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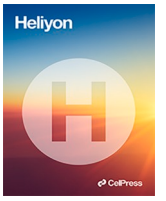

Research article

A qualitative study of work-related musculoskeletal disorders among midwives in selected hospitals in Ho municipality, Ghana

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ABSTRACT

Objective and rationale: The study sought to explore the experiences of midwives at selected hospitals in the Ho municipality regarding work-related musculoskeletal disorders, the predisposing factors, the impacts on them, and their coping strategies to mitigate the effects of work-related musculoskeletal disorders.

Methods: This study adopted a qualitative research approach with a phenomenological study design. Purposive sampling was employed in this study to select participants. Data was collected and recorded on voice recording devices from fifteen (15) midwives through an interview using a semi-structured interview guide. Data was manually transcribed and analyzed using thematic content analysis.

Results: The four emerging themes include: the lived experiences of midwives regarding musculoskeletal disorders, predisposing factors contributing to musculoskeletal disorders, impact of musculoskeletal disorders, and coping strategies of midwives. These themes were further expanded by their sub-themes in describing musculoskeletal conditions, onset, understaffing of midwives, awkward posture assumption during care delivery, limited logistics, struggle with quality of life, impaired work performance, rest and good body mechanics, and teamwork.

Conclusion: To lower the rate of work-related musculoskeletal disorders among midwives and increase work efficiency and productivity, educational programs on prevention and coping mechanisms for musculoskeletal disorders should be made mandatory for midwives.

1. Introduction

Globally, the prevalence of work-related musculoskeletal disorders (WRMSDs) among midwives varies widely between 9.2 % and 68.0 % [1]. The International Labour Organization (ILO), and the World Health Organization (WHO) refer to WRMSDs as a new epidemic that warrants more attention [2]. Lower back pain is one of the most common WRMSDs among midwifery professionals, accounting for a point prevalence of approximately 17 %, an annual prevalence of 40–50 %, and a lifetime prevalence of 35–80 % [3].

Musculoskeletal disorders can be caused by poor posture, sprains, lifting of heavy objects, stress, long working hours, and workload [4]. In the healthcare sector, midwives are part of the multi-disciplinary medical team that is susceptible to WRMSDs [5].

Midwives in Ghana routinely perform normal vaginal deliveries, episiotomy, and other ward activities that require standing long for the birth delivery processes, lifting patients, and transferring patients out of bed and from the floor [6,7]. On average, a midwife in

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Ghana as part of the job description is mandated to undertake between 15 and 25 deliveries monthly, depending on the specific hospital policy [8]. These herculean work tasks put midwives at high risk for acute and cumulative WRMSDs [9]. In light of midwives' susceptibility to WRMSD risk factors, it is crucial to implement practical health-preventative measures to alter work patterns and mitigate occupational stress, which could lead to an increase in the prevalence of these illnesses [10]. In maternity, limitations in the productivity or functionality of midwives can cost the life of the mother and the baby or cause critical and chronic damage [11]. In Ghana, there is little information on the prevalence of WRMSDs among midwives. However, a study by Boakye et al. in the Greater Accra region documented a prevalence of WRMSDS among midwives to be 53.8 % [10]. While midwives in Ho Municipality are not unique from other midwives, there are contextual peculiarities that require local studies before appropriate solutions can be proposed. A qualitative design was therefore employed for this study to explore the lived experiences of midwives concerning musculoskeletal disorders, the predisposing factors of musculoskeletal disorders, their impact on them, and the coping strategies adopted by midwives to mitigate work-related musculoskeletal disorders.

2. Methods

2.1. Study design

This study has adopted a qualitative research approach with a phenomenological study design. This design was selected to enable the researchers to describe midwives' experiences with work-related musculoskeletal disorders, their impact, and coping strategies at selected hospitals in the Ho Municipality.

The purpose of the study is to provide valuable insights into the complex interaction between work-related factors and musculoskeletal health among midwives, with the ultimate goal of informing policy, practice, and interventions to enhance workplace safety and support the health of midwifery professionals.

2.2. Sample and sampling technique

Purposive sampling was employed in this study to select participants and data saturation was reached after the 15th participant. This sampling technique was chosen because this research focuses on particular characteristics of a population that are of interest which will best enable participants to answer the research question. The study included midwives working at the selected facilities and willing to consent to take part in the study. Two (2) midwives along the line rescinded their decision to partake in the study on account of lack of time and interest.

