoted to future career steps.</i>	83 (N/A)	62 (N/A)	N/A	21 (N/A)	N/A	N/A	N/A	94 (N/A)	61 (N/A)	N/A	33 (N/A)	N/A	N/A	N/A
<i>Not being able to do work tasks anymore that one likes best.</i>	75 (N/A)	59 (N/A)	N/A	16 (N/A)	N/A	N/A	N/A	67 (N/A)	43 (N/A)	N/A	24 (N/A)	N/A	N/A	N/A
Social rejection <i>Fearing others will see you differently (negatively) as result of disclosure.</i>	107 (33.0)	83 (33.9)	2.15 (.85)	24 (30.4)	2.10 (.84)	-.48	.633	114 (20.6)	71 (15.2)	1.90 (.65)	43 (49.4)	2.47 (.82)	-6.35	<.001
Discrimination <i>Fearing being treated differently (less well) as results of disclosure.</i>	92 (28.4)	69 (28.2)	2.07 (.81)	23 (29.1)	2.06 (.82)	-.05	.963	90 (16.3)	56 (12.0)	1.83 (.64)	34 (39.1)	2.31 (.75)	-5.68	<.001
Blame <i>Fearing others see mental illness as one's own fault.</i>	87 (26.9)	63 (25.7)	1.99 (.83)	24 (30.4)	2.04 (.91)	-.27	.785	52 (9.4)	33 (7.1)	1.65 (.62)	19 (21.8)	1.95 (.73)	-3.68	<.001
Confidentiality concern <i>Fearing that supervisor would not treat disclosure confidentially.</i>	82 (25.3)	52 (21.2)	1.93 (.81)	30 (38.0)	2.24 (.99)	-2.42	.016	92 (16.6)	46 (9.9)	1.71 (.65)	46 (52.9)	2.54 (.91)	-8.14	<.001
Negative attitude supervisor <i>Supervisor is negative about mental illness.</i>	30 (9.3)	22 (9.0)	1.69 (.72)	8 (10.1)	1.76 (.70)	-.97	.330	27 (4.9)	11 (2.4)	1.52 (.58)	16 (18.4)	1.98 (.70)	-5.95	<.001
No choice, supervisor already heard from someone else.	5 (N/A)	N/A	N/A	5 (6.3)	1.55 (.62)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: A Bonferroni correction was used, with $\alpha = .05/20 = .003$
 Note: For comparison between disclosure intentions of military personnel without mental illness, 'very-unlikely' and 'unlikely' were combined, just as 'likely' and 'very-likely'.

review only

Differences between disclosers and non-disclosers

Overall, those who did not (intend to) disclose, reported significantly higher preference for solving own problems and for privacy, and lower feelings of responsibility due to the nature of their work.

Within personnel with MI, those who had not disclosed also reported MI having less effect on their occupational functioning, and less need for work accommodations compared to disclosers.

Within personnel without MI, those who intended to disclose and those who did not, differed significantly on all beliefs and attitudes pro non-disclosure. For beliefs and attitudes pro disclosure, those with no intention to disclose indicated significantly lower belief that the military has good policy for those with MI, supervisors taking MI less seriously, and a lower desire to be a good example to others with MI. Results with statistics can be found in Table 2. There were no significant differences in reported needs for future disclosure, based on disclosure intention.

Factors associated with non-disclosure to a supervisor

For personnel with MI, the logistic regression model with the dependent variable non-disclosure, was statistically significant ($\chi^2(24)=149.30, p<.001$) and explained 55.0% (Nagelkerke R^2) of the variance in non-disclosure. The following variables were significantly associated with non-disclosure: (1) lower symptom severity, (2) having a partner, (3) lower employee-supervisor relationship quality, (4) less importance given to disclosure advice from others, (5) MI having less impact on occupational functioning, (6) lower feeling of responsibility due to the nature of work, (7) higher preference for privacy, (8) higher privacy for self-management, and (9) higher stigma related concerns.

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3 For personnel without MI, the ordinal logistic regression model with the dependent
4 variable non-disclosure intention, was statistically significant ($\chi^2(23)=346.90, p<.001$) and
5 explained 53.5% (Nagelkerke R^2) of the variance in non-disclosure intention. The following
6 variables were significantly associated with non-disclosure intention: (1)not having positive
7 earlier experience with disclosing something personal to a supervisor, (2)having seen
8 negative experiences of others with disclosure, (3)lower employee-supervisor relationship
9 quality, (4)a supervisor who takes MI less seriously, (5)lower importance given to possible
10 work accommodations, (6)lower importance given to being able to be authentic, (7)lower
11 importance to wanting to be an example to others with MI, (8)higher preference for privacy,
12 (9)higher preference for self-management, (10)higher stigma related concerns and (11)
13 finding it more difficult to talk about MI. All results with statistics can be found in Table 3.
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Table 3. Logistic and ordinal regressions for the non-disclosure decision and intention to a supervisor.

	Military personnel with mental illness (0=disclosure, 1=non-disclosure)						Military personnel without mental illness (Disclosure 1=very likely, 2=likely, 3=(very)unlikely)					
	B	SE	Wald	OR	CI 95%	Sig.	B	SE	Wald	OR	CI 95%	Sig.
Constant	4.23	2.44	3.01	68.71	N/A	.083	N/A	N/A	N/A	N/A	N/A	N/A
Threshold: = 3 ((very) unlikely)	N/A	N/A	N/A	N/A	N/A	N/A	-8.63	1.61	28.74	.00	[7.62E-6 -.00]	<.001
Threshold: = 2 (likely)	N/A	N/A	N/A	N/A	N/A	N/A	-5.15	1.57	10.74	.01	[-.00-.13]	.001
Health												
Higher symptom severity	-.33	.10	12.27	.72	[-.59-.86]	<.001	N/A	N/A	N/A	N/A	N/A	N/A
Demographics and experience												
Gender (female, vs. male)	-.08	.56	.02	.92	[.31-2.76]	.882	-.52	.38	1.87	.60	[-.28-1.25]	.172
Marital status (partner, vs. single)	1.27	.54	5.52	3.58	[1.24-10.36]	.019	-.18	.28	.42	.84	[-.48-1.44]	.518
Higher age	-.19	.19	.93	.83	[-.57-1.21]	.336	-.13	.10	1.66	.88	[-.72-1.07]	.197
More familiarity with mental illness	.10	.12	.64	1.10	[.87-1.39]	.424	-.14	.07	3.73	.87	[-.76-1.00]	.054
Earlier experience disclosing to a supervisor												
Negative	-.86	.75	1.34	.42	[.10-1.83]	.248	-.41	.76	.30	.66	[-.15-2.93]	.586
Positive	-.72	.70	1.07	.49	[.12-1.91]	.301	-.54	.25	4.68	.59	[-.36-.95]	.031
None	0	0	2.22	0	0	.329	0	0	0	1	0	0
Seen experience of others with disclosure												
Negative	.29	.59	.24	1.34	[.42-4.24]	.623	1.12	.38	8.52	3.07	[1.45-6.52]	.004
Positive	.40	.54	.55	1.49	[-.52-4.29]	.458	-.09	.21	.18	.92	[-.61-1.38]	.672
None	0	0	.68	0	0	.713	0	0	0	1	0	0
Work context												
Rank	-.29	.29	1.05	.75	[.43-1.31]	.305	.31	.17	3.	3.18	[-.97-1.90]	.074
Unit cohesion	.17	.23	.55	1.19	[-.76-1.86]	.459	-.02	.13	.03	.98	[-.75-1.27]	.870
Relationship quality supervisor	-.76	.32	5.73	.47	[-.25-.87]	.017	-1.39	.27	27.14	.25	[-.15-.42]	<.001
Beliefs and attitudes												
Pro disclosure												
Supervisor takes mental illness seriously	-.09	.32	.07	.92	[-.50-1.70]	.787	-.45	.14	9.63	.64	[-.48-.85]	.002
Importance advice others for disclosure	-.57	.29	3.94	.56	[-.32-.99]	.047	-.18	.14	1.65	.84	[-.64-1.10]	.199
Mental illness effects occupational functioning	-.90	.27	10.93	.41	[-.24-.69]	.001	-.10	.15	.39	.91	[-.68-1.22]	.531
Responsibility due to nature of work	-1.12	.29	14.79	.33	[-.19-.58]	<.001	-.24	.17	1.98	.79	[-.56-1.10]	.159
Work accommodations are needed	-.40	.24	2.84	.67	[.42-1.07]	.092	-.35	.14	6.36	.71	[-.54-.93]	.012
Attitude that the military has good policy	.27	.24	1.30	1.31	[.82-2.09]	.254	-.37	.19	3.65	.69	[-.47-1.01]	.056
Wanting to be authentic	.04	.34	.01	1.04	[-.53-2.03]	.918	-.50	.15	11.33	.61	[-.46-.81]	.001
Wanting to be example to others	-.13	.26	.25	.88	[-.53-1.46]	.619	-.37	.15	6.59	.69	[-.52-.92]	.010
Pro non-disclosure												
Preference for privacy	.71	.31	5.40	2.05	[1.12-3.76]	.020	.69	.15	22.51	1.99	[1.50-2.65]	<.001
Preference self-management	.58	.30	3.87	1.79	[1.00-3.20]	.049	.49	.16	9.57	1.64	[1.20-2.23]	.002
Stigma related concerns	.79	.40	4.00	2.21	[1.02-4.79]	.046	.56	.23	5.93	1.76	[1.12-2.77]	.015
Difficulty talking about mental illness	.02	.29	.00	1.02	[-.57-1.81]	.952	.41	.15	7.51	1.51	[1.13-2.03]	.006

Note: Earlier experiences, both own and others, were each represented as three dummy variables with 'none' serving as the reference group.

Discussion

The current study aimed to examine beliefs, attitudes, and needs associated with (non-)disclosure to a supervisor in the military. Non-disclosure was associated with higher stigma related concerns, a higher preference for privacy and self-management, and a lower supervisor-employee relationship. A quarter of personnel with MI had not disclosed their MI to their supervisor, and those who had disclosed, appeared to do so after a considerable delay. Important reasons for disclosure were that personnel wanted to be their true and authentic self and thought disclosure was important due to the responsible nature of their work. To consider disclosure, most respondents indicated they would need a supervisor who shows understanding for MI. Moreover, over 80% expressed a need for advice about the best ways to disclose.

We identified that although the majority of personnel with MI had disclosed to their supervisor, they appeared to do so after a considerable delay. Those who disclosed had higher symptom severity than non-disclosers and the majority disclosed because they had to call in sick (46.9%) or had needed treatment during work hours (69.0%). This appears to be even more so the case for military personnel, compared to civilians. A study on disclosure among Dutch workers in general showed that 15.6% disclosed due to having to report sick, and 39.9% disclosed due to needing treatment during work (29). This is in line with ‘the model of employee decision-making about disclosure of a mental disorder at work’, which proposes a default position of non-disclosure and that a triggering incident is needed for disclosure – in this case, having to call in sick or needing treatment (16). This late disclosure causes missed opportunities for workplace support and work accommodations which can prevent worsened symptoms and sick leave (1, 30, 31).

Stigma related concerns form a barrier for (early-)disclosure. Half of those who had not disclosed, saw themselves as weak for having MI, experienced shame, and a third feared

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3 gossip, negative career consequences, social rejection and discrimination. These stigma
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5 related concerns were significantly associated both with non-disclosure intentions and
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7 decisions. Stigma has been found to be a barrier to disclosure before, both in military, other
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9 trauma-prone occupations, and civilian populations (5, 6, 16, 32, 33). However, concerns
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11 about stigma appear to be stronger within the military setting. For example, of military
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13 personnel who had not disclosed, half reported seeing themselves as weak and being
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15 ashamed, compared to only 13.5% of civilians (29). These higher concerns of stigma are
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17 likely caused by the military workplace culture and the responsible work nature, where
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19 people are expected to be 'strong' (6, 8). It should be noted that the study among civilians
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21 predominantly included females, while the current study predominantly included males,
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23 which might also account for some of the differences (29). Future research into
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25 destigmatizing interventions is needed, as up to now only a few, especially in the military,
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27 rigorous destigmatizing intervention studies have been conducted (1). Trauma risk
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29 management (TRiM) is a promising destigmatizing program within (military) organizational
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31 settings, as it has shown to improve attitudes towards MI (34). To facilitate disclosure, stigma
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33 should also be targeted as a policy level, to take away some of the fears personnel face (6).
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40 The preference for self-management also forms a barrier for (early-)disclosure.
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42 Although disclosure rates are comparable to earlier research among Dutch workers in general
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44 (22, 29), the reasons for non-disclosure differ. Of the non-disclosers, 87.3% reported a
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46 preference for self-management, compared to 44.9% of civilians. This is likely also caused
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48 by the military workplace culture, where people are expected to have a 'can-do' problem
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50 fixing mentality (6). To target this preference for self-management, self-help apps or personal
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52 recovery programs could provide personnel the opportunity to manage their own MI, possibly
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54 giving them more confidence in disclosure and a feeling of control, as they are already
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56 working on their MI (35). This could also be done through easily accessible care from for
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3 example a social worker. Additionally, decision aids and programs could be implemented, as
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5 personnel indicated this as a need, and it can positively influence sustainable employability
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7 and coping with stigma (36-39).
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10 To facilitate (early-)disclosure, there is an important role for the supervisor. The
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12 results show that lower employee-supervisor relationship quality is associated both with non-
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14 disclosure decision and intention. Having seen negative experiences of others with disclosure,
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16 was the second strongest predictor of non-disclosure intentions, indicating the importance of
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18 how others, including supervisors, respond to disclosure. It is also important that military
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20 personnel with positive experiences with disclosure, communicate openly about these
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22 experiences. The previous qualitative study in the Dutch military (6), and a study among
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24 Dutch workers in general (29), also showed the importance of supervisor relationships and
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26 support (6). Supervisor attitudes towards MI and knowledge of MI have also been found to
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28 be associated with whether employees disclose to the supervisor themselves, or that the
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30 supervisor finds out some other way (40). Finally, supervisor support was not only found to
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32 be important for disclosure, but also for treatment seeking for MI, a decision which is also of
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34 influence on sustainable employability (10). To facilitate (early-)disclosure, training may be
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36 needed for supervisors to improve understanding and support of MI needs (41). Additionally,
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38 supervisor relationship quality could be addressed, for example by adjusting the obligated job
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40 rotation every 3 years, giving personnel longer to build a relationship with their supervisor.
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48 **Strengths and limitations**

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50 The strength of this study is the large sample and inclusion of a group that is usually
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52 hard to study (participants who have not disclosed). Additionally, the study includes both
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54 personnel with and without MI, providing insights for interventions for personnel who may
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56 develop MI in the future. Finally, the study examines disclosure in the military where little
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58 research has been done on this topic.
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3 As for limitations, the sample is not representative for the entire military, due to the
4 sampling method. This method also caused the sample to include only personnel who have
5 been on deployment. This group might have more positive attitudes towards MI and
6 disclosure due to mental health training related to deployment (34). Also, despite
7 stratification, the current study included a sample of older, higher educated, and higher-
8 ranking personnel. Comparisons showed that lower ranking and lower educated personnel
9 were less likely to have completed the questionnaire once started. Majority of dropouts
10 occurred during the mental health questions. Possibly these questions were hard to answer, or
11 there were anonymity concerns. Additionally, drop-out might have been higher due to the use
12 of forced response. Previous research has shown that younger and lower educated workers
13 disclosed less (29), so disclosure rates in the current study might be an overestimation of the
14 true rates. Also, due to the cross-sectional design of the study, no causality can be presumed.
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33 **Conclusion**

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35 To better facilitate (early-)disclosure of MI to a supervisor, there is a need for several
36 changes within the military. First, destigmatizing interventions and policies are needed to
37 create a culture change where personnel do not feel shame for having MI, and do not have to
38 fear that stigma and discrimination negatively affect their careers and wellbeing at work.
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40 Second, offered early interventions should align with the preference for self-management.
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42 Third, our results strongly suggest a need to train supervisors to recognize, and effectively
43 communicate with, personnel with MI and to improve employee-supervisor relationships.
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45 Together this could facilitate (early-)disclosure which may optimize opportunities for the
46 provision of workplace support and accommodations, which in turn can increase the chance
47 of recovery and sustainable employment.
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Data Availability

The data that support the findings of this study are available upon reasonable request from the corresponding author, R.I. Bogaers.

