



Original article

Burnout and sleep quality among community health workers during the pandemic in selected city of Andhra Pradesh

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ABSTRACT

Background: This pandemic has resulted in physical and emotional exhaustion among everyone, especially among community healthcare workers (CHWs), resulting in increased burnout and poor sleep quality. This pandemic has increased responsibilities for Accredited Social Health Activist (ASHA) workers and Auxiliary Nurse Midwife (ANM) at the grassroots. Previous studies have shown that infectious diseases like SARS and MERS directly affect sleep. With the COVID-19 pandemic, burnout and poor sleep among healthcare workers are expected to increase. **Aim:** To determine the prevalence of burnout and sleep quality among community health workers

Settings: and Design: This Cross-sectional study was conducted from February to April 2020 in Urban Primary Health care centres of Guntur city, Andhra Pradesh.

Methods and material: Copenhagen Burnout Inventory scale (CBI) with a 5-point Likert scale and Pittsburgh Sleep Quality Index (PSQI) Questionnaire were used among four hundred and ten study participants. Descriptive statistics and the Chi-square test were used; a p-value of ≤ 0.05 is considered significant.

Results: The prevalence of personal burnout was 16.8%, while work-related and pandemic-related burnouts were 10.5% and 25.4%, respectively. The prevalence of poor sleep quality was 35.09%. Fear of contracting the virus was present among 38.3%. Fear of infecting the family members because of their exposure was reported by 36.6% of the respondents; 71.7% and 79.3% reported receiving support from the organisation and colleagues, respectively.

Conclusions: The provision of necessary equipment, regular check-ups and timely interventions will minimise the risk of stress and burnout.

1. Introduction

Community Health Workers (CHW) are the community members chosen to work closely with the people supported by the health system but are not necessarily a part of the organisation. The main advantage of having a CHW is that the people easily accept them. In India, the concept of CHW has a long and rich history; there are four cadres for CHW: ASHA (Accredited Social Health Activist), ANM (Auxiliary nurse midwife), Anganwadi worker and multi-purpose health assistant.¹ CHW are assigned various responsibilities under national health programs. With the declaration of the COVID-19 pandemic, additional duties are assigned to ASHA workers and ANM, such as contact tracing, community surveillance, implementing home quarantine, and identification of high-risk groups (HRG) and probable cases.²

Burnout is the emotional and physical exhaustion when one reaches their limits. Burnout in health care professionals can be more prevalent

during the pandemic because of the increased workload.³ Good sleep, in terms of quality and quantity, is essential for optimal day-to-day functioning. Sleep problems can lead to changes in mental health, but mental health conditions can also worsen problems with sleep.⁴ It is essential to know the mental health status of the CHW and provide them with the necessary measures. There are several studies conducted on healthcare professionals (Physicians, Nurses etc.) working in a hospital, but very few on community health workers (ANM/ASHA) who were the focal point of contact to the community members during the COVID-19 pandemic. Hence, this study aims to determine the prevalence of burnout and sleep quality among community health workers during the pandemic. The study also determines the factors associated with burnout and sleep quality.

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2. Materials and methods

This Cross-sectional study was conducted in 13 urban primary health care centres (UPHC) in Guntur city from February to April 2020. A sample size of 410 was estimated, taking the prevalence as 50% and considering a 5% non-responsive rate. ASHA workers and ANMs present on the day of data collection and those who gave consent were included in the study. The complete enumeration of CHW from all the UPHCs was done. A self-administered pre-structured questionnaire was used as a tool; it was translated to the Telugu language for easy understanding. The tool consisted of three parts: First part contains socio-demographic details (age, marital status, type of family, type of residence etc.) and work-related information (experience, hours of work, population covered, field visits and designation) of the participants.

The second part was the Copenhagen Burnout Inventory (CBI) which consisted of 3 domains: personal burnout, work-related burnout, and pandemic-related burnout. The personal and work-related burnout were taken from CBI, pandemic related burnout was adapted from a study in India.⁵ The responses are 5-point Likert scale (1: always; 2: often; 3: sometimes; 4: seldom; 5: never). The total scores were categorised as No Burnout (less than 50), Moderate Burnout (50–74) and High Burnout (75–99). To calculate the prevalence of burnout was calculated by adding moderate and high burnout, low level was considered to be normal burnout and hence ignored. The third part of the tool was Pittsburgh Sleep Quality Index (PSQI).⁶ The scores of PSQI ranged from 0 to 21. As there are no standard cut-off values to determine the level of sleep quality, quartiles were used to classify the same. Scores below 25th, 25th to 75th and above 75th percentile were considered to categorise sleep quality into good, moderate, and poor, respectively. A score below 6 as good sleep quality, 6–8 as moderate sleep quality, and above 9 as poor sleep quality.

