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Determinants of Managerial Preventive Actions in Relation to Common Mental Disorders at Work

A Cross-Sectional Study Among Swedish Managers

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Objective: Manager characteristics (personal, work-, and competence-related) were investigated as determinants of managerial preventive actions (MPAs) in relation to common mental disorders (CMDs) among employees. **Methods:** A web survey ($n = 2921$) among Swedish managers measured diverse managerial characteristics and two types of MPAs: reviewing assignments and work situation (MPA-review); talking about CMDs at the work place (MPA-talk). **Results:** MPA-review was reported by 50% and MPA-talk by 57% of managers. Characteristics that related to more MPAs were female gender, workplace offering lectures on CMDs, workplace offering stress counseling, being responsible for the work environment, management training on CMDs, and more than 10 years of managerial experience (MPA-talk only). **Conclusion:** Managers who are female, have had training on CMDs, and work for organizations paying attention to CMD prevention initiate MPAs more often.

Keywords: anxiety, depression, managers, prevention

PREVENTION OF COMMON MENTAL DISORDERS IN THE WORKING POPULATION

Common mental disorders (CMDs) include depression, anxiety, and stress-related conditions. On average 20% of the working-age population in countries belonging to the Organisation for Economic Co-operation and Development develop one or more CMDs during working life.[1] Many employees with CMDs continue working, but present with complaints (presenteeism),[2] which puts employees at an increased risk for reduced work capacity and poor future general health.[3,4] CMDs are indeed the most prevalent conditions in sick-listed employees in developed countries, and the leading cause for long-term sickness absence and disability.[5] Return to work (RTW) takes longer among employees with CMDs than among employees with other disorders and adds to the importance of the matter.[6] The elevated incidence and prevalence of CMDs among employees translates to an estimated total of 617 billion Euros every year for European countries and companies.[7]

Given the prevalence of CMDs among employees, the workplace may be an important venue for preventive intervention.[8] Next to a financial incentive to reduce costs associated with productivity loss, absenteeism, and compensation claims, employers in EU countries have a legal obligation to detect risk factors and accordingly adopt preventive measures to protect the health of their workforce.[9–11] Evidence suggests workplace interventions targeted at preventing CMDs to be effective.[5,12] However, most interventions or guidelines focus on secondary and tertiary prevention aimed at detection of or avoiding further deterioration rather than on preventing its onset primarily.[13,14] Although it is inherently harder to prevent the onset of CMDs, due its largely unknown, multifactorial, and multidirectional pathway that leads to its development,[15] there is extensive evidence suggesting the specificity of certain risk factors in the work environment, such as job demands, job control, role stress, and workplace conflict.[16] Many of these risk factors fall within the scope of managers' authority to be identified, controlled, adapted, reduced, or even eliminated.[17] Yet, surprisingly, the managerial perspective in regards to the prevention of CMDs among employees is virtually absent in academic literature, particularly management literature.[18]

MANAGERS' ROLE IN THE PREVENTION OF COMMON MENTAL DISORDERS

Studies consistently show the significant effect of managers' behavior, support, or leadership-style on employee mental health.[19,20] Managers are acknowledged to be key players in prevention, as they are conveniently situated between top management, the employee, coworkers, and (occupational) health care providers.[21] Usually, managers operationalize, execute, or initiate employer's health and safety programs and plans.[22] They often have the authority to modify work, adjust work conditions and environment, and are in one of the best positions to monitor (changes in) the health of employees.[23] The majority of studies measure managerial behavior from the perspective of their subordinates or (senior) executives/employers. Indeed, with managers as the vehicle between employers and employees, it is important to measure whether and why actual managerial behaviors could deviate from the intention of employers, or be received/perceived differently by subordinates. Without measuring or including different perspectives, there would be superficial evaluation and only limited room to improve behaviors. Despite the added value of studying multiple perspectives, it remains surprising why only a few studies include the managers' own perspective.[24]

Given the presumed ways in which managers aid in the prevention of mental ill-health among their employees, it is insightful to expand perspectives others have of managers' roles with the perspective of managers themselves. By including the manager perspective, we gain a better understanding of their perceived ability, possibilities, and preparedness to contribute to the prevention of CMDs, but we will also reveal discrepancies between their perception and others' perception. All in all, these insights may reveal opportunities for intervention in order to improve the managers' role and capacity to prevent CMDs among employees.

