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# Prevalence and associated factors of burnout syndrome among selected health care professionals at University Hospitals of Sidama Region and Southern, Ethiopia 2023

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## Abstract

**Background** Health professionals are burn out syndrome prone occupational group. In Ethiopia there are limited evidences about burnout syndrome and work related determinant factors resulting in Burnout syndrome. Therefore, this study aimed to determine the prevalence of burnout syndrome and associated factors of burnout syndrome among health professionals working in university hospitals found in Sidama region and Southern Ethiopia 2023.

**Methods** An institution based multi-center cross-sectional study was conducted on 362 health professionals working in three university hospital from February 15 to February 30, 2023. Study participants were recruited using Simple random sampling technique. A standard self-administered Maslach Burn out Inventory questionnaire were used to collect data. Data entered into Epi-info version 7.2.5.0 and exported to stata version 17 for analysis. Multivariate logistic regression was used to identify factors associated with burnout syndrome and adjusted odds ratio with a 95% confidence interval were used to describe factors associated significantly. Variables with a *P* value of less than 0.05 were considered statistically significant.

**Result** A total of 362 health professionals were enrolled in the study with a response rate of 100%. The prevalence of burnout syndrome among health professionals was found to be 198 (54.7%) with a 95% CI of 49.51–59.77%. Alcohol dependence (AOR=6.41, 95% CI=2.37–17.29), Sleep problem (AOR=3.88, 95% CI=2.33–6.46), poor social support (AOR=4.71, 95% CI=2.21–10.01) and intermediate social support (AOR=2.41, 95% CI=1.07–5.42) were factors significantly associated with burnout syndrome.

**Conclusion** This study revealed that a high proportion of health professionals working in university hospitals of sidama and southern part of Ethiopia suffer from burnout syndrome. Alcohol dependence, sleep problem, getting poor and intermediate social support were significantly associated predictor variable with burnout syndrome.

**Recommendation** Higher officials of university hospitals and human resource department should design strategies to reduce alcohol dependence, promote healthy sleep habit and advocate strong social support among health professionals.

**Keywords** Burnout syndrome, Health professionals, Maslach inventory tool

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## Back ground

Burnout syndrome (BOS) is a psychological syndrome resulting from a prolonged negative response to chronic work-related stressors characterized by Emotional Exhaustion (EE), Depersonalization (DP), and Low Personal Accomplishment (PA) that can occur among individuals who work with people in some capacity for a prolonged time without having adequate time physical or emotional recovery [1–4].

In the early 1970s, Freudenberg was the first scholar to use the phrase BOS [4] to express a sense of failure and exhaustion [5, 6]. Until Maslach redefined burnout in 1982, the concept was perceived differently [7] as a multidimensional disorder consisting of three spectrums, namely EE, DP and Low PA [8, 9]. Burn out (BOS) occurs when energy turns to tiredness, involvement becomes cynicism, and efficacy turns into ineffectiveness [10]. Prolonged exposure to high amounts of stress has negative health repercussions [11]. BOS is caused by a combination of very high expectations, ongoing situational stress at work, and working with scarce resources [12, 13].

BOS is highly prevalent in the health care sectors due to the stressful nature of health care activities, and HPs are the most affected profession, suffering from chronic workplace stress [3, 14, 15]. Emotional exhaustion in BOS causes HP to feel consumed at the conclusion of the work day commitment with a lack of motivation to be concerned or care for the patient [16]. Depersonalization in BOS defined as the phenomena which characterized by feeling disconnected from the self or surrounding environment [17]. A perception of decreased PA includes feelings of undervaluing one's own dedication and commitment [16, 18].

There is a global shortage of HP, which is serious and unavoidable in Sub-Saharan Africa (SSA) [19]. By 2013, the requirement for HPs was predicted to be roughly 17.4 million, of which nearly 2.6 million were doctors and approximately 9 million were nurses and midwives. The need for health personnel was greatest in South-East Asia (6.9 million) and Africa (4.2 million) [20].

Burnout syndrome is a major global health service-related hazard that is regarded as a workplace epidemic in modern society, and it is a component of occupational stress that is garnering significant attention globally [12, 13, 21]. The World Health Organization designated burnout syndrome as a "occupational phenomenon" in the 11th Revision of the International Classification of Diseases (ICD-11) [22, 23].

