Original Article

Burnout among Auxiliary Nurse Midwife Working in a District of West Bengal: In-depth Analysis by Mixed Methods Approach

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Abstract

Introduction: Auxiliary nurse midwife (ANM) health workers are pivotal in providing preventive and promotive healthcare services, including vaccinations, disease screening, antenatal checkups, and health education at the primary healthcare level. Their tireless efforts in strengthening primary healthcare and combating recent pandemics are evident. This study aimed to assess the extent, associated factors, and reasons for burnout in a district of West Bengal. **Methods:** This mixed methods research (explanatory-sequential approach: Quan-Qual) was conducted from May 2022 to January 2023, involving randomly selected 226 ANMs from 13 rural blocks (cross-sectional design). ANMs with maximum burnout were purposively selected for the qualitative follow-up. A self-administered, modified Copenhagen Burnout Inventory questionnaire captured three domains of burnout. Responses from an open-ended free-listing guide identified reasons for burnout. Adjusted multinomial logistic regression analysis determined factors associated with burnout. Findings were integrated and presented in a joint display. **Results:** Out of 214 complete responses, 44.9% reported burnout, over single (20.1%), double (18.7%), and triple (6.1%) domains, namely personal (32.2%), work-related (28.5%), and patient-related (14.9%) burnouts. Chronic morbidity, lack of physical activity, and recent negative incidents were associated with higher burnouts, whereas <5 km home to work-site distance and more support from supervisor were protective factors. Qualitative exploration revealed logistics problems, workload, distance, lack of support, etc., as reasons for burnout. After data triangulation, burnouts were identified with individual, interpersonal, community, and institutional level socioecological attributes. **Conclusion:** Almost 45% ANM suffered burnout. Addressing the interrelated factors at different socioecological levels could enhance productivity and job satisfaction, fostering a positive work environment.

Key words: Auxiliary nurse midwife, burnout, primary healthcare

Introduction

The health subcenter is the most basic healthcare facility in India, serving either 5000 people in plain areas or 3000 people in hilly and tribal regions. It is run by a Health Assistant Female (HAF) also known as auxiliary nurse midwife (ANM). Despite being shortage of ANMs, they play a crucial role in delivering preventive and promotive healthcare services, such as vaccinations, disease screening, antenatal checkups, and health education, at primary level of healthcare system.[1,2] This level, including subcenters, is a vital for the country's three-tier health system. It was also said in the Alma-Ata Declaration, more than four decades ago, to achieve universal health coverage strengthening, the primary level of care is the only solution.[3] However, like many other professions, healthcare workers, including ANMs, also face burnout while providing quality healthcare, especially exacerbated during the COVID-19 pandemic.[4,5]

Burnout is when long-term stress leads to emotional, mental, and physical exhaustion. It includes feeling drained emotionally, having negative attitudes towards patients, and

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feeling like you are not achieving much. It is serious because it affects both patients and healthcare workers, leading to poor health, lack of motivation, and lower quality care, which costs society a lot.[4-8]

Since 2020, India experienced three waves of the COVID-19 pandemic, where a devastating human resource crisis had shaken our healthcare system with escalation at each wave. Healthcare workers worked tirelessly, facing many challenges to provide services at all levels of health care.[9] However, the situation got stabilized only after majority of vaccination coverage has been completed for the general population where India achieved 200 core vaccinations in July 2022.[10]

Several studies have highlighted the significant burnout experienced by healthcare workers either before the pandemic or during the pandemic, mainly focusing on those in the curative healthcare system.[6,7,11,12] However, none have specifically examined the situation among healthcare workers in the preventive healthcare sector, who also faced challenges while providing health services such as managing home quarantine, surveillance, antenatal checkups, routine vaccination, and COVID vaccine services including addressing vaccine hesitancy.[13] To address this gap, we conducted a mixed methods study to assess the level of burnout and its associated factors then further sought explanation about the reasons for the burnout among those ANM workers who reported maximum burnout in Diamond Harbour Health District (DHHD) of West Bengal.

Materials and Methods

Study type and setting

This mixed methods research with quantitative cross-sectional and follow-up qualitative design (explanatory sequential approach: Quan-Qual) was conducted in DHHD, West Bengal. The district has 13 administrative blocks distributed under, Kakdwip, and Diamond Harbour subdivision.