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Competing interests

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3 interpretation of the data or the decision to submit the paper for publication. **Prof. van**
4
5 **Weeghel** has nothing to disclose. **Prof. van de Mheen** has nothing to disclose. **Dr. Rozema**
6
7 has nothing to disclose. **Prof. Brouwers** reports grants from The Dutch Ministry of Defence,
8
9 during the conduct of the study. However, this did not influence the interpretation of the data
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11 or the decision to submit the paper for publication.
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17 **Author contributions**

18
19 **R.I. Bogaers:** As the PhD student on the project, R.I. Bogaers was involved in all aspects of
20
21 the study. **S.G. Geuze:** Was involved by advising R.I. Bogaers during the formulating of
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23 research question(s) and designing the study. Also, he provided multiple rounds of feedback
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29 the paper. **F.R.M. Leijten:** Was involved by advising R.I. Bogaers during the formulating of
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39 advising R.I. Bogaers during the formulating of research question(s) and designing the study
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43 Was involved by advising R.I. Bogaers during the formulating of research question(s) and
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Figure 1. Needs for (future) disclosure



er review only

Appendix

Appendix A. Measures used to assess current mental illness and substance abuse.

Scale	Information	Psychometric properties based on earlier studies	Reliability in current study	Cut-off score used	References
The hospital anxiety and depression scale (HADS).	A 14-item scale measuring anxiety and depression.	Based on a literature review, reliability of the anxiety scale of the HADS varies from .68 to .93 and the depression scale varies from .67 to .90. Sensitivity and specificity for both anxiety and depression was approximately .80.	Depression: $\alpha=.85$ Anxiety: $\alpha=.84$	A cut-off score of > 8 was used for depression and anxiety, as recommended by earlier research.	(16, 36-38)
PTSD checklist for the DSM-5 (PCL-5)	20-item scale measuring PTSD symptoms. Participants received a question screening whether they had experienced extremely stressful events (examples were provided), and if yes, they received the PCL-5.	The PCL-5 has strong reliability ($\alpha = .94$) and convergent ($r_s = .74$ to $.85$) and discriminant ($r_s = .31$ to $.60$) validity. Sensitivity is approximately $.77$ and specificity $.96$.	$\alpha = .94$	A cut-off of >33 was used as an indication of PTSD, following the guidelines.	(19, 39)
ASSIST-LITE	Measure to assess a wide range of substance (ab)use. This questionnaire consists of 6 items, one per substance, and 2-3 follow up questions in case a substance is used by the participant in the past 3 months.	Sensitivity for each substance was between $.8$ and 1.0 , and specificity between $.7$ and $.8$. Reliability is N.A. as all questions are about different substances.	N/A as all questions are about different substances.	A cut-off of ≥ 2 was used for all substances except for alcohol, where the cut-off was ≥ 3 , following the user manual.	(17)
AUDIT-C	A 3-item scale, to assess alcohol abuse.	The AUDIT-C has been validated and shown to have good internal consistency in a variety of different samples. In a previous study among military personnel, the reliability was $.77$. Specificity is between $.89$ and $.91$ and sensitivity between $.73$ and $.86$.	$\alpha=.64$	A cut-off of ≥ 8 was used, as recommended for military population.	(18, 40)

Appendix B. Mental illness and substance abuse scores.

	Military personnel who indicated having (had) MI		Military personnel who indicated not having had MI	
	N	%	N	%
	324	37.0	554	63.1
Type of mental illness as reported by military personnel themselves				
Anxiety (incl. obsessive compulsive disorder)	111	34.3	N/A	N/A
Depression (incl. manic and bipolar)	146	45.1	N/A	N/A
Burn-out	176	54.3	N/A	N/A
Stress	260	80.3	N/A	N/A
Exhaustion	205	63.3	N/A	N/A
Post traumatic stress disorder	55	17.0	N/A	N/A
Psychotic disorders	3	.9	N/A	N/A
Personality disorder	77	23.8	N/A	N/A
Autism	16	5.0	N/A	N/A
Attention deficit hyperactivity disorder	34	10.5	N/A	N/A
Eating disorder	10	3.1	N/A	N/A
Substance abuse	56	17.3	N/A	N/A
Current type of mental illness based on measures of mental health				
HADS_depression	59	18.2	18	3.3
HADS_anxiety	65	20.1	14	2.5
Assist_lite_tobacco	48	14.8	79	14.3
Assist_lite_alcohol	50	15.4	38	6.9
Assist_lite_cannabis	1	.3	3	.5
Assist_lite_amphetamine	2	.6	0	0.0
Assist_lite_sleepmedication	8	2.5	2	.4
Assist_lite_streetdrug	0	0.0	0	0.0
Audit_C	13	4.0	19	3.4
PCL-5 score	19	5.9	2	.4

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1-2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	5
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	6
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	6-8
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	6-8
Bias	9	Describe any efforts to address potential sources of bias	20-21
Study size	10	Explain how the study size was arrived at	6, 10
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	9
		(b) Describe any methods used to examine subgroups and interactions	9
		(c) Explain how missing data were addressed	9
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	N/A

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	10
		(b) Give reasons for non-participation at each stage	10
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	10-11
		(b) Indicate number of participants with missing data for each variable of interest	9
Outcome data	15*	Report numbers of outcome events or summary measures	10
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	11-17
		(b) Report category boundaries when continuous variables were categorized	9
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	9
Discussion			
Key results	18	Summarise key results with reference to study objectives	18
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	20-21
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	18-21
Generalisability	21	Discuss the generalisability (external validity) of the study results	20-21
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	22

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Mental health issues and illness and substance use disorder (non-)disclosure to a supervisor: A cross-sectional study on beliefs, attitudes and needs of military personnel.

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Keywords:	MENTAL HEALTH, OCCUPATIONAL & INDUSTRIAL MEDICINE, PREVENTIVE MEDICINE, Substance misuse < PSYCHIATRY, PSYCHIATRY

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3 **Mental health issues and illness and substance use disorder (non-)disclosure to a**
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5 **supervisor: A cross-sectional study on beliefs, attitudes and needs of military personnel.**
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10 Rebecca Bogaers^{*a,b}, Elbert Geuze^{b,c}, Jaap van Weeghel^a, Fenna Leijten^d, Dike van de
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Abstract

Objectives. Research suggests that military personnel frequently delay disclosing mental health issues and illness (MHI), including substance use disorder, to supervisors. This delay causes missed opportunities for support and workplace accommodations which may help to avoid adverse occupational outcomes. The current study aims to examine disclosure related beliefs, attitudes, and needs, to create better understanding of personnel's disclosure decision-making. **Design.** A cross-sectional questionnaire study among military personnel with and without MHI. Beliefs, attitudes, and needs regarding the (non-)disclosure decision to a supervisor were examined, including factors associated with (non-)disclosure intentions and decisions. Descriptive and regression (logistic and ordinal) analyses were performed. **Setting.** The study took place within the Dutch military. **Participants.** Military personnel with MHI (N=324) and without MHI (N=554) participated in this study. **Outcome measure.** (Non-)disclosure intentions and decisions. **Results.** Common beliefs and attitudes *pro non-disclosure* were the preference to solve one's own problems (68.3%), the preference for privacy (58.9%), and a variety of stigma related concerns. Common beliefs and attitudes *pro disclosure* were that personnel wanted to perform well at work (93.3%) and the desire to act responsibly towards work colleagues (84.5%). The most reported need for future disclosure (96.8%) was having a supervisor who shows understanding for MHI. The following factors were associated both with non-disclosure intentions and decisions: higher preference for privacy (OR(95%CI) = 1.99(1.50–2.65)_{intention}, 2.05(1.12–3.76)_{decision}) and self-management (OR(95%CI) = 1.64(1.20–2.23)_{intention}, 1.79(1.00–3.20)_{decision}), higher stigma related concerns (OR(95%CI) = 1.76(1.12–2.77)_{intention}, 2.21(1.02–4.79)_{decision}), and lower quality of supervisor-employee relationship (OR(95%CI) = .25(.15–.42)_{intention}, .47(.25–.87)_{decision}).

Conclusion. To facilitate (early-)disclosure to a supervisor, creating opportunities for workplace support, interventions should focus on decreasing stigma and discrimination and

1
2
3 align with personnel's preference for self-management. Furthermore, training is needed for
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5 supervisors on how to recognize, and effectively communicate with, personnel with MHI.
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8 Focus should also be on improving supervisor-employee relationships.
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10 11 12 **Strengths and Limitations** 13

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15 • Disclosure of mental health issues and illness to a supervisor was examined in the
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17 military, a context in which little research has been done on this topic.
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20 • This study included a group that is usually hard to study, namely military personnel
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22 who have not disclosed.
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25 • This study included both personnel with and without mental health issues and illness,
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27 providing insights for interventions for personnel who may develop mental health
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29 issues and illness in the future.
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32 • The sample is not representative for the entire military, due to the sampling method.
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35 • Due to the cross-sectional design of the study, no causality can be presumed.
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Introduction

The decision for workers whether to disclose their mental health issues and illness (MHI), including substance use disorder, to their supervisors can have far-reaching consequences for their sustainable employment (1-4). Disclosure can lead to workplace support and accommodations, which can prevent worsened symptoms and sick-leave, and non-disclosure can lead to missed opportunities for this support (2, 3, 5). However, disclosure can also lead to being stigmatized and discriminated against (6, 7).

The disclosure dilemma is expected to be even more prominent for trauma-prone occupations, such as the military, where workers are expected to be 'strong' and disclosure may yield less positive outcomes (5, 8). Additionally, workers in these high-risk occupations are exposed to stressors at work, increasing their risk of developing MHI (9). Previous research in the military showed that there is a high preference for solving one's own problems (10), there are stigma related concerns and military personnel tend to delay seeking help (6, 11, 12). Together this might cause a delay in disclosure to a supervisor. To facilitate (early-)disclosure, so that personnel can receive support which can prevent adverse occupational outcomes (2, 3, 5), more insight is needed into the (non-)disclosure decision.

Although the (non-)disclosure decision is complex and has far-reaching consequences, research on this matter is scarce and mostly qualitative, especially in the military (3, 6, 11, 13). Research has shown that the supervisor plays an important role, where supervisor attitude and behavior can form both a barrier as well as be a facilitator for disclosure (6, 14, 15). Furthermore, "The model of employee decision-making about disclosure of a mental disorder at work" proposes that there is a default position of non-disclosure, caused by fear of stigma, wanting to maintain boundaries, and maintaining confidentiality (16). This model proposes that a triggering incident is needed before a disclosure decision is made (16).

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3 The aim of the current study was to gain insight into the (non-)disclosure decision to a
4 supervisor in the military, and to confirm and expand earlier qualitative findings (6). This was
5 done by examining beliefs, attitudes and needs related to disclosure to a supervisor. Based on
6 earlier qualitative research on disclosure in the military (6, 11), studies on disclosure among
7 Dutch workers (17, 18), and literature reviews on disclosure (2, 19), it was hypothesized that
8 the following beliefs and attitudes *pro non-disclosure* would be important for, and associated
9 with, the disclosure decision: stigma related concerns (e.g. social rejection), preference for
10 self-management and privacy, negative attitudes of the supervisor towards MHI, and
11 difficulty talking about MHI. Additionally, the following beliefs and attitudes *pro disclosure*
12 were hypothesized to be important for the disclosure decision: wanting to be one's true and
13 authentic self, positive attitudes of the supervisor towards MHI, setting an example,
14 organizational policies, a need for work accommodations, feelings of responsibility, whether
15 MHI affects work functioning, advice from others, and not having a choice due to the
16 visibility of symptoms, having to report sick or needing treatment during work. To inform
17 future interventions, several needs related to disclosure were also assessed, based on earlier
18 qualitative research (6). These needs were related to information on how to disclose and
19 education for supervisors on how to support military personnel with MHI.
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42 As personnel with and without MHI have shown to have different views on treatment
43 seeking (10, 12), the current study examined both actual disclosure decisions in personnel
44 with MHI as well as future disclosure intentions for those without MHI. The research
45 questions were: (1) 'What are beliefs, attitudes, and needs of military personnel regarding
46 disclosure to a supervisor?', (2) 'Do disclosers, differ from non-disclosers, and if so, how?',
47 and (3) 'What factors are associated with non-disclosure to a supervisor?'.
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Method

Design

A cross-sectional observational design with an online questionnaire. Comparisons were made based on past disclosure decisions for personnel with MHI and on disclosure intentions for those without MHI. Data collection happened simultaneously with a study on treatment seeking for MHI (12). The strobe-checklist was used to report this study (20).

Setting

This study took place within the Dutch military, where healthcare is organized internally. There are sanctions for use of soft and hard drugs. However, when substance use disorder is reported to a mental health professional, there are confidentiality agreements (10).

Patient and public involvement

Different stakeholders from the Dutch military (psychologists, psychiatrists, policymakers and military personnel) were involved in the development of the questionnaire. They provided advise on the language used in the questionnaire to ensure that it was military appropriate language. They also provided advise on the best way to recruit participants.

Participant recruitment

Active-duty military personnel who have been on deployment in the past 5 years were recruited. To ensure that both personnel with and without MHI would be present in the sample, existing data from a questionnaire personnel receive after deployment was used to select a sample. This questionnaire included scores of depression, aggression, alcohol abuse and PTSD. Clinical cut-off scores were used to identify personnel with and without an

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3 indication of MHI. Next, a stratified sample, based on gender, age, military division and rank
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5 of personnel was approached, half with indication of MHI (N=1000) and half without
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7 (N=1000).
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10 Data were collected between January and February 2021. All personnel were invited
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12 at the same time, both by e-mail and a letter. Reminders were sent after 3 and 5 weeks. It was
13
14 made clear that the responses to the questionnaire would be anonymous.
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17 18 19 **Measures**

20 21 *Demographics*

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23 Gender, age, marital status, education-level, type of work (operational or not),
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25 military department, rank, and years of service were assessed.
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28 29 *Mental health issues and illness*

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31 **Current MHI.** To assess current MHI, the following measures were used;
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33 (a)Hospital anxiety and depression scale (21), (b)ASSIST-LITE for substance use disorder
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35 (22), (c)AUDIT-C, for alcohol use (23), and (d)PTSD checklist for DSM-5 (24). For
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37 psychometric properties and cut-off scores, see appendix A.
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41 **Self-reported MHI.** Personnel were asked whether they have (had) MHI. Group
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43 membership (i.e., current/past MHI or no MHI) was determined based on this. If personnel
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45 reported having (had) MHI, they received a list of 15 possible types of MHI (see appendix B)
46
47 and were asked to indicate whether it concerned current or past MHI, in line with earlier
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49 research (12, 17, 25). They were asked whether the MHI was work-related (yes/no) and to
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51 rate the severity of their symptoms (during the worst time) on a scale of 0–10.
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54 55 56 *(Non-)Disclosure intentions and decisions* 57 58 59 60

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3 Personnel with MHI were asked whether they had disclosed to their supervisor
4 (yes/no). Personnel without MHI were asked, in case they would develop MHI in the future,
5 whether they would disclose this to their supervisor, using a 4-point scale ranging from very-
6 unlikely to very-likely.
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14 ***Beliefs, attitudes and needs***

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17 Based on earlier qualitative research on disclosure in the military (6, 11), studies on
18 disclosure among Dutch workers (17, 18), and literature reviews on disclosure (2, 3), it was
19 determined which beliefs and attitudes should be assessed. Regarding the beliefs and
20 attitudes, 13 statements *pro non-disclosure* (e.g. I would prefer to solve my own problems)
21 and 11 statements *pro disclosure* (e.g. In order to be your true self, disclosure is important)
22 were developed. Please see the results section for a full overview of the statements. Stigma
23 was found to be a main barrier to disclosure in our qualitative study (6). Therefore, several
24 stigma related statements were included. All the statements were assessed by several people
25 working in the military, to assure the questions were appropriate for the military context. The
26 statements were adjusted according to their feedback. Participants were asked to indicate on a
27 4-point scale to what extent they agreed with the statements, ranging from completely
28 disagree to completely agree.
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45 Personnel without MHI were asked additional questions about their needs regarding
46 disclosure if they would develop MHI in the future. Based on findings from the earlier
47 qualitative study (6), they were given seven options (e.g. a supervisor who shows
48 understanding for MHI) and were asked to rate these on a 4-point scale ranging from 'Not at
49 all' to 'Very much'. Please see the results section for a full overview of the assessed needs.
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(Previous) experience

Familiarity. Participants were asked about MHI in their surroundings using an adaptation of the Level of Contact Report (26), following earlier research (25, 27). The total score was used.