About 15% of work place absenteeism was caused by BOS and annual cost of this syndrome has reached 1.7 billion euros [24]. According to a recent study, BOS has a huge influence on the economy of hospitals and

health-care institutions, costing around \$20 billion every year, resulting in a significant financial burden [25]. In the United States, around 54% of physicians and 35% of hospital nurses reported burnout [26].

BOS has a negative impact on people's personal, psychological, and physical wellbeing. Personal consequences include substance misuse, shattered relationships, and even suicide [14]. Over 60% of physicians in the United States of America said they would quit their jobs because of BOS [5]. BOS was shown to be common in low and middle income countries (LMIC) [27], with one out of every two physicians having burnout at any given time. This may have an impact not just on one's own well-being, but also on the quality of treatment provided [14, 28]. BOS had a greater impact in Sub-Saharan Africa, where as many as 81% of physicians and 45.8% of nurses suffered from burnout, with 31% of physicians experiencing severe burnout [26, 29–31]. BOS is reported to affect 39% of Ethiopian nurses, and it affects two out of every five nurses in Ethiopia [32, 33].

BOS in health care is an infection and long-term sequel of unmanaged work-related fatigue and stress that, if left unmanaged, can cause negative repercussions in health care organizations, cause career dissatisfaction, and reduce time devoted to patient care and safety, ultimately deteriorating the country's health system [26, 32].

Several factors have been found to be related to the risk of burnout such as socio-demographic (age, gender, monthly pay, and marital status) [34, 35]. Work-related factors (profession type, years of experience, sleep deprivation, weekly working hours, night shifts per month) [13, 36] and physical and psychosocial factors (lack of recognition, social support, substance abuse) [19, 37]. Other factors associated with burnout include travelling time to work, poor wages, too frequent night duties additional work load or inadequate support from leaders [1, 19].

In Ethiopia few studies have been conducted however, they did not comprehensively assess personal and psycho-social factors resulting in BOS particularly in the Sidama region and southern Ethiopia [9, 19, 38]. So, the results of this study can serve as a reference for scientific evidence on the level of burnout syndrome and factors associated with in the university hospitals and conduct further studies. In addition this information will be beneficial for policy makers and planners to formulate strategies to minimize burnout syndrome.

## Methods

A multi-center cross-sectional study was conducted at Hawassa University Comprehensive Specialized Hospital (HUCSH), Dilla University Referral Hospital (DURH),

and Wolayta Sodo University Comprehensive Specialized Hospital (WSUCSH) from February 15–30, 2023.

Health professionals with work experience of 6 months and above, who were available during the data collection period and willing to participate in the study were included in the study. Health professionals who came for short term attachment during data collection period and Medical interns were excluded from the study.

### Sample size and sampling procedure

The sample size was determined by using single population proportion formula assuming  $p=54.1\%$  from a cross sectional study done on health professionals in Dire dawa city, Ethiopia [32] with a 5% margin of error (d) and 95% confidence interval of certainty ( $\alpha=0.05$ ), non-response rate 10%. The calculated sample size is 381.

A total of 2,422 health professionals were working in the three selected university hospitals.

Since the number of health professionals in the three university hospitals were 2422 which is less than 10,000 correction formula was used.

Where  $nf$ =final sample size,  $ni$ =initial sample size,  $N$ =total population, the calculated sample size was 329 and adding 10% none-response rate from previous related research response rate  $=329 \times 10\% = 32.9 \approx 33$  then final sample size was  $329 + 33 = 362$ . Therefore the final sample size was 362 participants.

All health professionals found in the hospital were stratified based on their profession by the assumption that different professions have different risk for burnout. Based on the number of professionals found in each stratum, proportional allocation of the total sample size was carried out to attain the required sample size.

Simple random sampling techniques were used to select the study units in each stratum (Fig. 1). Finally, 362 health professionals were recruited based on eligibility criteria using sampling frame prepared using professional list from each department. Then proportional allocation was made using the following formula;  $ni = nf \times ni/N$ ,  $i = 1, 2, 3, k$ , Where:  $ni$ =number of health professionals in each selected hospital,  $nf$ =final sample of the study,  $N$ =total number of health professionals in selected hospitals.

