BMJ Open

Health workers' conceptualisationand experiences of common mental symptoms and work-related psychosocial stressors in Central and Southern Ethiopian regions: a qualitative study

Yitagesu Habtu ,[1] Abera Kumie,[2] Medhin Selamu,[3] Hidenori Harada,[4] Eshetu Girma[1,5]

To cite: Habtu Y, Kumie A, Selamu M, *et al*. Health workers' conceptualisationand experiences of common mental symptoms and work-related psychosocial stressors in Central and Southern Ethiopian regions: a qualitative study. *BMJ Open* 2025;**15**:e087811. doi:10.1136/bmjopen-2024-087811

► Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (https://doi.org/10.1136/bmjopen-2024-087811).

Received 19 April 2024
Accepted 27 January 2025

For numbered affiliations see end of article.

Correspondence to
Yitagesu Habtu;
yitagesu.habtu@aau.edu.et

ABSTRACT

Objectives Despite the growing recognition of mental health challenges among health workers, limited information regarding their self-identification of common mental symptoms (CMSs) and their perceptions of causal pathways to work-related psychosocial stressors exists. This study aimed to explore how health workers recognise CMSs, perceive their exposure to work-related psychosocial stressors, conceptualise causal pathways, evaluate the impact of these stressors on the professional quality of life (PQoL), employ coping strategies and encounter barriers to mitigating stressors and seeking support.

Design and settings Our study employed an interpretive and descriptive phenomenological approach, informed by theoretical frameworks. We conducted focus group discussions (FGDs) and in-depth interviews (IDIs) with purposely selected health workers between January and February 2023. Interviews were audio recorded, transcribed and translated into English. Data was processed and analysed using MAXQDA 2020 software, with thematic findings supported by illustrative participants' quotations.

Participants The study included 34 health workers who participated in 10 IDIs and three FGDs.

Results Five themes emerged from the study, guided by combined theoretical frameworks: (1) conceptualisation of occupational stress, anxiety and depression symptoms; (2) exposure to work-related stressors; (3) perceived impact of work-related stressors on PQoL; (4) experiences with coping strategies; and (5) barriers to mitigating stressors and seeking support. Accordingly, our findings revealed a low self-identification with CMSs (SICMSs), an increased perception to link work-related stressors with CMSs and their negative impact on PQoL, limited use of adaptive coping strategies and the presence of multiple barriers to effective coping and support-seeking practices among health workers across the respective themes.

Conclusions The findings of this study highlight the need for targeted interventions, including updated training on CMSs, addressing resource-related stressors, improving workplace communication and conflict resolution, enacting policy reforms to ensure equitable compensation and promoting adaptive coping strategies to enhance health workers' mental well-being and their PQoL. Furthermore, we advocate for a more robust exploration of the perceived causal link supported by lived experiences of health workers with chronic occupational stress, occupational depression and occupational anxiety to provide stronger evidence using longitudinal qualitative and quantitative studies.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ The use of diverse qualitative methods (focus group discussions (FGDs) and in-depth interviews) guided by theoretical frameworks enriches the study by providing comprehensive, reliable and contextual insights into health workers' experiences with common mental symptoms (CMSs), work-related stressors and coping strategies.
⇒ Recall bias limited the ability to confirm specific links between individual symptoms (eg, stress, anxiety or depression) and specific work-related stressors.
⇒ The study could not establish whether changes in symptoms among participants were directly linked to changes in specific stressors due to challenges in recalling stressor durations and associations.
⇒ Exploring the subjective experience of CMSs through FGDs, particularly anxiety and depressive symptoms, may have been influenced by social desirability bias, with participants potentially withholding experiences due to stigma or fear of managerial repercussions.
⇒ Health workers' perceptions of causal links between work stressors and CMSs do not necessarily indicate causation.

INTRODUCTION

Employment is a beneficial determinant of health,[1] including mental health, and plays a

vital role in achieving sustainable development goals[2] of mental well-being. However, the increased risk of common mental disorders associated with work-related psychosocial stressors has become an increasingly pressing concern for researchers and policymakers.[3] Therefore, addressing how health workers perceive those mental health issues and their work-related stressors contributes to supporting sustainable development goals 3 (good health and well-being) and 8 (decent work and economic growth) of health workers.[2] The prevalence of CMSs, such as occupational stress, anxiety[4 5] and depression,[6] is notably higher among health professionals due to their exposure to various work-related psychosocial factors. During the COVID-19 pandemic, approximately 37%, 40% and 37% of health workers globally reported experiencing mental distress, anxiety and depressive symptoms, respectively.[3] In Ethiopia, the prevalence of psychological distress, anxiety and depression during the COVID-19 era ranged from 12.4% to 61.9%,[7–10] 21.9% to 78%[7–10] and 20.2% to 60.3%,[7–10] respectively. Moreover, the prevalence of these CMSs among health workers continued to rise even after the pandemic had ended.[11] However, such a high prevalence rate may not accurately reflect reality and be overestimated or underestimated due to misconceptions about these CMSs among health workers.

Given the subjective nature of symptoms and the complex perceived causal links to these symptoms, exposure to work stressors may be interpreted differently among health workers. Therefore, exploring how health workers understand or conceptualise these CMSs from an aetiological perspective (ie, work-ascribed manner) and their persistent experiences of exposure to work-related stressors may provide insights into the rising prevalence of these symptoms and associated work-related psychosocial factors. This understanding contributes to essential components of selective prevention and the promotion of mental health in the workplace[12] by generating evidence for effective interventions. To better understand the rising prevalence of CMSs among health workers, it is essential to examine how health workers conceptualise CMSs, such as how they perceive, interpret and conceptualise these symptoms. This focus on the subjective interpretation of CMSs lays the groundwork for exploring how health workers assign meaning to their symptoms and connect them to specific work-related stressors as well as their ability or inability to recognise, address and seek support for these issues. Similarly, the perceived or actual experience of exposure to work-related psychosocial stressors, coping strategies employed and barriers to seeking support would also add more information to targeted interventions to enhance the workplace mental well-being and professional quality of life (PQoL) of health workers.

The conceptualisation of CMSs including stress, anxiety and depression, in this study, pertains to how health workers assign meaning to or recognise symptoms experienced resulting from work-stressor responses. It encompasses their understanding of vulnerability, perceived and actual experiences; and practice of linking a specific work stressor to the symptoms of CMS symptoms, perceived controllability and prevention strategies. Health workers are expected to possess an adequate understanding of these issues, but many may lack the skills for early self-identification of CMSs within the work-ascribed or aetiological contexts which can impede their ability to seek care due to low mental health literacy.[13] This is a gateway for seeking care or support from mental health professionals or any other workplace mental health therapists (eg, organisational psychologists and/or clinical psychologists). A failure to accurately define CMSs, connect these symptoms to a specific work-related stressor(s), recognise confounding factors (such as life stressors) and misunderstand the biopsychosocial context can lead to challenges in symptom recognition. This can increase both the duration of stressor exposure and the risk of developing mental illnesses.[14] A study indicates that health workers often fear stigmatisation, perceive themselves as invulnerable to mental health issues, may overlook symptoms due to time constraints and heavy workloads and perceive symptom identification as futile in the absence of access to support for persistent specific symptoms.[15] Furthermore, an underestimation of symptoms[16] and inadequate mental health literacy[17] hinder health professionals from actively seeking support. Similarly, the perceived and actual experiences of work-related stressors, along with an inability to cope with them, can also lead to either overestimation or underestimation of the risk of common mental health symptoms.

Despite the high prevalence of CMSs among health professionals, including those in Ethiopia, there is limited comprehensive evidence on how these individuals conceptualise stress, anxiety and depression from an aetiological perspective, particularly the perception of work-related stressors as causative agents. Additionally, the subjective experiences of work-related stressors and their link with those CMSs, coping strategies employed, barriers to mitigating these stressors and barriers to actively seeking support from mental health practitioners (eg, mental health specialists, organisational and clinical psychologists) or relying on collegial and supervisory support remain largely underexplored. Therefore, this study aimed to investigate how health professionals conceptualise CMSs, explore their exposure to work-related stressors, explore perceived causal pathways and the impact of these stressors on their PQoL, identify coping practices and barriers to reducing stressors and support-seeking behaviours among health workers in Central and Southern Ethiopia.

Theoretical frameworks for the study

To guide our research question and streamline the complexities inherent in pure constructivism and interpretivism, we used combinations of theoretical frameworks to conceptualise and explore exposure experiences to work-related psychosocial stressors. Specifically, we used seven theoretical frameworks to guide our research

questions, develop our interview guide, develop code frames and the moderation or interview processes: self-identification as having common mental health symptoms (SICMS),[13] the occupational depression inventory (ODI),[18] perceived occupational stress,[17] the job demand-resources model (JD-R),[19] effort-reward imbalance (ERI) model,[20] PQoL[21] and the transactional model of stress (TMS).[22] The philosophical frameworks of constructivism and interpretivism intersect with phenomena related to perceived mental health symptoms, such as the perception of symptoms and corresponding work-related stressors, perceived vulnerability to these symptoms, the subjective experience of such symptoms and their impact on perceived PQoL. However, an exploration of coping practices and barriers to seeking support and mitigating stressors may require the coding of descriptive realities.

The SICMS is based on the health belief model,[23] which seeks to explore how individuals perceive and recognise symptoms, particularly in the context of diseases, including mental conditions. Our investigation was guided by the constructs of SICMS, focusing on health workers' awareness of symptoms, perceived vulnerability, experiential perceptions of those symptoms and their perceived causal links between workplace stressors and CMSs. We also explored their perceptions of the controllability and preventability of occupational stress, anxiety and depression. Within the SICMS framework, the perceived meaning or awareness of symptoms (stress, depression and anxiety) was evaluated against the Diagnostic and Statistical Manual of Mental Disorders (DSM)-5 criteria[24] for anxiety and depression.[18 24] The perceptions of health workers about the causal links between specific work-related stressors identified by themselves and CMSs of our interest were explored on immediate mention of stressors. This helped determine whether they denote terms like 'occupational stress', 'occupational depression' or 'occupational anxiety' to describe the conditions. We examined the relationships between occupational stress and various somatic and mental symptoms over an extended duration (6 months or more) as well as the frequency of occurrence of work stressors and their duration based on occupational aspect measures of distress.[17]

We selected the JD-R model[19] to guide the exploration of health workers' perceptions of high demands (such as high workloads and emotional stressors that may cause negative mental or physical symptoms when they exceed health workers' coping resources) and low job resources (limited support, autonomy, opportunities, emotional readiness and resiliencies) due to better accommodation of multiple work-related stressors. The JD-R model can be seen as an extension of the Job Demand-Control (JDC) model.[25] While the JDC model focuses primarily on the balance between job demands and employees' control over their work, the JD-R model broadens this perspective by incorporating not only job demands and control but also the importance of job resources in influencing employee well-being and performance. Hence, we selected the JD-R theoretical model to guide our study to incorporate broader work-related stressors identified by the health workers. The ERI[20] model is also another stress-health model that suggests stress arises when the effort employees invest in their work is not matched by adequate rewards, including financial compensation, esteem and career opportunities. This imbalance can lead to negative health outcomes, including mental health outcomes and lower job satisfaction, as individuals perceive their contributions as undervalued in relation to the demands placed on them. Similarly, we selected the ERI model to incorporate the high effort and low reward,[20] whether perceived or experienced by health workers, as identified during our interviews and focus group discussions (FGDs). Furthermore, we explored the perceived impact of exposure to high job demand, low job control or decision latitude, low job resources, high effort–low rewards and the subjective experience of CMSs on three components of PQoL[21]: burnout, compassion satisfaction and compassion fatigue (CF). Finally, we applied the transactional theory of stress[22] to investigate, code and thematise coping strategies employed to manage the abovementioned work-related stressors.

METHODS

Study settings

We conducted this study in eight public health facilities (HFs) located in the Central and Southern Ethiopian regions of Ethiopia, the central area of the former Southern Nations, Nationalities and Peoples' Regional Government from 15 January to 28 February 2023 among health workers. This qualitative study was conducted in randomly selected healthcare facilities stratified into primary hospitals, general hospitals and tertiary hospitals. Public health hospitals were selected using stratified random sampling for the quantitative component of a larger PhD project. The project incorporates both quantitative and qualitative approaches to address distinct research questions from different perspectives and ultimately integrate the findings for a comprehensive understanding of the problems under study in the same target population. Therefore, this qualitative exploration aimed to complement the quantitative objectives which focus on assessing the prevalence of occupational CMSs and their associations with work-related psychosocial factors.

The healthcare facilities serve a diverse, multiethnic, multilingual population residing in five administrative zones. These include four zones within the current Central Ethiopian Region (Hadiya, Halaba, Kembata and Silitie Zones) and one zone within the current South Ethiopian Region (Wolaita Zones). These zones are located approximately 203–328 kilometres from the capital city, Addis Ababa. The total population residing in these five zones, along with an additional eligible zone (the Guragie Zone), is approximately 9 201 127. The study areas where the selected public hospitals are located are shown in figure 1.