Previous experience. Participants were asked whether they had previous experience, and/or seen experiences of others, with disclosure to a supervisor. If yes, they were asked whether this experience was positive or negative.

Work context

Unit cohesion. A three-item measure was used for perceived unit cohesion (28). For example '*the members of my unit are cooperative with each other*'. Items were measured on a 5-point scale ranging from 'Completely-disagree' to 'Completely-agree'. Mean scores were used. Participants with MHI were asked about unit cohesion at the time they experienced MHI (28).

Relationship supervisor. A six-item measure for the relationship with the supervisor from the Questionnaire on the Experience and Evaluation of Work (QEEW) was used. This questionnaire is the most used and validated questionnaire for work experiences in the Netherlands (29). Items were measured on a 4-point scale with answer categories 'Always', 'Often', 'Sometimes' and 'Never'. Mean scores were used, with higher scores indicating better relationship quality. Participants with MHI were asked about the relationship at the time they experienced MHI.

Statistical analyses

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3 For beliefs, attitudes, and needs surrounding (non-)disclosure, descriptive analyses
4 were performed. Chi-square tests and Mann-Whitney U-tests were used for comparisons
5 between those who disclosed/intended to disclose and those who did not, as variables were
6 not normally distributed.
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12 To examine factors associated with (non-)disclosure, two separate analyses were
13 performed. For personnel with MHI, a logistic regression was performed with non-disclosure
14 decision as the dependent variable (0=disclosure, 1=non-disclosure). For personnel without
15 MHI, an ordinal regression was performed, as disclosure intention had more than two
16 categories. As the assumption of proportional odds was violated at first, the categories 'very
17 unlikely' and 'unlikely' were merged, resulting in the dependent variable non-disclosure
18 intention with categories 1=very-likely, 2=likely, and 3=(very)-unlikely. To prevent loss of
19 information 'likely' and 'very-likely' were not combined. Fear of negative career
20 consequences, social rejection, discrimination, self-stigma, shame, fear of receiving blame,
21 fear of gossip and confidentiality concerns were combined into one (mean) measure of
22 stigma, as they are all aspects of stigma (30). Together these items formed a reliable scale
23 ($\alpha_{\text{with MHI}}=.89$, $\alpha_{\text{without MHI}}=.91$). There were no missing data, as forced response answers were
24 used during data acquisition. All analyses were performed using SPSS.
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45 **Ethical considerations**

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47 Written informed consent was obtained from all subjects/patients. The authors assert
48 that all procedures contributing to this work comply with the ethical standards of the relevant
49 national and institutional committees on human experimentation and with the Helsinki
50 Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients
51 were approved by the Tilburg School of Social and Behavioral Sciences Ethics Review
52 Boards (approval number RP324) and the Dutch Military Ethics Review Board.
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Results

Participant characteristics

Response rate

After removing duplicates (caused by personnel going on multiple deployments) and personnel who had left active service from the original sample, a total of N=1627 eligible respondents were left. Of those, 63% (N=1025) started the questionnaire, and 54% (N=878) fully completed it and were used for further analysis. Compared to personnel who completed the questionnaire, those who did not complete it included more females ($\chi^2(1, N=1008)=6.01, p=.014$), more lower and middle education level ($\chi^2(2, N=1008)=7.25, p=.027$), and more non-commissioned officers ($\chi^2(2, N=1006)=8.26, p=.016$). The majority quit while answering mental health questions.

Non-disclosure (intentions)

Of those with MHI (N=324), 24.4% indicated not having disclosed their MHI to their supervisor. Of those without MHI (N=554), 15.6% did not intend to disclose if they would develop MHI in the future.

Sample characteristics

Sample characteristics can be found in Table 1. For personnel with MHI, there was a significant association between marital status and non-disclosure decision ($\chi^2(1, N=324)=5.53, p=.019$) with more people with a partner within the non-disclosers group. Those who had not disclosed, reported significantly lower symptom severity (M=6.01) compared to those who had disclosed (M=7.38, $U=5885.5, Z=-5.37, p<.001$). For personnel

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3 without MHI, there were no significant differences in demographics based on non-disclosure
4 intentions. Information on reported MHI can be found in Appendix B.
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7 [INSERT TABLE 1]
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12 **Beliefs, attitudes, and needs regarding (non-)disclosure to a supervisor**

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14 Regarding beliefs and attitudes *pro non-disclosure*, personnel preferred to solve their
15 own problems (73.8%with(w/)MHI, 65.2% (without(w/o)MHI)) and preferred privacy
16 (58.3%w/MHI, 59.3%w/oMHI). There were also high stigma related concerns, with
17 personnel reporting they saw (would see) themselves as weak due to MHI (52.5%w/MHI,
18 26.4%w/oMHI), had concerns about negative career consequences (35.5%w/MHI,
19 24.4%w/oMHI) and fear of social rejection (33.0%w/MHI, 20.6%w/oMHI). Only a minority
20 reported that their supervisor had negative attitudes towards MHI (9.3%w/MHI,
21 4.9%w/oMHI).
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33 As for beliefs and attitudes *pro disclosure*, the large majority indicated disclosure
34 would allow them to be their true and authentic self (95.7%w/MHI, 91.2%w/oMHI), and
35 believed disclosure was important due to the responsibility belonging to the nature of their
36 work (74.7%w/MHI, 90.3%w/oMHI). In addition, most reported that the military has good
37 policy for those who develop MHI (72.2%w/MHI, 87.9%w/oMHI) and that generally
38 supervisors take MHI seriously (82.4%w/MHI, 87.7%w/oMHI). Furthermore, personnel
39 reported that it matters for the disclosure decision whether MHI influences occupational
40 functioning (69.8%w/MHI, 74.7%w/oMHI) and whether work accommodations are needed
41 (43.5%w/MHI, 62.8%w/oMHI). Of those with MHI who had disclosed, the majority
42 indicated having had no choice, with 69% needing treatment during work hours and 46.9%
43 having to report sick. An overview of all beliefs and attitudes can be found in Table 2.
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58 [INSERT TABLE 2]
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6 As for needs regarding future disclosure to a supervisor, the highest need was reported
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8 for supervisors who show understanding for MHI (96.8%) and have life experience (93.1%),
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10 and advice about the best way to disclose (when/where/how) (88.8%). An overview of all
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12 needs can be found in Figure 1.
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14 [INSERT FIGURE 1]
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19 **Differences between disclosers and non-disclosers**

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21 Overall, those who did not (intend to) disclose, reported significantly higher
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23 preference for solving own problems and for privacy, and lower feelings of responsibility due
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25 to the nature of their work.
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29 Within personnel with MHI, there was also a significant difference between non-
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31 disclosers and disclosers in the following beliefs and attitudes *pro disclosure*: those who had
32
33 not disclosed reported MHI having less effect on their occupational functioning, and less
34
35 need for work accommodations compared to disclosers.
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39 Within personnel without MHI, those who intended to disclose and those who did not,
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41 differed significantly on all beliefs and attitudes *pro non-disclosure*. For beliefs and attitudes
42
43 *pro disclosure*, those with no intention to disclose indicated significantly lower belief that the
44
45 military has good policy for those with MHI, supervisors taking MHI less seriously, and a
46
47 lower desire to be a good example to others with MHI. Results with statistics can be found in
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49 Table 2. There were no significant differences in reported needs for future disclosure, based
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51 on disclosure intention.
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56 **Factors associated with non-disclosure to a supervisor**

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3 For personnel with MHI, the logistic regression model with the dependent variable
4 non-disclosure, was statistically significant ($\chi^2(24)=149.30, p<.001$) and explained 55.0%
5 (Nagelkerke R^2) of the variance in non-disclosure and correctly classified 85.% of cases.
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8 Sensitivity was 59.5% and specificity 93.9%. The following background variables were
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10 significantly associated with non-disclosure: lower symptom severity, having a partner, and
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12 lower employee-supervisor relationship quality. Additionally, the following beliefs and
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14 attitudes *pro non-disclosure* were positively associated with non-disclosure: preference for
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16 privacy, preference for self-management, and stigma related concerns. Finally, the following
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18 beliefs and attitudes *pro disclosure* were negatively associated with non-disclosure:
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20 importance given to disclosure advice from others, MHI having impact on occupational
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22 functioning, and feelings of responsibility due to the nature of work.
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28 For personnel without MHI, the ordinal logistic regression model with the dependent
29 variable non-disclosure intention, was statistically significant ($\chi^2(23)=346.90, p<.001$) and
30 explained 53.5% (Nagelkerke R^2) of the variance in non-disclosure intention and correctly
31 classified 66.4% of cases. The following background variables were significantly associated
32 with non-disclosure intention: not having positive earlier experience with disclosing
33 something personal to a supervisor, having seen negative experiences of others with
34 disclosure, and lower employee-supervisor relationship quality. Additionally, the following
35 beliefs and attitudes *pro non-disclosure* were positively associated with non-disclosure
36 intentions: preference for privacy, preference for self-management, stigma related concerns
37 and finding it difficult to talk about MHI. Finally, the following beliefs and attitudes *pro*
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disclosure were negatively associated with non-disclosure intentions: supervisor who takes
MHI seriously, needing work accommodations, wanting to be authentic self, and wanting to
be an example to others with MHI. All results with statistics can be found in Table 3.

[INSERT TABLE 3]

Discussion

The current study aimed to examine beliefs, attitudes, and needs associated with (non-)disclosure to a supervisor in the military. Non-disclosure was associated with higher stigma related concerns, a higher preference for privacy and self-management, and a lower supervisor-employee relationship. A quarter of personnel with MHI had not disclosed their MHI to their supervisor, and those who had disclosed, appeared to do so after a considerable delay. Important reasons for disclosure were that personnel wanted to be their true and authentic self and thought disclosure was important due to the responsible nature of their work. To consider disclosure, most personnel indicated they would need a supervisor who shows understanding for MHI. Moreover, over 80% expressed a need for advice about the best ways to disclose.

We identified that although the majority of personnel with MHI had disclosed to their supervisor, they appeared to do so after a considerable delay. Those who disclosed had higher symptom severity than non-disclosers and the majority disclosed because they had to call in sick (46.9%) or had needed treatment during work hours (69.0%). This appears to be even more so the case for military personnel, compared to civilians. A study on disclosure among Dutch workers in general showed that 15.6% disclosed due to having to report sick, and 39.9% disclosed due to needing treatment during work (18). This is in line with ‘the model of employee decision-making about disclosure of a mental disorder at work’, which proposes a default position of non-disclosure and that a triggering incident is needed for disclosure – in this case, having to call in sick or needing treatment (16). This late disclosure causes missed opportunities for workplace support and work accommodations which can prevent worsened symptoms and sick leave (1, 31, 32).

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3 Stigma related concerns form a barrier for (early-)disclosure. Half of those who had
4 not disclosed, saw themselves as weak for having MHI, experienced shame, and a third
5 feared gossip, negative career consequences, social rejection, and discrimination. These
6 stigma related concerns were significantly associated both with non-disclosure intentions and
7 decisions. Stigma has been found to be a barrier to disclosure before, both in military, other
8 trauma-prone occupations, and civilian populations (5, 6, 16, 33, 34). When comparing the
9 results of the current study to a study among Dutch civilian workers, it should be noted that
10 of military personnel who had not disclosed, half reported seeing themselves as weak and
11 being ashamed, compared to only 13.5% of civilians (18). Concerns about stigma thus appear
12 to be stronger within the military setting compared to civilian settings. These higher concerns
13 of stigma are likely caused by the military workplace culture and the responsible work nature,
14 where people are expected to be 'strong' (6, 8). It should be noted that the study among
15 civilians predominantly included females, while the current study predominantly included
16 males, which might also account for some of the differences (18). Future research into
17 destigmatizing interventions is needed, as up to now only a few, especially in the military,
18 rigorous destigmatizing intervention studies have been conducted (1). Trauma risk
19 management (TRiM) is a promising destigmatizing program within (military) organizational
20 settings, as it has shown to improve attitudes towards MHI (35). To facilitate disclosure,
21 stigma should also be targeted at a policy level, to take away some of the fears personnel face
22 (6).

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49 The preference for self-management also forms a barrier for (early-)disclosure.
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51 Although disclosure rates are comparable to earlier research among Dutch workers in general
52 (17, 18), the reasons for non-disclosure differ. Of the non-disclosers, 87.3% reported a
53 preference for self-management, compared to 44.9% of civilians. This is likely also caused by
54 the military workplace culture, where people are expected to have a 'can-do' problem fixing
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3 mentality (6). To target this preference for self-management, self-help apps or personal
4 recovery programs could provide personnel the opportunity to manage their own MHI,
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6 possibly giving them more confidence in disclosing and a feeling of control, as they are
7
8 already working on their MHI (36). This could also be done through easily accessible care
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10 from for example a social worker. Additionally, decision aids and programs could be
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12 implemented, as personnel indicated this as a need, and it can positively influence sustainable
13
14 employability and coping with stigma (37-40).
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19 To facilitate (early-)disclosure, there is an important role for the supervisor. The
20 results showed that lower employee-supervisor relationship quality was associated both with
21 non-disclosure decision and intention. Having seen negative experiences of others with
22 disclosure, was the second strongest predictor of non-disclosure intentions, indicating the
23 importance of how others, including supervisors, respond to disclosure. It is also important
24 that military personnel with positive experiences with disclosure, communicate openly about
25 these experiences. The previous qualitative study in the Dutch military (6), and a study
26 among Dutch workers in general (18), also showed the importance of supervisor relationships
27 and support (6). Supervisor attitudes towards MHI and knowledge of MHI have also been
28 found to be associated with whether employees disclose to the supervisor themselves, or that
29 the supervisor finds out some other way (41). Finally, supervisor support was not only found
30 to be important for disclosure, but also for treatment seeking for MHI, a decision which is
31 also of influence on sustainable employability (10). To facilitate (early-)disclosure, training
32 may be needed for supervisors to improve understanding and support of MHI needs (42).
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34 Additionally, supervisor relationship quality could be addressed, for example by adjusting the
35 obligated job rotation every 3 years, giving personnel longer to build a relationship with their
36 supervisor.
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Strengths and limitations

The strengths of this study included the large sample and inclusion of a group that is usually hard to study (participants who have not disclosed). Additionally, the study included both personnel with and without MHI, providing insights for interventions for personnel who may develop MHI in the future. Finally, the study examined disclosure in the military where little research has been done on this topic.

As for limitations, the sample was not representative for the entire military, due to the sampling method. This method also caused the sample to include only personnel who have been on deployment. This group might have had more positive attitudes towards MHI and disclosure due to mental health training related to deployment (35). Also, despite stratification, the current study included a sample of older, higher educated, and higher-ranking personnel. Comparisons showed that lower ranking and lower educated personnel were less likely to have completed the questionnaire once started. Majority of dropouts occurred during the mental health questions. Possibly these questions were hard to answer, or there were anonymity concerns. Additionally, drop-out might have been higher due to the use of forced response. Previous research has shown that younger and lower educated workers disclosed less (18), so disclosure rates in the current study might be an overestimation of the true rates. Also, due to the cross-sectional design of the study, no causality can be presumed. Furthermore, it should be noted that the questionnaire assessing attitudes, beliefs and needs regarding disclosure, has not been validated. It was developed specifically for the current study.