From human resource registry, the total health professionals in the three selected university hospitals were 1091 (HUCSH), 521 (DURH) and 810 (WSURH) respectively. Therefore, the proportion for HUCSH=163, for DURH=78, and for WSUCSH=121 participants.

### Data collection technique and tool

Data was collected using a self-administered standardized questionnaire adapted from previous literature [4, 19].

The questionnaire were divided into four parts. The first section include 17 items that covered the socio demographic characteristics and second section deals with work-related factors, the third section was on personal and psychosocial factors [14].

The fourth portion of the questionnaire contained the Maslach burnout Inventory human service survey (MBI) is a validated tool used 22-item measuring to self-assess the risk of burnout syndrome. The tool was organized into three domains of burnout syndrome that could assess emotional exhaustion (9questions), depersonalization (five questions), and lack of personal accomplishment (eight questions) [19].

The items are scored on Likert scale from 0 (never) to 6 (everyday) based on a 7-point Likert scale. Scores in each of the three subscales of burnout were divided into high, average, and low categories based on the cut-offs used in previous studies. The BOS assessment scores was calculated as a summation of answers to each item and represented with their mean and standard deviations (SDs) and participants who have scored above and equal to the mean were considered as having BOS [15, 39].

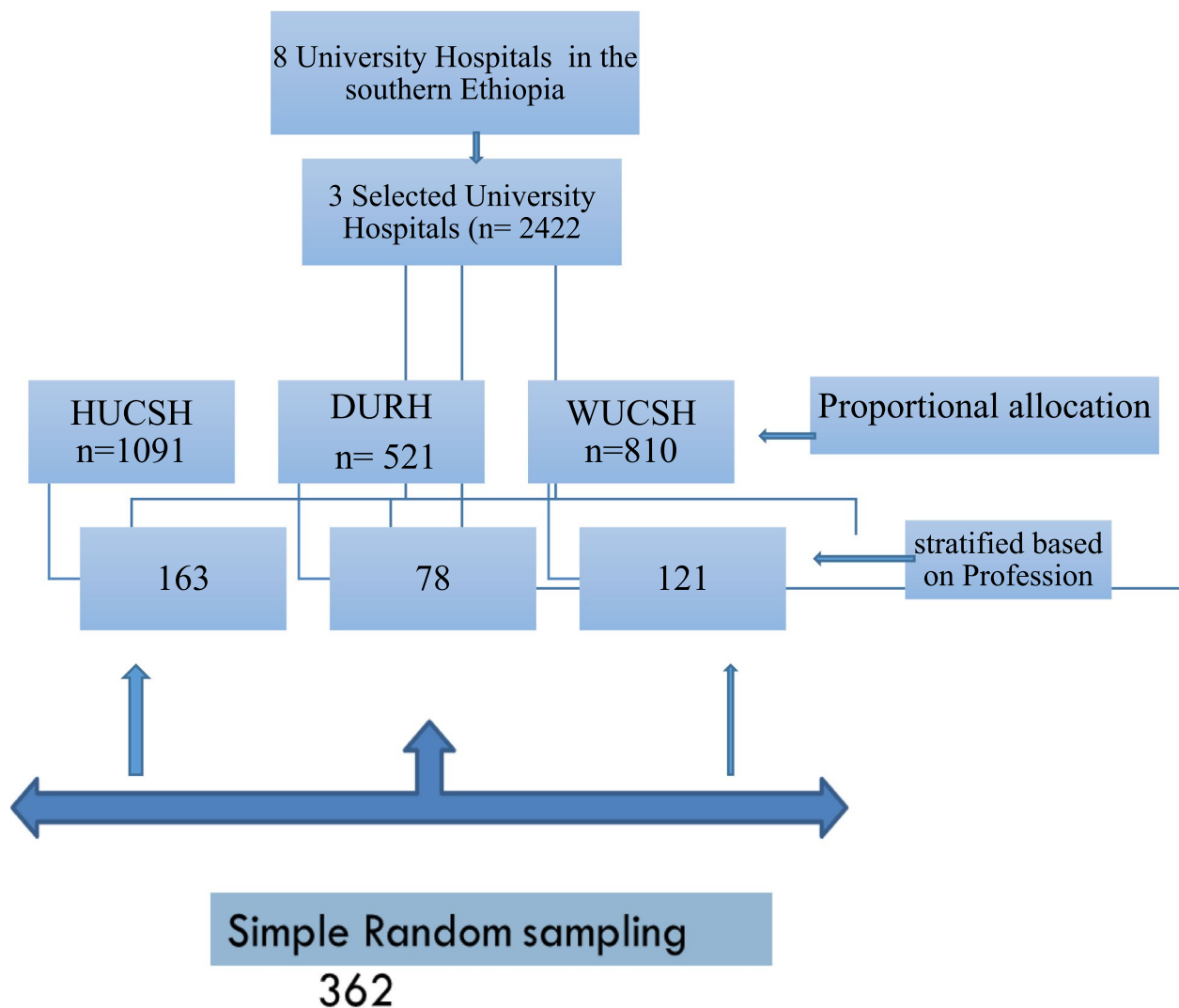
### Operational definition

*Burnout Syndrome*: is a physical and psychological outcome that resulted from long term exposure to job related stress. Which is a mental state characterized by psychological weariness to provide human service, it is characterized by emotional exhaustion (EE), depersonalization and lack of personal accomplishment (PA) [19]. In this study, a combination of cutoff values of high score ( $\geq 27$ ) in EE dimension, ( $\geq 13$ ) DP dimension, and ( $< 32$ ) low in PA dimension were considered burnout syndrome [32].

*Emotional Exhaustion (EE)*: is described as “wearing out, loss of energy, depletion, debilitation, and fatigue”. In this study, Emotional exhaustion refers to feeling exhausted and no longer able to cope emotionally with stressors related to the work [32]. Low ( $< 13$ ), moderate (14–26), high ( $\geq 27$ ). Corresponding to symptoms experienced a few times per month as per MBI tool [19].