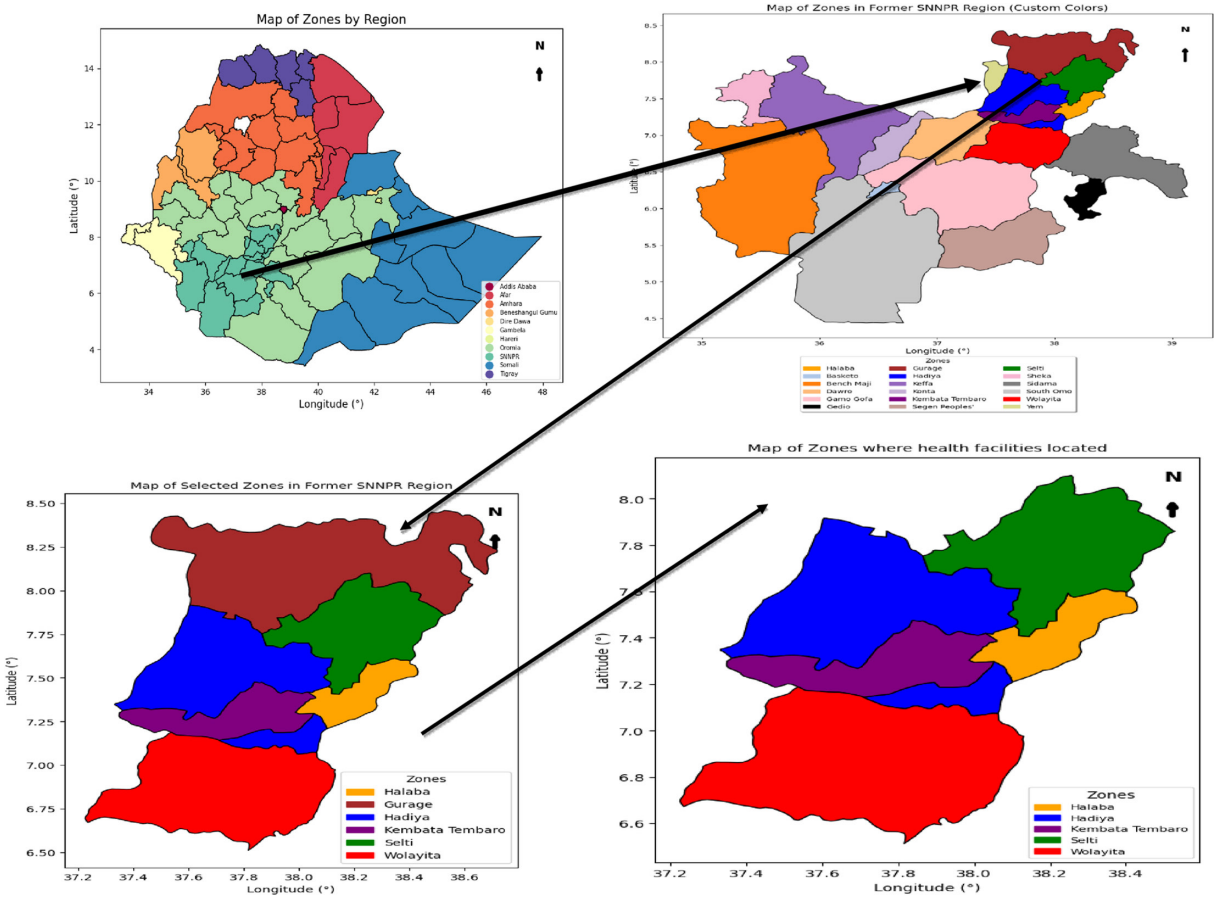


Figure 1 Map of the study areas in the Central and South regions of Ethiopia, February 2023. SNNPR, Southern Nations, Nationalities and Peoples' Regional Government.

Study design

This study employed a descriptive–interpretive phenomenological qualitative design, guided by a combination of theoretical frameworks, to explore participants' lived experiences and interpretations. Participants were encouraged to describe their experiences through probing, focusing on both their perceived and actual exposure to specific work-related stressors. We applied a descriptive approach to document participants' experiences and an interpretative analysis to uncover deeper meanings. This included exploring participants' perceptions of CMSs, their interpretations of vulnerability and the links they perceived between specific work stressors and CMSs. The analysis also considered participants' thoughts on the controllability and prevention of these symptoms. Although variations are expected in health workers' lived experience of CMSs, the meanings they attach to these symptoms, their exposure to work-related stressors, the perceived and actual impacts on their PQoL, coping strategies and perceived and actual barriers hindering coping with the stressors or seeking support can be assumed as constructive realities of health workers. We also considered the design phenomenological if a health worker shared their colleagues' experiences on the above issues during an interview or FGD, despite some distinctions to consider.[26 27] To analyse these experiences, we applied either descriptive coding (eg, capturing clear perceptions or actual experiences) or interpretive coding (eg, deriving deeper meanings from a segment), depending on the context.

Study participants and sampling strategy

We purposefully selected study participants from various units within the selected hospitals. We conducted in-depth interviews (IDIs) for a deeper exploration of individual experiences, emotions and perceptions related to CMSs and work-related stressors. We also conducted FGDs to facilitate interaction among participants, allowing for the sharing of diverse viewpoints and experiences regarding CMSs and exposure to various work-related stressors. The sampling process began with identifying departments or pinpoints or unit heads in the HFs included in the PhD study that analysed the same target population with different initial research questions or objectives[28] guided by the hospital's matrons and medical directors.

Participants for IDIs were purposely chosen based on having at least 2 years of work experience, engagement in clinical or paramedic activities and holding managerial roles such as directors, unit heads, outpatient and inpatient ward coordinators or other key positions within HFs. Participants for IDIs were deliberately chosen based on having at least 2 years of work experience, involvement

in clinical or paramedic activities and holding managerial roles such as directors, unit heads, managers, coordinators, ward heads or other key positions within HFs. 10 healthcare workers were selected for IDIs based on the assumption that they possessed rich information about CMSs, their prolonged exposure to work-related stressors, their understanding of colleagues' experiences and their knowledge of the subjective and actual impacts of these stressors on PQoL in the workplace. Additionally, they were supposed to provide rich information on coping strategies and the perceived and actual barriers to mitigating work-related stressors or seeking support.

Similarly, participants for the FGDs were purposely selected to ensure representation across various healthcare cadres, including physicians, nurses, midwives, laboratory technologists, pharmacists and other paramedical health workers. This approach aimed to gather insights into how health workers conceptualise CMSs (occupational stress, occupational depression and occupational anxiety) as well as their subjective and actual experiences with work-related stressors within each cadre. We conducted three FGDs, each involving eight participants. We assumed that all health workers possess a shared understanding of CMSs, work-related stressors, their perceived impact on PQoL, coping strategies, barriers to mitigating work-related stressors and seeking any support in the workplace, despite belonging to different specialty groups and experiencing varying magnitudes and severities of stressors and mental health symptoms. We continued these discussions until we identified recurring information.

Data collection procedures

Guides for conducting IDIs and FGDs were developed and translated into Amharic. The guidelines were developed to capture information on how health workers conceptualise CMSs in work-ascribed perspectives (ie, linking each CMS to the work-related stressors to comply with the terms 'occupational stress', 'occupational-related depression' and 'job anxiety'), subjective exposure to work-related stressors based on the theoretical work-related psychosocial stressors, the perceived impact of stressors and/or CMSs on PQoL, the experience of coping strategies and barriers to reducing stressors and feelings about CMSs.

We trained two research assistants, both experienced in supporting qualitative research and with professional expertise in health to assist the FGDs, one holding a Master of Science (MSc) in community psychiatry and the other a Master of Public Health (MPH) degree in epidemiology. Additionally, two research assistants were recruited to take detailed notes and record audio during the FGDs. During the training process, key topics were addressed, including CMS definitions, diagnostic approaches, work-related perspectives, the study's approach, interview guidelines and theoretical frameworks relevant to the study. Based on the interview guidelines, skills on how to initiate and probe a descriptive approach to capture participants' experiences, such as perceived and actual exposure to specific work-related stressors and applying interpretative analysis to derive deeper meanings were discussed during the training session. For example, how to explore participants' perceptions of CMSs, their interpretations of vulnerability and perceived connections between specific work stressors and CMSs, along with considerations of controllability and prevention.

We started by conducting IDIs to gather rich individual insights first and then conducting FGDs to explore broader group dynamics or consensus as a methodological triangulation to integrate data from FGDs and IDIs, enhancing the validity of the findings. Accordingly, interviews investigated deeper specific issues, while focus groups provided broad insights, allowing for iterative refinement of findings. The principal investigator and one of the research assistants moderated FGDs. Similarly, the IDIs were carried out by other research assistants and the principal investigators of the study.

Under the support of hospital matrons and medical directors, moderators recruited FGD and IDI participants based on the selection criteria. The moderator or interviewer of each session informed the purpose of the study, selection process and norms to be followed during the interview or discussion, assured confidentiality, agreed on the pseudonyms for each study participant, obtained written consent from each participant and checked the audio record before starting each interview or group discussion. FGDs were conducted in relatively quiet halls within the respective HFs, with a duration ranging from 90 min to a maximum of 190 min. The discussions were highly engaging and interactive, reflecting the participants' awareness of current and pressing challenges. The minimum IDI took 45 min and the maximum took 90 min. The individual interviews were held in private rooms or offices at the participants' workplace, with the doors secured to ensure confidentiality until the conclusion of the discussions. Except for two IDIs, all the interviews were interactive and engaging. Field notes and summaries, expanded scribbles of IDIs and FGDs, audio records and other important details such as participant backgrounds were daily submitted to the principal investigator.

During the interviews and discussions, participants were invited to define or reflect on symptoms of CMSs (stress, depression and anxiety) based on their own perceived or actual definitions of each symptom and asked when they considered themselves or their colleagues under stress, depression and anxiety because of their work stressor(s). The subjective and actual experiences of each CMS were assessed based on the SICMS's theoretical components, such as vulnerability, subjective experience, perceived controllability and prevention. After discussing the identified CMSs, participants were invited to list potential work-related stressors based on the theoretical frameworks chosen for the study. When specific work-related stressor(s) were mentioned, we proceeded to explore healthcare workers' perceptions of how these

stressor(s) might contribute to at least one symptom of common mental health symptoms, either in themselves or their colleagues, to assess perceived causality. Additionally, participants were asked to link the identified stressors to aspects of PQoL. To facilitate this, the components of PQoL; burnout, CF and compassion satisfaction, were explained and discussed during the discussions and interviews.

For health workers who could not provide specific symptoms for any of the CMSs mentioned above, their causal perceptions were identified while mentioning their actual or perceptual stressors, either in our 'workplace stressor section' or elsewhere during our interviews and discussions. The remaining theoretical components of SICMSs (ie, vulnerability, subjective experience, perceived controllability and prevention) as well as the perceived impact on PQoL, coping strategies and barriers were explored using the same approach.

Operational definitions of terms

CMSs for this study refer to health workers' actual experiences of feelings, subjective feelings or reflections on their colleagues' experience of developing mental and somatic symptoms related to three prevalent mental health issues in the workplace:

1. Occupational stress for this study refers to the presence of persistent somatic and mental symptoms lasting for 6 months or more, combined with a perceived inability to manage work-related stressors, such as the feeling of high workload or high job demand and low control over resources, based on the perceived occupational stress symptoms scale.[17] In this study, participants' perceptions were also considered, particularly because of the difficulties they faced in accurately recalling the duration of symptoms during our interviews and discussions. Health workers who demonstrated an understanding of the specified symptoms outlined in the perceived occupational stress symptoms scale and could link these symptoms to work stressors, including their duration and frequency, were categorised as having 'a better comprehension of the meaning of occupational stress'. Whereas health workers who mentioned only 'high job demand vs low resources or low control or low social support (in their account or understanding', irrespective of other symptoms, were coded as having a 'low understanding of symptoms' of occupational stress.
2. Occupational depression is also referred to as work-related depression for this study which applies to the recognition of key depressive symptoms based on the DSM-5 criteria[24] (online supplemental material 1) over two or more weeks. If health workers were unable to recall specific symptoms with their duration, their general perceptions of symptoms were also considered. To identify occupationally linked depressive symptoms, participants needed to associate at least one symptom with work-related stressors, as defined by the new occupational depression definitions.[18]

Accordingly, participants were categorised into four based on their awareness and belief about occupational depression. Those who were able to identify five or more of the nine DSM-5 depressive symptoms and link them to work-related stressors were classified as having 'high awareness of symptoms of occupational depression'. In contrast, those who identified fewer than five symptoms but still linked them to work-related stressors were coded as having 'low awareness of occupational depression'. Third, participants who were able to identify five or more symptoms of depression, but did not believe these symptoms were related to work-related stressors were coded as 'did not believe depression is linked to work-related stressors'.

Lastly, those who could not identify at least one cardinal symptom of depression were classified as having 'no awareness of occupational depression'.