Conclusion

To better facilitate (early-)disclosure of MHI to a supervisor, there is a need for several changes within the military. First, destigmatizing interventions and policies are

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3 needed to create a culture change where personnel do not feel shame for having MHI, and do
4 not have to fear that stigma and discrimination negatively affect their careers and wellbeing at
5 work. Second, offered early interventions should align with the preference for self-
6 management. Third, our results strongly suggest a need to train supervisors to recognize, and
7 effectively communicate with, personnel with MHI and to improve employee-supervisor
8 relationships. Together this could facilitate (early-)disclosure which may optimize
9 opportunities for the provision of workplace support and accommodations, which in turn can
10 increase the chance of recovery and sustainable employment.
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Tables & Figures

Table 1. Characteristics of the sample separated by military personnel with and without mental health issues or illness (MHI).

	Military personnel with MHI			Military personnel without MHI		
	Disclosure N=245 N (%)	Non-disclosure N=79 N (%)	Total N=324 N (%)	Disclosure intention N=467 N (%)	Non-disclosure intention N=87 N (%)	Total N=554 N (%)
Demographics						
Sex						
Male	215 (87.8)	68 (86.1)	283 (87.4)	430 (92.1)	79 (90.8)	509 (91.9)
Female	30 (12.2)	11 (13.9)	41 (12.7)	37 (7.9)	8 (9.2)	45 (8.1)
Age						
<20	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
21-30	15 (6.1)	12 (15.2)	27 (8.3)	55 (11.8)	10 (11.5)	65 (11.7)
31-40	81 (33.1)	26 (32.9)	107 (33.0)	149 (31.9)	41 (47.1)	190 (34.3)
41-50	76 (31.0)	19 (24.1)	95 (29.3)	134 (28.7)	18 (20.7)	152 (27.4)
51-60	68 (27.8)	21 (26.6)	89 (27.5)	119 (25.5)	17 (19.5)	136 (24.6)
>60	5 (2.0)	1 (1.3)	6 (1.9)	10 (2.1)	1 (1.2)	11 (2.0)
Marital Status						
Partner (vs. Single)	183 (74.7)	69 (87.3)	252 (77.8)	394 (84.4)	76 (87.4)	470 (84.8)
Educational Level						
Low	26 (10.6)	4 (5.1)	30 (9.3)	49 (10.5)	2 (2.3)	51 (9.2)
Medium	136 (55.5)	39 (49.4)	175 (54.0)	242 (51.8)	48 (55.2)	290 (52.4)
High	83 (33.9)	36 (45.6)	119 (36.7)	176 (37.7)	37 (42.5)	213 (38.5)
Work related context						
Type of work						
Operational work	188 (76.7)	67 (84.8)	255 (78.7)	258 (55.3)	50 (57.5)	308 (55.6)
Military branch						
Marine	20 (8.2)	2 (2.5)	22 (6.8)	75 (16.1)	16 (18.4)	91 (16.4)
Army	119 (48.6)	47 (59.5)	166 (51.2)	196 (42.0)	40 (46.0)	236 (42.6)
Air-force	69 (28.2)	15 (19.0)	84 (25.9)	120 (25.7)	15 (17.2)	135 (24.4)
Military-police	16 (6.5)	4 (5.1)	20 (6.2)	21 (4.5)	5 (5.7)	26 (4.7)
Staff	20 (8.2)	11 (13.9)	31 (9.6)	53 (11.3)	11 (12.6)	64 (11.6)
Other	1 (.4)	0 (0.0)	1 (.3)	2 (.4)	0 (0.0)	2 (.4)
Ranks						
Military personnel	29 (11.8)	15 (19.0)	44 (13.6)	26 (5.6)	8 (9.2)	34 (6.1)
Non-commissioned officers	132 (53.9)	33 (41.8)	165 (50.9)	225 (48.2)	32 (36.8)	257 (46.4)
Officers	84 (34.3)	31 (39.2)	115 (35.5)	216 (46.3)	47 (54.0)	263 (47.5)
Years of service (M (SD))						
Years	22.25 (9.08)	21.42 (9.92)	22.05 (9.28)	22.20 (9.62)	20.11 (9.98)	21.86 (9.70)
Mental health related context						
Past or current (self-reported) MHI						
Past MHI	194 (79.2)	62 (78.5)	256 (79.0)	N/A	N/A	N/A
MHI work related						
Yes	167 (68.2)	48 (60.8)	215 (66.4)	N/A	N/A	N/A
Severity of symptoms						
Mean severity (M, SD)	7.38 (1.87)	6.01 (2.07)	7.05 (2.01)	N/A	N/A	N/A

Note: Military personnel with MHI were asked about their type of work and rank at the time their MHI started.

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For peer review only

Table 2. Beliefs and attitudes regarding disclosure to a supervisor for military personnel with and without mental health issues and illness (MHI)

Beliefs and attitudes	Military personnel with MHI							Military personnel without MHI						
	Total (N=324)	Disclosure (N=245)		Non-Disclosure (N=79)		Difference		Total (N=554)	Disclosure intention (N=467)		Non-disclosure intention (N=87)		Difference	
	N (%)	N (%)	M (SD)	N (%)	M (SD)	Z	Sig.	N (%)	N (%)	M(SD)	N (%)	M (SD)	Z	Sig.
Pro non-disclosure														
The preference to solve one's own problems.	239 (73.8)	170 (69.4)	2.70 (.78)	69 (87.3)	3.13 (.76)	-4.79	<.001	361 (65.2)	284 (60.8)	2.58 (.75)	77 (88.5)	3.10 (.65)	-6.05	<.001
Finding it difficult to talk about MHI.	214 (66.1)	154 (62.9)	2.62 (.84)	60 (76.0)	2.86 (.80)	-2.28	.023	212 (38.3)	156 (33.4)	2.20 (.76)	56 (64.4)	2.76 (.78)	-5.93	<.001
Preference that MHI remains private.	189 (58.3)	124 (50.6)	2.49 (.77)	65 (82.3)	3.05 (.75)	-5.55	<.001	328 (59.2)	252 (54.0)	2.58 (.78)	76 (87.4)	3.22 (.72)	-6.89	<.001
Seeing yourself as weak due to MHI.	170 (52.5)	125 (51.0)	2.44 (.96)	45 (57.0)	2.52 (.99)	-.69	.489	146 (26.4)	95 (20.3)	1.90 (.74)	51 (58.6)	2.49 (.79)	-6.46	<.001
Being ashamed of the MHI.	159 (49.1)	121 (49.4)	2.40 (.96)	38 (48.1)	2.47 (1.00)	-.47	.636	129 (23.3)	85 (18.2)	1.89 (.71)	44 (50.6)	2.39 (.84)	-5.41	<.001
Fearing gossip as result of disclosure.	124 (38.3)	97 (39.6)	2.24 (.91)	27 (34.2)	2.18 (.89)	-.60	.547	118 (21.3)	72 (15.4)	1.88 (.68)	46 (52.9)	2.63 (.85)	-7.69	<.001
Fearing negative career consequences as result of disclosure.	114 (35.2)	86 (35.1)	2.11 (.94)	28 (35.4)	2.16 (.97)	-.41	.680	135 (24.4)	86 (18.4)	1.90 (.73)	49 (56.3)	2.55 (.89)	-6.57	<.001
Unemployment.	35 (N/A)	28 (N/A)	N/A	7 (N/A)	N/A	N/A	N/A	28 (N/A)	19 (N/A)	N/A	9 (N/A)	N/A	N/A	N/A
Not being able to be promoted to future career steps.	83 (N/A)	62 (N/A)	N/A	21 (N/A)	N/A	N/A	N/A	94 (N/A)	61 (N/A)	N/A	33 (N/A)	N/A	N/A	N/A
Not being able to do work tasks anymore that one likes best.	75 (N/A)	59 (N/A)	N/A	16 (N/A)	N/A	N/A	N/A	67 (N/A)	43 (N/A)	N/A	24 (N/A)	N/A	N/A	N/A
Fearing others will see you differently (negatively) as result of disclosure.	107 (33.0)	83 (33.9)	2.15 (.85)	24 (30.4)	2.10 (.84)	-.48	.633	114 (20.6)	71 (15.2)	1.90 (.65)	43 (49.4)	2.47 (.82)	-6.35	<.001
Fearing being treated differently (less well) as results of disclosure.	92 (28.4)	69 (28.2)	2.07 (.81)	23 (29.1)	2.06 (.82)	-.05	.963	90 (16.3)	56 (12.0)	1.83 (.64)	34 (39.1)	2.31 (.75)	-5.68	<.001
Fearing others see MHI as one's own fault.	87 (26.9)	63 (25.7)	1.99 (.83)	24 (30.4)	2.04 (.91)	-.27	.785	52 (9.4)	33 (7.1)	1.65 (.62)	19 (21.8)	1.95 (.73)	-3.68	<.001
Fearing that supervisor would not treat disclosure confidentially.	82 (25.3)	52 (21.2)	1.93 (.81)	30 (38.0)	2.24 (.99)	-2.42	.016	92 (16.6)	46 (9.9)	1.71 (.65)	46 (52.9)	2.54 (.91)	-8.14	<.001
Supervisor is negative about MHI.	30 (9.3)	22 (9.0)	1.69 (.72)	8 (10.1)	1.76 (.70)	-.97	.330	27 (4.9)	11 (2.4)	1.52 (.58)	16 (18.4)	1.98 (.70)	-5.95	<.001
No choice, supervisor already heard from someone else.	5 (N/A)	N/A	N/A	5 (6.3)	1.55 (.62)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pro disclosure														
Importance of being your true self.	310 (95.7)	238 (97.1)	3.33 (.56)	72 (91.1)	3.20 (.63)	-1.49	.135	509 (91.2)	430 (92.1)	3.34 (.68)	79 (90.8)	3.18 (.66)	-2.32	.020
Supervisor who takes MHI seriously.	267 (82.4)	207 (84.5)	3.11 (.79)	60 (76.0)	2.90 (.61)	-2.88	.004	486 (87.7)	426 (91.2)	3.28 (.74)	60 (69.0)	2.83 (.78)	-5.42	<.001
Disclosure important due to the responsibility associated with the nature of the work.	242 (74.7)	209 (85.3)	3.04 (.65)	33 (41.8)	2.35 (.75)	-7.26	<.001	500 (90.3)	438 (93.8)	3.28 (.59)	62 (71.3)	2.86 (.81)	-4.71	<.001
Military has policy which provides good solutions for those with MHI.	234 (72.2)	179 (73.1)	2.81 (.79)	55 (69.6)	2.77 (.83)	-.38	.707	487 (87.9)	422 (90.4)	3.09 (.55)	65 (74.7)	2.79 (.70)	-3.86	<.001
Importance of whether MHI effects occupational functioning.	226 (69.8)	193 (78.8)	3.02 (.78)	33 (41.8)	2.33 (.87)	-6.15	<.001	414 (74.7)	342 (73.2)	2.79 (.75)	72 (82.8)	2.98 (.68)	-2.11	.035
Wanting to be a good example to others.	146 (45.1)	121 (49.4)	2.44 (.83)	25 (31.7)	2.18 (.69)	-2.61	.009	373 (67.3)	341 (73.0)	2.88 (.73)	32 (36.8)	2.23 (.80)	-6.85	<.001
Importance of needing work accommodations.	141 (43.5)	129 (52.7)	2.44 (.95)	12 (15.2)	1.72 (.88)	-5.86	<.001	348 (62.8)	303 (64.9)	2.68 (.75)	45 (51.7)	2.51 (.83)	-2.02	.044
The importance of advice from others for disclosure.	62 (19.1)	55 (22.5)	1.91 (.77)	7 (8.9)	1.63 (.64)	-2.73	.006	356 (64.3)	302 (64.7)	2.63 (.77)	54 (62.1)	2.52 (.71)	-1.24	.216
No choice, supervisor could see it.	95 (N/A)	95 (38.8)	2.23 (.89)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I had to report sick.	115 (N/A)	115 (46.9)	2.39 (1.04)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I needed treatment during work.	169 (N/A)	169 (69.0)	2.78 (.91)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: A Bonferroni correction was used, with $\alpha = .05/20 = .003$

Note: For comparison between disclosure intentions of military personnel without MHI, 'very-unlikely' and 'unlikely' were combined, just as 'likely' and 'very-likely'.

Table 3. Logistic and ordinal regressions for the non-disclosure decision and intention to a supervisor.

	Military personnel with mental health issues or illness (0=disclosure, 1=non-disclosure)						Military personnel without mental health issues or illness (Disclosure 1=very likely, 2=likely, 3=(very)unlikely)					
	B	SE	Wald	OR	CI 95%	Sig.	B	SE	Wald	OR	CI 95%	Sig.
Constant	4.23	2.44	3.01	68.71	N/A	.083	N/A	N/A	N/A	N/A	N/A	N/A
Threshold: = 3 ((very) unlikely)	N/A	N/A	N/A	N/A	N/A	N/A	-8.63	1.61	28.74	.00	[7.62E-6 -.00]	<.001
Threshold: = 2 (likely)	N/A	N/A	N/A	N/A	N/A	N/A	-5.15	1.57	10.74	.01	[.00-.13]	.001
Health												
Higher symptom severity	-.33	.10	12.27	.72	[-.59-.86]	<.001	N/A	N/A	N/A	N/A	N/A	N/A
Demographics and experience												
Gender (female, vs. male)	-.08	.56	.02	.92	[-.31-2.76]	.882	-.52	.38	1.87	.60	[-.28-1.25]	.172
Marital status (partner, vs. single)	1.27	.54	5.52	3.58	[1.24-10.36]	.019	-.18	.28	.42	.84	[-.48-1.44]	.518
Higher age	-.19	.19	.93	.83	[-.57-1.21]	.336	-.13	.10	1.66	.88	[-.72-1.07]	.197
More familiarity with mental health issues or illness	.10	.12	.64	1.10	[-.87-1.39]	.424	-.14	.07	3.73	.87	[-.76-1.00]	.054
Earlier experience disclosing to a supervisor												
Negative	-.86	.75	1.34	.42	[-.10-1.83]	.248	-.41	.76	.30	.66	[-.15-2.93]	.586
Positive	-.72	.70	1.07	.49	[-.12-1.91]	.301	-.54	.25	4.68	.59	[-.36-.95]	.031
None	0	0	2.22	0	0	.329	0	0	0	1	0	0
Seen experience of others with disclosure												
Negative	.29	.59	.24	1.34	[-.42-4.24]	.623	1.12	.38	8.52	3.07	[1.45-6.52]	.004
Positive	.40	.54	.55	1.49	[-.52-4.29]	.458	-.09	.21	.18	.92	[-.61-1.38]	.672
None	0	0	.68	0	0	.713	0	0	0	1	0	0
Work context												
Rank	-.29	.29	1.05	.75	[-.43-1.31]	.305	.31	.17	3.	3.18	[-.97-1.90]	.074
Unit cohesion	.17	.23	.55	1.19	[-.76-1.86]	.459	-.02	.13	.03	.98	[-.75-1.27]	.870
Relationship quality supervisor	-.76	.32	5.73	.47	[-.25-.87]	.017	-1.39	.27	27.14	.25	[-.15-.42]	<.001
Beliefs and attitudes												
Pro non-disclosure												
Preference for privacy	.71	.31	5.40	2.05	[1.12-3.76]	.020	.69	.15	22.51	1.99	[1.50-2.65]	<.001
Preference self-management	.58	.30	3.87	1.79	[1.00-3.20]	.049	.49	.16	9.57	1.64	[1.20-2.23]	.002
Stigma related concerns	.79	.40	4.00	2.21	[1.02-4.79]	.046	.56	.23	5.93	1.76	[1.12-2.77]	.015
Difficulty talking about mental health issues or illness	.02	.29	.00	1.02	[-.57-1.81]	.952	.41	.15	7.51	1.51	[1.13-2.03]	.006
Pro disclosure												
Supervisor takes mental health issues or illness seriously	-.09	.32	.07	.92	[-.50-1.70]	.787	-.45	.14	9.63	.64	[-.48-.85]	.002
Importance advice others for disclosure	-.57	.29	3.94	.56	[-.32-.99]	.047	-.18	.14	1.65	.84	[-.64-1.10]	.199
Mental health issues or illness effects occupational functioning	-.90	.27	10.93	.41	[-.24-.69]	.001	-.10	.15	.39	.91	[-.68-1.22]	.531
Responsibility due to nature of work	-1.12	.29	14.79	.33	[-.19-.58]	<.001	-.24	.17	1.98	.79	[-.56-1.10]	.159
Work accommodations are needed	-.40	.24	2.84	.67	[-.42-1.07]	.092	-.35	.14	6.36	.71	[-.54-.93]	.012
Attitude that the military has good policy	.27	.24	1.30	1.31	[-.82-2.09]	.254	-.37	.19	3.65	.69	[-.47-1.01]	.056
Wanting to be authentic	.04	.34	.01	1.04	[-.53-2.03]	.918	-.50	.15	11.33	.61	[-.46-.81]	.001
Wanting to be example to others	-.13	.26	.25	.88	[-.53-1.46]	.619	-.37	.15	6.59	.69	[-.52-.92]	.010

Note: Earlier experiences, both own and others, were each represented as three dummy variables with 'none' serving as the reference group.