*Depersonalization (DP)*: Is defined as “negative or inappropriate attitudes towards clients, irritability, loss of idealism, and withdrawal”. In this study, it means not treating patients as humans [32]. Low ( $< 2$ ), moderate (3–9), high ( $\geq 10$ ) corresponding to symptoms experienced once per month or less as per MBI tool [19].

*Reduced Personal Accomplishment (PA)*: defined as ‘reduced productivity or capability, low morale, and an inability to cope. In this study, reduced PA refers to the inability to perform someone’s work and self-evaluate negatively or as incapable of job [32] low ( $\geq 43$ ) average



**Fig. 1** Showing sampling technique of study participants from selected university hospital in southern part of Ethiopia in 2023

[10, 23, 27, 30, 33, 35, 36, 38, 40–43], high degree of burnout ( $\leq 31$ ) corresponding to symptoms experienced approximately once per week [32].

**Sleep disturbance:** was measured by Athens insomnia scale (AIS). The AIS is 8-item self-reported questionnaire that indicates insomnia within the past month and scores each ranging from 0 to 3 (0 score equals better and 3 is worst). The total score greater than or equals to 6 indicates insomnia [22].

**Alcohol Use Disorders Identification Test (AUDIT):** is a 10-item questionnaire which was used to assess the alcohol consumption and drinking behavior of the participant.

The audit was developed by WHO to identify alcohol use disorders, and has been used in various LMICs, including Ethiopia. 0–7 indicates low risk, 8–15 indicates

increasing risk, 16–19 higher risk and above 20 indicates possible dependence [44].

**Social support,** to assess social support Oslo Social Support Scale was used. Oslo Social Support Scale Score is ranged from 3–14 with a score of 3–8=poor social support; 9–11=intermediate social support; and 12–14=strong social support [22].

**Health care professionals:** operationalized for this study as health care professionals which has at least 20 staff member in each study areas.

#### Data analysis procedure

Data was checked, coded, and entered into Epi-info version 7.2.5.0 and transported to STATA version 17 for analysis. Kolmogorov Smirnov (k-s test) was employed to check normality.