1. Job or occupational anxiety refers to health workers recognising symptoms of generalised anxiety based on the DSM-5 criteria[24] (online supplemental material 2) due to work-related stressors. A participant was classified as 'aware of job or occupational anxiety' if they could identify the link between these symptoms and perceived or hypothesised views or actual. The summarisation is the same as that for occupational depression.
2. SICMSs for this study refer to perceptual opinions of health workers, such as vulnerability to, subjective experiences of and perceived causal links with work stressors, perceived controllability and perceived preventability of previously specified CMSs.[13]
3. Work-related stressors or work-related psychosocial stressors for this study refer to all broad work-related stressors as defined by theoretical frameworks, the JD-R framework[19] and the ERI model. Additional definitions of these stressors are provided in the codebook for selected stressors (online supplemental material 2).

Data processing and analysis

The primary investigator transcribed all audio recordings from the interviews which were conducted in Amharic and then translated these transcripts into English. Expanded scribbles and field notes provided by the moderators and notetakers were cross-validated and incorporated into the corresponding transcript. Throughout the transcription process, the primary investigator sought clarification by contacting participants via phone and documented during fieldwork when significant or confusing information arose. The English versions of the transcripts were imported into MAXQDA 2020 software to support the coding, categorisation process, generating code book and generating code frequencies.

We identified and developed a coding frame using constructs derived from the combined theoretical frameworks used in the study. The theoretical frameworks help interpret or categorise the data, without aiming to directly test the theories from the emerging data. We allowed

themes and patterns to emerge from the data itself, even if they were informed by constructs of the theoretical frameworks. For each segment of the interviews and FGDs imported into MAXQDA 2020, we used either descriptive coding (to capture clear perceptions or actual experiences) or interpretive coding (to derive meaning from the data), depending on the content of the segment. A consistent coding scheme was established to systematically analyse the data, and insights were cross-referenced to maintain clarity and coherence. Themes emerged from the categorisation of code frames developed based on the theoretical frameworks used in the study to highlight significant data. To triangulate data from FGDs and individual interviews, the study cross-checked findings for consistency and employed participant validation to confirm accuracy. We integrated the two data sources as part of a single, cohesive data set, contributing collectively to the understanding of each theme as guided by the theoretical frameworks used for the study.

Two community mental health experts, each holding an MSc in community psychiatry in community psychiatry, were briefed on the theoretical frameworks used in the study. They were invited to review a sample of codes related to emerging themes to validate the primary investigator's categorisation and theming process. Member checking was by inviting selected participants to review summaries of merged findings of FGDs and IDIs to ensure that data accurately reflected the realities faced by health workers to enhance the trustworthiness of the findings. We described the sociodemographic characteristics of our participants using absolute numbers and illustrated the relationships among themes with causal diagrams. Finally, we presented our findings under each theme and supported these with direct quotes from participants relevant. We reported our findings according to the standards for reporting qualitative research (SRQR)[29] (online supplemental material 3).

Public and patient involvement statement

Study participants were involved in the conducting (ie, filed work and findings validation) stage of the research process. As described in the analysis subsection, they were invited to review the preliminary findings from the interviews and FGDs. Matrons from the selected hospitals participated in the selection of study participants to ensure that those with richer information and greater exposure to work-related psychosocial factors were included. However, the study did not include a formal planning process that involved close collaboration with study participants or direct assessments of research needs before conducting the study.

Ethical statements

The participants were informed of voluntary participation and were given the option to withdraw at any stage of our discussion and interview and the right not to respond to any questions they did not want to respond to. Pseudonyms were assigned to both the FGD and IDI participants to ensure their confidentiality. Accordingly, the FGD participants were given pseudonyms as 'P1, P2, P3…' and in-depth interviewees were given 'IDI1, IDI2, IDI3…'. We used these pseudo-names for each in-depth interviewee and discussant for use in the transcripts throughout the coding and analysis process in MAXQDA 2020. Any identifying information such as the participant's working unit, managerial positions and name of the specific hospital background associated with the reported findings was not reported to maintain confidentiality. Written informed consent was obtained from the participants. To maintain data confidentiality, audio files and transcripts were stored on a password-protected computer only accessible to the researchers.

We used age ranges rather than exact ages for quotes in the results section that contained direct participant quotes to ensure sufficient anonymity. We used age ranges from '25 to 30', '31 to 35', '36 to 40', '41 to 45', '46 to 50' and '51 to 55' when referring to ages based on the age ranges of our participants. We also used a maximum of two indirect identifiers, age range and sex in our questions to keep anonymity. Following the Ethical Review Board's recommendations, participants were reimbursed for expenses like communication and transportation after the discussions or interviews.

RESULTS

Participants' sociodemographic characteristics

A total of 34 health workers participated in the study which included three FGDs and 10 IDIs. The FGD involved 24 health workers from different healthcare cadres, while 10 health workers participated in the IDIs. The age of the focus group participants ranged from 28 to 55 years, with a mean age of 32 years, while the interviewees ranged in age from 30 to 41 years, with an average age of 35. Most participants were male. Of the professional categories, nurses of all categories, midwives, pharmacy, community psychiatry, public health officers, medical laboratory, emergency surgery and radiology participated in the interview and FGD. Among these, nurses of all categories followed by midwives composed the study participants. Table 1 presents the sociodemographic characteristics of study participants (table 1).

Emerged themes

Four theoretical framework-informed themes emerged from the coding and categorising segments of the data: 'conceptualization of CMSs', 'experience of work-related stressors', 'perceived impact of work-related stressors on PQoL', 'experience of coping strategies' and 'barriers to seeking care and lack of interventions'. The relationships of the themes and subthemes with the number of segments coded for perceived and actual reflection by health workers are displayed in figure 2.

Figure 3 also presents the frequency of mention of all work-related stressors. Limited managerial and social support, shortages of medical supplies and equipment,

Table 1 Sociodemographic characteristics of the study participants, Central and Southern Ethiopia, February 2023 (n=34)

Characteristics	Number
Sex	
Female	10
Male	24
Marital status	
Married	26
Single	8
Educational status	
BSc degree	26
MSc/MPH	5
Medical degree (MD)	2
Diploma	1
Experience in years	
Less than 10 Years	23
Greater than 10 years	11

BSc, Bachelor of Science; MPH, Master of Public Health; MSc, Master of Science.

inadequate WASH (water, sanitation and hygiene) in the care areas, higher perceived effort-reward imbalance and work-family conflict were the top five most frequently mentioned stressors by health workers.

Theme 1: conceptualisation of CMSs

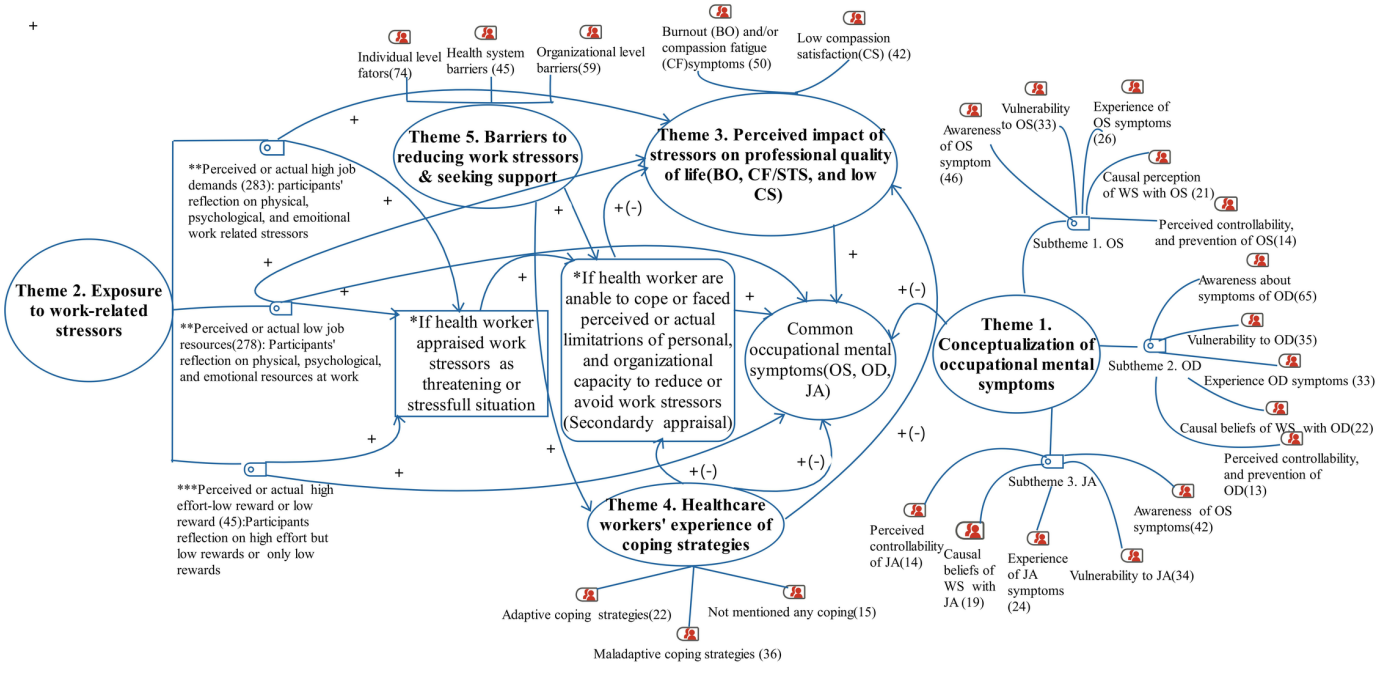
This theme explores how health workers conceptualise occupational stress, occupational anxiety and occupational depression. Before exploring the meanings of their CMSs in work-stressor or occupational linkage, we started exploring health workers' awareness of symptoms CMSs to the generic diagnostic criteria and proceeded to the occupational or work-ascribed perspectives. Accordingly, participants reflected their interpretations or meanings they attached to, perceived vulnerability to, subjective lived experiences of, causal beliefs of work stressors with CMSs, perceived controllability and preventability of CMSs.

Subtheme 1: conceptualisation of occupational stress

This subtheme explores how health workers define or interpret (aware of), perceived vulnerability to, subjective lived experiences of, causal beliefs of work stressors with occupational stress, perceived controllability of and prevention of occupational stress.

Awareness about symptoms of occupational stress

Following the exploration of health workers' awareness of stress in general, participants were asked about 'occupational stress' symptoms based on perceived occupational stress measures described in the subheading of 'definition of terms' in the methods section. Accordingly, health workers exhibited varying levels of awareness regarding occupational stress symptoms.



Note: JA; job anxiety, OD, Occupational depression; OS, Occupational stress; STS, secondary traumatic stress; ——, elements of the specified construct of guiding theories ;→perceptual causal direction, (), frequency of mentions by participants; +(-), direction of perceived causality(i.e., + when exposure increased, the oucome will increase, and (-) when one increase, the other will decrease); *tenets of transactional model of stress; **tenets of job demand resources models of stress,***tenets of effort reward imbalance ; if health workers primarly appraised stressors as irrelevant or beneficial the negative mental health outcomes will not occur.

Figure 2 Theme relationship and causal perceptions between work-related stressors and common occupational mental symptoms in Central and South Ethiopian region, February 2023.

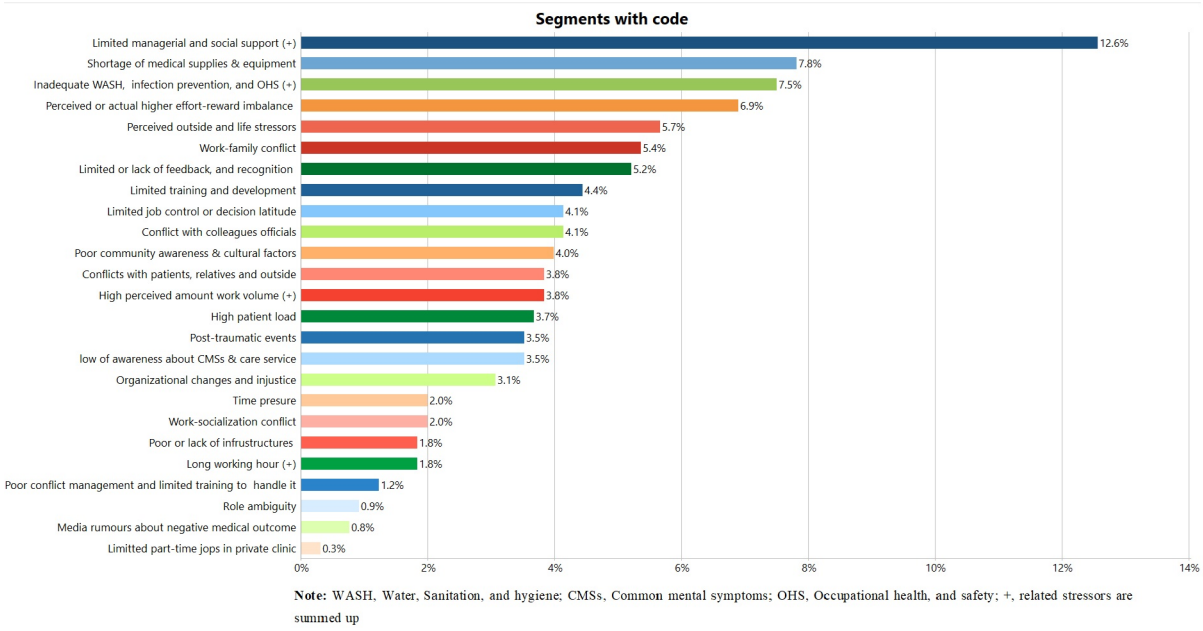


Figure 3 Frequency of mentions of work-related stressors and outside work stressors by segments with code of the study participants, Central and South Ethiopian Region, February 2023. WS, Work stressor.