Study population

There were 820 ANM workers in the district; among them, study participants were selected by probabilistic sampling. We excluded those who were on leave or could not receive the questionnaire despite our best efforts.

Study duration

May 2022 to January 2023.

Sample size calculation

A study to assess burnout among healthcare workers during the COVID-19 pandemic reported patient- or pandemic-related burnout among 52.8% of the participants.[8] Based on that report, the sample size was calculated using the formula $Z^2.P.Q/L^2$, $Z = 1.96$ (standard normal deviate at desired confidence level), $P = 0.528$, $Q = 1–P = (0.472)$, $L = 0.10$ (absolute error) and estimated to be to 96. As simple random sampling (SRS) was not feasible, design effect 2 was accounted and the minimum sample size reached at 192. After adding 15% anticipated nonresponse, final sample size was (192/.85) = 226.

For qualitative follow-up part, ANM workers who were identified with maximum burnout in the quantitative analysis, selected purposively to explore the causes of burnout.

Sampling design and data collection

Initially number of participants to be recruited in each block was decided in proportion to the number of ANM workers there, ensuring a proportionate representation. Then, SRS was employed to select participants from each block from the list of ANMs in respective blocks. A self-administered questionnaire was predesigned, tested, and translated into the local language (Bengali) for quantitative data collection. A technique similar to self-administered mail survey was adopted.[14] The questionnaire was distributed among the selected ANMs in a sealed envelope with the help of Block Public Health Nurse (BPHN) or PHN. The detailed content of the questionnaire was not disclosed to BPHN/PHN. For quality control, participants were contacted over the phone to ensure the appropriate delivery of the questionnaire, explained about the survey and self-administered nature of the questionnaire, ensured about the confidentiality of their responses, and requested to return the completed questionnaires in a sealed envelope using the same medium. This approach was adopted for operational feasibility and to ensure that responses were unbiased and not influenced by the presence of health officials or interviewers, who might inadvertently shape the answers.

For the qualitative part, a separate free-listing guide was distributed to purposively selected participants for a free-listing exercise, and responses were collected using the same method. Free-listing exercise was employed to understand the participants' perspective in the qualitative strand of this MMR in line with the methodology followed in prior studies.[15]

Ethical issues

Ethical permission was taken from Institutional Ethics Committee of All India Institute of Hygiene and Public Health (AIIHandPH) (Protocol No-AIIHPH/PSM/Protocol/2020-23/055). Further a written permission was taken from the Chief Medical Officer of Health of DHHD. Written informed consent was also taken from each participant which was attached with respective questionnaire.

Study variables

For quantitative part

According to ICD-11, "Burnout" is a syndrome conceptualized as resulting from chronic workplace stress that has not been successfully managed. It is characterized by three dimensions: feelings of energy depletion or exhaustion; increased mental distance from one's job, or feelings of negativism or cynicism related to one's job; and reduced professional efficacy.[16]

Participants' burnout, the outcome variable was measured with a modified version of the Copenhagen Burnout Inventory questionnaire having three domains: personal, work-related, and patient- or pandemic-related burnout. The questionnaire consisted of 23 questions and was validated by institutional experts.[17] Personal burnout was measured by 6

questions, work-related burnout by 8 questions, and patient or pandemic-related burnout by 9 questions. Participants rated their responses on a 5-point Likert scale, with scores ranging from 0 to 100 (always - 100, often 75, sometimes - 50, seldom - 25, and never - 0). In each domain, we calculated the average score by dividing the total attained score by the number of questions. Domain-specific burnout was defined by an average score above 50 for that respective domain. Further based on the presence or absence of domain-specific burnout, levels of burnout were identified as having; no burnout, single burnout, and multiple (double and triple) burnout.

Sociodemographic variables: information about age, marital status, religion, caste, income, total family members, and socioeconomic status (derived variable).[18]

Behavioral and lifestyle characteristics: Whether the person engages in physical activity at least once in a week, walking, jogging, running, swimming, or cycling beyond their usual daily activities.

Work-related variables: Distance from home to workplace (measured in kilometers), years worked in the current profession, weekly working hours, relationship with coworkers (close-ended categorized as very good, good, average, or bad), support from supervisor (close-ended categorized as always, most of the time, sometimes or never) and if they felt threatened by the community in the past year.