MANAGERIAL PREVENTIVE ACTIONS

The few exceptions that take a managerial perspective in relation to the prevention of CMDs have focused on managers' attitudes (eg, stigma),[25] their mental health literacy,[26] or their

experiences with the RTW process for employees with a mental disorder.[27,28] There is evidence though that managers' stress-preventive behaviors (as reported by themselves) have positive effects on employee affective well-being.[29] The current study will focus on, what we named, managerial preventive actions (MPAs) in relation to CMDs among employees. Two MPAs will be distinguished. First, reviewing employee's assignments and work situation by the employer is required to decrease stress in the workplace in the EU.[30] Second, talking about CMDs at the workplace can be supposed to lower the stigma, offering support and encouraging improvement of working conditions.[8]

MANAGERS' CHARACTERISTICS AS DETERMINANTS OF MPAs

This study focuses on determinants of these MPAs. On the basis of managerial literature, three types of determinants will be distinguished. First, it is argued that person-related characteristics of managers play a role as to whether managers initiate MPAs or not. Yet, in the management and leadership literature, there is inconclusive evidence on the effect of gender and level of education on displaying specific leadership styles and management behavior.[31,32] Second, specific work-related characteristics of the environments in which managers work may influence if and to what extent they initiate MPAs. Theories of Organizational Behaviour argue for the inclusion of context in analyses of behavior within organization, as it may restrain or stimulate specific behaviors and hence account for variations in similar study populations.[33,34] Third, competence-related characteristics may explain why certain managers' initiate MPAs while others do not. Research shows that managers with more years of managerial work experience have more knowledge, expertise, and enhanced learning ability.[35] It is possible that more experienced managers are more competent and confident in addressing mental health at the workplace, often perceived to be a difficult task.[36] Other studies show that managers who have had training on the mental health of their employees have increased their mental health knowledge, confidence, and supportive behavior.[37] It may have a similar effect on their preventive behavior.

In addition to person-related, work-related, and competence-related characteristics, experience-related characteristics of managers may play a role in whether managers engage in preventive actions or not. First, having had personal experience with CMDs might make managers more inclined to initiate MPAs.[38] Second, managers with previous occupational (mental) health care experience might have better understanding of the manifestation of CMDs, how it affects work capacity, and might acknowledge the relevance of prevention.[39] Third, managers who have experienced employees with CMDs before could be more engaged in prevention, as demonstrated in case of other disabilities than CMDs.[40]

AIM OF THE STUDY

Recent studies recommend the need for more explicit research on the role of managers in the prevention of CMDs.[41,42] In addition, more knowledge on the managerial perspective is important in order to improve managers' capacity to contribute to the prevention of CMDs among employees. This study aims to address the lack of a managerial perspective in a cross-sectional study testing the relationships pictured in Fig. 1.

The research questions are as follows:

(1) What is the frequency of MPA-review and MPA-talk among managers?
(2) To what extent are both MPAs determined by person-related, work-related, and competence-related characteristics of managers?

METHODS

Study Design

This study is part of the "Managers' perspective – the missing piece" project, which aims to study attitudes, knowledge, and needs among Swedish managers to support employees with depression and anxiety. Data on person-related, work-related, and competence-related characteristics, and MPAs among Swedish managers were collected in the autumn of 2017 through a web-based questionnaire. CMDs were formulated as depression and anxiety disorders throughout the questionnaire, as representing the two main categories of CMD diagnoses, and because they are more well-known than the concept CMD.[42] The project received ethical approval from the Regional Ethical Review Board in Gothenburg, Sweden, Dnr: 165-17.

Setting

Employers in Sweden have to adhere to the Work Environment Act, a body of regulations obliging employers to take all necessary actions to prevent disease, accidents, and general ill health and hence ensure a healthy and safe work environment.[43] The employer obligation extends to managers, supervisors, and employees.[44]

Participants

Participants were recruited from the LORE Citizen Panel at the University of Gothenburg and the HELIX Competence Centre at Linköping University. The LORE Citizen Panel identified eligible members (ie, occupying a managerial position) by means of two questions included in the 26th Citizen Panel survey.[45] Among those identified, 5000 managers were randomly invited to participate in the study by E-mail. The HELIX Competence Centre is a
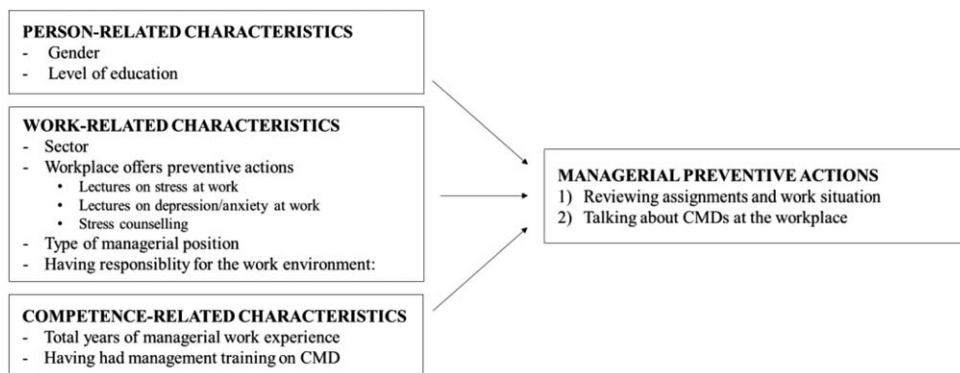