2.3. Inclusion and exclusion criteria

The study included midwives working at the selected facilities and willing to consent to take part in the study. This study excluded all rotation midwives, student midwives and midwives who were seriously sick, midwives on sick leave, and, midwives on study leave at the time of data collection.

2.4. Research instrument and data collection procedures

A semi-structured interview guide was used based on the study objectives. A semi-structured questionnaire was chosen because it permits freedom of responses and provides insight into a comprehension of an issue. The interview was conducted by all authors who are lecturers, nurses, and midwives by profession. The researchers had discussions and internal training before data collection to ensure unison and accuracy in data collection. To ensure a higher degree of validity and reliability of the interview guide for the study, a pre-test was conducted among three (3) midwives in any of the selected health facilities. Study participants were approached face-to-face and informed consent was obtained from the individual midwives after an explanation of the nature of the study. A formal relationship and rapport were established with the participants to enable them to familiarize themselves with the researchers and the intent for carrying out the research. The place and time of face-to-face interviews were scheduled according to the participants' convenience. Data was collected right in the three major health facilities in Ho namely: Ho Teaching Hospital, Ho Municipal Hospital and Ho Polyclinic with maximum privacy ensured. To ensure maximum privacy and confidentiality, no one else was present during data collection before the interview, a pre-test was conducted in another private hospital in the municipality. All interviews were conducted in English language since it is an official language. A deductive approach was applied in this study. The researchers studied what others have done, read existing theories, and tested hypotheses that emerged from those theories. To minimize inter-observer bias, all authors were trained to make sure data is consistently recorded ensuring interrater reliability. Also, all observation procedures were standardized making sure they were well structured and clear. The researchers reviewed and discussed the categories and themes to ensure that participants' views were represented. Philip Voice Tracer Audio Recorder was used for audio recording. The researchers transcribed all the audio tape-recorded information verbatim into readable texts after listening to the audio severally. Each interview lasted between 30 and 45 min. Data was collected within a period of three months, thus from November 2022 to January 2023.

Research rigour was ensured using the four aspects of trustworthiness identified by Elo et al. [12]. To ensure, dependability, the researchers read over the transcripts several times and at least two of the researchers coded the data which were discussed among other members for validation. To ensure conformability, the researchers kept memos, field observations and decisions regarding the data

which were incorporated into the interview transcripts before analysis. Audit trail of audios, transcripts, field notes and meetings were labelled correctly and kept by the researchers to facilitate data integrity at all stages. Transferability was accomplished through a detailed description of the methods and tools used in the study for replication and reference. To ensure credibility, transcribed data were returned to participants for their comments, and clarification to ensure that their experiences were accurately captured. Thus, the study was conducted in a manner that ensured accuracy in the results obtained thus maintaining trustworthiness.

2.5. Data analysis

The outcomes of the interview were analyzed by all authors using thematic content analysis. Thematic content analysis is a method of presenting qualitative data descriptively. The data from the recorded interviews was transcribed and categorized. Data was coded by three authors. The data was compared with notes taken during the interview process to check for possible omissions or additions. The data was subsequently integrated using the thematic content analysis technique. Codes were developed into themes and sub-themes for the write-up. Direct quotations from participants were presented to ensure that the participant's responses were reflected in the study. Field notes were also reviewed to add depth to the analysis.

3. Results

3.1. Sample characteristics

A total of fifteen (15) midwives from 3 selected health facilities participated in this study as seen in Table 1.

3.2. Research question results

All fifteen (15) participants in this study affirmed that they suffer from musculoskeletal disorders as a result of the midwifery work. Four themes and thirteen subthemes emerged from the analysis of this study as seen in Table 2.

3.3. Theme one: lived experiences of midwives regarding musculoskeletal disorders

The majority of the participants described some musculoskeletal disorders experienced and how they started. These disorders range from those that arise suddenly and are short term such as lower back pain, waist and neck pain to long-term conditions such as herniated lumber disk, spondylosis and scoliosis.

4. Subtheme one: description of musculoskeletal conditions

13 out of 15 participants vividly described the musculoskeletal conditions experienced in the line of duty. This is evident in the following quotes:

Table 1
Demographic characteristics of participants.