Figure 1

Caption: Needs regarding future disclosure

Statements**Contributorship**

R.I. Bogaers: As the PhD student on the project, R.I. Bogaers was involved in all aspects of the study. **S.G. Geuze:** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Also, he provided multiple rounds of feedback on the manuscript of the paper. **N. Greenberg:** Was involved by advising R.I. Bogaers during designing the study and provided one critical round of feedback on the manuscript of the paper. **F.R.M. Leijten:** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. **J. van Weeghel:** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Also, he provided multiple rounds of feedback on the manuscript of the paper. **H. van de Mheen:** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. **A.D. Rozema:** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. **E.P.M. Brouwers: Project leader who wrote the research proposal.** Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Provided multiple rounds of critical feedback on the manuscript of the paper.

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Competing of Interests

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Ethics approval

Written informed consent was obtained from all subjects/patients. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients

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3 were approved by the Tilburg School of Social and Behavioral Sciences Ethics Review
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5 Boards (approval number RP324) and the Dutch Military Ethics Review Board.
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10 **Data sharing**

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12 The data that support the findings of this study are available upon reasonable request from the
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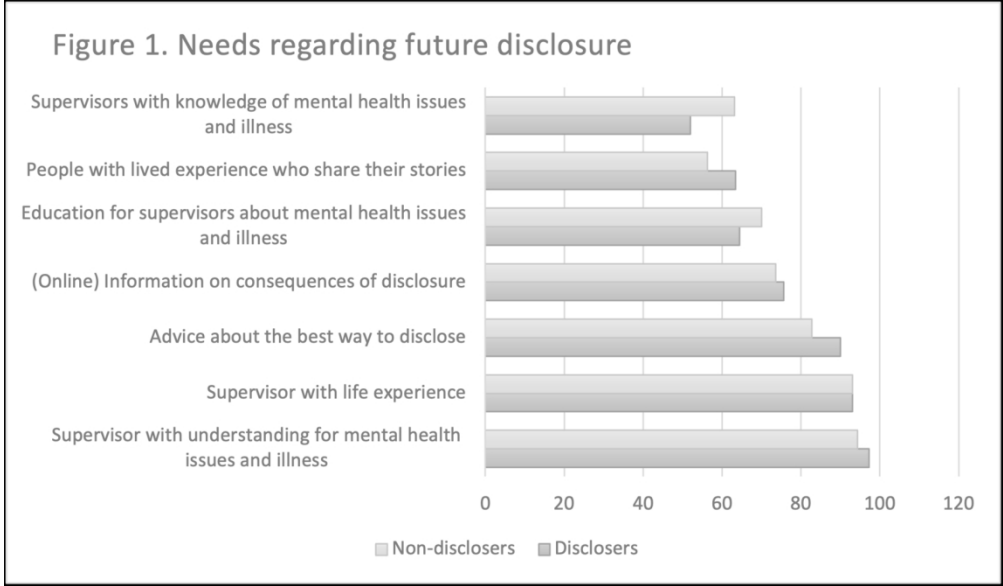
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Needs regarding future disclosure

153x89mm (300 x 300 DPI)

Appendix

Appendix A. Measures used to assess current mental health issues and illness.

Scale	Information	Psychometric properties based on earlier studies	Reliability in current study	Cut-off score used	References
The hospital anxiety and depression scale (HADS).	A 14-item scale measuring anxiety and depression.	Based on a literature review, reliability of the anxiety scale of the HADS varies from .68 to .93 and the depression scale varies from .67 to .90. Sensitivity and specificity for both anxiety and depression was approximately .80.	Depression: $\alpha=.85$ Anxiety: $\alpha=.84$	A cut-off score of > 8 was used for depression and anxiety, as recommended by earlier research.	(16, 36-38)
PTSD checklist for the DSM-5 (PCL-5)	20-item scale measuring PTSD symptoms. Participants received a question screening whether they had experienced extremely stressful events (examples were provided), and if yes, they received the PCL-5.	The PCL-5 has strong reliability ($\alpha = .94$) and convergent ($r_s = .74$ to $.85$) and discriminant ($r_s = .31$ to $.60$) validity. Sensitivity is approximately .77 and specificity .96.	$\alpha = .94$	A cut-off of >33 was used as an indication of PTSD, following the guidelines.	(19, 39)
ASSIST-LITE	Measure to assess a wide range of substance use. This questionnaire consists of 6 items, one per substance, and 2-3 follow up questions in case a substance is used by the participant in the past 3 months.	Sensitivity for each substance was between .8 and 1.0, and specificity between .7 and .8. Reliability is N.A. as all questions are about different substances.	N/A as all questions are about different substances.	A cut-off of ≥ 2 was used for all substances except for alcohol, where the cut-off was ≥ 3 , following the user manual.	(17)
AUDIT-C	A 3-item scale, to assess alcohol use.	The AUDIT-C has been validated and shown to have good internal consistency in a variety of different samples. In a previous study among military personnel, the reliability was .77. Specificity is between .89 and .91 and sensitivity between .73 and .86.	$\alpha=.64$	A cut-off of ≥ 8 was used, as recommended for military population.	(18, 40)

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3 **Appendix B. Mental health issues and illness (MHI) scores.**
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	Military personnel who indicated having (had) MHI		Military personnel who indicated not having had MHI	
	N	%	N	%
	324	37.0	554	63.1
Type of MHI as reported by military personnel themselves				
Anxiety (incl. obsessive compulsive disorder)	111	34.3	N/A	N/A
Depression (incl. manic and bipolar)	146	45.1	N/A	N/A
Burn-out	176	54.3	N/A	N/A
Stress	260	80.3	N/A	N/A
Exhaustion	205	63.3	N/A	N/A
Post traumatic stress disorder	55	17.0	N/A	N/A
Psychotic disorders	3	.9	N/A	N/A
Personality disorder	77	23.8	N/A	N/A
Autism	16	5.0	N/A	N/A
Attention deficit hyperactivity disorder	34	10.5	N/A	N/A
Eating disorder	10	3.1	N/A	N/A
Substance use disorder	56	17.3	N/A	N/A
Current type of MHI based on measures of mental health				
HADS depression	59	18.2	18	3.3
HADS anxiety	65	20.1	14	2.5
Assist lite tobacco	48	14.8	79	14.3
Assist lite alcohol	50	15.4	38	6.9
Assist lite cannabis	1	.3	3	.5
Assist lite amphetamine	2	.6	0	0.0
Assist lite sleepmedication	8	2.5	2	.4
Assist lite streetdrug	0	0.0	0	0.0
Audit C	13	4.0	19	3.4
PCL-5 score	19	5.9	2	.4

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1-2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2-3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6-7
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	6-7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7-10
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7-9
Bias	9	Describe any efforts to address potential sources of bias	18
Study size	10	Explain how the study size was arrived at	6-7, 11
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9-10
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	9-10
		(b) Describe any methods used to examine subgroups and interactions	9-10
		(c) Explain how missing data were addressed	10
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	N/A

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	11
		(b) Give reasons for non-participation at each stage	11
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	11-12
		(b) Indicate number of participants with missing data for each variable of interest	10-11
Outcome data	15*	Report numbers of outcome events or summary measures	11
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	12 - 14
		(b) Report category boundaries when continuous variables were categorized	9-10
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	9-10
Discussion			
Key results	18	Summarise key results with reference to study objectives	13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	17-18
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15-19
Generalisability	21	Discuss the generalisability (external validity) of the study results	18
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	24

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

BMJ Open

Mental health issues and illness and substance use disorder (non-)disclosure to a supervisor: A cross-sectional study on beliefs, attitudes and needs of military personnel.

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Primary Subject Heading:	Occupational and environmental medicine
Secondary Subject Heading:	Mental health, Occupational and environmental medicine, Addiction
Keywords:	MENTAL HEALTH, OCCUPATIONAL & INDUSTRIAL MEDICINE, PREVENTIVE MEDICINE, Substance misuse < PSYCHIATRY, PSYCHIATRY

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3 1 **Mental health issues and illness and substance use disorder (non-)disclosure to a**
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5 2 **supervisor: A cross-sectional study on beliefs, attitudes and needs of military personnel.**
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10 4 Rebecca Bogaers^{*a,b}, Elbert Geuze^{b,c}, Jaap van Weeghel^a, Fenna Leijten^d, Dike van de
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20 **Word count: 4157**

21 **Abstract count: 299**

22 **References: 44**

27 **Keywords:** Disclosure, Mental health issues and illness, Sustainable employment, Military,
28 Stigma

29 Abstract

30 **Objectives.** Research suggests that military personnel frequently delay disclosing mental
31 health issues and illness (MHI), including substance use disorder, to supervisors. This delay
32 causes missed opportunities for support and workplace accommodations which may help to
33 avoid adverse occupational outcomes. The current study aims to examine disclosure related
34 beliefs, attitudes, and needs, to create better understanding of personnel's disclosure decision-
35 making. **Design.** A cross-sectional questionnaire study among military personnel with and
36 without MHI. Beliefs, attitudes, and needs regarding the (non-)disclosure decision to a
37 supervisor were examined, including factors associated with (non-)disclosure intentions and
38 decisions. Descriptive and regression (logistic and ordinal) analyses were performed. **Setting.**
39 The study took place within the Dutch military. **Participants.** Military personnel with MHI
40 (N=324) and without MHI (N=554) participated in this study. **Outcome measure.** (Non-
41)disclosure intentions and decisions. **Results.** Common beliefs and attitudes *pro non-*
42 *disclosure* were the preference to solve one's own problems (68.3%), the preference for
43 privacy (58.9%), and a variety of stigma related concerns. Common beliefs and attitudes *pro*
44 *disclosure* were that personnel wanted to perform well at work (93.3%) and the desire to act
45 responsibly towards work colleagues (84.5%). The most reported need for future disclosure
46 (96.8%) was having a supervisor who shows understanding for MHI. The following factors
47 were associated both with non-disclosure intentions and decisions: higher preference for
48 privacy (OR(95%CI) = 1.99(1.50–2.65)_{intention}, 2.05(1.12–3.76)_{decision}) and self-management
49 (OR(95%CI) = 1.64(1.20–2.23)_{intention}, 1.79(1.00–3.20)_{decision}), higher stigma related concerns
50 (OR(95%CI) = 1.76(1.12–2.77)_{intention}, 2.21(1.02–4.79)_{decision}), and lower quality of
51 supervisor-employee relationship (OR(95%CI) = .25(.15–.42)_{intention}, .47(.25–.87)_{decision}).
52 **Conclusion.** To facilitate (early-)disclosure to a supervisor, creating opportunities for
53 workplace support, interventions should focus on decreasing stigma and discrimination and

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2
3 54 align with personnel's preference for self-management. Furthermore, training is needed for
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5 55 supervisors on how to recognize, and effectively communicate with, personnel with MHI.
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8 56 Focus should also be on improving supervisor-employee relationships.
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13 58 **Strengths and Limitations**

- 14 59 • Disclosure of mental health issues and illness to a supervisor was examined in the
15
16 60 military, a context in which little research has been done on this topic.
- 17
18 61 • This study included a group that is usually hard to study, namely military personnel
19
20 62 who have not disclosed.
- 21
22 63 • This study included both personnel with and without mental health issues and illness,
23
24 64 providing insights for interventions for personnel who may develop mental health
25
26 65 issues and illness in the future.
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28 66 • The sample is not representative for the entire military, due to the sampling method.
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30 67 • Due to the cross-sectional design of the study, no causality can be presumed.
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79 **Introduction**

80 The decision for workers whether to disclose their mental health issues and illness
81 (MHI), including substance use disorder, to their supervisors can have far-reaching
82 consequences for their sustainable employment (1-4). Disclosure can lead to workplace
83 support and accommodations, which can prevent worsened symptoms and sick-leave, and
84 non-disclosure can lead to missed opportunities for this support (2, 3, 5). However, disclosure
85 can also lead to being stigmatized and discriminated against (6, 7).

86 The disclosure dilemma is expected to be even more prominent for trauma-prone
87 occupations, such as the military, where workers are expected to be ‘strong’ and disclosure
88 may yield less positive outcomes (5, 8). Additionally, workers in these high-risk occupations
89 are exposed to stressors at work, increasing their risk of developing MHI (9). Previous
90 research in the military showed that there is a high preference for solving one’s own
91 problems (10), there are stigma related concerns and military personnel tend to delay seeking
92 help (6, 11, 12). Together this might cause a delay in disclosure to a supervisor. To facilitate
93 (early-)disclosure, so that personnel can receive support which can prevent adverse
94 occupational outcomes (2, 3, 5), more insight is needed into the (non-)disclosure decision.

95 Although the (non-)disclosure decision is complex and has far-reaching
96 consequences, research on this matter is scarce and mostly qualitative, especially in the
97 military (3, 6, 11, 13). Research has shown that the supervisor plays an important role, where
98 supervisor attitude and behavior can form both a barrier as well as be a facilitator for
99 disclosure (6, 14, 15). Furthermore, “The model of employee decision-making about
100 disclosure of a mental disorder at work” proposes that there is a default position of non-
101 disclosure, caused by fear of stigma, wanting to maintain boundaries, and maintaining
102 confidentiality (16). This model proposes that a triggering incident is needed before a
103 disclosure decision is made (16).

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3 104 The aim of the current study was to gain insight into the (non-)disclosure decision to a
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5 105 supervisor in the military, and to confirm and expand earlier qualitative findings (6). This was
6
7 106 done by examining beliefs, attitudes and needs related to disclosure to a supervisor. Based on
8
9
10 107 earlier qualitative research on disclosure in the military (6, 11), studies on disclosure among
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12 108 Dutch workers (17, 18), and literature reviews on disclosure (2, 19), it was hypothesized that
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14 109 the following beliefs and attitudes *pro non-disclosure* would be important for, and associated
15
16 110 with, the disclosure decision: stigma related concerns (e.g. social rejection), preference for
17
18 111 self-management and privacy, negative attitudes of the supervisor towards MHI, and
19
20 112 difficulty talking about MHI. Additionally, the following beliefs and attitudes *pro disclosure*
21
22 113 were hypothesized to be important for the disclosure decision: wanting to be one's true and
23
24 114 authentic self, positive attitudes of the supervisor towards MHI, setting an example,
25
26 115 organizational policies, a need for work accommodations, feelings of responsibility, whether
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28 116 MHI affects work functioning, advice from others, and not having a choice due to the
29
30 117 visibility of symptoms, having to report sick or needing treatment during work. To inform
31
32 118 future interventions, several needs related to disclosure were also assessed, based on earlier
33
34 119 qualitative research (6). These needs were related to information on how to disclose and
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36 120 education for supervisors on how to support military personnel with MHI. As
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38 121 personnel with and without MHI have shown to have different views on treatment seeking
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40 122 (10, 12), the current study examined both actual disclosure decisions in personnel with MHI
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42 123 as well as future disclosure intentions for those without MHI. The research questions were:
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44 124 (1) 'What are beliefs, attitudes, and needs of military personnel regarding disclosure to a
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46 125 supervisor?', (2) 'Do disclosers, differ from non-disclosers, and if so, how?', and (3) 'What
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48 126 factors are associated with non-disclosure to a supervisor?'.
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129 **Method**

130 **Design**

131 A cross-sectional observational design with an online questionnaire. Comparisons
132 were made based on past disclosure decisions for personnel with MHI and on disclosure
133 intentions for those without MHI. Data collection happened simultaneously with a study
134 on treatment seeking for MHI (12). The strobe-checklist was used to report this study (20).