FIGURE 1. Research model.

collaboration among 22 organizations (eg, universities, private, and public organizations) to promote the sustainable development of organizations.[46] Eight organizations accepted participation and identified another 556 managers, who were similarly invited. Upon receiving the invitation, both groups received a short introduction on the aim of the study, were informed of the possibility to contact the responsible researcher, and were asked for consent to participate.

In total, the survey was sent to 5556 participants of whom 795 answered not occupying a managerial position (ie, wrongly identified as managers before sending the questionnaire) and 24 were excluded due to technical error, leaving 4737 as eligible participants, of whom 71% responded ($n = 3358$). In this study, participants were excluded when they reported to not have any direct staff responsibility (ie, managing "0" employees or not answering that particular question) ($n = 437$), leaving 2921 participants in the final study sample. For an overview, see Fig. 2.

Measures

Managers' characteristics – independent variables

- Person-related characteristics: "age" and "level of education" of the managers were included as person-related characteristics. The response options for gender included "women," "men," and "non-binary." Gender was dichotomized into "men" and "women," due to a low number of respondents indicating to be nonbinary ($n = 3$; 0,1%), yielding it unable to derive statistical inferences for this group. The response options for level of education were "compulsory school," "upper secondary school or equivalent," "degree from college/university (minimum three years)," and "other post-secondary education." For analyses, this was dichotomized into "secondary school or lower" and "post-secondary school."

- Work-related characteristics: "sector," "workplace offers preventive measures," "managerial position," and "having responsibility for the work environment" were included as work-related characteristics of the managers. First, response options for sector included "governmental," "municipal," and "county council/ regional," "private and non-profit organisation/foundation," which was dichotomized into "private" and "public & non-profit." Second, workplace offers preventive measures was measured as three items, each referring to a different preventive measure that had been offered to employees at the workplace, according to managers. These items were developed from workplace health promotion measures, investigated among employees.[47] Managers were asked the following question: "Workplaces can engage in preventive measures to forestall the emergence of depression and/or anxiety disorders among staff members. Have staff members at your workplace been offered any of the following options during the past two years." Then, the three items/measures were presented, being (1) "lectures about stress at work," (2) "lectures about depression/anxiety at work," and (3) "stress counselling." Response options to each of these three actions were "Yes," "No," or "Don't know," which were later dichotomized into "Yes" and "No or don't know" for every item. Third, response options for type of managerial position were "senior manager," "middle manager" "first-line manager," "group leader/supervisor," and "expert/operations manager." These categories were dichotomized into "senior and operations managers" and "middle managers, first-line managers, and supervisors," based on the different nature of their core activities. Finally, response options to "having responsibility for the work environment" included "Yes," "No," or "Don't know," which was dichotomized into "Yes" and "No or Don't know."
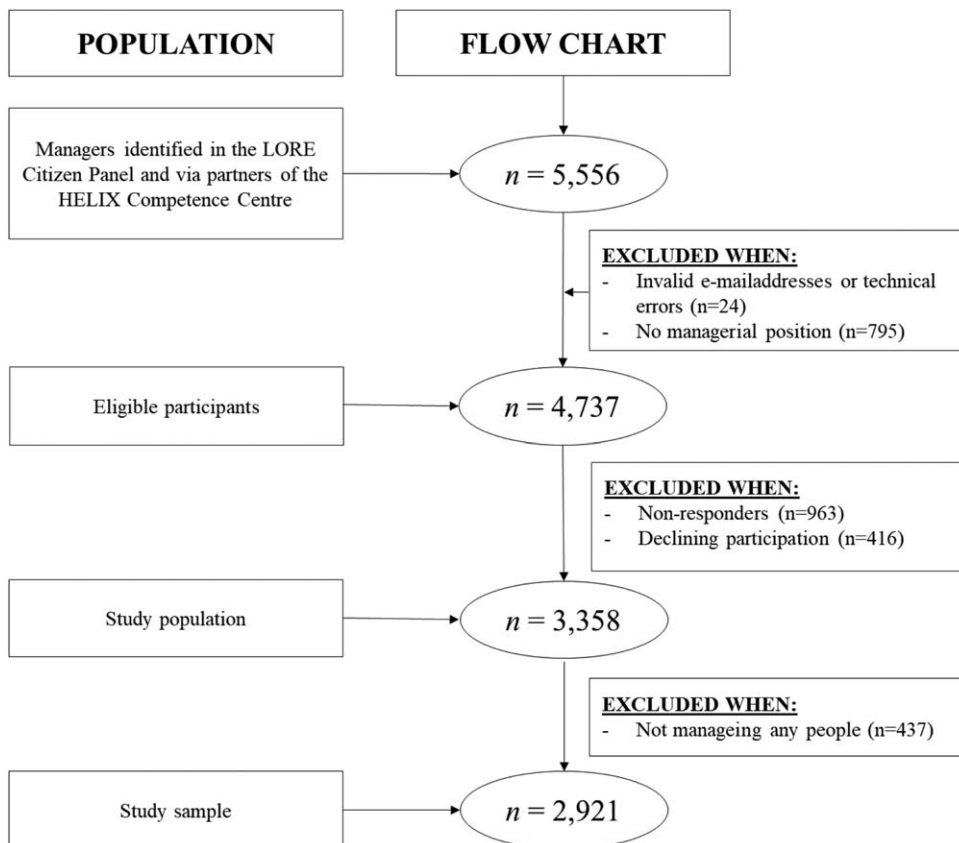