The internal consistency of the tool was insured by estimate of reliability of test score (Cronbach's alpha). The Cronbach's alpha was 0.867 for sleep problem, 0.673 for social support, and 0.89 for alcohol use. Cronbach's alpha for the tool was: 0.876 for emotional exhaustion, 0.872 for depersonalization and 0.95 for personal accomplishment.

A Hosmer–Lemeshow goodness-to-fit model was tested for model fitness at  $P$ -value  $> 0.05$ . Occurrence of multi collinearity was checked by variable inflation factor (VIF) for final model whether there is collinearity among independent variables.

Multivariate logistic regression was used to assess the relationship between BOS as dependent and various psychosocial and work related factors as independent factors. Variables that showed an association with Burn out syndrome in bivariate analysis ( $p$ -value  $< 0.2$ ) were entered into a multivariate logistic regression model to identify Burn out syndrome independent factors.

A backward stepwise elimination technique was used to build the logistic regression model. The model fitness was evaluated using the Hosmer–Lemeshow goodness of fit test ( $P = 0.121$ ). Multicollinearity between independent variables was checked using variance inflation factor (VIF before entering the multivariable model, and the mean VIF was = 1.19. Descriptive statistics was used to summarize tables and figures and numeric data was described in terms of mean  $\pm$  SD for symmetric. AOR with 95% Confidence interval was estimated to identify factors associated on multivariable logistic regression and statistical significance was declared at  $P$ -value  $< 0.05$ .

### Ethics approval and informed consent

Prior to data collection, ethical approval was granted by Hawassa University's Institutional Review Board with Ethical clearance reference number of IRB/181/15. Permission to access patient data was requested through a letter of support sent to each university hospital. Informed consent was obtained from all participants, outlining the research's objectives and procedures. Confidentiality and anonymity were upheld throughout the study. Participants were informed of their right to withdraw from the study at any point.

## Result

### Socio-demographic characteristics of health professionals

A total of 362 professional participated in this study with a response rate of 100%. Two hundred thirty two (64.09%) of the respondents were male and the respondents' average age was 30 years old. In terms of educational level, 244 (67.40%) of professionals were bachelor's degree holders and 226 (62.43%) were nurses in the profession. One hundred seventy one (47.24%) of the participants had  $\leq 5$  years of experience (Table 1).

**Table 1** Socio-demographic characteristics of health professional in Sidama region and Southern, Ethiopia 2023 ( $n = 362$ )

Variables $N = 362$	Category	Frequency	Percent
Age	$\leq 29$ years	176	48.62
	30–39 years	166	45.86
	$\geq 40$ year	20	5.52
Sex	Male	232	64.09
	Female	130	35.91
Marital status	Married	174	48.07
	Unmarried	188	51.03
Religion	Orthodox	162	44.75
	Protestant	161	44.48
	Muslim	22	6.08
	Others	17	4.70
Educational status	Diploma	28	7.73
	Bachelor degree	244	67.40
	Bachelor degree	45	12.43
	Master's degree	45	12.43
Having children	Yes	165	45.58
	No	197	54.42
Profession	Nurse	226	62.43
	Midwife	49	13.54
	Physician	45	11.99
	Laboratory technologist	42	11.60
Year of experience	$\leq 5$ years	171	47.24
	6–11 years	140	38.67
	$> 11$ years	51	14.09
Monthly income	$< 4,725$	35	9.67
	4,725–5,653	23	6.35
	5,654–7,414	130	35.91
	$> 7,414$	174	48.07

Work Related Factors of Health Professionals in selected university hospitals of Sidama Region and Southern Ethiopia, 2023.

Three hundred fifteen (87.02%) of participants had Supervision in their current job, and 265 (73.20%) had  $\leq 72$  average working hours per week. The majority of the participants, 70 (19.34%), worked at Gyn obs, while 16 (4.42%) worked in the adult OPD and 260 (71.82%) had the intention of leaving their work (Table 2).