Demographics		Count (15)	Percentage (100 %)
Age	20–29	2	13.3 %
	30–39	7	46.7 %
	40–49	4	26.7 %
	50–59	2	13.3 %
Marital status	Single	4	26.7 %
	Married	10	66.6 %
	Divorced	1	6.7 %
Educational Qualification	Master's Degree	2	13.3
	Bachelor's Degree (Award obtained from University after 4 years of training)	7	46.6
	Diploma (Award obtained from Nursing Training College after 3 years)	6	40
Years of working experience	1–5	2	13.3 %
	6–10	7	46.7 %
	11–15	3	20 %
	16–20	3	20 %
Years of serving in the study hospital	1–3	5	38.8
	4–6	6	38.8
	7–9	2	11.1
	10–12	2	11.1
Sex	Female	14	90
	Male	1	10

(Field Survey, 2023)

Table 2
Summary of the themes and their subthemes.

THEMES	SUBTHEMES
Theme one: Lived experiences of midwives regarding musculoskeletal disorders	a. Description of Musculoskeletal conditions. b. Onset of musculoskeletal discomfort.
Theme two: Predisposing factors contributing to musculoskeletal disorders.	a. Understaffing of midwives. b. Assuming awkward posture during care delivery. c. Limited hospital logistics.
Theme three: Impact of work-related musculoskeletal disorders among midwives	a. Struggle with quality of life b. Impaired work performance
Theme four: Coping strategies adopted by midwives to mitigate work-related musculoskeletal disorders.	a. Rest and good body mechanics. b. Teamwork c. Self-medication.

(Field Survey, 2023)

"I have been having pain in my waist, my neck and my lumbar but one morning I couldn't turn my neck so I went to the nearest hospital. I was asked to take an X-ray and the result showed it was herniation of the bone, so I was given some medication and was asked to come back. About two months later I experienced the same pain again so I went to another hospital but was referred to a bigger hospital in the capital city for MRI. When the results came, it was herniation of the bone and my spinal cord. I was diagnosed with spondylosis. I was given pain relief and referred to a physiotherapist" **(P2, 40years)**

Other participants also said:

*Yes, I have back and waist pain. As for the waist it resulted from the bed we use for delivery while the back is a result of taking ultrasound scans for pregnant women. The was a time I went to work and couldn't sit upright after a day's work. I couldn't even lift my hand so an X-ray was requested and I was diagnosed with scoliosis. I was put on medications and was told if it doesn't resolve then it will be corrected surgically***. (P13, 33 years)**

4.1. Subtheme two: onset of musculoskeletal disorder

The onsets of these skeletal disorders were described as sudden or gradual. The following are statements by some participants:

The pain started with numbness in the leg so I went for an X-ray. The pain was radiating with the numbness so I went back to consult the orthopaedic specialist and he said it was not my previous surgery (Caesarian Section) and that I should be fine in six months. So finally, I had to take an x-ray, which indicated I have a problem with my back as a result of the nature of my work. We continued until an MRI confirmed that I had slipped a disk on my spinal cord "herniated lumbar disk". **(P6, 40years)**

4.2. Theme two: predisposing factors contributing to musculoskeletal disorders

It was revealed that most activities, poor working environment, limited logistics, diversity of clients' needs at the hospital, inadequate staff and body postures predispose most midwives to work-related musculoskeletal disorders.

4.3. Subtheme three: understaffing of midwives

It was revealed that because the nature of their work is demanding. In this regard, participants stated:

"I work overtime … I risk myself doing many things … Yesterday there was a client I delivered and I had to stay over and write the delivery summary since I conducted the delivery alone. Later I realized the client was bleeding so I had to stay and stabilize her before leaving. The night staff were just two on duty so I left here around 11p.m". **(P8, 36years)**

"We are not many, there are lack of staff but management would not regard it. There are only 9 midwives in the maternity ward. There are times when one midwife runs a full shift with many patients on the ward. Sometimes, just as you are about to close, labour cases do arrive in the second stage. You may be extremely tired but still have to attend to those cases. Amidst the waist pain, you still need to attend to all, just imagine". **(P1, 34years)**

4.4. Subtheme four: assuming awkward posture during care delivery

All Participants reported that they assumed inappropriate postures while attending to clients. The following statements were made:

"Sometimes patients prefer delivering on the floor which makes us bend or assume an awkward posture for a very long time but because of the patient's right, we tend to do it without hesitation. For example, I had to deliver a psychiatric client on the floor even though delivery beds were available. The client preferred to lie on the floor so I had to conduct the delivery on the floor. All these predispose us to musculoskeletal disorders". **(P10, 59 year)**

I prefer standing for a long time in complicated cases, bending over the patient, lifting the patient and pushing the trolley here and there. The postures assumed while conducting deliveries make us prone to musculoskeletal disorders". **(P15, 56 years).**

Subtheme five: Limited hospital logistics.