While participants (notably those with mental health backgrounds) with a mental health background had a better understanding of occupational stress based on a theoretical framework (ie, perceived occupational stress), the majority struggled to define occupational stress or its symptoms. Of those who had a better understanding, one participant linked stress to excessive workload and described associated physical and emotional symptoms such as headaches, body aches, anger and emotional instability:

> […] I recognised that I was stressed due to my extreme workload. If judged myself too harshly for it, I found I couldn't control the situation. In such situations, I experience physical and mental symptoms, such as headaches, body aches, emotional instability, anger, conflicts, and a decline in performance. If I cannot recover quickly and the stress persists for six months or more, I might suspect that I am suffering from chronic work-related stress. (Female, 36–40 years old)

Of those participants who were unable to mention all the symptoms with the recommended duration of occupational stress, one participant said:

> I think stress, anxiety, and depression are related illnesses. To be honest, my understanding of them is based on common sense, but I don't how to define them precisely. As a midwife, I am not very familiar with the concept of 'occupational stress' […]. However, I think, like any disease, it could be linked to our work environment. (Female, 25–30 years old)

Most participants normalised stress as part of their daily lives, attributing the difficulty of defining symptoms to their overlap with other mental health conditions. They also perceived that it stems from multiple unavoidable causes, including work-related causes, making it a futile exercise to dwell on it. For example, one participant reflected on a perspective commonly shared among many health workers:

> I do not believe stress should be considered a disease. After all, is there a health professional who doesn't experience 'stress' during the day? It is a normal part of life, especially for those of us working in healthcare. It should not be considered a disease. We shouldn't waste our time defining it. (Male, 25–30 years old)

The latter was a view that stress has many causes and could not be prevented; thus, trying to invest time and resources would not give public health importance. For example, a participant explained the multiple-cause scenario as follows:

> You know, we [health workers] cannot have complete pictures of the symptoms of these [stress, depression, and anxiety] diseases even if we study the health profession. […] I mean […] owing to the web of causes they may have. Therefore, I usually fail to think about symptoms, particularly stress, in the context of work. […] (Male, 13–35 years old)

Vulnerability to occupational stress

Most participants perceived themselves as vulnerable to occupational stress, citing their subjective and actual work-related stressors and the potential impact of these stressors on their physical and mental health. One participant described his perceived vulnerability to occupational stress as follows:

> Yes, despite having inadequate information to identify symptoms, I strongly believe that I may have experienced stress at various points in my life due to work. […]Because of my workload, I suffer from persistent back pain. I am also worried about how my health will be affected. Along with the stress, additional health issues may develop in the future. (Male, 36–40 years old)

The subjective experience of occupational stress

Most health workers believed they had experienced occupational stress at least once in their professional lives, though they found it difficult to consciously recognise its severity or link it directly to work-related stressors. One participant stated his experiences as follows:

> I realized I was stressed, but I wasn't fully aware of how severe it was, how long it had lasted or the exact moments that had caused it. […] I did not consult any mental health professionals. I had experienced symptoms like physical, mental, and emotional. […] However, how did I know if it was chronic stress or not? How could I identify whether my symptoms were linked to specific work-related stressors? (Male, 25–30 years old)

Causal beliefs of work stressors with occupational stress

Participants widely acknowledged that work-related stressors contribute to occupational stress, but found it challenging to define specific causal pathways due to the multifactorial nature of work stressors. One participant shared his perspective:

> […] You [referring to the interviewer] can't fully understand the causes of stress, even with expertise in health professions like clinical psychiatry. It's difficult to pinpoint which specific work stressors lead to particular stress symptoms. Instead, the focus should be on assessing how removing or adjusting specific types of work stressors might impact individual stress levels. (Female, 36–40 years old)

Perceived controllability and prevention of occupational stress

Most participants believed that they had little individual control over occupational stress. The majority of the participants thought that only employers had the power to avoid/reduce stressors, not at the individual level, and accepted stress as part of normal life. They attributed this to systemic factors like workload and institutional failure to implement prevention strategies. One participant, for example, reflected on his doubts about his ability to control or prevent occupational stress:

> As previously discussed, the workload was the main reason for high-level stress. However, how can it be controlled or prevented? If I seek to be counselled for this issue, what steps can I take to improve the situation? Without institutional prevention strategies, the situation is unlikely to improve. […] Counselling or any behavioural change interventions could help, but changing the situations will require broader systemic change. I do not know how we could change. (Female, 41–45 years old)

Subtheme 2: conceptualisation of occupational depression

This subtheme explores how health workers define or interpret (aware of), perceived vulnerability to, subjective lived experiences of, causal beliefs of work stressors with occupational depression, perceived controllability of and prevention of occupational depression. Similar to our exploration of occupational stress, we began by examining health workers' definitions of depression based on the cardinal symptoms outlined in the DSM-5 (online supplemental material 1). We then explore their reflections on how they connect these symptoms to work-related stressors, using the approaches of ODI.[18]

Awareness about symptoms of occupational depression

Many health workers had limited awareness of occupational depression symptoms. They found it difficult to identify the cardinal symptoms outlined in the DSM-5 (see online supplemental material 1) or link them to specific work-related stressors. However, most believe that work-related stressors increase the risk of depressive symptoms. In the end, few participants mentioned at least a single cardinal symptom nor believed in the link between work-related stressors and depressive symptoms. The participants also frequently mentioned low awareness of occupational depressive symptoms among their colleagues. One participant described the challenges he and his colleagues faced in defining depression as follows:

> I use the term 'depression' like my colleagues, but I can't mention its symptoms. I also don't believe depression is linked to my job-related stressors. […] Instead, I think behavioural and physiological changes may cause the disease. […] I have not ever paid attention to defining such mental health diseases. When I feel something bad at work or other places, I usually go to church and pray for relief. […] (Male, 36–40 years old)

Another participant shared that he found it challenging to define depressive symptoms from a neutral perspective, without attributing them to specific work-related stressors or job-related causes.

> Let alone the work-ascribed one, I can't understand how I feel when I get depressed. […] I feel like I have always been this way. (Male, 25–30 years old)

Vulnerability to occupational depression

Most health workers frequently fear experiencing occupational depression during their careers, as the overwhelming nature of work stressors contributes significantly to their vulnerability. One participant,

for example, shared worries about the risk of experiencing depressive symptoms:

> […] When I fail to meet expectations despite my extra effort at work, I start asking myself questions repeatedly. I feel as if I've made a mistake in choosing this career.[…] When such events keep occurring, they can lead to sadness, hopelessness, emotional exhaustion, and even physical symptoms like loss of appetite and trouble concentrating. I believe all of these are symptoms of depression […]. (Male, 51–55 years old)

Another participant added about her vulnerability, including her colleagues:

> I served as a coordinator. In the past three days, I have experienced the symptoms, I mentioned earlier, especially when faced with challenges. I feel particularly vulnerable in these situations. However, I am not completely familiar with the specific criteria for diagnosing mental health issues including depression. I believe that healthcare professionals are at a higher risk than the general population. (Female, 36–40 years old)

The subjective experience of occupational depression

Most participants did not perceive themselves as experiencing depression due to work-related stressors, although many acknowledged that such stressors increase the risk of depressive symptoms. However, during interviews, participants often referred to their colleagues' experiences rather than their own, suggesting a tendency to downplay or conceal their struggles for various reasons. For instance, one participant shared:

> I haven't been sick with this disease. But, my colleagues told me they had experienced it. […] It is seen as caused by bad spirits affecting individuals. However, our [referring to himself and his colleagues'] spiritual outlook is strong. […] The disease doesn't affect us. (Male, 41–45 years old)

However, a few participants disclosed that they had experienced it at least once after entering their professional lives. One participant shared their experience as follows:

> Yes, […] I was taking care of a mother who safely gave birth. […] When I came back the next morning, they [referring his colleagues in shift] told me that she had passed away. I became sad and depressed. My sleep has been disturbed for days. […] I was not happy to talk to my family, including my husband. I was blaming myself. […] I hated every activity I enjoyed before. I lost my appetite. These feelings last for a week. […] (Female, 31–35 years old)

Causal beliefs of work stressors with occupational depression

Many health workers perceived that work stressors contribute to causing depressive symptoms. However, a significant number of them highlighted the challenges in identifying the specific symptoms associated with distinct types of work stressors, citing the complexity and multifaceted nature of these stressors. Conversely, only a few health workers believed that workplace stressors do not play a role in causing depressive symptoms. The following quote illustrates how one participant acknowledged that work-related stressors elevate the risk of depressive symptoms, while also emphasising the importance of distinguishing between the terms 'cause' and 'risk factors'.

> There may be several causes and factors that contribute to depressive symptoms. However, we do not call them causes of depression, but they can be a risk factor. (Female, 36–40 years old)

Another participant also shared his beliefs as follows:

> I believe there's a strong connection between workload and mental health. I know that some nurses and doctors are under psychiatric care, although I'm not sure what the specific risk factors are in those cases. Work-related stressors can worsen mental health conditions, including depression.[…] Honestly, I find it challenging to clearly explain the pathophysiological mechanisms that link work stressors to specific symptoms of depression.(Male, 36–40 years old)

Perceived controllability and prevention of occupational depression

Many health workers were afraid of the inability to control or prevent work factors for depression. One of the participants from the psychiatry profession mentioned her fear as follows:

> […] I don't think that because they [her colleagues or other health workers] hadn't these [mental illness] issues. They may be afraid of coming to this room [psychiatry room]. […] They often do not consider […] depression and […] as illnesses. […] If you explore closely, intellectuals, including health professionals, perceive mental illnesses as evil spirits. (Female, 36–40 years old)

Subtheme 3: conceptualisation of occupational or job anxiety

Awareness of job anxiety symptoms

Most health workers, apart from mentioning 'excessive worrying', were unable to list the cardinal symptoms of general anxiety as per our operational definition.[24] Additionally, they were not able to link any specific symptoms with the work-related stressors discussed during the interviews. Participants cited various reasons for this challenge, such as the broad range of symptoms, overlapping symptoms with symptoms of other mental health illnesses and the lack of specific guidelines to identify job anxiety within their hospital. One participant described how he was struggling to identify the symptoms of anxiety:

I couldn't recall the specific symptoms of anxiety. To me, it seems more complicated than depression. Also, I'm a bit confused about the symptoms compared to stress. They feel similar, but maybe stress is a bit less severe than anxiety. I think anxiety is like 'worrying about nothing and over a fear of something. (Male, 36–40 years old)

Many participants believed their work-related stressors could increase the risk of developing anxiety, even though many of them were unable to mention its cardinal symptoms. One participant shared his live experience:

I think. I'm thinking about my work. I feel like I have always been this way. […] I mean, the feeling of […] anxiety […] symptoms. […] I am restless even right now. […] It happens when my workload is always beyond my control. […] And yeah, I am not always happy with my performance; I feel tense about it. […] (Male, 25–30 years old)

Vulnerability to occupational anxiety

Although most participants struggled to identify the specific symptoms of anxiety, they generally believed they could experience anxiety and perceived that the disease could affect them similarly to other mental health issues. One participant shared his fear as follows:

Yes, we are at risk of experiencing anxiety symptoms because of our[referring to his colleagues, too] jobs. […] I always worry about what will happen if medical errors occur. Right now, I feel insecure, and it's becoming a risky profession. […] We don't have enough protection. […] Just recently, my friend was attacked by a patient's relatives while working in the emergency ward. (Male, 31–35 years old)

However, few participants were able to either mention any symptoms of anxiety or believed that anxiety was linked to their job. One participant shared his thoughts as follows:

[…] I don't also believe that anxiety, and […] are linked to my job.[…] Why would I go [to the mental health professionals] instead of going to church to pray? I am very happy with Jesus. So, I don't believe I will be affected by any mental health disorders (Male, 36–40 years old)

The subjective experience of job anxiety

Although the majority of health workers had a high vulnerability perception to job anxiety, only a few participants believed they could experience it. One participant, for instance, reflected on his experience as follows:

I have never experienced symptoms such as those mentioned above [symptoms of job anxiety mentioned in our discussion]. […] Every hurting noise of a patient comes to my ears when I try to take a nap in a duty room. […] Such events follow me to my home and disturb my sleep. […] I'm worried about every time I fall asleep. […] I wake up in a state of shock. I'm trying to forget through praying.(Male, 31–35 years old)

Paradoxically, many participants reflected on their colleagues' lived experiences of having anxiety symptoms. One of the focus group discussants shared his experience as follows:

I don't believe I have had anxiety […]. But, my friend told me that he had feelings of anxiety,[…]. He told me to keep a secret. If possible, the psychiatrist advised him that it would be best to change that ward or change his job. (Female, 31–35 years old)

Causal beliefs of work stressors with occupational anxiety

Despite having difficulty in listing symptoms, many health workers commonly believed that work-related stressors could increase the risk of anxiety. One participant shared their experience, using examples of work-related stressors to highlight the link between the stressors and anxiety symptoms.