Clinical profile: Chronic morbidity (any illness chronic in nature and participants having such condition for the last 6 months considered as chronic morbidity present) and sleep disorder (decrease in sleep duration or difficulty in sleep induction among the participant in last one month considered sleep disorder present).

Miscellaneous: Negative incident (any family history of death, major accident, or serious illness in last 6 months considered as negative incident present).

For the qualitative part

Participants with the highest (triple) level of burnout were purposively selected for qualitative follow-up. They were given a free-listing guide with two open-ended questions: "What are the reasons that led to your physical and mental exhaustion while delivering healthcare services?" and "What solutions do you suggest overcoming these challenges?". In response, they were requested to free list the topics that came to their mind.

Statistical analysis

All data were entered and coded in Microsoft Excel. We used SPSS version 28 (IBM SPSS Statistics) for quantitative analysis, presenting descriptive statistics with numbers (percentages), mean ± (SD), or median (IQR). Univariate and multivariable multinomial logistic regression were performed for inferential statistics. Biologically plausible variables with $P < 0.25$ were selected in the final multivariable model.

Free-listing technique was used for qualitative data generation. The free-listed items were entered in a text document, and the final analysis was performed in Visual Anthropac 1.0-Freelists software (Analytic Technologies, Lexington, Kentucky, United States) to obtain salience scores which is a quantitative representation of qualitative data. Higher salience score denotes more importance of the free-listed items to the participants.

Triangulation and integration of the findings were done, and quantitative and qualitative findings were presented side-by-side in a joint display. Quantitative findings revealed the levels and factors associated with burnout. Qualitative follow-up further explored the causes of burnout. For triangulation, the factors associated with burnout as identified in quantitative analysis were compared with the causes of burnout explored through free-listing, and subsequently categorized under different socioecological attributes of burnout.

Results

Out of 226 participants, 214 (94.7%) had complete responses and were included in the final analysis.

Sociodemographic characteristics and clinical profile of the study participants

The median age of the participants was 46 (32,54) years, where 37.9% of participants belonged to 51–60 years age group which is the most frequently reported age category. The majority were married (89.3%), Hindu (93.0%), and belong to general caste (77.1%). The median income of the participants was 40000 Indian rupees (INR), and most participants (74.8%) were in the Class I socioeconomic group according to the modified B. G. Prasad scale [Table 1].

Almost 67% of participants were staying beyond 5 km from their workplace, and 82% were working as healthcare workers for over 10 years. Around one-third had difficulty getting supervisor support, and 49.5% felt threatened by the community while delivering healthcare services in the past year [Table 1].

More than half (54.7%) of the participants reported chronic morbidity with 24.3% reporting multimorbidity. Major morbidities included hypertension (15.9%), diabetes (15.0%), hypothyroidism (15.0%), and musculoskeletal disorder (14.0%). 38.3% of the participants experienced sleep problems. 40.7% experienced negative incidents in the last 6 months due to illness of a family member (60.9%), death of close relatives (27%), accident of family members (5.7%), personal physical trauma or illness (4.6%), and stillborn baby (1.1%). In addition, 68.2% were physically inactive [Supplementary Table 1].

Burnout of the participants

Almost 45% of ANM reported burnout, with 6.1% highest (triple) level, 18.7% with double, and 20.1% with single burnout. Personal, work-related, and patient- or pandemic-related burnout affected 69(32.2%), 61(28.5%), and 32(14.9%) participants, respectively. Spearman correlation revealed strong positive correlations between personal and work-related burnout (0.71), moderate positive correlations between work-related and patient-related burnout (0.55), and

Table 1: Distribution of participants based on sociodemographic characteristics and work-related profile (*n*=214)