### Prevalence of burnout syndrome among health professionals

The findings of this study revealed that the overall prevalence of burnout was found to be 54.7% among health professionals working in selected university hospitals of Sidama and southern Ethiopia, with a (95% CI: 49.51–59.77%). Regarding components of burnout, 82 (22.65%) of the participants had low personal accomplishment,



**Table 2** Work related factors of health professional of health professional in in selected Sidama Region and, southern Ethiopia, 2023 ( $n = 362$ )

Variables $N = 362$	Category	Frequency	Percent
Current Service delivery unit/working unit	Medical	47	12.98
	Surgical	54	14.92
	Gynobs	70	19.34
	Pediatric	45	12.43
	Emergency	28	7.73
	ICU	22	6.08
	Laboratory	46	12.71
	OPD	16	4.42
	Orthopedics	34	9.39
Job Title	Staff	315	87.02
	Focal	26	7.18
	Department Head	18	4.97
	Director	3	0.83
Average working hour per week	$\leq 72$ h	265	73.20
	$\geq 72$ h	97	26.80
Are you working in shifts?	Yes	249	68.78
	No	113	31.22
What is your current duty shift?	Day shift	115	31.77
	Night shift	63	17.40
	Both	184	50.83
Do you work in private health institutions?	Yes	98	27.07
	No	264	72.03
Presence of work overload	Yes	98	27.07
	No	264	72.93
Are you paid for any extra load/duty payment on time?	Yes	261	72.10
	No	101	27.90
Is there organizational support for a staff related to your service?	Yes	129	35.64
	No	233	64.36
Is your working environment equipped with adequate medical equipment/Lab investigations/Medications?	Yes	116	32.04
	No	244	67.40
Having job supervision	Yes	270	74.59
	No	92	25.41
Do you have intention to leave working environment in the future?	Yes	260	71.82
	No	100	27.62

194 (53.59%) of the participants had high depersonalization, and 86(23.76%) of the participants had High emotional exhaustion (Figs. 2 and 3).

### Component of burnout syndrome among health professional

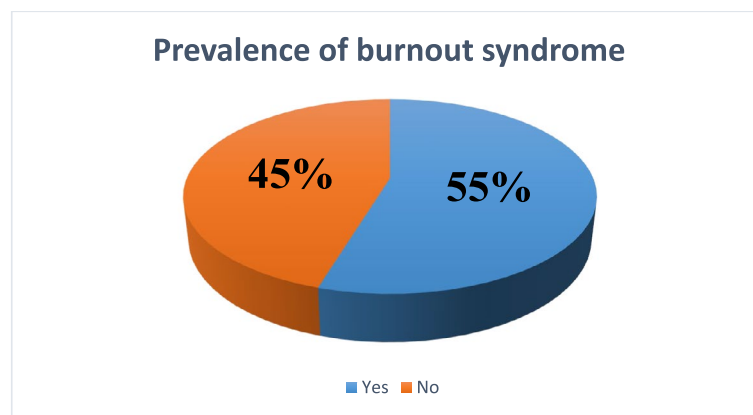
#### Factors associated with Burnout syndrome among health professionals in sidama region and Southern Ethiopia 2023

In binary logistic regression; age, sex, marital status, profession, weekly working hours, alcohol drinking, sleep problem, social support and intention to leave working were the variables with  $P$ -value  $< 0.25$  and become