FIGURE 2. Flowchart from invited participants to study sample.

- Competence-related characteristics: "total years of managerial work experience," and "having had management training on CMDs" were included within this category. Response options for total years of managerial work experience were "0–2 years," "3–5 years," "6–10 years," ">10 years." Following distribution along these categories, this variable was categorized into "0–10 years" or ">10 years." Response options to having had management training on CMDs included "Yes, during the last two years," "Yes, more than two years ago," and "No," which was dichotomized into "Yes" and "No."

Managerial Preventive Actions (MPAs) – Dependent Variables

- Reviewing assignments and work situation (MPA-review): The item measuring the first MPA was based on the Swedish Work Environment Act, that, parallel to other countries, address the issue of organizational and social work environment.[44] Managers were asked the following question "During the past two years, have you reviewed the assignments and work situation of your staff members to forestall depression and anxiety among your staff"? Response options were "No, never," "Yes, 1–2 times," and "Yes, 3 or more times." This was dichotomized into "Yes" and "No, never."

- Talking about CMDs with employee (MPA-talk): This item was developed as a result of a survey among white-collar workers in Sweden, indicating that 60% never talked about mental health at any work place meetings (not published, http://www.nsph.se/hjarnkoll). Managers were asked the following question: "During the past two years, have you in your capacity as manager/supervisor taken any initiative to talk about depression or anxiety with the aim of increasing understanding of mental illness at your workplace"? Response options included "No, never," "Yes, in individual performance appraisals," "Yes, occasionally in the working group," and "Yes, on several occasions in the working group." Multiple answers were possible (eg, in the individual settings and in the working group). A new variable was computed to distinguish between those managers who had taken the initiative to talk about CMDs in at least one setting (or more) versus those who had never done so.

Covariates

Managers might have acquired experience that could influence their ability and inclination to initiate MPAs. In addition, the number of employees in organizations is included as a covariate to adjust for the likelihood that workplace health and prevention measures are usually more common in larger (>250 employees) organizations.[48]

- Having had experience with CMDs, either personally or through a close friend or relative: Managers were asked the following question: "Have you personally, or has a close relative or a friend, had depression and/or anxiety disorder?" Response options included "Yes" or "No."

- Having been in occupations treating or caring for people with CMDs: Respondents were asked the following question: "During your professional life, have you worked in occupations where you cared for or treated people with depression and/or anxiety disorders?" Response options included "Yes" or "No."

- Having had employees with CMDs before: Managers were asked the following question: "During the past two years, have you had staff members at your current workplace who have had depression and/or anxiety disorders?" Response options were "Yes, several staff members," "Yes, one staff member," "No, no staff member," and "Don't know," which was dichotomized into "Yes" and "No/Don't know" for analyses.