A pilot study was conducted before the original research in a similar survey setting to check the feasibility of the study and reliability of the study tools. The Institutional Ethics Committee approved the study, and formal approval was taken from the District Health Officer of the study area. The data were coded, entered, and analysed using SPSS (Statistical Package for Social Science) version 15. Socio-demographic variables were described as frequency and percentage. To find the association Chi-square test was used, level of $p \leq 0.05$ was taken as statistically significant.

3. Results

A total of 410 CHWs participated in the study, out of which 221 were ASHAs, and 189 were ANMs. Table 1 represents the distribution of respondents based on socio-demographic and work-related characteristics. The mean age of study participants is 34 ± 5 years, and all the participants were females. The majority, 305 (74.4%) of the study participants live in a nuclear family; 360 (87.8%) were married. Among married, 261 (69.4%) had more than one child. The level of education for ANMs is ANM/GNM nursing for 94.7% of the respondents, whereas ten respondents have done BSC Nursing. For work experience, the mean is 6 ± 4 years. The minimum number of working hours is reported as 8 h and the maximum as 12 h; the number of weekly field visits ranges between 5 and 7 days.

Table 2 represents the distribution of participants based on burnout and sleep quality. 83.2% of the respondents were classified under a low level of personal burnout, while 2.7% reported having high burnout. The pandemic had little effect on community health workers showing 24.9% had moderate pandemic-related burnout. 35.9% of the community health worker had poor sleep quality. The prevalence of personal burnout is 16.8%, work-related burnout is 10.5%, and pandemic-related burnout is 25.4%. Among ASHA workers, 21.3% had personal burnout, 12.7% had work-related burnout, and 29% had pandemic-related burnout. Among ANMs, 11.6% had personal burnout, 6.9% had work-related burnout, and 21.2% had pandemic-related burnout.

Table 1

Distribution of respondents based on socio-demographic and work related characteristics.

Characteristics	ASHA n (%)	ANM n (%)	Total n (%)
Designation	221 (54)	189 (46)	410 (100)
Age (in years)			
<30	81 (36.7)	39 (20.6)	120 (29.3)
30–35	63 (28.5)	61 (32.3)	124 (30.2)
36–40	60 (27.1)	63 (33.3)	123 (30.0)
>40	17 (7.7)	26 (13.8)	43 (10.5)
Type of family			
Nuclear family	155 (70.1)	150 (79.4)	305 (74.4)
Extended family	66 (29.9)	39 (20.6)	105 (25.6)
Marital status			
Unmarried	21 (9.5)	13 (6.9)	34 (8.3)
Married	196 (88.7)	164 (86.8)	360 (87.8)
Widowed/Divorced	4 (1.8)	12 (6.3)	16 (3.9)
Number of children (n=376)			
No children	11 (5.5)	6 (3.4)	17 (4.5)
One	57 (28.5)	41 (23.3)	98 (26.1)
More than one child	132 (66)	129 (73.3)	261 (69.4)
Type of residence			
Rented house	92 (41.6)	77 (40.7)	169 (41.2)
Own house	129 (58.4)	112 (59.3)	241 (58.8)
Years of work experience			
<5	88 (39.8)	127 (67.2)	215 (52.4)
5–10	84 (38)	33 (17.5)	117 (28.5)
>10	49 (22.2)	29 (15.3)	78 (19.1)
Number of working hours (in a day)			
8	128 (57.9)	84 (44.4)	212 (51.7)
>8	93 (42.1)	105 (55.6)	198 (48.3)
Number of field visits (in a week)			
5	35 (15.8)	26 (13.8)	61 (14.9)
>5	186 (84.2)	163 (86.2)	349 (85.1)
Total population covered			
<4000	76 (34.4)	66 (34.9)	142 (34.6)
4000–4500	87 (39.4)	74 (39.2)	161 (39.3)
>4500	58 (26.2)	49 (25.9)	107 (26.1)

Table 2

Distribution of respondents based on burnout, and sleep quality.