Variables	Category	*n* (%)
Age (years), median (IQR)	21–30	14 (6.5)
	31–40	49 (22.9)
	41–50	67 (31.3)
	51–60	81 (37.9)
	>60	3 (1.4)
	46 (32–54), range (26–61)	
Marital status	Unmarried	12 (5.6)
	Married	191 (89.3)
	Divorced	2 (0.9)
	Widow	9 (4.2)
Religion	Muslim	15 (7.0)
	Hindu	199 (93.0)
Caste	Schedule caste	48 (22.4)
	Schedule tribe	1 (0.5)
	General caste	165 (77.1)
Income (INR), median (IQR)	40,000 (10,371–74,875)	
Socioeconomic class (as per Modified BG Prasad Scale 2021)	Class I	160 (74.8)
	Class II	41 (19.2)
	Class III	9 (4.2)
	Class IV	4 (1.9)
Working site distance (km)	<5	70 (32.7)
	5–10	53 (24.8)
	>10	91 (42.5)
Working duration in the current profession (years)	<5	11 (5.1)
	5–10	28 (13.1)
	>11–20	70 (32.7)
	>20–30	55 (25.7)
	>30	50 (23.4)
Weekly working hours	<30	5 (2.3)
	30–40	54 (25.2)
	>40	155 (72.4)
Relation with coworkers	Very good	111 (51.9)
	Good	85 (39.7)
	Average	18 (8.4)
Get support from the in-charge/ supervisor	Always	67 (31.3)
	Most of the time	76 (35.5)
	Sometimes	63 (29.4)
	Never	8 (3.7)
Perceived threat	No	108 (50.5)
	Yes	106 (49.5)

IQR: Interquartile range

weak positive correlation between personal and patient-related burnout (0.38) ($P < 0.001$, at 99% CI) [Figure 1 and Supplementary Table 2].

Predictors of burnout

Multinomial multivariable logistic regression revealed significant higher odds of single burnout with the presence of morbidity (adjusted odds ratio [95% CI]: 2.89 [1.23–6.78]), and lack of physical activity (3.03[1.20–7.62]). While multiple burnouts were predicted among participants with experience of negative incidence in the last 6 months (3.22 [1.37–7.56]). Factors such as short working site distance and support from in-charge/supervisor were reported with lower odds of having multiple burnouts.

Compared to those having no morbidity, participants with single and multimorbidity, reported with increasing odds of having multiple burnouts (2.25 [1.01–4.97] and 4.12 [1.78–9.53], respectively) in univariate regression analysis. Sleep disturbance was also associated with both single (2.69 [1.28–5.54]) and multiple (5.06 [2.52–10.15]) burnouts [Table 2].

A qualitative exploration of reasons for burnout and its solutions

Free listing analysis revealed the most pertinent reasons for burnout such as lack of essential logistics (essential medicine, contraceptives, Hb kit, CBG kit, tetanus toxoid, bandages, ointment for dressing) (0.364), more workload (same day routine immunization as well as COVID-19 vaccination) (0.244), difficulty in transportation (transporting vaccine to village health nutritional day [VHND] camp, family planning medicine to subcenter, unavailability of nischay jan, kutcha and bad road within the village) (0.233), lack of infrastructure (0.182), lack of working environment (0.154), COVID-19 vaccination (COVID-19 vaccination hampered others activity and vaccine hesitancy) (0.138), do not get adequate leave (0.133), long distance from home to subcentre[0.103], more working pressure (0.103), lack of political supports (0.092), and personal illness (0.87).

Suggested measures to prevent burnout were captured as; supply logistics (0.254), improved infrastructure (0.244), staff recruitment (0.138), regular health checkups of the villagers by Medical Officer (0.115), more local political support (0.114), improve working environment (0.097), frequent awareness camp (0.096), provide adequate leave (0.092), divided the subcenter according to population (0.092), and decrease workload (0.077).

The joint display revealed the qualitative extension of the initial findings and how burnout could be linked with individual, interpersonal, community/infrastructure, and institution/policy level socioecological attributes [Table 3].

Discussion

This study tried to identify the extent of, and factors associated with burnout among frontline health workers, in personal, work-related, and patient/pandemic-related domains. Further efforts were made to extend the understanding of burnouts into different socioecological attributes. This categorization helped to understand the different levels at which burnout can manifest and to identify potential interventions.

In our study, almost 45% of participants experienced burnout, with 32.2% perceiving personal, 28.5% work-related, and 14.9% patient or pandemic-related burnout.