135

136 **Setting**

137 This study took place within the Dutch military, where healthcare is organized
138 internally. There are sanctions for use of soft and hard drugs. However, when substance use
139 disorder is reported to a mental health professional, there are confidentiality agreements (10).

140

141 **Patient and public involvement**

142 Different stakeholders from the Dutch military (psychologists, psychiatrists,
143 policymakers and military personnel) were involved in the development of the questionnaire.
144 They provided advise on the language used in the questionnaire to ensure that it was military
145 appropriate language. They also provided advise on the best way to recruit participants.

146

147 **Participant recruitment**

148 Active-duty military personnel who have been on deployment in the past 5 years were
149 recruited. To ensure that both personnel with and without MHI would be present in the
150 sample, existing data from a questionnaire personnel receive after deployment was used to
151 select a sample. This questionnaire included scores of depression, aggression, alcohol use and
152 PTSD. Clinical cut-off scores were used to identify personnel with and without an indication
153 of MHI. Next, a stratified sample, based on gender, age, military division and rank of

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3 154 personnel was approached, half with indication of MHI (N=1000) and half without
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5 155 (N=1000).

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7 156 Data were collected between January and February 2021. All personnel were invited
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10 157 at the same time, both by e-mail and a letter. Reminders were sent after 3 and 5 weeks. It was
11
12 158 made clear that the responses to the questionnaire would be anonymous.

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16 160 **Measures**

17 161 *Demographics*

18
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20 162 Gender, age, marital status, education-level, type of work (operational or not),
21
22 163 military department, rank, and years of service were assessed.

23 164 *Mental health issues and illness*

24
25 165 **Current MHI.** To assess current MHI, the following measures were used;

26
27 166 (a)Hospital anxiety and depression scale (21), (b)ASSIST-LITE for substance use disorder
28
29 167 (22), (c)AUDIT-C, for alcohol use (23), and (d)PTSD checklist for DSM-5 (24). For
30
31 168 psychometric properties and cut-off scores, see appendix A.

32
33 169 **Self-reported MHI.** Personnel were asked whether they have (had) MHI. Group
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35 170 membership (i.e., current/past MHI or no MHI) was determined based on this. If personnel
36
37 171 reported having (had) MHI, they received a list of 15 possible types of MHI (see appendix B)
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39 172 and were asked to indicate whether it concerned current or past MHI, in line with earlier
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41 173 research (12, 17, 25). They were asked whether the MHI was work-related (yes/no) and to
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43 174 rate the severity of their symptoms (during the worst time) on a scale of 0 –10.

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47 176 *(Non-)Disclosure intentions and decisions*

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49 177 Personnel with MHI were asked whether they had disclosed to their supervisor
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51 178 (yes/no). Personnel without MHI were asked, in case they would develop MHI in the future,
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3 179 whether they would disclose this to their supervisor, using a 4-point scale ranging from very-
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5 180 unlikely to very-likely.
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10 182 ***Beliefs, attitudes and needs***
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12 183 Based on earlier qualitative research on disclosure in the military (6, 11), studies on
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14 184 disclosure among Dutch workers (17, 18), and literature reviews on disclosure (2, 3), it was
15
16 185 determined which beliefs and attitudes should be assessed. Regarding the beliefs and
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18 186 attitudes, 13 statements *pro non-disclosure* (e.g. I would prefer to solve my own problems)
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20 187 and 11 statements *pro disclosure* (e.g. In order to be your true self, disclosure is important)
21
22 188 were developed. Please see the results section for a full overview of the statements. Stigma
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24 189 was found to be a main barrier to disclosure in our qualitative study (6). Therefore, several
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26 190 stigma related statements were included. All the statements were assessed by several people
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28 191 working in the military, to assure the questions were appropriate for the military context. The
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30 192 statements were adjusted according to their feedback. Participants were asked to indicate on a
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32 193 4-point scale to what extent they agreed with the statements, ranging from completely
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34 194 disagree to completely agree.
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40 195 Personnel without MHI were asked additional questions about their needs regarding
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42 196 disclosure if they would develop MHI in the future. Based on findings from the earlier
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44 197 qualitative study (6), they were given seven options (e.g. a supervisor who shows
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46 198 understanding for MHI) and were asked to rate these on a 4-point scale ranging from 'Not at
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48 199 all' to 'Very much'. Please see the results section for a full overview of the assessed needs.
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3 204 **(Previous) experience**
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5 205 **Familiarity.** Participants were asked about MHI in their surroundings using an
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7 206 adaptation of the Level of Contact Report (26), following earlier research (25, 27). The total
8
9 score was used.
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12 208 **Previous experience.** Participants were asked whether they had previous experience,
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14 209 and/or seen experiences of others, with disclosure to a supervisor. If yes, they were asked
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16 whether this experience was positive or negative.
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21 212 **Work context**
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24 213 **Unit cohesion.** A three-item measure was used for perceived unit cohesion (28). For
25
26 214 example '*the members of my unit are cooperative with each other*'. Items were measured on a
27
28 215 5-point scale ranging from 'Completely-disagree' to 'Completely-agree'. Mean scores were
29
30 used. Participants with MHI were asked about unit cohesion at the time they experienced
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32 MHI (28).
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35 218 **Relationship supervisor.** A six-item measure for the relationship with the supervisor
36
37 219 from the Questionnaire on the Experience and Evaluation of Work (QEEW) was used. This
38
39 220 questionnaire is the most used and validated questionnaire for work experiences in the
40
41 221 Netherlands (29). Items were measured on a 4-point scale with answer categories 'Always',
42
43 222 'Often', 'Sometimes' and 'Never'. Mean scores were used, with higher scores indicating
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45 223 better relationship quality. Participants with MHI were asked about the relationship at the
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47 224 time they experienced MHI.
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53 226 **Statistical analyses**
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56 227 For beliefs, attitudes, and needs surrounding (non-)disclosure, descriptive analyses
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58 228 were performed. Chi-square tests and Mann-Whitney U-tests were used for comparisons
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60

229 between those who disclosed/intended to disclose and those who did not, as variables were
230 not normally distributed.

231 To examine factors associated with (non-)disclosure, two separate analyses were
232 performed. For personnel with MHI, a logistic regression was performed with non-disclosure
233 decision as the dependent variable (0=disclosure, 1=non-disclosure). For personnel without
234 MHI, an ordinal regression was performed, as disclosure intention had more than two
235 categories. As the assumption of proportional odds was violated at first, the categories 'very
236 unlikely' and 'unlikely' were merged, resulting in the dependent variable non-disclosure
237 intention with categories 1=very-likely, 2=likely, and 3=(very)-unlikely. To prevent loss of
238 information 'likely' and 'very-likely' were not combined. Fear of negative career
239 consequences, social rejection, discrimination, self-stigma, shame, fear of receiving blame,
240 fear of gossip and confidentiality concerns were combined into one (mean) measure of
241 stigma, as they are all aspects of stigma (30). Together these items formed a reliable scale
242 ($\alpha_{\text{with MHI}}=.89$, $\alpha_{\text{without MHI}}=.91$). There were no missing data, as forced response answers were
243 used during data acquisition and a complete case analysis was used. All analyses were
244 performed using SPSS.

246 **Ethical considerations**

247 Written informed consent was obtained from all subjects/patients. The authors assert
248 that all procedures contributing to this work comply with the ethical standards of the relevant
249 national and institutional committees on human experimentation and with the Helsinki
250 Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients
251 were approved by the Tilburg School of Social and Behavioral Sciences Ethics Review
252 Boards (approval number RP324) and the Dutch Military Ethics Review Board.

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Results

Participant characteristics

Response rate

After removing duplicates (caused by personnel going on multiple deployments) and personnel who had left active service from the original sample, a total of N=1627 eligible respondents were left. Of those, 63% (N=1025) started the questionnaire, and 54% (N=878) fully completed it and were used for further analysis. Compared to personnel who completed the questionnaire, those who did not complete it included more females ($\chi^2(1, N=1008)=6.01, p=.014$), more lower and middle education level ($\chi^2(2, N=1008)=7.25, p=.027$), and more non-commissioned officers ($\chi^2(2, N=1006)=8.26, p=.016$). The majority quit while answering mental health questions.

Non-disclosure (intentions)

Of those with MHI (N=324), 24.4% indicated not having disclosed their MHI to their supervisor. Of those without MHI (N=554), 15.6% did not intend to disclose if they would develop MHI in the future.

Sample characteristics

Sample characteristics can be found in Table 1. For personnel with MHI, there was a significant association between marital status and non-disclosure decision ($\chi^2(1, N=324)=5.53, p=.019$) with more people with a partner within the non-disclosers group. Those who had not disclosed, reported significantly lower symptom severity (M=6.01) compared to those who had disclosed (M=7.38, $U=5885.5, Z=-5.37, p<.001$). For personnel without MHI, there were no significant differences in demographics based on non-disclosure

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3 280 intentions. Information on reported MHI can be found in Appendix B.
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5 281 [INSERT TABLE 1]
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9
10 283 **Beliefs, attitudes, and needs regarding (non-)disclosure to a supervisor**

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12 284 Regarding beliefs and attitudes *pro non-disclosure*, personnel preferred to solve their
13
14 285 own problems (73.8%with(w/)MHI, 65.2% (without(w/o)MHI)) and preferred privacy
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16 286 (58.3%w/MHI, 59.3%w/oMHI). There were also high stigma related concerns, with
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18 287 personnel reporting they saw (would see) themselves as weak due to MHI (52.5%w/MHI,
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20 288 26.4%w/oMHI), had concerns about negative career consequences (35.5%w/MHI,
21
22 289 24.4%w/oMHI) and fear of social rejection (33.0%w/MHI, 20.6%w/oMHI). Only a minority
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24 290 reported that their supervisor had negative attitudes towards MHI (9.3%w/MHI,
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26 291 4.9%w/oMHI).
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30 292 As for beliefs and attitudes *pro disclosure*, the large majority indicated disclosure
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32 293 would allow them to be their true and authentic self (95.7%w/MHI, 91.2%w/oMHI), and
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34 294 believed disclosure was important due to the responsibility belonging to the nature of their
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36 295 work (74.7%w/MHI, 90.3%w/oMHI). In addition, most reported that the military has good
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38 296 policy for those who develop MHI (72.2%w/MHI, 87.9%w/oMHI) and that generally
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40 297 supervisors take MHI seriously (82.4%w/MHI, 87.7%w/oMHI). Furthermore, personnel
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42 298 reported that it matters for the disclosure decision whether MHI influences occupational
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44 299 functioning (69.8%w/MHI, 74.7%w/oMHI) and whether work accommodations are needed
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46 300 (43.5%w/MHI, 62.8%w/oMHI). Of those with MHI who had disclosed, the majority
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48 301 indicated having had no choice, with 69% needing treatment during work hours and 46.9%
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50 302 having to report sick. An overview of all beliefs and attitudes can be found in Supplementary
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52 303 Table 1.
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5 306 As for needs regarding future disclosure to a supervisor, the highest need was reported
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8 307 for supervisors who show understanding for MHI (96.8%) and have life experience (93.1%),
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10 308 and advice about the best way to disclose (when/where/how) (88.8%). An overview of all
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12 309 needs can be found in Figure 1.

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14
15 310 [INSERT FIGURE 1]

16
17 311

18 19 312 **Differences between disclosers and non-disclosers**

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21 313 Overall, those who did not (intend to) disclose, reported significantly higher
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23 314 preference for solving own problems and for privacy, and lower feelings of responsibility due
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25 315 to the nature of their work.

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28 316 Within personnel with MHI, there was also a significant difference between non-
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30 317 disclosers and disclosers in the following beliefs and attitudes *pro disclosure*: those who had
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32 318 not disclosed reported MHI having less effect on their occupational functioning, and less
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34 319 need for work accommodations compared to disclosers.

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37 320 Within personnel without MHI, those who intended to disclose and those who did not,
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39 321 differed significantly on all beliefs and attitudes *pro non-disclosure*. For beliefs and attitudes
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41 322 *pro disclosure*, those with no intention to disclose indicated significantly lower belief that the
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43 323 military has good policy for those with MHI, supervisors taking MHI less seriously, and a
44
45 324 lower desire to be a good example to others with MHI. Results with statistics can be found in
46
47 325 Supplementary Table 1. There were no significant differences in reported needs for future
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49 326 disclosure, based on disclosure intention.

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53 54 328 **Factors associated with non-disclosure to a supervisor**

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3 329 For personnel with MHI, the logistic regression model with the dependent variable
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5 330 non-disclosure, was statistically significant ($\chi^2(24)=149.30, p<.001$) and explained 55.0%
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7 331 (Nagelkerke R^2) of the variance in non-disclosure and correctly classified 85.% of cases. The
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9 332 following background variables were significantly associated with non-disclosure: lower
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11 333 symptom severity, having a partner, and lower employee-supervisor relationship quality.
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13 334 Additionally, the following beliefs and attitudes *pro non-disclosure* were positively
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15 335 associated with non-disclosure: preference for privacy, preference for self-management, and
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17 336 stigma related concerns. Finally, the following beliefs and attitudes *pro disclosure* were
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19 337 negatively associated with non-disclosure: importance given to disclosure advice from others,
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21 338 MHI having impact on occupational functioning, and feelings of responsibility due to the
22
23 339 nature of work.

24
25 340 For personnel without MHI, the ordinal logistic regression model with the dependent
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27 341 variable non-disclosure intention, was statistically significant ($\chi^2(23)=346.90, p<.001$) and
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29 342 explained 53.5% (Nagelkerke R^2) of the variance in non-disclosure intention and correctly
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31 343 classified 66.4% of cases. The following background variables were significantly associated
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33 344 with non-disclosure intention: not having positive earlier experience with disclosing
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35 345 something personal to a supervisor, having seen negative experiences of others with
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37 346 disclosure, and lower employee-supervisor relationship quality. Additionally, the following
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39 347 beliefs and attitudes *pro non-disclosure* were positively associated with non-disclosure
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41 348 intentions: preference for privacy, preference for self-management, stigma related concerns
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43 349 and finding it difficult to talk about MHI. Finally, the following beliefs and attitudes *pro*
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45 350 *disclosure* were negatively associated with non-disclosure intentions: supervisor who takes
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47 351 MHI seriously, needing work accommodations, wanting to be authentic self, and wanting to
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49 352 be an example to others with MHI. All results with statistics can be found in Supplementary
50
51 353 Table 2.