Characteristics	ASHA n (%)	ANM n (%)	Total n (%)
Personal burnout			
Low	174 (78.7)	167 (88.4)	341 (83.2)
Moderate	40 (18.1)	18 (9.5)	58 (14.1)
High	7 (3.2)	4 (2.1)	11 (2.7)
Work related burnout			
Low	193 (87.3)	174 (92.1)	367 (89.5)
Moderate	22 (10)	15 (6.9)	37 (9)
High	6 (2.7)	0	6 (1.5)
Pandemic related burnout			
Low	157 (71)	149 (78.8)	306 (74.6)
Moderate	63 (28.5)	39 (20.6)	102 (24.9)
High	1 (0.5)	1 (0.6)	2 (0.5)
Sleep Quality			
Good	62 (28)	46 (24.3)	108 (26.3)
Moderate	85 (38.5)	70 (37.1)	155 (37.8)
Poor	74 (33.5)	73 (38.6)	147 (35.9)

Table 3 represents the distribution of respondents according to pandemic-related burnout. The respondents feared getting infected with the COVID-19 virus for themselves and family while working during the pandemic (mean score = 50.7 ± 38.0 and 47.9 ± 38.2 , respectively). The respondents reported that their colleagues supported them during the pandemic and did not fear death due to COVID-19 (mean score = 11.0 ± 25.6 and 11.8 ± 26.7 , respectively).

Table 4 illustrates the distribution of respondents according to personal and work-related burnout. The mean score of personal burnout is 35 ± 18 ; for work-related burnout, the mean score is 34 ± 15 ; and for

Table 3
Distribution of Respondents according to Pandemic related burnout.

Questions	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)	Mean score
Feeling hard to work in the current scenario	14 (3.4)	24 (5.9)	102 (24.8)	148 (36.1)	122 (29.8)	29.2 ± 25.7
Drain more of my energy to work during the current scenario	20 (4.9)	39 (9.5)	86 (21)	115 (28)	150 (36.6)	29.5 ± 29.2
Finding fruitful while performing my work during the current scenario	191 (46.6)	46 (11.2)	51 (12.4)	45 (11)	77 (18.8)	36.0 ± 39.7
Feeling of giving more than what you get back while working in the current scenario	37 (9)	26 (6.3)	78 (19.1)	76 (18.5)	193 (47.1)	27.9 ± 32.7
Hesitation to work during this current scenario	19 (4.6)	20 (4.9)	68 (16.6)	68 (16.6)	235 (57.3)	20.7 ± 28.7
Depressed due of the current scenario	21 (5.1)	19 (4.6)	64 (15.6)	66 (16.2)	240 (58.5)	20.4 ± 29.1
Feeling that my patience is tested while working in the current scenario	31 (7.6)	24 (5.9)	58 (14.1)	72 (17.6)	225 (54.8)	23.4 ± 31.6
Fear of catch of COVID-19 infection while working in the current scenario	114 (27.8)	43 (10.5)	91 (22.2)	66 (16.1)	96 (23.4)	50.7 ± 38.0
Fear of family members catching COVID-19 infection because of my work exposure	103 (25.1)	47 (11.5)	81 (19.8)	71 (17.3)	108 (26.3)	47.9 ± 38.2
Feel welcomed by the community because I'm HCW and working in the current scenario	202 (49.3)	51 (12.4)	57 (13.9)	28 (6.8)	72 (17.6)	32.4 ± 38.6
Fear of death while working in the current scenario	25 (6.1)	5 (1.2)	18 (4.4)	44 (10.7)	318 (77.6)	11.8 ± 26.7
Feel you are being properly protected by the organisation while working in the current scenario	294 (71.7)	59 (14.4)	21 (5.1)	10 (2.4)	26 (6.4)	14.3 ± 28.0
Feel you are being supported by colleagues during the current scenario	325 (79.3)	37 (9)	20 (4.9)	8 (2)	20 (4.8)	11.0 ± 25.6
Total mean score						42 ± 13.08

Table 4
Distribution of Respondents according to Personal burnout and work related burnout.