All three types of burnouts were found correlated, indicating that personal burnout affects both work and patient care,

Table 2: Factors associated with single and multiple (double and triple) burnout: Univariate and multivariable multinomial logistic regression analysis (*n*=214)

Variables	Category	Outcome (reference: No burnout)			
		Univariate model		Multivariable model	
		Single burnout, uOR (95% CI)	Multiple burnout, uOR (95% CI)	Single burnout, aOR (95% CI)	Multiple burnout, aOR (95% CI)
Age‡		1.03 (0.99–1.06)	1.02 (0.98–1.07)	0.99 (0.95–1.04)	0.99 (0.95–1.04)
Marital status‡	Living with spouse	0.62 (0.19–1.99)	0.40 (0.15–1.08)	0.76 (0.20–2.94)	0.55 (0.13–2.18)
	Not living with spouse (ref)	1	1	1	1
Religion‡	Muslim	0.91 (0.17–4.69)	2.84 (0.90–8.91)	0.57 (0.08–3.64)	1.25 (0.28–5.44)
	Hindu (ref)	1	1	1	1
Caste‡	Others caste	1.61 (0.73–3.53)	0.97 (0.43–2.16)	1.86 (0.76–4.51)	0.94 (0.34–2.55)
	General caste (ref)	1	1	1	1
Presence of morbidity‡	Yes	2.36 (1.14–4.89)	2.93 (1.47–5.85)	2.89 (1.23–6.78)	2.16 (0.87–5.33)
	No (ref)	1	1	1	1
Morbidity category	Multimorbidity	3.24 (1.33–7.89)	4.12 (1.78–9.53)	-	-
	Single morbidity	1.86 (0.80–4.32)	2.25 (1.01–4.97)	-	-
	No morbidity (ref)	1	1		
Sleeping disturbance	Present	2.69 (1.28–5.54)	5.06 (2.52–10.15)	-	-
	Absent (ref)	1	1	-	-
Physical activity‡	No	2.32 (1.02–5.30)	1.71 (0.84–3.50	3.03 (1.20–7.62)	1.61 (0.65–3.97)
	Yes (ref)	1	1	1	1
Negative incident‡	Yes	1.0 (0.48–2.09)	2.64 (1.36–5.14)	0.97 (0.43–2.28)	3.22 (1.37–7.56)
	No (ref)	1	1	1	1
Perceived threat‡	Yes	0.91 (0.46–1.85)	2.68 (1.35–5.31)	0.83 (0.37–1.87)	2.30 (0.99–5.37)
	No (ref)	1	1	1	1
Working site distance‡ (km)	<5	0.85 (0.38–1.91)	0.26 (0.11–0.61	1.04 (0.43–2.52)	0.34 (0.13–0.92)
	5–10	0.69 (0.28–1.71)	0.31 (0.13–0.74)	1.04 (0.37–2.88)	0.40 (0.14–1.15)
	>10 (ref)	1	1	1	1
Relation with in-charge	Friendly	0.51 (0.23–1.11)	0.36 (0.17–0.75)	-	-
	Strict	0.68 (0.22–2.07)	0.92 (0.36–2.36)	-	-
	Professional (ref)	1	1	-	-
Relation with co-workers‡	Very good	0.22 (0.05–0.90)	0.11 (0.03–0.42)	0.40 (0.08–1.88)	0.23 (0.05–1.04)
	Good	0.34 (0.08–1.42)	0.26 (0.07–0.94)	0.53 (0.11–2.46)	0.48 (0.11–2.11)
	Average (ref)	1	1	1	1
Support from in-charge‡	Always	0.25 (0.09–0.65)	0.09 (0.03–0.25)	0.33 (0.11–0.96)	0.17 (0.06–0.53)
	Most of the time	0.58 (0.25–1.36)	0.22 (0.10–0.51)	0.58 (0.23–1.46)	0.26 (0.10–0.66)
	Sometimes and never (ref)	1	1	1	1

‡Model adjusted based on the assumption of biologically plausible variables with $P<0.25$ where three variables morbidity category, sleeping disturbance, and relation with in-charge/supervisor we deliberately excluded as we included the presence of morbidity and support from in-charge/supervisor in the final model. Hosmer and Lemeshow test (χ^2=435.0. P=0.086) - Hence, we are failed to reject the model. Cox and Snell R^2=0.31, Nagelkerke R^2=0.36, McFadden R^2=0.19. Ref: Ref of independent variable, uOR: Unadjusted odds ratio, aOR: Adjusted odds ratio, 95% CI: 95% Confidence interval

and vice versa. This finding aligns with a meta-analysis finding by Lim *et al*.[19] This study also apparently indicated higher burden of personal burnout, however, further analysis revealed that only 9.8% was solely due to personal reasons. A study by Khasne R W *et al*. during the peak of the pandemic in India reported higher personal burnout (44.6%) and patient-related burnout (52.8%) but similar work-related burnout (26.9%) compared to our study.[8] Another study by Jalili M *et al*. among hospital healthcare workers in Iran during the pandemic found a burnout rate of 53.0%.[5] In contrast, studies by Palvelkova *et al*. and Odonkor among hospital workers in the Czech Republic and Ghana before the pandemic reported lower burnout rates (5.8% and 9.9% respectively).[7,11]