I believe all these [referring to his list of multiple work-related stressors] cause anxiety. […] A week ago, I cared for a young male patient in the critical unit before leaving for my night shift. Other health workers took over, but by the next morning, he had died due to […] at the hospital. Experiences like this make me always fear similar incidents. (Male, 25–30 years old)

Another more experienced participant also reflected on her own experience:

Yes, I'm sure work-related stressors can cause mental illnesses like anxiety. […] Every morning, I wake up thinking about terrible incidents from my job. (Female, 41–45 years old)

Perceived controllability and prevention of occupational anxiety

Owing to the complexity of understanding symptoms and other misconceptions, many health workers believe that 'anxiety' in general, including perceived 'occupational anxiety', could be difficult to control or prevent. One of the participants raised his concern:

We usually notice these diseases [referring to the three CMSs we discussed during the interview] late, after complications like failure to think or failure to perform our tasks.[…] Many, including myself, link them to spiritual or religious issues, but their exact causes remain unclear, so they're often not preventable. (Male, 41–45 years old)

One participant shared his own and their colleagues' views:

Many of us, including health professionals like myself, rarely seek help from mental health

professionals, whether within or outside our facility. Instead, when a colleague shows signs of unhealthy behaviour or mood, we often joke, saying, 'Better go to number 35' [referring to a Psychiatry unit]. This creates shame and stigma, leading to isolation and discrimination. It reflects a belief that mental health symptoms aren't treatable. (Male, 51–55 years old)

Theme 2: exposure to work-related stressors

Under this theme, participants were asked about stressors and perceived links to CMSs. We coded work-related stressors reflected by participants based on the study's theoretical frameworks: the JD-R model[19] and ERI.[20] Figure 2 illustrates the relationship themes and perceived causal perceptions of work-related stressors with occupational CMSs and PQoL. The numbers in parentheses represent how often health workers mentioned or reflected on specific stressors. Guided by the TMS,[30] we assumed health workers appraised these work-related stressors as threatening or stressful situations (primary appraisal) and perceived them as unresolved due to limited or lack of organisational and personal resources, leading to experiencing CMSs. Definitions of perceived or actual categories of work stressors are provided in the codebook in the online supplemental material 2.

The perceptual causal diagram is based on health workers' perceptions or beliefs shared during interviews and discussions, guided by the theoretical models of psychological stress: the TMS model,[30] the JD-R model[19] and the ERI model.[20] As shown in figure 2, participants' exposure to work-related stressors has at least the following interrelationships: (1) work-related stressors were perceived to increase the risk of CMSs by negatively affecting coping strategies (personal psychological and physical resources), PQoL (burnout, CF, compassion satisfaction) and by exacerbating the impact of barriers; (2) work stressors were also perceived to negatively affect coping strategies, as participants felt these stressors often went unresolved, while barriers at all levels further intensified their effects; (3) poor coping strategies, barriers at all levels and PQoL, combined with work stressors so that increase the risk of CMSs; and (4) the way CMSs are conceptualised could either increase or decrease the experience of these symptoms.

Subtheme 2.1: exposure to high job demands and low job resources

As displayed in figure 2, health workers identified multiple work stressors which fall into constructs of two theoretical frameworks used in the study: JD-R and ERI models. They mentioned many work stressors categorised under the high job demand (ie, requires sustained physical and/or psychological efforts), low job resources (ie, limitations and/or unavailability of physical, psychological and emotional job resources), and the higher ERI or lower effort that may worsen mental symptoms. The top three commonly mentioned stressors under the high job-demand category include all forms of conflicts at work (with colleagues, supervisors, patients or visitors), work-family conflicts and three almost equally significant stressors (a high perceived workload, a large number of patients and low community awareness and cultural factors). Particularly, the root cause for all forms of conflict could be a shortage of medical supplies and resources, lack of training on multicultural communication skills, lack of workplace wellness-centred training, lack of workplace communication skills, lack of decision-making procedures and lack of mentorship programmes to equip managers with the skills as reflected by the study participants. Participants perceived these work-related stressors increased the risk of experiencing CMSs. The following sample of quotes from participants illustrated these and other stressors contributing to CMSs among health workers.

> […] Let me tell you about a recent incident in our emergency ward. The patient's relatives attempted to threaten our friend with a pistol. No single hospital guard was around us during that time. We paid a heavy price to cool the situation. Such incidents cause stress and anxiety. (Male, 31–35 years old)

> Yes, many times.[…] My demanding workload and night shifts often create conflict. My husband opposes my night shifts, but I have no choice due to my job. He and his family also want me to join their holiday celebrations, but I usually decline because of my night duty schedule. This makes them feel hurt as if I am deliberately avoiding them. (Female, 31–35 years old)

> The information I provide to patients about drugs and precautions and changes over time. […] When I get exhausted from a heavy workload, I give less information. During busy periods, I've had conflicts with patients, their relatives, nurses, and doctors. I become anxious and confused, unsure of what is happening. (Male, 36–40 years old)

Similar to high job demands, we explored low job resources and the limitations or unavailability of job resources (ie, physical, psychological and emotional resources) that could be used to resolve or cope with the stressful situation. Participants frequently listed several job resource limitations and/or unavailability that hindered their ability to achieve work goals and increased their perceived risk of experiencing CMSs. The top three frequently reported low-level job resources that were perceived to cause CMSs were limited managerial and social support, shortage of medical supplies and equipment and inadequate WASH premises near the care areas. Sample quotes from participants supporting each of these issues are presented below.

> […]The hospital's bureaucratic processes are another source of stress. Even after laboratory tests and ultrasounds are completed, patients are often subjected to unnecessary delays, and additional appointments,

despite the availability of adequate specialists. […] (Male, 25–30 years old)

[…] The profession is about serving humanity, and […] demands honesty and commitment in every aspect. We even posted a slogan everywhere 'A mother should not die in childbirth', And officials bring it up in every meeting. […], but how can we achieve this goal without tangible actions? […] For instance, we lack basic supplies like 'NS [normal saline]', which is a minimum requirement for referral hospitals but is often unavailable. […] Yea, all situations are stressful. (Male, 31–35 years old)

[…] Less than one in ten of the points of care in the hospital have access to water. We have no separate water sources, we get through rotation similar to the community. The health system should work with the water supply sector to provide a continuous clean water supply.[…]As a result, toilets, and hand washing facilities, are without water. We have also a shortage of personal protective equipment (PPE), and sanitation supplies like sanitisers, and hand rub alcohols. […] (Male, 51–55 years old)

Less than 10% of the points of care have access to water.

Subtheme 2.2: exposure to ERI

This subtheme explored health workers' perception or actual exposure experiences and the perceived causal link between perceived or actual high effort and low rewards and CMSs. Participants' reflections were coded and thematised through a theoretical framework of the ERI model. Many health workers reflected on the imbalance between efforts (characterised by perceived high intensity and numerous tasks, responsibilities and obligations) and rewards (which include limited or lack of benefit packages, inadequate or no duty payments, no or insufficient holiday compensation, limited career opportunities, a lack of recognition from the community and higher officials and perceived problems of job evaluation and grading (JEG) criteria). Participants commonly reflected on the adequacy of benefits, incentives or salaries in comparison to current inflation. One participant shared his view:

[…] We[health workers] have to work for 16 hours to get 8 hours of duty payment, which is not comparable to the intensity of work. […] Five years ago, holiday payments including Saturday and Sunday […] were 80% of the regular duty time payment, regardless of our involvement in duty. However, that is no longer the case. […] We are struggling to survive under the current inflation. I believe all these factors contribute to at least some kind of mental distress for myself and other health workers. (Female, 36–40 years old)

Another participant added,

[…] Nurses working in adult ICUs [Intensive Care Units], for example, receive a risk allowance of 470 birrs while we perform heavier tasks such as lifting, transporting, and putting patients to sleep. However, if we work in the OR [Operation Room], with very few patients per room, we are paid 1200 birrs. […] What can we buy for 470 birrs per month? […] Such things make us feel distressed, depressed, and overworried. (Male, 31–35 years old)

Theme 3: perceived impact of work-related stressors on PQoL

This theme explored how exposure to high job demands, limited/low resources and imbalances in effort and rewards, along with subjective experience of CMSs, negatively influenced three components of PQoL: compassion satisfaction, CF and burnout.[21] Although it was challenging to identify the independent effect of each work stressor, health workers frequently described how these stressors negatively affected their PQoL.

Many participants perceived that work-related stressors reduced their ability to empathise or be compassionate and decreased their overall professional well-being due to the persistent demands of caring for patients in stressful situations. The following quotes from three participants illustrate the emotional exhaustion (EE), detachment from their roles and dissatisfaction with their performance that these stressors caused.

[…] I understand the feelings of most health workers because I, too, am part of the hospital management. […] Patients were referred to other hospitals because health workers refused to provide services due to the lack of duty payments. At the zonal level, I've heard reports that some hospitals have stopped delivering services as expected. […] We are here because we have nowhere else to go. (Male, 31–35 years old)

[…] I get upset and sometimes feel like I would be better off choosing a different profession. […] Because of this, I've decided to leave this job and this career entirely. (Male, 25–30 years old)

[…] There are no words to fully express how overwhelming the workload has become. We[health workers] get burned out. […] I don't think it is humanly possible to keep up, but somehow, by God's grace, we manage. Yet, we still don't understand where the root of all these problems lies. (Male, 36–40 years old)

Many participants reported experiencing secondary trauma due to work-related stressors that hindered their ability to provide the best care for their patients. One participant shared his concerns about the medical costs patients faced and the limited resources available to help them achieve better medical outcomes:

[…] How can patients or their families afford these high medical expenses? […] Sometimes, we[Health workers] even pay out of pocket or pool money to help.[…] We do that for every patient? It'simpossible. The only options are doing what we can, feeling sad about the situation, and waiting for a bad medical

outcome. So, here we are, suffering as we watch our patients suffer. (Male, 31–35 years old)

Despite the challenges, many participants reflected on the sense of satisfaction and fulfilment they derived from positively impacting their patients' medical outcomes. However, many participants believed that work-related stressors negatively affected this sense of purpose and satisfaction. One participant shared his thoughts:

Yes, we [health workers]should ideally be emotionally attached to our patients and their families or caregivers. When we share in their emotions well, 85% of the treatment feels more effective. That is our purpose, our reason for being here. But, many of us, myself included, have failed to uphold this critical aspect of professionalism. Even when we believe in the importance of our positive impact, an extremely deteriorated work environment makes it hard to sustain this mindset. But, I believe in doing so, irrespective of any situation.(Male, 31–35 years old)

Theme 4: health workers' experience with coping strategies

Under this theme, participants' coping experience with work stressors was explored. We coded and categorised the coping strategies experienced by the study participants into three groups: adaptive strategies (both problem and emotion-based positive and effective methods to address stressors or stress), maladaptive strategies (coping strategies that do not effectively address the stressor or have no proven effect on resolving stressors or distresses) and no planned coping strategies (instances where participants did not recall or recognise any particular approach). The first two approaches are based on the TMS[30] and the last classification is not a coping strategy but for ease of analysis. Eleven of the 34 participants reported using at least one form of an adaptive strategy to manage work-related stressors or stress. These participants also reported that their colleagues also apply such coping strategies. These strategies included fostering good communication with colleagues and managers, entertaining colleagues, seeking social support, religious conditioning, solving the stressors encountered at work, positive reframing, practising acceptance and building confidence through skill development. For example, one participant shared his coping experience:

[…] I have a good relationship with hospital ward coordinators, pinpoints, and medical directors. And, I think we need to appreciate and accept problems at work. […] Get relaxed and develop confidence through developing skills. I know there are lots of health professionals who are upset by such problems. I do not care much about it. (Female, 31–35 years old)

In contrast, 10 participants reported practising at least one form of maladaptive coping strategy which often failed to address their stress or stressors effectively or had negative consequences. Common maladaptive strategies included avoiding problems at work, abnormal patient referrals to reduce workload, consuming chew chat and alcohol, displaying autocratic behaviour towards patients and colleagues, isolating themselves by closing their rooms to escape from stressors, using medication like painkillers to get relief from the stressful situations and being absent from the workplace. The following two participants, for example, shared their experience with maladaptive coping strategies:

[…] I told him [patient's family] those drugs in our hospital run out very quickly because of the high number of patients. However, he did not understand. We [the patient's family, and the health worker] ended up exchanging bad words. At that time, I closed my room and went out to escape the conflict. I had no other choice. I usually do the same thing before. (Male, 31–35 years old)

[…] I often enjoy my friends to forget my situation. […] I often go out after lunch. I forget a lot of work hassles. (Male, 31–35 years old)

Finally, a significant portion of health workers either did not recall practising any form of coping strategies or expressed scepticism about their coping strategies. One of the participants described how he did not consider any strategy, such as counselling:

[…] I have never consulted psychiatrists or any counsellor. Would it make any difference? For example, if I could have told him/her about the work-conflict issues I frequently face. What solution would psychiatrists or any other mental health professionals give me? I do not think so. (Male, 31–35 years old)

Theme 5: barriers to mitigating work-related stressors and seeking support

This theme explores health workers' experiences with barriers to both reducing or coping with work-related stressors and seeking support for persistent CMSs. These barriers were reported to operate at the individual, organisational and systemic levels (ie, health system level). At the individual level, many healthcare workers identified barriers such as low awareness of the sources and consequences of stressors or stress, poor recognition of symptoms and limited coping skills. Participants also highlighted challenges such as ineffective communication, inadequate task planning, poor conflict management skills and a reactive rather than proactive approach to addressing shortages in infrastructure and supplies. One participant forwarded important advice from her general observation as follows:

[…] Many health workers, including me, focus on our primary tasks. However, this tradition may negatively impact both our health and performance. We are usually unaware of which stressors cause us to experience negative mental and physical feelings. […]

> We need to carefully assess our stress levels, identify sources of concern along with the duration of these feelings, address them with a plan, balance workloads using effective methods, understand and fulfil our roles, maintain active communication with colleagues and supervisors, and seek support. (Female, 36–40 years old)

The participants frequently mentioned many other individual-level barriers to seeking support or care from mental health services or mental health professionals when they persistently feel CMSs. Many reported low self-awareness regarding mental symptoms, such as distress, anxiety and depression, as well as a lack of planned coping strategies. Stigma and fear of disclosure were recurring concerns, with several participants noting worries about being judged by patients, colleagues and communities. There was also a pervasive fear that admitting to mental health issues could undermine professional trust and credibility. One participant shared his experience emphasising the professional risks associated with seeking mental health support:

> […] First, I do not recognize the symptoms of mental health issues early, whether it's depression, anxiety or else. Second, I worry that revealing such conditions could harm the professional trust I've built. If people found out I have a mental health condition, they might hesitate to seek medical care from me, […], fearing I couldn't provide quality service while mentally ill and dealing with these issues. Because of this, I avoid consulting psychiatrists. (Male, 25–30 years old)

In addition to these individual challenges, participants frequently mentioned barriers at the organisational level (at the hospital level). Many participants described how shortages of supplies, inadequate infrastructure and understaffing contributed to stress and limited their ability to seek support. A lack of mental health services, insufficient training in stress management, technical updating training, inadequate social support, a lack of rewards for high effort, poor conflict resolution practice and ineffective communication channels further exacerbate these challenges. One participant shared a particularly striking example:

> […] Relatives of patients sometimes unintentionally make our work harder, such as beating or mishandling or throwing our gowns. […] I believe that conflicts and negative outcomes in medical procedures often arise from supply shortages, which require proactive attention. […]Additionally, hospital administrators often demonstrate insufficient commitment to addressing these challenges, leaving health workers to manage with inadequate support. (Female, 36–40 years old)

Participants also identified systemic barriers (zonal, regional and national level issues) that hindered their ability to alleviate stressors and to access mental health services support. These main ones included a lack of mental health policies and initiatives tailored to the mental health of the health workforce, limited engagement in JEG processes and inadequate facilities and infrastructure at hospitals. The insufficient support from the media, the political climate and a shortage of specialised mental health professionals further compounded these challenges. One participant highlighted the systemic level barriers:

> […] Particularly, the salaries, risk allowances, and career progression of healthcare professionals need to be reconsidered. Particularly, the issue of workload has not been given adequate attention. Furthermore, I believe we, as healthcare professionals, were not properly represented in the JEG [job evaluation & grading] or BPR[business process reengineering] studies. […]. This sector is suffering from significant challenges. […] Ultimately, these issues are also risk factors for mental disorders (Male, 25–30 years old)

Another participant expressed frustration with the lack of long-term support for mental health initiatives within the healthcare system, noting:

> […] In our hospital, I initiated efforts to promote mental health for health workers to the Ministry of Health and zonal health departments, but these initiatives were not sustainable. I observed a lack of support at the ministry level to establish mental well-being for the health workforce. There was a prevailing belief that only the community was affected by mental health disorders, yet many work-related factors contributed to increased symptoms among us. (Male, 31–35 years old)

DISCUSSION

Our study highlighted how health workers conceptualise CMSs such as occupational stress, anxiety and depression. It explored how they experience and appraise work-related stressors to causal pathways to CMSs, how these stressors affect their PQoL, how they cope with stressors or stressor-related CMSs and the barriers they face in mitigating stressors or seeking support. Our findings revealed low SICMSs, higher perception of linking work-related stressors to the likelihood of experiencing CMSs and PQoL, the low practice of adaptive coping strategies and multiple barriers to effective coping and support-seeking practice among health workers in respective themes.

Under the first theme of the study, our findings revealed paradoxes in how CMSs are conceptualised from an aetiological approach, suggesting low self-identification as having CMSs. For instance, while many participants demonstrated low symptom identification skills, they exhibited high perceived vulnerability to common mental health symptoms. However, according to the guiding theoretical framework[13] of the study, participants are

considered to have a better understanding or conceptualisation of CMSs if they can identify key symptoms of each CMS, demonstrate high awareness of their vulnerability to experiencing any CMSs, describe actual or subjective experiences of CMSs, explain the potential causal pathways that link work-related stressors to CMSs and express strong beliefs in their ability to control and prevent these mental health symptoms. Keeping this in mind, low symptom identification and high vulnerability to CMSs importantly suggest that health workers may appraise their work-related stressors as beyond their capacity to control which could exacerbate their vulnerability to CMSs. Additionally, low symptom recognition and low perceived ability to control stress or stressors could lead health workers to believe stress is part of their normal professional life, suggesting that health workers may view stress as inherent to the job rather than as a treatable condition. These findings are supported by other studies showing low misconceptions among health workers, even among mental health workers,[31 32] despite variations in methods.

Moreover, the high perceived vulnerability to and low subjective experiences of occupational depression and anxiety could also arise from hiding themselves to avoid stigmatisation and misconceptions about those mental health symptoms, as also supported by a meta-synthesis study.[31] In Ethiopia, studies indicating health workers' conceptualisation and exploration of sources of stressors are scarce despite the availability of studies focusing on the prevalence of CMSs (stress, depression and anxiety) and associations among sociodemographics in Ethiopia[7–10] among Ethiopian health workers. Despite contextual differences, previous research has documented low symptom identification among health workers,[15] and the perception of stress as a normal professional life has also been documented.[16] This low self-identification may imply low mental health literacy, low acceptance of mental health issues, reluctance to seek support and behaviour likely influenced by stigma and other misconceptions.[33] These findings are concerning as they have implications not only for health workers' well-being but also for their ability to diagnose CMSs in patients. Although health workers are assumed to have a better conceptualisation of CMSs of interest from their college education, our findings still suggest the need to provide additional technical updating training for all health workers to increase their appraisal skills to identify themselves as to whether they are experiencing symptoms with the recommended duration and episode to seek early support and prevention activities. Various approaches to training can be tailored to the specific CMSs and their work-related psychosocial risk to promote their mental well-being.[34 35] However, additional studies involving health workers in the Ethiopian context may be required to understand those symptoms from a cause-specific or aetiological approach for targeted interventions.

Participants identified workplace conflicts (conflicts with colleagues, supervisors, hospital officials, patients and visitors) as the most common stressors associated with common mental health symptoms. Additionally, low community (patients, visitors and relatives of patients) awareness of medical processes, difficulties in differentiating patients' or relatives' roles from health workers, negative attitudes towards healthcare providers, failures to communicate with patients and low support to health workers were also sources of conflict at work. Despite differences in methodological and theoretical approaches, our findings align with prior research, such as studies in the USA, where conflict ranks as a significant stressor for healthcare workers.[36] Although drawing causal links remains challenging, our findings are consistent with quantitative studies also indicating conflict is associated with an increased risk of mental strain or distress,[37 38] depression[37 39] and anxiety.[38] Work-family conflict also emerged as a major stressor among study participants. Despite variations in measuring work-family conflict, our finding aligns with a study that indicated work-family conflict was associated with occupational stress[40] in Ethiopia. Our findings also align with other quantitative studies outside Ethiopia which have shown that work-family conflict increases the risk of anxiety symptoms[41 42] and depression.[42] The findings suggest a poor understanding of conflict at work by health workers, poor competence in communication, poor job performance, limited personal resources (both psychological and work-life skills), job dissatisfaction and a broader deficit in conflict resolution culture in healthcare facilities. As participants frequently mentioned, the absence of training regarding workplace conflict management and work-family balance training could contribute to these challenges.

Therefore, health workers should be trained in the effective use of medical supplies, workplace multicultural communication, patient–provider interactions and work–home balance management. These skills are essential for preventing workplace conflicts that could arise if these areas are neglected. Similarly, healthcare managers can benefit from targeted training that focuses on stress management, conflict resolution, mentorship and strategies for promoting equity and staff recognition. As hospitals serve patients and families from diverse cultural, linguistic and religious backgrounds, hospital staff should also receive training on respectful and inclusive treatment of these communities. Additionally, mass media can play a role in encouraging the public to follow hospital rules and regulations and appreciate the critical role health workers play in caring for patients. These measures can help reduce conflicts within hospital settings. The link between such conflict at work and CMSs also needs further studies for the contexts of Ethiopian health workers.

Participants also reported limited access to essential job resources, such as managerial and social support, inadequate medical supplies and equipment and WASH were among the three stressors in the selected hospitals. These resource constraints not only increase job demands but

also reduce job control, increasing mental strain and the risk of CMSs. In our thematisation processes, such constraints were considered as job resources. Failure to meet these resources damages health workers' job performance, loss of positive emotions and satisfaction, burnout and so on, which in turn causes mental distress, depressed mood and excessive worries about performance. Regarding managerial and social support, participants' concern is also supported by other studies that indicated low social support (supervisors and colleagues' support) increases the risk of CMSs, such as distress,[43] depressive symptoms[44–53] and anxiety symptoms.[43] Our finding that personal protective equipment (PPE) was limited or unavailable agrees with findings from Ethiopia[7] and sub-Saharan Africa during the COVID-19 pandemic.[54]

Participants also noted that inadequate WASH-related stressors were among the top stressors in care areas that could increase the risk of CMSs by hindering health workers' performance and lowering the quality of care. Though the target population and study approaches differ from our study, studies support participants' concern that WASH-related stressors such as water insecurity increased psychological distress including anxiety and depression.[55–59] However, studies with strong study designs are required to establish complex causal pathways. Our findings underscore the importance of individual and organisational interventions, urging further research on the links among managerial commitment, inadequate medical supplies and equipment, WASH-related stressors and symptoms of common mental health disorders in health workers.

Higher effort and low reward dynamics were other stressors perceived to increase the risk of CMSs in our study. While data specific to Ethiopian health workers is limited, quantitative studies from high and middle-income countries show that a higher effort to low reward ratios increase the risk of common mental health disorders,[60–63] including anxiety and depression. These findings suggest the need for sector-wide collaboration to improve compensation schemes, such as salaries, risk allowances and duty payments. Revising the current JEG system with additional studies on salaries and current economic inflation rates may be a policy-level intervention to improve the mental well-being of health workers. Work-related stressors were also reported to negatively affect key components of PQoL including compassion satisfaction, feelings of burnout and CF.

Despite population and methodological differences, the findings of other studies support our findings that job demands increase burnout by affecting burnout dimensions, such as EE and depersonalisation (DP), while negatively predicting personal accomplishment (PA)[64 65] and compassion.[66] Similarly, low job resources increase the likelihood of elevating EE, DP and CF,[66] and decrease the likelihood of PA.[64 65 67] Our study also aligns with prior studies that indicated high job demands and low resources decrease life satisfaction,[68] and supportive factors such as servant leadership were found to be important job resources that decrease burnout and increase life satisfaction.[68] Similarly, higher scores of job demands and lower job resources such as low decision latitude and low social support were more likely to report maladaptive coping strategies like self-undermining which can lead to job dissatisfaction[24] and may harm compassion satisfaction components of PQoL of health workers. Furthermore, low social support (supervisors' and colleagues' support) is also an important resource known to reduce burnout,[64 67 69–74] CF or secondary trauma forms,[67 69 70 73 75 76] whereas higher social support increased the likelihood of compassion satisfaction.[73] Participants' concern in our study is also supported by studies indicating that a higher ERI increases the likelihood of burnout syndromes[64 77 78] and reduces compassion satisfaction,[66 78] which all are components of PQoL. Therefore, despite the uncertainty of discussing all work stressors, our findings may provide clues on where policymakers should focus to reduce stressors by increasing job resources (psychological and material resources) to improve the PQoL of health workers. However, the impact of each work-related stressor on the PQoL of health workers requires additional studies for the Ethiopian health workers context.