Questions	Always n (%)	Often n (%)	Sometimes n (%)	Seldom n (%)	Never n (%)	Mean score
Personal Burnout						
Feel tired	11 (2.7)	76 (18.5)	164 (40)	123 (30)	36 (8.8)	44.0 ± 23.5
I'm physically exhausted	10 (2.4)	65 (15.9)	151 (36.8)	132 (32.2)	52 (12.7)	40.7 ± 24.3
I'm emotionally exhausted	14 (3.4)	47 (11.5)	118 (28.8)	157 (38.3)	74 (18)	35.9 ± 25.5
I think "I can't take it anymore?"	5 (1.2)	40 (9.8)	109 (26.6)	130 (31.7)	126 (30.7)	29.7 ± 25.4
Feeling worn out (extremely tired)	6 (1.5)	35 (8.5)	115 (28)	131 (32)	123 (30)	29.8 ± 25.2
Feeling weak and susceptible to illness	17 (4.1)	30 (7.3)	107 (26.1)	112 (27.3)	144 (35.1)	29.5 ± 27.9
Total mean score						35 ± 18.15
Work-related burnout						
Feeling that my work is emotionally exhausting	6 (1.5)	15 (3.6)	138 (33.7)	191 (46.6)	60 (14.6)	32.6 ± 20.4
Do you feeling completely physical and mental burn-out due of my work	13 (3.2)	9 (4.6)	134 (32.7)	161 (39.3)	83 (20.2)	32.8 ± 23.7
My work frustrate me	14 (3.4)	22 (5.4)	117 (28.5)	133 (32.4)	124 (30.3)	29.8 ± 25.9
Feel worn out at the end of the working day	46 (11.2)	47 (11.5)	101 (24.6)	90 (22)	126 (30.7)	37.6 ± 33.2
I'm exhausted in the morning at the thought of another day at work	10 (2.4)	8 (2)	57 (13.9)	109 (26.6)	226 (55.1)	17.5 ± 23.7
Feeling that every working hour is tiring for me	12 (2.9)	12 (2.9)	65 (15.9)	97 (23.7)	224 (54.6)	18.9 ± 25.3
Have enough energy for family and friends during leisure time	197 (48)	72 (17.6)	63 (15.4)	33 (8)	45 (11)	29.0 ± 34.6
Total mean score						34.3 ± 15.1

pandemic-related burnout, the mean score is 42 ± 15.

Table 5 represents the association of burnout with socio-demographic and work-related variables. None of the work-related variables was significantly associated with personal burnout. Age ($p = 0.309$) and type of family ($p = 0.582$) did not affect substantially personal burnout. Factors such as the number of field visits and hours of work did not show any significant association with work-related or pandemic-related burnout. The total population covered ($p < 0.05$) and the number of children ($p = 0.029$) was significantly associated with pandemic burnout. None of the socio-demographic variables was significantly associated with work-related and pandemic-related burnout.

The age of the respondents was found to be significantly associated with sleep quality ($p < 0.001$), marital status ($p = 0.018$), type of housing ($p = 0.008$) and years of work experience ($p = 0.039$). In contrast, factors such as hours of work, field visits, and the population

covered did not show any association with sleep quality. The problem of keeping up the enthusiasm to get things done was present among 46.8% of the respondents, and trouble staying awake while engaging in any activity was present among 24.6% of the respondents. Burnout did not show a significant association with sleep quality (Table 6).

4. Discussion

The prevalence of personal burnout was 16.8%, work-related burnout was 10.5%, and pandemic burnout was 25.4%. Sleep quality was moderate among 37.8% of the participants and poor among 36.05%. Personal burnout in the current study was associated significantly with the designation of the respondents. In contrast, studies conducted in Ethiopia and China found that nurses had the highest prevalence of burnout.^{7,8}

The number of working hours in a day was significantly associated

Table 5
Association of burnout with socio-demographic and work-related variables.

Variables	Level of personal burnout				p-value
	Total	Low (%)	Moderate (%)	High (%)	
Designation					
ASHA	221	174 (78.7)	40 (18.1)	7 (3.2)	0.033*
ANM	189	167 (88.4)	18 (9.5)	4 (2.1)	
Marital status					
Unmarried	34	30 (88.2)	4 (11.8)	0	0.522
Married	360	297 (82.5)	52 (14.4)	11 (3.1)	
Widowed/ Divorced	16	14 (87.5)	2 (12.5)	0	
Number of children (n=376)					
No children	17	17 (100)	0	0	0.028*
One child	98	86 (87.8)	11 (11.2)	1 (1)	
More than one	261	208 (79.7)	43 (16.5)	10 (3.8)	
Level of work-related burnout					
Variables	Total	Low (%)	Moderate (%)	High (%)	p-value
Designation					
ASHA	221	193 (87.3)	22 (10)	6 (2.7)	0.017*
ANM	189	174 (92.1)	15 (7.9)	0	
Years of work experience					
<5	215	196 (91.2)	19 (8.8)	0	0.011*
5–1	117	107 (91.5)	8 (6.8)	2 (1.7)	
>10	78	64 (82.1)	10 (12.8)	4 (5.1)	
Number of working hours (in a day)					
8	212	190 (89.6)	17 (8)	5 (2.4)	0.208
>8	198	177 (89.4)	20 (10.1)	1 (0.5)	
Number of field visits (in a week)					
5	61	59 (96.8)	1 (1.6)	1 (1.6)	0.092
>5	349	308 (88.3)	36 (10.3)	5 (1.4)	
Level of pandemic-related burnout					
Population covered					
<3500	62	39 (62.9)	23 (37.1)	0	0.050*
>3500	348	267 (76.7)	79 (22.7)	2 (0.6)	
Number of working hours					
8	212	152 (71.7)	59 (27.8)	1 (0.5)	0.358
>8	198	154 (77.8)	43 (21.7)	1 (0.5)	