Comparing burnout across studies is challenging due to differences in study timeline (before or during the pandemic) and participants (hospital workers vs. community workers). However, it is evident that patient or pandemic-related burnout peaked during the pandemic but decreased when pandemic stress reduced, as also indicated in our study.[5,8]

We identified factors associated with burnout, including morbidity, lack of physical activity, life incidents, relations with superiors, and supervisor support. Ge C *et al*. reported similar findings among Chinese community health workers, focusing on job satisfaction.[20] This indirectly suggests that burnout affects job satisfaction, potentially impacting patient satisfaction. In addition, our study found that shorter home

Table 3: Joint display table integrating qualitative and quantitative findings

Research question	Quantitative finding	Qualitative finding	Meta-inference
Measurement of burnout	Single (20%) Double (19%) Triple (6%) – levels of burnout	Not explored	Almost 45% suffering from burnout
Factors associated/ reason of burnout	Presence of morbidity Sleep disturbance Lack of physical activity Negative incident in the family	Presence of health condition (0.087)	Individual level factors
	Lack of friendly relation with in-charge/supervisor	Lack of working environment (0.154) Do not get adequate leave (0.133)	Interpersonal level factors
	Long distance from home to subcenter	Difficulty in transport (0.233)	Community level factors
	Perceived threat from the community	Long distance from home to SC (0.103) Lack of local political support (0.092)	
	Having very less support from in charge or superior	Lack of essential logistics (0.364) More workloads (0.244) Lack of infrastructure (0.182) COVID-19 vaccination load (0.138)	Institutional level factors

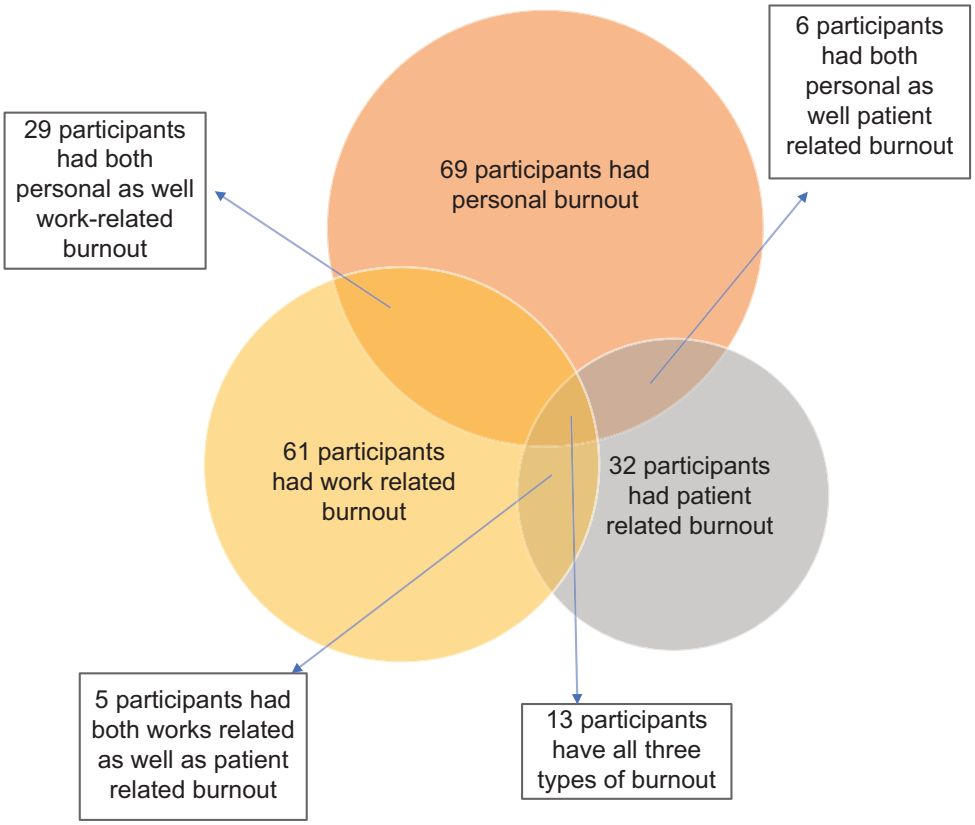

Figure 1: Venn diagram showing the distribution and overlapping of the domains of burnout among the participants (n = 214).

to workplace distance (<5 km) acted as a protective factor, a finding not observed in other studies.