- Number of employees in organization: "How many staff members are in your company/organisation in total?" Response options included "0–9," "10–49," "50–250," "251–1,000," and "more than 1,000." This was dichotomized into "0–250" to reflect micro, small, and medium-sized organizations and ">250" to reflect larger organizations.[49]

Statistical Methods

All analyses were performed with IBM SPSS Statistics 22 (IBM Corp., Armonk, NY). In regards to the first research question, frequencies, expressed in count and percentage, were explored for initiated MPAs, as well as person-related, work-related, and competence-related characteristics and covariates. To answer the second research question, binary logistic regression analyses were conducted to measure associations between the independent variables on the one hand, and the MPAs on the other hand. Before performing logistic regression, multi-collinearity between the independent variables was checked and no significant strong correlations were found. Thereafter, logistic regression analyses were conducted for both MPAs separately to generate odds ratios (ORs) with a 95% confidence interval (95% CI) between independent variables and the MPAs. Next to bivariate analyses between one determinant and an MPA, multivariate analyses were conducted to reflect a more realistic representation of the presence of multiple determinants and their interaction on each other in order to understand the effect of determinants on an MPA. All in all, regression was conducted in three subsequent ways: first, through bivariate analyses (Model 1) and second, through multivariate analyses for each category of characteristics separately (Model 2 to 4). In these models, the covariates were also included. Finally, all independent variables were entered simultaneously in multivariate analyses (Model 5), including the covariates. Missing values were reported for every variable in descriptive analyses and a sample size per analysis, excluding missing values, was reported for each regression analysis separately.

RESULTS

Descriptive Analyses

Descriptives are presented in Table 1. With regard to the frequency of initiated MPAs, managers indicate that they review assignments and work situation (MPA-review) in 50% of the cases and they talk about CMDs at the work place (MPA-talk) (in at least one setting) in 57% of the cases.

Determinants of MPA-review

Results of bivariate and multivariate binary logistic regression are presented in Table 2. First, separate bivariate analyses yielded significant associations between a characteristic and initiating MPA-review, with the exception of total years of managerial experience (Model 1). Second, separate multivariate analyses for each of the three categories of characteristics were conducted, while simultaneously adjusting for the covariates (model 2 to 4). Person-related characteristics, when entered together, remained significant, although the odds slightly attenuated. The odds between work-related characteristics and initiating MPA-review also lowered, and "managerial position" and "lectures about stress at work" as a workplace preventive measure became insignificant. The odds between competence-related characteristics and initiating MPA-review changed only marginally, and total years of managerial work experience remained insignificant. Finally, all characteristics were included simultaneously regardless of the category to which they belonged and in addition adjusted for covariates (Model 5). Female managers have a 1.42 (95% CI 1.17 to 1.73) times higher odds than male managers to initiate MPA-review. Managers in workplaces where lectures on CMDs or stress counseling are offered as preventive measures, respectively, have a 1.36 (95% CI 1.01 to 1.83) and 1.79 (95% CI 1.46 to 2.20)

TABLE 1. Descriptives of Study Sample ($n = 2,921$)

	N	*%*
Person-related characteristics		
Gender		
Men	1,971	68
Women	938	32
Nonbinary	3	0
Missing values	9	0
Level of education		
Secondary school or lower	454	16
Post-secondary school	2,441	84
Missing values	26	1
Work-related characteristics		
Sector		
Private	1,715	59
Public or nonprofit	1,203	41
Missing values	3	0
Workplace offers preventive measures		
Lectures about stress at work		
Yes	1,076	37
No/do not know	1,487	51
Missing values	358	12
Lectures about depression and anxiety at work		
Yes	345	12
No/do not know	2,214	76
Missing values	362	12
Stress counseling		
Yes	1,090	37
No/do not know	1,461	50
Missing values	370	13
Type of managerial position		
Senior or operations managers	853	29
Middle managers, line-managers, and supervisors	1,991	68
Missing values	77	3
Responsibility for the work environment		
Yes	2,127	73
No/do not know	744	26
Missing values	50	2
Competence-related characteristics		
Total years of managerial work experience		
0–10 years	1,415	48
>10 years	1,467	50
Missing values	39	1
Having had management training on CMDs		
Yes	718	25
No	1,892	65
Missing values	311	10
Managerial preventive actions (MPAs)		
MPA-review: Reviewing assignments and work situation		
Yes	1,450	50
No, never	1,113	38
Missing values	358	12
MPA-talk: Talking about CMDs with at the workplace		
Yes in at least one setting	1,653	57
Only in individual performance appraisals	*951*	*33*
Only in the working group	*494*	*17*
In both settings	*208*	*7*
No, never	922	32
Missing values	346	12
Covariates		
Having had experience with CMDs, either personally or through a close friend or relative		
Yes	1,998	68
No	616	21
Missing values	307	11
Having been in occupations treating or caring for people with CMDs		
Yes	413	14
No	2,198	75
Missing values	310	11
Having supervised employees with CMDs before:		
Yes	1,684	58
No/Do not know	928	32
Missing values	309	11
Number of employees in organization		
0–250	1,474	51
>250	1,443	49
Missing values	4	0

Italic sections stands for the descriptives how MPA-talk was originally measured, being 4 options rather than 2.

times higher odds to initiate MPA-review than managers whose workplaces do not offer these preventive measures. When managers have responsibility for the work environment, they also show a 1.42 (95% CI 1.15 to 1.74) times higher odds to initiate MPA-review than managers without this responsibility. Finally, managers having had management training on CMD have a 1.56 (95% CI 1.27 to 1.93) times higher odds to initiate MPA-review than managers untrained in CMDs. Other characteristics became insignificant when considered together and adjusted for covariates.