When it came to coping strategies, nearly half of the participants described using maladaptive strategies, while others reported no planned coping strategies (perhaps due to recall bias). While there has been much debate about whether maladaptive coping strategies could alleviate mental distress, evidence shows that adaptive (positive) coping strategies related to COVID-19 helped reduce health workers' distress and motivated them to engage in direct patient care.[79 80] Fewer participants in our study used positive coping strategies compared with a study on burnout among mental health professionals,[81] likely because most of our participants were non-mental health professionals with less awareness of such strategies. Using maladaptive coping strategies such as ignoring resource challenges and proceeding to substandard options were common strategies employed by the study participants. For example, health workers convinced themselves of the persistent problem of WASH as an unresolved challenge, making them stay with the problem and choose to work in unhygienic working areas rather than taking any problem-based coping strategies. Using maladaptive coping strategies may harm health workers' well-being and PQoL, even if they are better than having no coping strategies at all, despite being better than being without any conscious planning of any coping strategies. Additionally, those who did employ positive coping primarily relied on emotion-based methods like prayer, socialising with friends, entertainment and engaging in religious prayer. Therefore, this study suggests providing training for health workers on emotional and physical problem-solving skills and implementing individual-level and organisational-level coping skills based on stressor prioritisation.

Finally, barriers to seeking support from mental health services during the persistent experience of CMS and

hindering coping strategies with work-related stressors were also evident at the individual, organisational and health system levels. In our study, barriers could be appraised as also workplace stressors by health workers despite creating some complexity. Although comparing these findings with others may be challenging due to differences in contextual factors, our results align with those of a similar study conducted elsewhere.[82] While likely contextual, it requires further exploration to develop interventions that reduce stigma and improve access to mental health services. Testing effective individual and organisational interventions[83 84] for stress management and implementing them in context can benefit health workers. Intersectoral collaboration may also be needed to address organisational and system-level barriers in the workplace. Overall, the findings of this study underscore several key areas for intervention. First, there is a need to provide updated training on CMSs among health workers, equipping them with the skills to recognise and appraise CMSs and to seek early support. Second, addressing resource shortages, such as PPE, WASH infrastructure and managerial support is critical for reducing stress and improving mental well-being. Healthcare managers can be empowered through internal organisational level changes such as targeted training in workplace-centred training focusing on stress management, conflict resolution and mentorship skills, alongside strategies for equity and staff recognition. These initiatives create supportive and effective leaders who enhance healthcare worker well-being and drive better patient outcomes, leading to quality professional life. Third, promoting communication and conflict resolution skills in healthcare organisations may help address workplace conflicts, the main perceived source of stress. Fourth, policy reforms are needed to improve compensation structures and ensure that the economic realities of health workers are reflected in salary adjustments. Lastly, organisational interventions focused on fostering adaptive coping strategies and prioritising job resources could enhance mental well-being and PQoL.

Steps to maintain rigours of the study

The study employed methodological triangulation to integrate data from FGDs and IDIs, enhancing the validity of the findings. Themes were identified with data from both methods cross-checked to ensure consistency and highlight differences. Focus groups provided broad insights, while interviews investigated deeper specific issues, allowing for iterative refinement of findings. Principal investigators, along with note-takers and recorders, spend sufficient time engaging with study participants and healthcare facility communities to ensure prolonged interaction and persistent observation for contextual understanding. The study used two data sources: IDIs and FGDs performed by different investigators (note-takers, moderators, IDI interviewers) cross-verifying findings through interviews informed by existing theories to ensure triangulation.

A summary of findings and selected participants' quotations was shared with study participants, with feedback received from at least one participant per FGD and five IDI participants to ensure better representations of perspectives. Detailed descriptions of the context, participants and research processes were provided to readers to assess the findings' applicability to other contexts. Participants were purposefully selected from three strata of healthcare facilities (primary, general and tertiary hospital settings) based on experience and knowledge of the work environment concerning stressors to ensure transferability.

The research team thoroughly documented all processes, including local language (Amharic) transcripts, translations; codings and thematisation with supported quotations. Multiple researchers randomly picked codes and assigned them to themes, verifying their alignment with the guiding theoretical frameworks to ensure dependability. The findings for each theme were supported by the participant quotes, ensuring they were free of researcher bias and motivations, ensuring confirmability. Lastly, the inclusion of diverse categories of healthcare professionals ensured the study fairly represented the different varied realities of participants regarding work stressors and common mental health symptoms.

Strengths and limitations of the study

This uses diverse qualitative methods (FGDs and IDIs) guided by theoretical frameworks and enriches the study by providing comprehensive, reliable and contextually grounded insights into health workers' conceptualisation and experiences with CMSs, work-related stressors, coping strategies and barriers to mitigating work stressors and seeking support.

However, there are several limitations. Participants faced challenges in recalling specific mental symptoms (ie, stress, anxiety and depression), the associated stressor(s), their duration and the link between specific stressors and symptoms. This made it difficult to verify whether changes in symptoms were tied to changes in specific stressor(s). Similarly, it was unclear which coping strategies corresponded to particular stressor(s) and/or symptoms of CMSs due to health workers' recall limitations despite trying to capture coping strategies in every theme during our interviews and discussions.

Exploring the subjective experience of CMSs, especially anxiety and depressive symptoms through FGDs could lead to social desirability bias such as hiding experience due to perceived and actual fear of stigmatisation, and perception of loss of professional trust and acceptance. Health workers may hide some managerial stressors due to fear of managerial repercussions and/or another conflict of interest. Furthermore, there were long-term interruptions of duty payments for most of the hospitals during the study period. This may have led participants to disproportionately attribute stress to managerial and systemic

issues, potentially inflating perceived conflicts as stressors.

We suggest that perceived causal exploration be supported by the lived experiences of health workers with chronic occupational stress, occupational depression and occupational anxiety to provide stronger evidence via longitudinal qualitative and quantitative studies.

CONCLUSIONS

Our findings revealed low self-identification as having SICMSs, higher perception of linking work-related stressors to the likelihood of experiencing CMSs and a PQoL, low practice of adaptive coping strategies and multiple barriers to effective coping and support-seeking practice among health workers in respective themes.

Overall, the findings of this study underscore several key areas for intervention. First, there is a need to provide updated training on CMSs among health workers, equipping them with the skills to recognise and appraise CMSs and to seek early support. Second, addressing resource shortages, such as PPE, WASH infrastructure and managerial support is critical for reducing stress and improving mental well-being and PQoL. Third, promoting communication and conflict resolution skills in healthcare organisations may help address workplace conflicts, the main perceived source of stress. Fourth, policy reforms are needed to improve compensation structures and ensure that the economic realities of health workers are reflected in salary adjustments. Finally, organisational interventions focused on fostering adaptive coping strategies and prioritising job resources could enhance mental well-being and PQoL.

We suggest that perceived causal exploration be supported by the lived experiences of health workers with chronic occupational stress, occupational depression and occupational anxiety to provide stronger evidence using longitudinal qualitative and quantitative studies.

Author affiliations
[1]Department of Preventive Medicine, Addis Ababa University,College of Health Sciences, Addis Ababa, Ethiopia
[2]Department of Preventive Medicine, Addis Ababa University, College of Health Science, Addis Ababa, Ethiopia
[3]Department of Mental Health Epidemiology, Addis Ababa University, College of Health Sciences, Addis Ababa, Ethiopia
[4]Graduate School of Asian and African Area Studies, Kyoto University, Kyoto, Japan
[5]African Population and Health Research Center, Nairobi, Nairobi County, Kenya

X Medhin Selamu @medhin91

Acknowledgements We express our gratitude to Addis Ababa University, School of Public Health, for ethical approval and funding. We also thank the Hosanna College of Health Sciences for providing the data collection training halls and other required support, the Public Health Institute of Central Ethiopia Region for additional ethical approval, the public hospitals for permitting the data collection, the study participants and the field research assistants. We would like to express special thanks to Kyoto University-Asia and the African Area Study for supporting the corresponding author in drafting a manuscript and to Professor Mirgissa, Professor Masayoshi Shigeta and Dr Morie Kaneko for their valuable suggestions.

Contributors YAH conceived the idea, wrote the proposal, secured funding, administered the fieldwork, analysed the data, drafted, reviewed the manuscript and approved the submission. YAH is responsible for the overall content as a guarantor. AK conceived the idea, reviewed the proposal, supervised fieldwork, facilitated funding and seminars, participated in the data analysis, reviewed the manuscript and approved it for submission. EG conceived the idea, reviewed the proposal, supervised fieldwork, arranged subsequent seminars, participated in the data analysis, reviewed the manuscript and approved it for submission. MS reviewed the proposal, participated in the data analysis, participated in the data analysis, reviewed the manuscript and approved it for submission. HH supervised and participated in data analysis, arranged the seminars at international conferences and approved the study for submission.

Funding The School of Public Health of Addis Ababa University funded the research.

Map disclaimer The inclusion of any map (including the depiction of any boundaries therein), or of any geographic or locational reference, does not imply the expression of any opinion whatsoever on the part of BMJ concerning the legal status of any country, territory, jurisdiction or area or of its authorities. Any such expression remains solely that of the relevant source and is not endorsed by BMJ. Maps are provided without any warranty of any kind, either express or implied.

Competing interests None declared.

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

Patient consent for publication Not applicable.

Ethics approval This study involves human participants and was approved by the Institutional Review Board of the College of Health Sciences (CHS-IRB) of Addis Ababa University approved this study (Protocol Number: 080/22/SPH). Participants gave informed consent to participate in the study before taking part.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. All data relevant to the study are included in the article or uploaded as supplementary information. All data are within the manuscript and its supplementary materials. Additional data can be obtained from the corresponding author upon reasonable request.

ORCID iD
Yitagesu Habtu http://orcid.org/0000-0003-3201-8101

REFERENCES

1 Marmot M, Friel S, Bell R, *et al*. Closing the gap in a generation: health equity through action on the social determinants of health. *The Lancet* 2008;372:1661–9.
2 Lund C, Brooke-Sumner C, Baingana F, *et al*. Social determinants of mental disorders and the Sustainable Development Goals: a systematic review of reviews. *Lancet Psychiatry* 2018;5:357–69.
3 Goetzel RZ, Roemer EC, Holingue C, *et al*. Mental Health in the Workplace: A Call to Action Proceedings From the Mental Health in the Workplace-Public Health Summit. *J Occup Environ Med* 2018;60:322–30.
4 Beate M. Different workplace-related strains and different workplace anxiety. *J Occup Environ Med* 2013;55:978–82.