*p-value ≤0.05.

with personal burnout among healthcare professionals in a tertiary healthcare setting in Kerala. In contrast, no association was found in the current study.⁹ The present study found that years of work experience were significantly associated with work-related burnout; the studies conducted in Delhi and Andhra Pradesh among nurses and clinicians found that respondents with low years of expertise reported high levels of burnout.^{10,11}

According to studies in India and Andhra Pradesh, the pandemic burnout was more among the age group of 31–40. In contrast, age did not correlate with pandemic burnout in the current study.^{5,12} There is no association between the number of working hours and years of experience with pandemic burnout in the present study, which is similar to the findings of a multinational study. In contrast, a study conducted in North India in a tertiary healthcare setting found that the average number of working hours was associated with burnout during the pandemic.^{13,14}

In the current study, age was significantly associated with sleep quality. The finding is similar to a study in Iran which found that respondents above 45 years had poor sleep quality.¹⁵ Studies conducted in

Table 6
Association of sleep quality with socio-demographic and work-related variables.

Variables	Total	Level of sleep quality			p-value
		Good n (%)	Moderate n (%)	Poor n (%)	
Designation					
ASHA	221	62 (28.1)	85 (38.5)	74 (33.4)	0.512
ANM	189	46 (24.4)	70 (37)	73 (38.6)	
Age (in years)					
<30	120	46 (38.3)	42 (35)	32 (26.7)	0.001**
>30	290	62 (21.3)	113 (39)	115 (39.7)	
Type of family					
Nuclear	305	77 (25.2)	123 (40.3)	105 (34.5)	0.199
Extended	105	31 (29.5)	32 (30.5)	42 (40)	
Marital status					
Unmarried	34	17 (50)	8 (23.5)	9 (26.5)	0.018*
Married	360	87 (24.2)	139 (38.6)	134 (37.2)	
Widowed/ Divorced	16	4 (25)	8 (50)	4 (25)	
Type of housing					
Own house	241	50 (20.7)	96 (39.8)	95 (39.5)	0.008*
Rented house	169	58 (34.3)	59 (34.9)	52 (30.8)	
Years of work experience					
<5	215	68 (31.6)	79 (36.7)	68 (31.7)	0.039*
5–10	117	25 (21.4)	50 (42.7)	42 (35.9)	
>10	78	15 (19.2)	26 (33.3)	37 (47.5)	
Number of working hours in a day					
8	212	54 (25.5)	88 (41.5)	70 (33)	0.259
>8	198	54 (27.3)	67 (33.8)	77 (38.9)	

*p-value ≤0.05.

China and India also found that poor sleep quality increased with age, whereas a study conducted in Tripura did not find any association.^{16–19} The type of housing was significantly associated with sleep quality in the present study, similar to a survey in Tripura.¹⁶ The designation of the respondents was not associated with sleep quality in the current study. In contrast, a study in China among healthcare professionals during the pandemic revealed that being a nurse was related to poor sleep quality.¹⁸

The total population covered by ASHA workers is not per norms, which may lead to an increased workload and, in return, occupational stress.¹⁹ Most respondents feared contracting the virus and infecting their family members because of their exposure. The majority of respondents reported a feeling of non-acceptability by the community and a lack of time to spend with family and friends. Early identification of the factors causing burnout is necessary to improve the overall well-being.

4.1. Strength and limitations

The strength of the current study was that the questionnaires used (CBI and PSQI) are tested and validated in various national and international studies. Also, a pilot study was conducted to check for the reliability of the questionnaire. However, the study's weakness was relying on the participants' self-reporting. Being a cross-sectional study may limit our ability to identify causal relationships between burnout and sleep quality.

5. Conclusions

The present study showed that designation, level of education, and years of experience were associated with work-related burnout. The number of children and designation of the respondents were determining factors for personal burnout. For sleep quality, age, marital status, and type of housing were found to be determining factors. The total population covered by ASHA workers is not per norms which may

lead to increased workload. The provision of necessary equipment, regular check-ups and timely interventions will benefit in minimising the risk of stress and burnout. Subsequently, more in-depth assessments are needed for a better understanding of the mental health of CHWs.

Sources of support

Nil

Declaration of competing interest

Nil

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