Our quantitative findings were complemented by qualitative follow-up, which explored the cause and nature of burnout. Up on the integration of the findings, burnout was attributed to different socioecological level.

Work-related burnout encompassed concerns like workloads, working environment, lack of support, and issues with institutional systems and policies. Similar findings were echoed in multiple studies.[4,21-25] Distance and transport-related burnout at workplaces as uncovered here were also supported elsewhere.[21] Altogether root cause of such work-related burnouts could be seen from an interpersonal, community infrastructure, and institutional level policies.

Patient- or community-related burnout addressed workplace violence and pressure, was consistent with previous findings.[12]

This could also be attributed to interpersonal and institutional level factors. Finally, personal burnout revealed how personal illness, family events, sleeping difficulty, and inactivity lead to burnout, alike the findings of Konlan *et al*. and Chutiyami *et al*.[25,26] However such individual-level issues could have its root associated with interpersonal, community, and institutional level factors.

Ashipala D O *et al*. found in their qualitative study that creating a conducive environment, such as employing more staff, Procurement of items beforehand, and improving management, can address burnout among nurses.[23] This aligns with our study's suggestions, including improving administrative policies like ensuring adequate supply of logistics, infrastructure enhancement, staff recruitment, and subcenter division based on population, etc.

Our study's strength lies in using both quantitative and qualitative methods to explain participant burnout. The probabilistic sampling method used for participant selection enhances generalizability, and studying community health workers instead of hospital staff offers new insights. In addition, employing the free listing self-administered technique instead of face-to-face interviews allows participants more freedom to express themselves in qualitative exploration. However, low response rate, risk of misinterpretation of questions, and acquiescence bias (tendency to agree with statements) were some of the limitations of self-administered that were considered during the interpretation of the findings. Furthermore, the application of cross-sectional design makes it challenging to draw causal conclusions regarding burnout.

Conclusion

This study uncovered a concerning finding: 44.9% of ANM workers experience burnout, which is alarmingly high. Various correlated factors – at individual, interpersonal, community, and institutional levels to burnout. Interestingly, most of these factors are interrelated and modifiable. Thus, intervention at one level could positively influence factors at other levels. At interpersonal and institutional level, positive reinforcement of the working environment could ease the perceived workload and perceived health. Similarly, by encouraging a healthier lifestyle, stress management techniques, and proactive screening of participants who has family history of diseases can even counter the personal factors and better work management. Applying the Pareto law principle, identifying and targeting just 20% of these factors associated with burnout could potentially mitigate the remaining 80% and reduce overall burnout among ANM workers. This approach promises to enhance productivity, job satisfaction, and patient care, ushering in a more positive work environment for all involved.

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Conflicts of interest

There are no conflicts of interest.

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Supplementary Table 1: Distribution of the morbidity profile of the participants (*n*=214)

Variables	Category	*n* (%)
Presence of morbidity	Yes	117 (54.7)
	No	97 (45.3)
Morbidity category	No morbidity	97 (45.3)
	Single morbidity	65 (30.4)
	Multiple morbidities	52 (24.3)
Sleep problem	No problem	132 (61.7)
	Hypertension	34 (15.9)
	Diabetes mellitus	32 (15.0)
	Hypothyroidism	31 (14.5)
	Musculoskeletal	30 (14.0)
	Psychiatric illness	10 (4.6)
	Respiratory	9 (4.2)
	Hypercholesteremia	9 (4.2)
	Gastroesophageal reflux disorder	8 (3.7)
	Ischemic heart disease	5 (2.3)
	Gynecological problem	5 (2.3)
	Rheumatoid arthritis	3 (1.4)
	Ocular morbidity	2 (0.9)
	Hyperuricemia	2 (0.9)
	Thalassemia carrier	2 (0.9)
	Others[†]	6 (2.7)
Sleep problem	No problem	132 (61.7)
	Decreases the sleep duration or difficulty in sleep induction	82 (38.3)
Physical activity (at least one episode in a week)	No	146 (68.2)
	Yes	68 (31.8)
Negative incident in life (in last 6 months)	No	128 (59.3)
	Yes	87 (40.7)