5 Søvold LE, Naslund JA, Kousoulis AA, *et al*. Prioritizing the Mental Health and Well-Being of Healthcare Workers: An Urgent Global Public Health Priority. *Front Public Health* 2021;9:679397.
6 Wulsin L, Alterman T, Timothy Bushnell P, *et al*. Prevalence rates for depression by industry: a claims database analysis. *Soc Psychiatry Psychiatr Epidemiol* 2014;49:1805–21.
7 Ayalew M, Deribe B, Abraham Y, *et al*. Prevalence and determinant factors of mental health problems among healthcare professionals during COVID-19 pandemic in southern Ethiopia: multicentre cross-sectional study. *BMJ Open* 2021;11:e057708.
8 Demilew D, Angaw DA, Getnet B, *et al*. Psychological distress and associated factors among healthcare professionals in Ethiopia during the COVID-19 pandemic: a cross-sectional study. *BMJ Open* 2022;12:e057197.
9 Jemal K, Deriba BS, Geleta TA, *et al*. Self-Reported Symptoms of Depression, Anxiety, and Stress Among Healthcare Workers in Ethiopia During the COVID-19 Pandemic: A Cross-Sectional Study. *Neuropsychiatr Dis Treat* 2021;17:1363–73.
10 Mulatu HA, Tesfaye M, Woldeyes E, *et al*. The prevalence of common mental disorders among healthcare professionals during the COVID-19 pandemic at a tertiary Hospital in Addis Ababa, Ethiopia. *J Affect Disord Rep* 2021;6:100246.
11 Stone KW, Jagger MA, Horney JA, *et al*. Changes in anxiety and depression among public health workers during the COVID-19 pandemic response. *Int Arch Occup Environ Health* 2023;96:1235–44.
12 WHO. Prevention of mental disorders. Effective interventions and policy options. 2004.
13 Schomerus G, Muehlan H, Auer C, *et al*. Validity and psychometric properties of the Self-Identification as Having a Mental Illness Scale (SELF-I) among currently untreated persons with mental health problems. *Psychiatry Res* 2019;273:303–8.
14 Rugulies R, Aust B, Greiner BA, *et al*. Work-related causes of mental health conditions and interventions for their improvement in workplaces. *The Lancet* 2023;402:1368–81.
15 Moll SE. The web of silence: a qualitative case study of early intervention and support for healthcare workers with mental ill-health. *BMC Public Health* 2014;14:138.
16 Nakamura-Taira N, Izawa S, Yamada KC. Stress underestimation and mental health literacy of depression in Japanese workers: A cross-sectional study. *Psychiatry Res* 2018;262:221–8.
17 Francesco Marcatto LDB, Luis O, Festa S, *et al*. The Perceived Occupational Stress Scale: A Brief Tool for Measuring Workers' Perceptions of Stress at Work. *Eur J Psychol Assess* 2022;104:1–14.
18 Bianchi R, Schonfeld IS. The Occupational Depression Inventory: A new tool for clinicians and epidemiologists. *J Psychosom Res* 2020;138:110249.
19 Critical Review of the Job Demands-Resources Model: Implications for Improving Work and Health. *Springer Sci* 2014;3:43–68.
20 Siegrist J. Adverse health effects of high-effort/low-reward conditions. *J Occup Health Psychol* 1996;1:27–41.
21 Stamm BH, ed. *The concise ProQOL manual*. 2 ed.2010:
22 Lazarus Richard.S FS. *Stress, appraisal, and coping*. New York: Springer publishing company, 1984.
23 Champion VL, Skinner CS. The health belief model. In: *Health behavior and health education: theory, research, and practice*. San Francisco, CA, US: Jossey-Bass, 2008: 45–65.
24 *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. 5th edn. Arlington, VA, US: American Psychiatric Publishing, Inc, 2013.
25 Karasek RA. Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign. *Adm Sci Q* 1979;24:285.
26 Lopez KA, Willis DG. Descriptive versus interpretive phenomenology: their contributions to nursing knowledge. *Qual Health Res* 2004;14:726–35.
27 Willis DG, Sullivan-Bolyai S, Knafl K, *et al*. Distinguishing Features and Similarities Between Descriptive Phenomenological and Qualitative Description Research. *West J Nurs Res* 2016;38:1185–204.
28 Habtu Y, Kumie A, Selamu M, *et al*. Prevalence and determinants of occupational depression, anxiety, and stress among Ethiopian healthcare workers. *Sci Rep* 2024;14:21817.
29 O'Brien BC, Harris IB, Beckman TJ, *et al*. Standards for reporting qualitative research: a synthesis of recommendations. *Acad Med* 2014;89:1245–51.
30 Lazarus RS, Folkman S. Transactional theory and research on emotions and coping. *Eur J Pers* 1987;1:141–69.
31 Choudhry FR, Mani V, Ming LC, *et al*. Beliefs and perception about mental health issues: a meta-synthesis. *Neuropsychiatr Dis Treat* 2016;12:2807–18.
32 Marthoenis M. Beliefs, Knowledge, and Perception of Indonesian Mental Healthcare Workers Regarding Mental Illness: A Cross-Sectional Study. *Iran J Nurs Midwifery Res* 2024;29:631–4.
33 Horsfield P, Stolzenburg S, Hahm S, *et al*. Self-labeling as having a mental or physical illness: the effects of stigma and implications for help-seeking. *Soc Psychiatry Psychiatr Epidemiol* 2020;55:907–16.
34 Liu G, Jack H, Piette A, *et al*. Mental health training for health workers in Africa: a systematic review. *Lancet Psychiatry* 2016;3:65–76.
35 Ho SS, Sosina W, DePierro JM, *et al*. Promoting Resilience in Healthcare Workers: A Preventative Mental Health Education Program. *IJERPH* 2024;21:1365.
36 Rink LC, Oyesanya TO, Adair KC, *et al*. Stressors Among Healthcare Workers: A Summative Content Analysis. *Glob Qual Nurs Res* 2023;10:23333936231161127.
37 Madsen IEH, Nyberg ST, Magnusson Hanson LL, *et al*. Job strain as a risk factor for clinical depression: systematic review and meta-analysis with additional individual participant data. *Psychol Med* 2017;47:1342–56.
38 Gerhardt C, Semmer NK, Sauter S, *et al*. How are social stressors at work related to well-being and health? A systematic review and meta-analysis. *BMC Public Health* 2021;21:890.
39 Zuelke AE, Roehr S, Schroeter ML, *et al*. Are social conflicts at work associated with depressive symptomatology? Results from the population-based LIFE-Adult-Study. *J Occup Med Toxicol* 2020;15:1.
40 Bakare M, Darega J, Nugus GG, *et al*. Work-related stress and associated factors among health professionals working in Ambo town public health facilities, West Shoa Zone, Ethiopia, 2021: a cross-sectional study. *BMJ Open* 2023;13:e074946.
41 Liang Z, Wang Y, Wei X, *et al*. Prevalence and associated factors of depressive and anxiety symptoms among healthcare workers in the post-pandemic era of COVID-19 at a tertiary hospital in Shenzhen, China: A cross-sectional study. *Front Public Health* 2023;11:1094776.
42 Zhang Y, Dugan AG, El Ghaziri M, *et al*. Work-Family Conflict and Depression Among Healthcare Workers: The Role of Sleep and Decision Latitude. *Workplace Health Saf* 2023;71:195–205.
43 Shi L-S-B, Xu RH, Xia Y, *et al*. The Impact of COVID-19-Related Work Stress on the Mental Health of Primary Healthcare Workers: The Mediating Effects of Social Support and Resilience. *Front Psychol* 2021;12:800183.
44 Gao YQ, Pan BC, Sun W, *et al*. Depressive symptoms among Chinese nurses: prevalence and the associated factors. *J Adv Nurs* 2012;68:1166–75.
45 Franche R, Williams A, Ibrahim S, *et al*. Path analysis of work conditions and work–family spillover as modifiable workplace factors associated with depressive symptomatology. *Stress Health* 2006;22:91–103.
46 da Silva ATC, Lopes C de S, Susser E, *et al*. Work-Related Depression in Primary Care Teams in Brazil. *Am J Public Health* 2016;106:1990–7.
47 Magnavita N, Fileni A. Association of work-related stress with depression and anxiety in radiologists. *Radiol Med* 2014;119:359–66.
48 Mark G, Smith AP. Occupational stress, job characteristics, coping, and the mental health of nurses. *Br J Health Psychol* 2012;17:505–21.
49 Sakata Y, Wada K, Tsutsumi A, *et al*. Effort-reward imbalance and depression in Japanese medical residents. *J Occup Health* 2008;50:498–504.
50 Tomioka K, Morita N, Saeki K, *et al*. Working hours, occupational stress and depression among physicians. *Occup Med (Lond)* 2011;61:163–70.
51 Wang JN, Sun W, Chi TS, *et al*. Prevalence and associated factors of depressive symptoms among Chinese doctors: a cross-sectional survey. *Int Arch Occup Environ Health* 2010;83:905–11.
52 Wang LJ, Chen CK, Hsu SC, *et al*. Active job, healthy job? Occupational stress and depression among hospital physicians in Taiwan. *Ind Health* 2011;49:173–84.
53 Jasper S, Stephan M, Al-Khalaf H, *et al*. Too little appreciation for great expenditure? Workload and resources in ICUs. *Int Arch Occup Environ Health* 2012;85:753–61.
54 Oyat FWD, Oloya JN, Atim P, *et al*. The psychological impact, risk factors and coping strategies to COVID-19 pandemic on healthcare workers in the sub-Saharan Africa: a narrative review of existing literature. *BMC Psychol* 2022;10:284.
55 Libey A, Kebede A, Ibrahim J, *et al*. Surveyed from Afar: Household water security, emotional well-being, and the reliability of water supply in the Ethiopian lowlands. *Int J Hyg Environ Health* 2022;246:114059.
56 Stevenson EGJ, Greene LE, Maes KC, *et al*. Water insecurity in 3 dimensions: An anthropological perspective on water and women's

psychosocial distress in Ethiopia. *Social Science & Medicine* 2012;75:392–400.
57 Stevenson EGJ, Ambelu A, Caruso BA, *et al*. Community Water Improvement, Household Water Insecurity, and Women's Psychological Distress: An Intervention and Control Study in Ethiopia. *PLoS One* 2016;11:e0153432.
58 Ghassemi EY, Thorseth AH, Le Roch K, *et al*. Mapping the association between mental health and people's perceived and actual ability to practice hygiene-related behaviours in humanitarian and pandemic crises: A scoping review. *PLoS One* 2023;18:e0286494.
59 Simiyu S, Bagayoko M, Gyasi RM. Associations between water, sanitation, and depression among older people in Ghana: empirical evidence from WHO-SAGE Wave 2 survey. *Aging Ment Health* 2022;26:1112–9.
60 Theorell T, Hammarström A, Aronsson G, *et al*. A systematic review including meta-analysis of work environment and depressive symptoms. *BMC Public Health* 2015;15:738.
61 van der Molen HF, Nieuwenhuijsen K, Frings-Dresen MHW, *et al*. Work-related psychosocial risk factors for stress-related mental disorders: an updated systematic review and meta-analysis. *BMJ Open* 2020;10:e034849.
62 Law PCF, Too LS, Butterworth P, *et al*. A systematic review on the effect of work-related stressors on mental health of young workers. *Int Arch Occup Environ Health* 2020;93:611–22.
63 Bonde JPE. Psychosocial factors at work and risk of depression: a systematic review of the epidemiological evidence. *Occup Environ Med* 2008;65:438–45.
64 Rostamabadi A, Kargar Shouroki F, Jalilian H, *et al*. The relationship between work-related psychosocial factors and burnout among Iranian nurses: Job Demand-Control-Support model. *Med Lav* 2019;110:312–20.
65 Schaufeli WB, Bakker AB, Van Rhenen W. How changes in job demands and resources predict burnout, work engagement, and sickness absenteeism. *J Organ Behavior* 2009;30:893–917.
66 Tolonen I, Saarinen A, Keltikangas-Järvinen L, *et al*. Rewards of Compassion: Dispositional Compassion Predicts Lower Job Strain and Effort-Reward Imbalance Over a 11-Year Follow-Up. *Front Psychol* 2021;12:730188.
67 Bakker AB, de Vries JD. Job Demands-Resources theory and self-regulation: new explanations and remedies for job burnout. *Anxiety Stress Coping* 2021;34:1–21.
68 Upadyaya K, Vartiainen M, Salmela-Aro K. From job demands and resources to work engagement, burnout, life satisfaction, depressive symptoms, and occupational health. *Burn Res* 2016;3:101–8.
69 Li L, Ruan H, Yuan W-J. The relationship between social support and burnout among ICU nurses in Shanghai: A cross-sectional study. *Chinese Nursing Research* 2015;2:45–50.
70 Pergol-Metko P, Staniszewska A, Metko S, *et al*. Compassion Fatigue and Perceived Social Support among Polish Nurses. *Healthcare (Basel)* 2023;11:706.
71 Nasirpour N, Shalbafan M, Savari E, *et al*. Effort-reward imbalance and common mental disorders among public sector employees of Iran: a cross-sectional analysis. *BMC Public Health* 2024;24:1447.
72 Yang S, Liu D, Liu H, *et al*. Relationship of work-family conflict, self-reported social support and job satisfaction to burnout syndrome among medical workers in southwest China: A cross-sectional study. *PLoS ONE* 2017;12:e0171679.
73 Ruiz-Fernández MD, Ramos-Pichardo JD, Ibañez-Masero O, *et al*. Perceived health, perceived social support and professional quality of life in hospital emergency nurses. *Int Emerg Nurs* 2021;59:101079.
74 Hunsaker S, Chen HC, Maughan D, *et al*. Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses. *J Nurs Scholarsh* 2015;47:186–94.
75 Zhang J, Wang X, Chen O, *et al*. Social support, empathy and compassion fatigue among clinical nurses: structural equation modeling. *BMC Nurs* 2023;22:425.
76 Monroe M, Morse E, Price JM. The Relationship Between Critical Care Work Environment and Professional Quality of Life. *Am J Crit Care* 2020;29:145–9.
77 Hämmig O, Brauchli R, Bauer GF. Effort-reward and work-life imbalance, general stress and burnout among employees of a large public hospital in Switzerland. *Swiss Med Wkly* 2012;142.
78 Han SJ, Lee SY, Kim SE. An Exploratory Study of Psychological Distress, Professional Quality of Life, Effort-Reward Imbalance, and Turnover Intention of Hospital Nurses during the COVID-19 Pandemic. *Healthcare (Basel)* 2023;11:2695.
79 Franck E, Haegdorens F, Goossens E, *et al*. The Role of Coping Behavior in Healthcare Workers' Distress and Somatization During the COVID-19 Pandemic. *Front Psychol* 2021;12:684618.
80 Rose S, Hartnett J, Pillai S. Healthcare worker's emotions, perceived stressors and coping mechanisms during the COVID-19 pandemic. *PLoS One* 2021;16:e0254252.
81 Estafanos Nakhla MY, Eissa MF, Mahmoud NZ, *et al*. The Relation between Burnout, Life Event Stresses and Coping Strategies in Mental Health Workers. *QJM* 2024;117.
82 Maple J-L, Willis K, Lewis S, *et al*. Healthcare workers' perceptions of strategies supportive of their mental health. *Journal of Medicine, Surgery, and Public Health* 2024;2:100049.
83 Tamminga SJ, Emal LM, Boschman JS, *et al*. Individual-level interventions for reducing occupational stress in healthcare workers. *Cochrane Database Syst Rev* 2023;5:CD002892.
84 Catapano P, Cipolla S, Sampogna G, *et al*. Organizational and Individual Interventions for Managing Work-Related Stress in Healthcare Professionals: A Systematic Review. *Medicina (Kaunas)* 2023;59:1866.