Determinants of MPA-talk

Results of bivariate and multivariate binary logistic regression are presented in Table 3. First, separate bivariate analyses yielded significant associations between a characteristic and initiating MPA-talk, with the exception of managerial position (Model 1). Second, separate multivariate analyses for each of the three categories of characteristics were conducted, while simultaneously adjusting for the covariates (model 2 to 4). Within person-related characteristics, level of education became insignificant when considered simultaneously with gender and the covariates, while gender remained significant, but the odds to initiate MPA-talk became lower. The odds between work-related characteristics and initiating MPA-talk also attenuated, and only "having responsibility for the work environment" and "lectures on depression/anxiety" and "stress counselling" as workplace preventive measures remained significant. The odds between competence-related characteristics and initiating MPA-talk changed only marginally and remained significant when considered together including the covariates. Finally, all characteristics were included simultaneously regardless of the category to which they belonged and in addition adjusted for covariates (Model 5). Female managers have 1.33 (95% CI 1.08 to 1.64) higher odds than male managers to initiate MPA-talk. Managers in workplaces who offer lectures on CMDs or stress counseling as preventive measures, respectively, have 1.84 (95% CI 1.30 to 2.60) and 1.53 (95% CI 1.22 to 1.91) higher odds to initiate MPA-talk. When managers have responsibility for the work environment, they also show a 1.44 (95% CI 1.16 to 1.79) higher odds to initiate MPA-talk. Managers who have more than 10 years of managerial work experience show a 1.23 (95% CI 1.01 to 1.50) higher odds to initiate MPA-talk. Finally, managers having had management training on CMD show 1.61 (95% CI 1.28 to 2.03) higher odds to initiate MPA-talk. Other characteristics became insignificant when considered together and adjusted for covariates.

DISCUSSION

This cross-sectional study conducted among 2921 Swedish managers explored the frequency of two types of MPAs among managers and the association with three categories of managers' characteristics. We found that 50% of managers reported to review assignments and work situation (MPA-review) and 57% of managers talked about CMDs at the workplace (MPA-talk) with the intention to prevent CMDs among employees. Moreover, every category of characteristics included one or more determinants of MPAs, expressing the contextual and multidimensional background of these managerial behaviours.[25,34] These were reported irrespective of the manager's level of education, sector, or type of managerial position. Strong statistical effects of gender were found though. Female managers in this study consistently reported to initiate more MPAs than male managers, which is line with other research that found female managers to pertain more importance and confidence to address mental health of employees.[50]

Further, managers reported MPAs most when they perceive to be working in organizations that provided specific lectures on depression and anxiety and stress counseling. These findings on

TABLE 2. Crude and Adjusted Odds Ratios (OR) with 95% Confidence Interval (CI) for "Reviewing Assignments and Work Situation (MPA-review)" in Respect to Independent Variables

Independent Variables	n	Model 1: Crude OR (95% CI)	Model 2: OR (95% CI) n = 2,525	Model 3: OR (95% CI) n = 2,434	Model 4: OR (95% CI) n = 2,520	Model 5: OR (95% CI) n = 2,392
Person-related characteristics						
Gender (women)	2,554	1.67 (1.41–1.99)	1.41 (1.18–1.68)			**1.42 (1.17–1.73)**
Level of education (post-secondary)	2,544	1.53 (1.24–1.90)	1.34 (1.07–1.68)			1.15 (0.90–1.47)
Work-related characteristics						
Sector (public or nonprofit)	2,561	1.73 (1.48–2.04)		1.27 (1.05–1.53)		1.16 (0.96–1.42)
Workplace offers preventive measure (lectures about stress at work, yes)	2,544	1.82 (1.55–2.14)		1.08 (0.87–1.33)		1.03 (0.83–1.27)
Workplace offers preventive measure (lectures about depression/anxiety at work, yes)	2,540	2.26 (1.75–2.91)		1.48 (1.11–1.98)		**1.36 (1.01–1.83)**
Workplace offers preventive measure (stress counseling, yes)	2,532	2.50 (2.12–2.95)		1.87 (1.53–2.28)		**1.79 (1.46–2.20)**
Type of managerial position (middle, line, supervisor)	2,502	1.20 (1.01–1.43)		1.06 (0.87–1.31)		1.02 (0.83–1.26)
Having responsibility for the work environment (yes)	2,537	1.77 (1.48–2.12)		1.49 (1.22–1.82)		**1.42 (1.15–1.74)**
Competence-related characteristics						
Total years of managerial work experience (>10 years)	2,534	1.00 (0.85–1.17)			0.95 (0.81–1.13)	0.90 (0.75–1.08)
Having had management training on CMDs (yes)	2,559	1.85 (1.54–2.22)			1.83 (1.51–2.22)	**1.56 (1.27–1.93)**

Model 1: bivariate analyses.