In addition, midwives expressed concern that limited logistics is a serious problem for the hospital. The following statements were made:

"We lack most equipment in this hospital. For instance, we move oxygen cylinders around a lot. Anytime we run out of oxygen at the labour ward, we either go to the NICU or the maternity ward to carry the oxygen cylinders which are without carriers or labourers to assist. We normally move the cylinders up and down all by ourselves, and all these predispose us to musculoskeletal disorders". **(P9, 32years)**

"Imagine me examining puerperal mothers on this low bed, I will surely bend and you know examining puerperal mother takes a very long time and it is very tedious. We need seats as well". **(P12, 26 years)**

4.5. Theme three: impact of work-related musculoskeletal disorders among midwives

The subthemes include performance impairment, negative effects on quality of life, financial struggles in paying treatment bills and the idea of changing jobs.

4.6. Subtheme six: struggle with quality of life

Nearly all of the midwives who were interviewed said that they have had problems with their musculoskeletal systems as a result of their jobs. These are shreds of evidence from participants:

"Due to my back pain, I can't bend to tidy up my room or even cook. Previously, I spent more time with my family on my off days but now I prefer sleeping because of the pain and mostly sleep in a sitting position". **(P4, 40years)**

Participants said that WRMSDs affect them financially since they have to foot their hospital bills themselves after treatment. This is described in the following statement:

The hospital has no insurance for staff suffering from any work-related disorder, I pay with my own money. Even up till now, I'm still paying with my own money anytime I go to Korle Bu Hospital for treatment. **(P4, 40years)**

I will be telling lies if I say I know of any available insurance for staff. I visit the Physiotherapist twice a week, that is 8 times a month which has a huge toll on my finances because not all their services are covered by the NHIS. **(P6, 40years)**

It also emerged from the interview that most participants have the idea of moving into a different field of work. The narration supports the above assertions:

Oh, do you want me to die early? Lecturing is next on my agenda but it's not because the job is difficult that's why I want to leave. To be frank, there's stress, the stress is too much, physical and mental stress. So I have decided to leave the field within the next five years. **(P6, 40years)**

4.7. Subtheme seven: impaired work performance

According to the findings of the study, the job of a midwife requires a lot of activities and critical thinking to protect the mother and her unborn child. This was evident in the words of some participants:

Sometimes because of the pain when I go to the ward I work on a few clients. I'm not allowed to conduct delivery or do any difficult work because of my condition. Also, I do not run night duties. **(P2, 40years)**

Sometimes when you're too tired and a client calls, how fast you attend to them is affected. There was a day I came for the afternoon shift at 2 pm, I was serving medication, and attending to CS and abortion cases. I only had the chance to drink water at 5 pm. Immediately I sat down, and a client called. I couldn't attend to her immediately. I asked what was wrong with her when I was sitting there but I shouldn't have asked the question while sitting down. I should have gone to her to check what was wrong but I did not. Later she said it was coming but when I got to her bedside she was expelling, and it was an incomplete abortion. **(P9, 32years)**

Theme Four: Coping strategies adopted by midwives to mitigate work-related musculoskeletal disorders.

The most common strategies adopted by all participants include rest and good body mechanics, teamwork, and self-medication.

4.8. Subtheme eight: rest and good body mechanics

Some participants emphasized that they try to create time for rest and also maintain good posture while working. This is described in the following statements:

"Oh, I sleep, the first thing I normally do after work is to throw my bag somewhere and take a nap even before I think of finding something to eat". **(P2, 40years)**

"Anytime I'm timing contraction, I always sit down because it is 10 minutes long. I sit down to be comfortable. If I conduct delivery and let's say there is a tear, I sit down to do the suturing. I do create time for rest". **(P5, 28 years)**

The study also revealed that most midwives relieve their pain from work-related musculoskeletal disorders, by visiting the physiotherapy. The following quote supports the above assertion:

"Because of my condition(spondylosis), I go for physiotherapy regularly. Occasionally, I do full body works also". **(P2, 40years)**

I go for physiotherapy twice every week to reduce the pain. Also, I wear a Lumber sacral belt which helps not to put pressure on the affected body part. **(P6, 40years)**

4.9. Subtheme nine: teamwork

All participants stated that to make their work less stressful, they require extra hands in providing care to a patient. This is evident by the following statement:

"I usually seek help from my colleagues to carry heavy patients and tasks I cannot perform alone. In case of any difficult task, you need to call for help. Don't force yourself to do things above your strength when there are people around. When you break down right now you will be replaced". **(P3, 39 years)**