*Multiple response, [†](Chronic UTI, piles, chronic tonsillitis, hernia, kidney stone, and Meniere's disease). UTI: Urinary tract infections

Supplementary Table 2: Distribution of item-wise and average score of modified Copenhagen burnout questionnaire across different domains (*n*=214)

	Always (score=100)	Often (score=75)	Sometimes (score=50)	Seldom (score=25)	Never (score=0)	Mean±SD
Personal burnout						
How often do you feel tired?	6 (2.8)	27 (12.6)	134 (62.6)	30 (14)	17 (7.9)	47.08±20.70
How often are you physically exhausted?	5 (2.3)	40 (18.7)	125 (58.4)	32 (15)	12 (5.6)	49.30±20.25
How often are you emotionally exhausted?	14 (6.5)	38 (17.8)	89 (41.6)	55 (25.7)	18 (8.4)	47.08±25.29
How often do you think:" I can't take it anymore"?	12 (5.6)	25 (11.7)	86 (40.2)	50 (23.4)	41 (19.2)	40.30±27.34
How often do you feel weak and susceptible to illness?	14 (6.5)	27 (12.6)	80 (37.4)	39 (18.2)	54 (25.2)	39.25±29.59
Average score						44.60±20.22
Work related burnout						
Is your work emotionally exhausting?	12 (5.6)	25 (11.7)	92 (43.0)	36 (16.8)	49 (22.9)	40.07±28.21
Do you feel burntout because of your work?	12 (5.6)	24 (11.2)	75 (35)	40 (18.7)	63 (29.4)	36.21±29.61
Does your work frustrate you?	12 (5.6)	16 (7.5)	63 (29.4)	33 (15.4)	90 (42.1)	29.79±30.50
Do you feel worn out at the end of the working day?	19 (8.9)	53 (24.8)	89 (41.6)	30 (14)	23 (10.7)	51.75±27.08
Are you exhausted in the morning at the thought of another day at work?	10 (4.7)	20 (9.3)	39 (18.2)	29 (13.6)	116 (54.2)	24.18±30.87
Do you feel that every working hour is tiring for you?	10 (4.7)	20 (9.3)	60 (28)	40 (18.7)	84 (39.3)	30.37±29.87
Do you have enough energy for family and friends during leisure time?	33 (15.4)	44 (20.6)	63 (29.4)	35 (16.4)	39 (18.2)	50.35±32.81
Average score						37.53±22.53
Patient and pandemic-related burnout						
Do you find it hard to work with patients/community?	3 (1.4)	4 (1.9)	47 (22)	31 (14.5)	129 (60.3)	17.41±24.18
Do you find it frustrating to work with patients/community?	0	5 (2.3)	32 (15)	36 (16.8)	141 (65.9)	13.43±20.78
Does it drain your energy to work with patients/community?	13 (6.1)	33 (15.4)	76 (35.5)	27 (12.6)	65 (30.4)	38.55±30.98
Do you feel that you give more than you get back when you work with patients/community?	40 (18.7)	55 (25.7)	73 (34.1)	11 (5.1)	35 (16.4)	56.31±32.15
Do you feel it is hard to work in the current scenario because of COVID 19?	25 (11.7)	22 (10.3)	54 (25.2)	36 (16.8)	77 (36.0)	36.21±34.29
Do you hesitate to work during this current scenario because of COVID 19?	3 (1.4)	8 (3.7)	25 (11.7)	15 (7)	163 (76.2)	11.80±23.44
Do you have fear to catch COVID-19 infection while working in the current scenario?	35 (16.4)	16 (7.5)	33 (15.4)	57 (26.6)	73 (34.1)	36.33±35.97
Do you have a fear of family members catching infection because of your work exposure?	68 (31.8)	24 (11.2)	40 (18.7)	46 (21.5)	36 (16.8)	54.91±37.44
Do you feel welcomed by the community because you are an HCW and working in the current scenario?	96 (44.9)	47 (22)	44 (20.6)	18 (8.4)	9 (4.2)	26.29±29.29
Average score						32.35±17.29

HCW: Healthcare workers