Model 2: multivariate analyses for person-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 3: multivariate analyses for work-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 4: multivariate analyses for competence-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 5: full model, all characteristics entered together and adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Bold stands for significant results in the final model.

TABLE 3. Crude and Adjusted Odds Ratios (OR) with 95% Confidence Interval (CI) for "talking about CMDs at the workplace (MPA-talk)" in Respect to Independent Variables

Independent Variables	n	Model 1: Crude OR (95% CI)	Model 2: OR (95% CI) n = 2,534	Model 3: OR (95% CI) n = 2,444	Model 4: OR (95% CI) n = 2,531	Model 5: OR (95% CI) n = 2,402
Person-related characteristics						
Gender (women)	2,566	1.67 (1.40–2.00)	1.30 (1.07–1.58)			**1.33 (1.08–1.64)**
Level of education (post-secondary)	2,555	1.42 (1.14–1.76)	1.23 (0.97–1.56)			1.14 (0.88–1.48)
Work-related characteristics						
Sector (public or nonprofit)	2,573	1.66 (1.40–1.96)		1.18 (0.97–1.45)		1.12 (0.90–1.38)
Workplace offers preventive measure (lectures about stress at work, yes)	2,554	1.84 (1.56–2.18)		1.07 (0.85–1.34)		1.01 (0.80–1.28)
Workplace offers preventive measure (lectures about depression/anxiety at work, yes)	2,550	2.92 (2.19–3.91)		1.99 (1.42–2.79)		**1.84 (1.30–2.60)**
Workplace offers preventive measure (stress counseling, yes)	2,543	2.43 (2.05–2.89)		1.62 (1.30–1.98)		**1.53 (1.22–1.91)**
Type of managerial position (middle, line, supervisor)	2,515	1.02 (0.86–1.22)		0.81 (0.65–1.02)		0.83 (0.66–1.05)
Having responsibility for the work environment (yes)	2,550	1.96 (1.63–2.35)		1.60 (1.30–1.98)		**1.44 (1.16–1.79)**
Competence-related characteristics						
Total years of managerial work experience (>10 years)	2,547	1.29 (1.10–1.52)			1.29 (1.08–1.55)	**1.23 (1.01–1.50)**
Having had management training on CMD (yes)	2,571	2.15 (1.77–2.62)			2.06 (1.66–2.55)	**1.61 (1.28–2.03)**

Model 1: bivariate analyses.

Model 2: multivariate analyses for person-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 3: multivariate analyses for work-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 4: multivariate analyses for competence-related characteristics entered together, adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Model 5: full model, all characteristics entered together and adjusted for having had personal experience with CMDs (or through a friend or relative), having had occupational experience treating or caring for individuals with CMDs, having had staff members with CMDs before, and number of employees in organization.

Bold stands for significant results in the final model.

workplace preventive measures are in line with literature that advocates a cross-level effect of organizational measures taken at a higher level on individual behavior at a lower level.[33] Elsewhere, managers have voiced that a supportive work environment that makes the topic of mental (ill-) health more salient through awareness campaigns, company policies, and education assists them in addressing mental illness at work as well.[51] Lectures on stress were not significantly associated with initiating either MPA. This might have a methodological explanation (see below), express a lack of knowledge on the relationship between stress and depression/anxiety, or suggest that lectures need to be tailored in order to link knowledge and behavior.

In line with the findings regarding lectures that were offered to all employees and that might have contributed to a positive, more open organizational climate for talking about CMDs, managers were also more likely to report MPAs if they had received explicit management training on CMDs. A recent meta-analysis confirms a positive effect of interventions on managers' understanding of mental health, understanding of their role and responsibility, attitudes and behavior addressing employees' mental health needs.[52] In addition to an overall positive climate regarding CMDs, knowledge and skills to handle CMDs seem thus important to take actions to prevent CMDs. Finally, being formally responsible for the work environment also seemed to promote MPAs. Thus, formal organizational policies and directives add to the positive climate and competence building regarding MPAs.