"As for me, my doctor advised me not to lift heavy things but I still do with assistance from other staff on duty when the need arises". **(P4, 40years)**

Another participant also talked about breaking in between tasks to stretch to reduce the stress on some parts of the body. This was evident in the words:

When performing a task, I stretch in between and continue with the work again. Also, when I'm not feeling well, I hand over to a colleague to continue the work for me to rest. **(P1, 34years)**

4.10. Subtheme 10: self-medication

Some participants claimed that they use mild to moderate analgesics, such as tablet paracetamol, and diclofenac to manage their pain and keep working. The participants quoted the following:

"Sometimes when I close from work, I experience so much pain that I cannot do my chores, so I take painkillers to help reduce the level of pain. Even sometimes at work, I feel severe pain so I take some paracetamol to relieve the pain". **(P8, 36years)**

Due to the nature of midwifery work, even in pain, you still have to attend to clients so I take pain medication like Ezipen to relieve the pain while on duty. **(P10, 59 years).**

5. Discussion

The study indicated that work-related musculoskeletal disorders comprised fractures, sprains, lower back pain and herniated lumber disk, spondylosis, and scoliosis. This finding is consistent with the earlier reports wherein most midwives experienced some form of work-related musculoskeletal disorders which included lordosis, lower back pain, kyphosis, sprains, herniated lumber disk, and scoliosis [5,13,14]. However, the current findings were contrasted by Kacem et al. in Tunisia who documented that the most common work-related musculoskeletal disorders experienced by midwives were lower back, neck, and shoulder pain [5]. The majority of midwives recruited for our studies had worked for more than five years with a maximum working experience of 18 years. It is not surprising that some of the midwives recruited for our studies had herniated lumber discs, spondylosis, and scoliosis because these conditions take longer to develop than those reported by Kacem et al. who only reported lower back, neck, and shoulder pain [5]. The study results showed that the majority of participants reported having developed symptoms of a work-related musculoskeletal disorder within the first year of beginning their careers as midwives, and they described the onset as either sudden or gradual. This finding is in line with earlier reports wherein most midwives experienced some form of work-related musculoskeletal disorder symptoms within the first 12 months [5,10,15,16]. In agreement, Yang et al. in China found that during the first year of employment, more than two-thirds (62.7 %) of midwives suffered from work-related musculoskeletal disorders [17]. Contrastingly, Boakye et al. found that the majority of midwives first experienced work-related musculoskeletal disorder symptoms while still being student midwives [10]. The onset of WMSDs can be inferred from the findings above as occurring in all stages of life, from training to working years.

On predisposing factors, the results of this study showed that poor body posture and unavailability of Non-Adjustable Delivery Beds (NADBs) were significant predisposing factors for work-related musculoskeletal disorders. This result is consistent with the earlier reports, wherein the unavailability of adjustable beds and poor body posture as significant risk factors for work-related musculoskeletal disorders [7,17–20]. The possible explanation for the above findings is that working in an awkward posture puts stress on the

muscles, bones, and joints. For instance, transferring a pregnant woman requires the midwife to flex their vertebral column for a prolonged duration, exerting isometric muscle contractions to maintain their static posture or to slowly lower a heavier patient to the chair (eccentric muscle contractions). However, Narsigan et al. documented in their report that most midwives do not practice proper lifting techniques when transferring patients (they do not bend their knees and brace their lower backs) [21]. Maintaining these deviated postures for prolonged periods daily produces abnormal force couple relationships among the paraspinal musculature, producing muscle damage. Another predisposing factor from this study was the insufficient number of midwives per shift. This result is consistent with studies conducted in Nigeria by Kacem et al.′and Tinubu et al. [5,7]. They found that the poor ratio (1:40) of midwives-to-pregnant women was a significant contributor to work-related musculoskeletal disorders among midwives. The fact that shortage of staff ranked as a predisposing factor for work-related musculoskeletal disorders among midwives in the results does not come as a surprise given that most healthcare facilities in low-to middle-income countries are understaffed. This assertion affirms the report by the Ghana Registered Nurses and Midwives Association (GRNMA) in 2023, that more than 3000 of its members left Ghana by March 2022 and 55.9 % of practising nurses and midwives intend to leave the country. This will tend to create an increased workload among the working forces of nurses and midwives in the various health facilities and an increase in the prevalence of work-related musculoskeletal disorders. According to the results of the study, the majority of midwives also expressed concern about inadequate logistics as a risk factor for work-related musculoskeletal disorders. This result is in line with the earlier reports, wherein the majority of midwives cited a lack of working tools as a significant contributor to work-related musculoskeletal disorders [22–24].