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Discussion

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10 359 The current study aimed to examine beliefs, attitudes, and needs associated with (non-
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12 360)disclosure to a supervisor in the military. Non-disclosure was associated with higher stigma
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14 361 related concerns, a higher preference for privacy and self-management, and a lower
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16 362 supervisor-employee relationship. A quarter of personnel with MHI had not disclosed their
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18 363 MHI to their supervisor, and those who had disclosed, appeared to do so after a considerable
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20 364 delay. Important reasons for disclosure were that personnel wanted to be their true and
21
22 365 authentic self and thought disclosure was important due to the responsible nature of their
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24 366 work. To consider disclosure, most personnel indicated they would need a supervisor who
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26 367 shows understanding for MHI. Moreover, over 80% expressed a need for advice about the
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28 368 best ways to disclose.
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33 369 We identified that although the majority of personnel with MHI had disclosed to their
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35 370 supervisor, they appeared to do so after a considerable delay. Those who disclosed had higher
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37 371 symptom severity than non-disclosers and the majority disclosed because they had to call in
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39 372 sick (46.9%) or had needed treatment during work hours (69.0%). This appears to be even
40
41 373 more so the case for military personnel, compared to civilians. A study on disclosure among
42
43 374 Dutch workers in general showed that 15.6% disclosed due to having to report sick, and
44
45 375 39.9% disclosed due to needing treatment during work (18). This is in line with ‘the model of
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47 376 employee decision-making about disclosure of a mental disorder at work’, which proposes a
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49 377 default position of non-disclosure and that a triggering incident is needed for disclosure – in
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51 378 this case, having to call in sick or needing treatment (16). This late disclosure causes missed
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53 379 opportunities for workplace support and work accommodations which can prevent worsened
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55 380 symptoms and sick leave (1, 31, 32).
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3 381 Stigma related concerns form a barrier for (early-)disclosure. Half of those who had
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5 382 not disclosed, saw themselves as weak for having MHI, experienced shame, and a third
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7 383 feared gossip, negative career consequences, social rejection, and discrimination. These
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9 384 stigma related concerns were significantly associated both with non-disclosure intentions and
10
11 385 decisions. Stigma has been found to be a barrier to disclosure before, both in military, other
12
13 386 trauma-prone occupations, and civilian populations (5, 6, 16, 33, 34). When comparing the
14
15 387 results of the current study to a study among Dutch civilian workers, it should be noted that
16
17 388 of military personnel who had not disclosed, half reported seeing themselves as weak and
18
19 389 being ashamed, compared to only 13.5% of civilians (18). Concerns about stigma thus appear
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21 390 to be stronger within the military setting compared to civilian settings. These higher concerns
22
23 391 of stigma are likely caused by the military workplace culture and the responsible work nature,
24
25 392 where people are expected to be 'strong' (6, 8). It should be noted that the study among
26
27 393 civilians predominantly included females, while the current study predominantly included
28
29 394 males, which might also account for some of the differences (18). Future research into
30
31 395 destigmatizing interventions is needed, as up to now only a few, especially in the military,
32
33 396 rigorous destigmatizing intervention studies have been conducted (1). Trauma risk
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35 397 management (TRiM) is a promising destigmatizing program within (military) organizational
36
37 398 settings, as it has shown to improve attitudes towards MHI (35). To facilitate disclosure,
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39 399 stigma should also be targeted at a policy level, to take away some of the fears personnel face
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41 400 (6).

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43 401 The preference for self-management also forms a barrier for (early-)disclosure.
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45 402 Although disclosure rates are comparable to earlier research among Dutch workers in general
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47 403 (17, 18), the reasons for non-disclosure differ. Of the non-disclosers, 87.3% reported a
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49 404 preference for self-management, compared to 44.9% of civilians. This is likely also caused by
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51 405 the military workplace culture, where people are expected to have a 'can-do' problem fixing
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3 406 mentality (6). To target this preference for self-management, self-help apps or personal
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5 407 recovery programs could provide personnel the opportunity to manage their own MHI,
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7 408 possibly giving them more confidence in disclosing and a feeling of control, as they are
8
9 409 already working on their MHI (36). This could also be done through easily accessible care
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11 410 from for example a social worker. Additionally, decision aids and programs could be
12
13 411 implemented, as personnel indicated this as a need, and it can positively influence sustainable
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15 412 employability and coping with stigma (37-40).

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19 413 To facilitate (early-)disclosure, there is an important role for the supervisor. The
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21 414 results showed that lower employee-supervisor relationship quality was associated both with
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23 415 non-disclosure decision and intention. Having seen negative experiences of others with
24
25 416 disclosure, was the second strongest predictor of non-disclosure intentions, indicating the
26
27 417 importance of how others, including supervisors, respond to disclosure. It is also important
28
29 418 that military personnel with positive experiences with disclosure, communicate openly about
30
31 419 these experiences. The previous qualitative study in the Dutch military (6), and a study
32
33 420 among Dutch workers in general (18), also showed the importance of supervisor relationships
34
35 421 and support (6). Supervisor attitudes towards MHI and knowledge of MHI have also been
36
37 422 found to be associated with whether employees disclose to the supervisor themselves, or that
38
39 423 the supervisor finds out some other way (41). Finally, supervisor support was not only found
40
41 424 to be important for disclosure, but also for treatment seeking for MHI, a decision which is
42
43 425 also of influence on sustainable employability (10). To facilitate (early-)disclosure, training
44
45 426 may be needed for supervisors to improve understanding and support of MHI needs (42).
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47 427 Additionally, supervisor relationship quality could be addressed, for example by adjusting the
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49 428 obligated job rotation every 3 years, giving personnel longer to build a relationship with their
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51 429 supervisor.
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431 **Strengths and limitations**

432 The strengths of this study included the large sample and inclusion of a group that is
433 usually hard to study (participants who have not disclosed). Additionally, the study included
434 both personnel with and without MHI, providing insights for interventions for personnel who
435 may develop MHI in the future. Finally, the study examined disclosure in the military where
436 little research has been done on this topic.

437 As for limitations, the sample was not representative for the entire military, due to the
438 sampling method. This method also caused the sample to include only personnel who have
439 been on deployment. This group might have had more positive attitudes towards MHI and
440 disclosure due to mental health training related to deployment (35).

441 Second, despite stratification, the current study included a sample of older, higher
442 educated, and higher-ranking personnel. Comparisons showed that lower ranking and lower
443 educated personnel were less likely to have completed the questionnaire once started.
444 Majority of dropouts occurred during the mental health questions. Possibly these questions
445 were hard to answer, or there were anonymity concerns. Additionally, drop-out might have
446 been higher due to the use of forced response. The current study used a complete case
447 analysis, which carries the assumption that data are missing completely at random (MCAR)
448 (43). As the data appeared not to be missing completely at random, as described before, the
449 results should be interpreted with caution, as they might be different for lower ranking and
450 lower educated personnel. Previous research has shown that younger and lower educated
451 workers disclosed less (18), so disclosure rates in the current study might be an
452 overestimation of the true rates. Future research should further examine this in a
453 representative sample.

454 Third, it should be noted that MHI in the current study includes substance use
455 disorders. Previous research suggests that the stigma concerning substance use disorder is

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3 456 higher compared to general mental health stigma (44), but no comparisons could be made in
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5 457 the current study. Therefore, it is important that future research examines the decision to
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7 458 disclose a substance use disorder separately from other MHI.
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10 459 Also, due to the cross-sectional design of the study, no causality can be presumed.
11
12 460 Additionally, it should be noted that the questionnaire assessing attitudes, beliefs and needs
13
14 461 regarding disclosure, has not been validated. It was developed specifically for the current
15
16 462 study.
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19 463

21 464 **Conclusion**

23
24 465 To better facilitate (early-)disclosure of MHI to a supervisor, there is a need for
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26 466 several changes within the military. First, destigmatizing interventions and policies are
27
28 467 needed to create a culture change where personnel do not feel shame for having MHI, and do
29
30 468 not have to fear that stigma and discrimination negatively affect their careers and wellbeing at
31
32 469 work. Second, offered early interventions should align with the preference for self-
33
34 470 management. Third, our results strongly suggest a need to train supervisors to recognize, and
35
36 471 effectively communicate with, personnel with MHI and to improve employee-supervisor
37
38 472 relationships. Together this could facilitate (early-)disclosure which may optimize
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40 473 opportunities for the provision of workplace support and accommodations, which in turn can
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42 474 increase the chance of recovery and sustainable employment.
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Tables & Figures

Table 1. Characteristics of the sample separated by military personnel with and without mental health issues or illness (MHI).

	Military personnel with MHI			Military personnel without MHI		
	Disclosure N=245 N (%)	Non-disclosure N=79 N (%)	Total N=324 N (%)	Disclosure intention N=467 N (%)	Non-disclosure intention N=87 N (%)	Total N=554 N (%)
Demographics						
Sex						
Male	215 (87.8)	68 (86.1)	283 (87.4)	430 (92.1)	79 (90.8)	509 (91.9)
Female	30 (12.2)	11 (13.9)	41 (12.7)	37 (7.9)	8 (9.2)	45 (8.1)
Age						
<20	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
21-30	15 (6.1)	12 (15.2)	27 (8.3)	55 (11.8)	10 (11.5)	65 (11.7)
31-40	81 (33.1)	26 (32.9)	107 (33.0)	149 (31.9)	41 (47.1)	190 (34.3)
41-50	76 (31.0)	19 (24.1)	95 (29.3)	134 (28.7)	18 (20.7)	152 (27.4)
51-60	68 (27.8)	21 (26.6)	89 (27.5)	119 (25.5)	17 (19.5)	136 (24.6)
>60	5 (2.0)	1 (1.3)	6 (1.9)	10 (2.1)	1 (1.2)	11 (2.0)
Marital Status						
Partner (vs. Single)	183 (74.7)	69 (87.3)	252 (77.8)	394 (84.4)	76 (87.4)	470 (84.8)
Educational Level						
Low	26 (10.6)	4 (5.1)	30 (9.3)	49 (10.5)	2 (2.3)	51 (9.2)
Medium	136 (55.5)	39 (49.4)	175 (54.0)	242 (51.8)	48 (55.2)	290 (52.4)
High	83 (33.9)	36 (45.6)	119 (36.7)	176 (37.7)	37 (42.5)	213 (38.5)
Work related context						
Type of work						
Operational work	188 (76.7)	67 (84.8)	255 (78.7)	258 (55.3)	50 (57.5)	308 (55.6)
Military branch						
Marine	20 (8.2)	2 (2.5)	22 (6.8)	75 (16.1)	16 (18.4)	91 (16.4)
Army	119 (48.6)	47 (59.5)	166 (51.2)	196 (42.0)	40 (46.0)	236 (42.6)
Air-force	69 (28.2)	15 (19.0)	84 (25.9)	120 (25.7)	15 (17.2)	135 (24.4)
Military-police	16 (6.5)	4 (5.1)	20 (6.2)	21 (4.5)	5 (5.7)	26 (4.7)
Staff	20 (8.2)	11 (13.9)	31 (9.6)	53 (11.3)	11 (12.6)	64 (11.6)
Other	1 (.4)	0 (0.0)	1 (.3)	2 (.4)	0 (0.0)	2 (.4)
Ranks						
Military personnel	29 (11.8)	15 (19.0)	44 (13.6)	26 (5.6)	8 (9.2)	34 (6.1)
Non-commissioned officers	132 (53.9)	33 (41.8)	165 (50.9)	225 (48.2)	32 (36.8)	257 (46.4)
Officers	84 (34.3)	31 (39.2)	115 (35.5)	216 (46.3)	47 (54.0)	263 (47.5)
Years of service (M (SD))						
Years	22.25 (9.08)	21.42 (9.92)	22.05 (9.28)	22.20 (9.62)	20.11 (9.98)	21.86 (9.70)
Mental health related context						
Past or current (self-reported) MHI						
Past MHI	194 (79.2)	62 (78.5)	256 (79.0)	N/A	N/A	N/A
MHI work related						
Yes	167 (68.2)	48 (60.8)	215 (66.4)	N/A	N/A	N/A
Severity of symptoms						
Mean severity (M, SD)	7.38 (1.87)	6.01 (2.07)	7.05 (2.01)	N/A	N/A	N/A

Note: Military personnel with MHI were asked about their type of work and rank at the time their MHI started.

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For peer review only

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For peer review only

Figure 1

Caption: Needs regarding future disclosure

Statements

Contributorship

R.I. Bogaers: As the PhD student on the project, R.I. Bogaers was involved in all aspects of the study. S.G. Geuze: Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Also, he provided multiple rounds of feedback on the manuscript of the paper. N. Greenberg: Was involved by advising R.I. Bogaers during designing the study and provided one critical round of feedback on the manuscript of the paper. F.R.M. Leijten: Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. J. van Weeghel: Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Also, he provided multiple rounds of feedback on the manuscript of the paper. H. van de Mheen: Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. A.D. Rozema: Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study and provided one critical round of feedback on the manuscript of the paper. E.P.M. Brouwers: Project leader who wrote the research proposal. Was involved by advising R.I. Bogaers during the formulating of research question(s) and designing the study. Provided multiple rounds of critical feedback on the manuscript of the paper.

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Competing of Interests

R.I. Bogaers reports grants from The Dutch Ministry of Defence, during the conduct of the study. However, this did not influence the interpretation of the data or the decision to submit the paper for publication. Dr. Geuze has nothing to disclose. Prof. Greenberg is the Royal College of Psychiatrists Lead for Trauma and the Military; however, all views expressed are his own. Dr. Leijten is an employee at the Ministry of Defence but this did not influence the interpretation of the data or the decision to submit the paper for publication. Prof. van Weeghel has nothing to disclose. Prof. van de Mheen has nothing to disclose. Dr. Rozema has nothing to disclose. Prof. Brouwers reports grants from The Dutch Ministry of Defence, during the conduct of the study. However, this did not influence the interpretation of the data or the decision to submit the paper for publication.

Ethics approval

Written informed consent was obtained from all subjects/patients. The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All procedures involving human subjects/patients

were approved by the Tilburg School of Social and Behavioral Sciences Ethics Review Boards (approval number RP324) and the Dutch Military Ethics Review Board.

Data sharing

The data that support the findings of this study are available upon reasonable request from the corresponding author, R.I. Bogaers.

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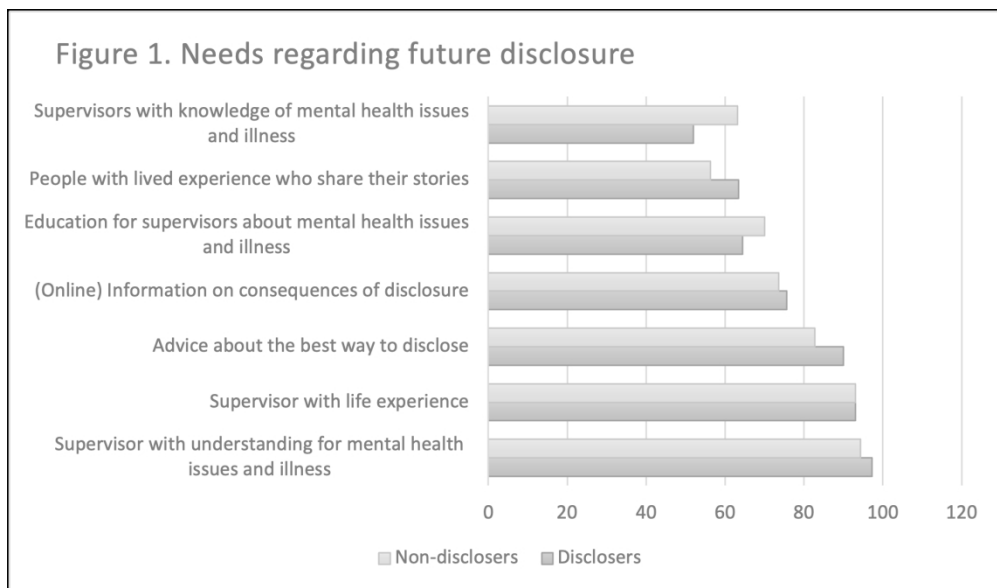
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Needs regarding future disclosure

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Appendix

Appendix A. Measures used to assess current mental health issues and illness.

Scale	Information	Psychometric properties based on earlier studies	Reliability in current study	Cut-off score used	References
The hospital anxiety and depression scale (HADS).	A 14-item scale measuring anxiety and depression.	Based on a literature review, reliability of the anxiety scale of the HADS varies from .68 to .93 and the depression scale varies from .67 to .90. Sensitivity and specificity for both anxiety and depression was approximately .80.	Depression: $\alpha=.85$ Anxiety: $\alpha=.84$	A cut-off score of > 8 was used for depression and anxiety, as recommended by earlier research.	(16, 36-38)
PTSD checklist for the DSM-5 (PCL-5)	20-item scale measuring PTSD symptoms. Participants received a question screening whether they had experienced extremely stressful events (examples were provided), and if yes, they received the PCL-5.	The PCL-5 has strong reliability ($\alpha = .94$) and convergent ($r_s = .74$ to $.85$) and discriminant ($r_s = .31$ to $.60$) validity. Sensitivity is approximately $.77$ and specificity $.96$.	$\alpha = .94$	A cut-off of >33 was used as an indication of PTSD, following the guidelines.	(19, 39)
ASSIST-LITE	Measure to assess a wide range of substance use. This questionnaire consists of 6 items, one per substance, and 2-3 follow up questions in case a substance is used by the participant in the past 3 months.	Sensitivity for each substance was between $.8$ and 1.0 , and specificity between $.7$ and $.8$. Reliability is N.A. as all questions are about different substances.	N/A as all questions are about different substances.	A cut-off of ≥ 2 was used for all substances except for alcohol, where the cut-off was ≥ 3 , following the user manual.	(17)
AUDIT-C	A 3-item scale, to assess alcohol use.	The AUDIT-C has been validated and shown to have good internal consistency in a variety of different samples. In a previous study among military personnel, the reliability was $.77$. Specificity is between $.89$ and $.91$ and sensitivity between $.73$ and $.86$.	$\alpha=.64$	A cut-off of ≥ 8 was used, as recommended for military population.	(18, 40)

Appendix B. Mental health issues and illness (MHI) scores.