Strengths and Limitations

Regarding the representativeness and generalizability of the sample, an important strength is the inclusion of managers from different sectors and managerial levels. This is certainly a major improvement compared with other studies.[53] The sample represents the Swedish managers well in relation to gender (sample/Sweden: 32/39% women, 68/61% men), but the study sample included a larger proportion of managers from the public sector (sample/Sweden: 41/21% public sector; 59/79% private sector).[54] However, the sample might have been biased toward managers who have had personal experience with CMDs. In this sample, 71% of managers indicated personal experience of CMDs. This has been acknowledged by being corrected for in the models, and the associations between the determinants and MPAs hardly changed.

The findings represent the distinct context that typifies Swedish organizations with generally lower levels of hierarchy[55] and a higher level of gender equality (see: http://hdr.undp.org/en/data#). Lower burnout levels have been observed in countries with less hierarchic environments, higher gender equality, and less masculine cultures, and the same may be the case for other CMDs.[56] Perhaps lower levels of hierarchy encourages more discourse on sensitive topics such as mental health between managers and employees. In addition, studies show that stereotypical traits and behavior of women and men are likely to transcend to the work-setting, with female managers being considered more ''communal,'' or expressing more concern for the wellbeing of others than male managers.[57] Females in Sweden are considered more equal than other countries, and hence may feel less pressure to conform to more masculine leadership styles or experience more freedom to address the wellbeing of employees.

Despite the large group of participants, the study sample was a lot smaller due to high attrition as a result of the web-survey method. Using the AAPOR Standard definitions 2011[58] for respondents, three levels of participation were identified among the total respondents ($n = 3358$), *responses* which is those answering 80% or more of the study questions ($n = 2821$), *partials* answering between 50% and 79% of the questions ($n = 278$), and *break-offs* answering less than 49% of the questions ($n = 259$). The

items on MPAs were positioned at the end of the survey, therefore subject to relatively more attrition, although some partials and break-offs did respond to the MPA questions and skipped questions before in the survey.

Another important limitation though is that this study did not address the possible outcomes of MPAs. It might be that MPAs prevent CMDs through their effect on certain work-related stressors such as a role stress or lack of support, but this need to be studied. Neither can it be assumed that MPAs specifically prevent the onset of CMDs (ie, primary prevention). It might potentially also contribute to the prevention of deterioration of already developed CMDs (ie, secondary prevention) or facilitate rehabilitation and RTW of employees with CMDs (ie, tertiary prevention). Further, given the cross-sectional design, apart from women and more than 10 years of managerial work experience, the associations found between the managers' characteristics and initiated MPAs pertain to a specific point in time and hence no conclusion can be drawn in regards to the direction of the association.

Another limitation was that the two MPAs were measured with only one item each, which reduces reliability and thus validity. The chance for social desirable answers might have been increased, for example, among managers who are aware of the legal obligation of employers and managers to protect the health of employees who might have felt pressure to confirm that they performed MPAs. Also, the two MPA items included the terms ''depression'' and ''anxiety,'' which might have led to common method variance with the independent variable on lectures about depression and anxiety. This methodological factor might also explain the lack of association with lectures on stress.

Future Research

This study clearly contributed to filling the knowledge gap on managers' preventive actions regarding their subordinates' CMDs. Future research should have longitudinal design. Research may be directed at identifying other MPAs in relation to the prevention of CMDs. Further, a multilevel design, including outcomes at subordinate level (eg, mental health complaints, CMDs, sickness absence, and presenteeism due to CMDs) is recommended. Also, other determinants could be included. For instance, both Pomaki et al[59] and Pransky et al[60] highlight the importance of investigating workplace mental health stigma. The measures for MPAs could be improved by adding items and improving the reliability of the measures. Also, future research could investigate which types of training have a positive effect on MPAs, or how to promote male managers to enact MPAs more. Finally, cross-country comparison studies should reveal the extent to which gender equality and low hierarchy in workplaces are related to MPAs.

Implications for Practice

In line with the research findings, employers and occupational health services could consider to adopt organizational policies, preventive measures, and management training in order to stimulate managers' ability and inclination to initiate actions to improve their subordinates' mental health.

CONCLUSION

This study addressed a contemporary knowledge gap in the field of work-related mental health research by exploring the managers' perspective in the prevention of CMDs among employees. We found that managers' initiation of MPAs is multidimensionally determined by person-, competence-, but particularly work-related characteristics. Regardless, these first findings indicate that managers could be more inclined to initiate MPAs when supported by in-company management education and a supportive work environment, where preventive measures such as lectures on CMDs and stress counseling are provided company-wide. Future research

is encouraged to include and elaborate on the managers' perspective in CMD prevention.

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