Furthermore, the results of our study also showed that work-related musculoskeletal disorders have a negative impact on midwives' performance at work as it lowers their productivity. This finding is consistent with earlier studies showing that work-related musculoskeletal disorders reduced midwives' productivity [4,17,20,25]. Dartey et al. agreed that musculoskeletal disorders could arise as a result of stress from work and this greatly affects work output hence lowering productivity [4].

Again, it became clear from our study that the majority of participants were thinking about changing careers. This outcome is consistent with that of Carugno et al. who discovered that early retirement among midwives in Germany was a result of work-related musculoskeletal disorders [26]. Similar findings were made in the Netherlands, where Kacem et al. discovered that midwives with work-related musculoskeletal diseases had a higher intention to leave the profession or retire earlier than usual [5].

With coping strategies, almost all midwives emphasized that maintaining good body postures while working either by sitting to perform some procedures or adjusting beds to appropriate heights when caring for pregnant women were some ways to reduce the pain associated with work-related musculoskeletal disorders. Additionally, the findings from this study indicated that another way midwives cope with work-related musculoskeletal disorders is to work collaboratively with colleagues. Most midwives stated that helping colleagues transfer a patient from a stretcher to the bed, assisting colleagues in performing bed baths, and helping colleagues to position a client for a procedure were the various ways they collaborated to reduce work-related musculoskeletal disorders. These findings are consistent with the earlier reports of Kassa et al. and Boakye et al. who in their studies documented that getting support from colleagues was a strategy adopted by most midwives to cope with work-related musculoskeletal disorders [10,27]. Most of the midwives in this study admitted to using analgesics, mainly NSAIDs, as self-medication to treat their work-related musculoskeletal disorders. This finding is consistent with the study by Akodu et al. who documented that midwives resort to taking medications to deal with lower back pain and neck pain [28]. The aforementioned findings can be linked to the fact that midwives, by virtue of their job, possess sufficient knowledge of the many types of medications and their uses. However, it is well recognised that continual use of these drugs can have a significant impact on the health of these midwives [20,25].

The purpose of the study is to provide valuable insights into the complex interaction between work-related factors and musculoskeletal health among midwives, with the ultimate goal of informing policy, practice, and interventions to enhance workplace safety and support the health of midwifery professionals.

5.1. Strengths and limitations

This study is one of the few that specifically examines the effects of work-related musculoskeletal disorders among midwives. The exploratory character of the study contributed to a broader and more contextual knowledge of the phenomenon. However, because this study is qualitative, it cannot be generalized.

5.2. Implications for practice

These study findings have important implications for developing proper and continuous education programs, in-service training and campaigns for the primary prevention of musculoskeletal disorders. Findings from this study will help health policy administrators, relevant stakeholders and health-care workers in developing strategies to curtail work-related musculoskeletal disorders (WRMSDs). Additionally, findings from this study will serve as a piece of baseline information for other practitioners and researchers who are interested in this field.

6. Conclusion

The study concluded that all midwives working at the selected health facilities in the Volta Region had experienced work-related musculoskeletal disorders, which had a detrimental effect on their quality of life and productivity at work. To lower the rate of work-related musculoskeletal disorders (WRMSDs) among midwives and to increase efficiency, educational programmes and in-service training on prevention and coping mechanisms for musculoskeletal disorders should be made mandatory for midwives.

Ethical approval statement

This study was reviewed and approved by the Ethical Review Committee at the University of Health and Allied Sciences, Ho, Ghana with the approval number: UHAS-REC A.11 [128] 21–22. Approval was also obtained from selected facilities and individual participants signed the consent form as appropriate.

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Data availability statement

The data that has been used is confidential. Due to the sensitive nature of the research, supporting data is not available.

CRediT authorship contribution statement

Anita Fafa Dartey: Supervision, Methodology, Investigation, Conceptualization. **Vivian Tackie:** Writing – review & editing, Validation, Investigation. **Comfort Worna Lotse:** Visualization, Formal analysis, Data curation. **John Yesuohene Ofori:** Writing – review & editing, Writing – original draft, Validation, Software, Resources, Methodology. **Esi Twiba Mother Bansford:** Investigation, Data curation. **Princella Yayra Hamenu:** Investigation.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.heliyon.2024.e32046.

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