	Military personnel who indicated having (had) MHI		Military personnel who indicated not having had MHI	
	N	%	N	%
	324	37.0	554	63.1
Type of MHI as reported by military personnel themselves				
Anxiety (incl. obsessive compulsive disorder)	111	34.3	N/A	N/A
Depression (incl. manic and bipolar)	146	45.1	N/A	N/A
Burn-out	176	54.3	N/A	N/A
Stress	260	80.3	N/A	N/A
Exhaustion	205	63.3	N/A	N/A
Post traumatic stress disorder	55	17.0	N/A	N/A
Psychotic disorders	3	.9	N/A	N/A
Personality disorder	77	23.8	N/A	N/A
Autism	16	5.0	N/A	N/A
Attention deficit hyperactivity disorder	34	10.5	N/A	N/A
Eating disorder	10	3.1	N/A	N/A
Substance use disorder	56	17.3	N/A	N/A
Current type of MHI based on measures of mental health				
HADS depression	59	18.2	18	3.3
HADS anxiety	65	20.1	14	2.5
Assist lite tobacco	48	14.8	79	14.3
Assist lite alcohol	50	15.4	38	6.9
Assist lite cannabis	1	.3	3	.5
Assist lite amphetamine	2	.6	0	0.0
Assist lite sleepmedication	8	2.5	2	.4
Assist lite streetdrug	0	0.0	0	0.0
Audit C	13	4.0	19	3.4
PCL-5 score	19	5.9	2	.4

Supplementary Table 1. Beliefs and attitudes regarding disclosure to a supervisor for military personnel with and without mental health issues and illness (MHI)

Beliefs and attitudes	Military personnel with MHI							Military personnel without MHI						
	Total (N=324)	Disclosure (N=245)		Non-Disclosure (N=79)		Difference		Total (N=554)	Disclosure intention (N=467)		Non-disclosure intention (N=87)		Difference	
	N (%)	N (%)	M (SD)	N (%)	M (SD)	Z	Sig.	N (%)	N (%)	M(SD)	N (%)	M (SD)	Z	Sig.
Pro non-disclosure														
The preference to solve one's own problems.	239 (73.8)	170 (69.4)	2.70 (.78)	69 (87.3)	3.13 (.76)	-4.79	<.001	361 (65.2)	284 (60.8)	2.58 (.75)	77 (88.5)	3.10 (.65)	-6.05	<.001
Finding it difficult to talk about MHI.	214 (66.1)	154 (62.9)	2.62 (.84)	60 (76.0)	2.86 (.80)	-2.28	.023	212 (38.3)	156 (33.4)	2.20 (.76)	56 (64.4)	2.76 (.78)	-5.93	<.001
Preference that MHI remains private.	189 (58.3)	124 (50.6)	2.49 (.77)	65 (82.3)	3.05 (.75)	-5.55	<.001	328 (59.2)	252 (54.0)	2.58 (.78)	76 (87.4)	3.22 (.72)	-6.89	<.001
Seeing yourself as weak due to MHI.	170 (52.5)	125 (51.0)	2.44 (.96)	45 (57.0)	2.52 (.99)	-.69	.489	146 (26.4)	95 (20.3)	1.90 (.74)	51 (58.6)	2.49 (.79)	-6.46	<.001
Being ashamed of the MHI.	159 (49.1)	121 (49.4)	2.40 (.96)	38 (48.1)	2.47 (1.00)	-.47	.636	129 (23.3)	85 (18.2)	1.89 (.71)	44 (50.6)	2.39 (.84)	-5.41	<.001
Fearing gossip as result of disclosure.	124 (38.3)	97 (39.6)	2.24 (.91)	27 (34.2)	2.18 (.89)	-.60	.547	118 (21.3)	72 (15.4)	1.88 (.68)	46 (52.9)	2.63 (.85)	-7.69	<.001
Fearing negative career consequences as result of disclosure.	114 (35.2)	86 (35.1)	2.11 (.94)	28 (35.4)	2.16 (.97)	-.41	.680	135 (24.4)	86 (18.4)	1.90 (.73)	49 (56.3)	2.55 (.89)	-6.57	<.001
Unemployment.	35 (N/A)	28 (N/A)	N/A	7 (N/A)	N/A	N/A	N/A	28 (N/A)	19 (N/A)	N/A	9 (N/A)	N/A	N/A	N/A
Not being able to be promoted to future career steps.	83 (N/A)	62 (N/A)	N/A	21 (N/A)	N/A	N/A	N/A	94 (N/A)	61 (N/A)	N/A	33 (N/A)	N/A	N/A	N/A
Not being able to do work tasks anymore that one likes best.	75 (N/A)	59 (N/A)	N/A	16 (N/A)	N/A	N/A	N/A	67 (N/A)	43 (N/A)	N/A	24 (N/A)	N/A	N/A	N/A
Fearing others will see you differently (negatively) as result of disclosure.	107 (33.0)	83 (33.9)	2.15 (.85)	24 (30.4)	2.10 (.84)	-.48	.633	114 (20.6)	71 (15.2)	1.90 (.65)	43 (49.4)	2.47 (.82)	-6.35	<.001
Fearing being treated differently (less well) as results of disclosure.	92 (28.4)	69 (28.2)	2.07 (.81)	23 (29.1)	2.06 (.82)	-.05	.963	90 (16.3)	56 (12.0)	1.83 (.64)	34 (39.1)	2.31 (.75)	-5.68	<.001
Fearing others see MHI as one's own fault.	87 (26.9)	63 (25.7)	1.99 (.83)	24 (30.4)	2.04 (.91)	-.27	.785	52 (9.4)	33 (7.1)	1.65 (.62)	19 (21.8)	1.95 (.73)	-3.68	<.001
Fearing that supervisor would not treat disclosure confidentially.	82 (25.3)	52 (21.2)	1.93 (.81)	30 (38.0)	2.24 (.99)	-2.42	.016	92 (16.6)	46 (9.9)	1.71 (.65)	46 (52.9)	2.54 (.91)	-8.14	<.001
Supervisor is negative about MHI.	30 (9.3)	22 (9.0)	1.69 (.72)	8 (10.1)	1.76 (.70)	-.97	.330	27 (4.9)	11 (2.4)	1.52 (.58)	16 (18.4)	1.98 (.70)	-5.95	<.001
No choice, supervisor already heard from someone else.	5 (N/A)	N/A	N/A	5 (6.3)	1.55 (.62)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pro disclosure														
Importance of being your true self.	310 (95.7)	238 (97.1)	3.33 (.56)	72 (91.1)	3.20 (.63)	-1.49	.135	509 (91.2)	430 (92.1)	3.34 (.68)	79 (90.8)	3.18 (.66)	-2.32	.020
Supervisor who takes MHI seriously.	267 (82.4)	207 (84.5)	3.11 (.79)	60 (76.0)	2.90 (.61)	-2.88	.004	486 (87.7)	426 (91.2)	3.28 (.74)	60 (69.0)	2.83 (.78)	-5.42	<.001
Disclosure important due to the responsibility associated with the nature of the work.	242 (74.7)	209 (85.3)	3.04 (.65)	33 (41.8)	2.35 (.75)	-7.26	<.001	500 (90.3)	438 (93.8)	3.28 (.59)	62 (71.3)	2.86 (.81)	-4.71	<.001
Military has policy which provides good solutions for those with MHI.	234 (72.2)	179 (73.1)	2.81 (.79)	55 (69.6)	2.77 (.83)	-.38	.707	487 (87.9)	422 (90.4)	3.09 (.55)	65 (74.7)	2.79 (.70)	-3.86	<.001
Importance of whether MHI effects occupational functioning.	226 (69.8)	193 (78.8)	3.02 (.78)	33 (41.8)	2.33 (.87)	-6.15	<.001	414 (74.7)	342 (73.2)	2.79 (.75)	72 (82.8)	2.98 (.68)	-2.11	.035
Wanting to be a good example to others.	146 (45.1)	121 (49.4)	2.44 (.83)	25 (31.7)	2.18 (.69)	-2.61	.009	373 (67.3)	341 (73.0)	2.88 (.73)	32 (36.8)	2.23 (.80)	-6.85	<.001
Importance of needing work accommodations.	141 (43.5)	129 (52.7)	2.44 (.95)	12 (15.2)	1.72 (.88)	-5.86	<.001	348 (62.8)	303 (64.9)	2.68 (.75)	45 (51.7)	2.51 (.83)	-2.02	.044
The importance of advice from others for disclosure.	62 (19.1)	55 (22.5)	1.91 (.77)	7 (8.9)	1.63 (.64)	-2.73	.006	356 (64.3)	302 (64.7)	2.63 (.77)	54 (62.1)	2.52 (.71)	-1.24	.216
No choice, supervisor could see it.	95 (N/A)	95 (38.8)	2.23 (.89)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I had to report sick.	115 (N/A)	115 (46.9)	2.39 (1.04)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
No choice, I needed treatment during work.	169 (N/A)	169 (69.0)	2.78 (.91)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: A Bonferroni correction was used, with $\alpha = .05/20 = .003$

Note: For comparison between disclosure intentions of military personnel without MHI, 'very-unlikely' and 'unlikely' were combined, just as 'likely' and 'very-likely'.

Supplementary Table 2. Logistic and ordinal regressions for the non-disclosure decision and intention to a supervisor.

	Military personnel with mental health issues or illness (0=disclosure, 1=non-disclosure)						Military personnel without mental health issues or illness (Disclosure 1=very likely, 2=likely, 3=(very)unlikely)					
	B	SE	Wald	OR	CI 95%	Sig.	B	SE	Wald	OR	CI 95%	Sig.
Constant	4.23	2.44	3.01	68.71	N/A	.083	N/A	N/A	N/A	N/A	N/A	N/A
Threshold: = 3 (very) unlikely	N/A	N/A	N/A	N/A	N/A	N/A	-8.63	1.61	28.74	.00	[7.62E-6 - .00]	<.001
Threshold: = 2 (likely)	N/A	N/A	N/A	N/A	N/A	N/A	-5.15	1.57	10.74	.01	[-.00-.13]	.001
Health												
Higher symptom severity	-.33	.10	12.27	.72	[-.59-.86]	<.001	N/A	N/A	N/A	N/A	N/A	N/A
Demographics and experience												
Gender (female, vs. male)	-.08	.56	.02	.92	[-.31-2.76]	.882	-.52	.38	1.87	.60	[-.28-1.25]	.172
Marital status (partner, vs. single)	1.27	.54	5.52	3.58	[1.24-10.36]	.019	-.18	.28	.42	.84	[-.48-1.44]	.518
Higher age	-.19	.19	.93	.83	[-.57-1.21]	.336	-.13	.10	1.66	.88	[-.72-1.07]	.197
More familiarity with mental health issues or illness	.10	.12	.64	1.10	[-.87-1.39]	.424	-.14	.07	3.73	.87	[-.76-1.00]	.054
Earlier experience disclosing to a supervisor												
Negative	-.86	.75	1.34	.42	[-.10-1.83]	.248	-.41	.76	.30	.66	[-.15-2.93]	.586
Positive	-.72	.70	1.07	.49	[-.12-1.91]	.301	-.54	.25	4.68	.59	[.36-.95]	.031
None	0	0	2.22	0	0	.329	0	0	0	1	0	0
Seen experience of others with disclosure												
Negative	.29	.59	.24	1.34	[-.42-4.24]	.623	1.12	.38	8.52	3.07	[1.45-6.52]	.004
Positive	.40	.54	.55	1.49	[-.52-4.29]	.458	-.09	.21	.18	.92	[-.61-1.38]	.672
None	0	0	.68	0	0	.713	0	0	0	1	0	0
Work context												
Rank	-.29	.29	1.05	.75	[-.43-1.31]	.305	.31	.17	3.	3.18	[-.97-1.90]	.074
Unit cohesion	.17	.23	.55	1.19	[-.76-1.86]	.459	-.02	.13	.03	.98	[-.75-1.27]	.870
Relationship quality supervisor	-.76	.32	5.73	.47	[-.25-.87]	.017	-1.39	.27	27.14	.25	[-.15-.42]	<.001
Beliefs and attitudes												
Pro non-disclosure												
Preference for privacy	.71	.31	5.40	2.05	[1.12-3.76]	.020	.69	.15	22.51	1.99	[1.50-2.65]	<.001
Preference self-management	.58	.30	3.87	1.79	[1.00-3.20]	.049	.49	.16	9.57	1.64	[1.20-2.23]	.002
Stigma related concerns	.79	.40	4.00	2.21	[1.02-4.79]	.046	.56	.23	5.93	1.76	[1.12-2.77]	.015
Difficulty talking about mental health issues or illness	.02	.29	.00	1.02	[-.57-1.81]	.952	.41	.15	7.51	1.51	[1.13-2.03]	.006
Pro disclosure												
Supervisor takes mental health issues or illness seriously	-.09	.32	.07	.92	[-.50-1.70]	.787	-.45	.14	9.63	.64	[.48-.85]	.002
Importance advice others for disclosure	-.57	.29	3.94	.56	[-.32-.99]	.047	-.18	.14	1.65	.84	[-.64-1.10]	.199
Mental health issues or illness effects occupational functioning	-.90	.27	10.93	.41	[-.24-.69]	.001	-.10	.15	.39	.91	[-.68-1.22]	.531
Responsibility due to nature of work	-	.29	14.79	.33	[-.19-.58]	<.001	-.24	.17	1.98	.79	[-.56-1.10]	.159
Work accommodations are needed	-.40	.24	2.84	.67	[-.42-1.07]	.092	-.35	.14	6.36	.71	[-.54-.93]	.012
Attitude that the military has good policy	.27	.24	1.30	1.31	[-.82-2.09]	.254	-.37	.19	3.65	.69	[-.47-1.01]	.056
Wanting to be authentic	.04	.34	.01	1.04	[-.53-2.03]	.918	-.50	.15	11.33	.61	[-.46-.81]	.001
Wanting to be example to others	-.13	.26	.25	.88	[-.53-1.46]	.619	-.37	.15	6.59	.69	[-.52-.92]	.010

Note: Earlier experiences, both own and others, were each represented as three dummy variables with 'none' serving as the reference group.

STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of *cross-sectional studies*

Section/Topic	Item #	Recommendation	Reported on page #
Title and abstract	1	(a) Indicate the study's design with a commonly used term in the title or the abstract	1-2
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	2-3
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	4-5
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	6
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	6-7
Participants	6	(a) Give the eligibility criteria, and the sources and methods of selection of participants	6-7
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	7-10
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	7-9
Bias	9	Describe any efforts to address potential sources of bias	18-19
Study size	10	Explain how the study size was arrived at	6-7, 11
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	9-10
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	9-10
		(b) Describe any methods used to examine subgroups and interactions	9-10
		(c) Explain how missing data were addressed	10
		(d) If applicable, describe analytical methods taking account of sampling strategy	N/A
		(e) Describe any sensitivity analyses	N/A

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	11
		(b) Give reasons for non-participation at each stage	11
		(c) Consider use of a flow diagram	N/A
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	11-12
		(b) Indicate number of participants with missing data for each variable of interest	10-11
Outcome data	15*	Report numbers of outcome events or summary measures	11
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	12 - 14
		(b) Report category boundaries when continuous variables were categorized	9-10
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	N/A
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	9-10
Discussion			
Key results	18	Summarise key results with reference to study objectives	13
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	18-19
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	15-19
Generalisability	21	Discuss the generalisability (external validity) of the study results	18-19
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	24

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.