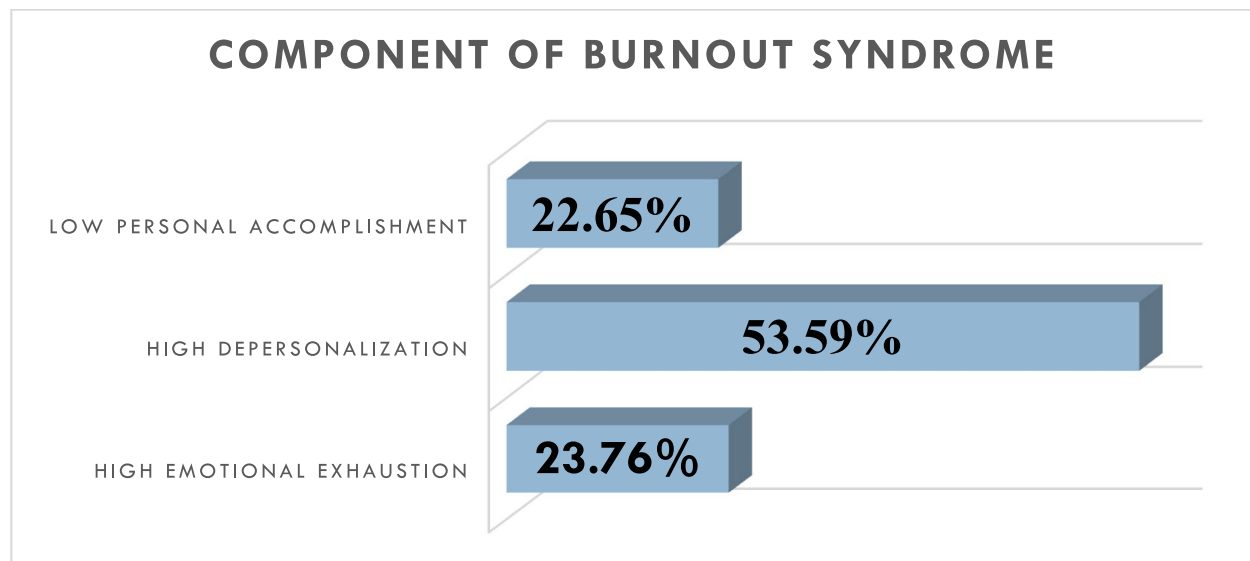
candidate for multivariate analysis. A variable that shows significant association for multiple logistic regression at  $p < 0.05$  were alcohol drinking, Sleep problem and social support (Table 3).

### Discussion

Burnout syndrome (BOS) is a psychological syndrome characterized by Emotional Exhaustion (EE), Depersonalization (DP), and Low Personal Accomplishment (PA) as a result of a prolonged negative response to chronic work-related stressors. The findings of this study will be critical in overcoming the issues associated with burnout



**Fig. 2** Prevalence of burnout syndrome among health professional in southern Ethiopia, 2023



**Fig. 3** Component of burnout syndrome among health professional in Sidama region and southern Ethiopia, 2023

syndrome among health professionals, such as decreased quality of care, poor interaction with health care professionals, and high turnover rates and absenteeism [45–47].

The study indicates that prevalence of burnout syndrome among health professionals was found to be 54.70% (49.51–59.77). The findings of the study revealed that the prevalence of burnout syndrome among Health professionals was high.

Accordingly, the Prevalence of burnout was comparable to the findings of a study in Iran (52.9%) [48], Ethiopia (50.4%) [49], Senegal (55%) [50] and Saudi Arabia (40%–60%) [41].

The possible reason may be a similarity in the tool used to assess burnout syndrome, organizational structure,

higher official staff relationship and the same professional work load and the findings of this study however, is higher than that of previous studies conducted in Ethiopia: 13.7%, 34.0%, 47.6% [49, 51, 52] Egypt (36.3%) [42], and China (2.46%) [53]. This disparity can be attributed to participants' socio-cultural and demographic factors, as well as the structure of the country's healthcare system. It could also be due to differences in study settings. Moreover, the difference might be due the difference in the study participants where the study conduct in Debrebirhan was on medical students where the level of responsibility and commitment expected is lower than that of licensed professionals and the study conducted in Mekele were on health professionals working in Private

**Table 3** Bivariable and multivariable logistic regression of factors associated with Burnout syndrome among health professionals in Sidama region and Southern Ethiopia 2023

Variables (N = 362)	Category	Burnout syndrome		COR (95%CI)	P-Value	AOR (95%CI)	P-Value
		Yes	No				
		N (%)	N (%)				
Age	≤ 29 years	97(55.11%)	79 (44.89%)	1.00		1:00	
	30–39 years	87(52.41%)	79 (47.59%)	0.89(0.58–1.37)	0.122	0.90(0.51–1.57)	0.456
	≥ 40 years	14(7.0%)	6 (30.00%)	1.90(0.69–5.17)	0.078	2.34 (0.73–7.48)	0.077
Sex	Male	127 (54.62%)	105 (45.26%)	1.00		1:00	
	Female	71 (54.70%)	59 (45.38%)	0.99(0.64–1.53)	0.134	0.84 (0.50–1.41)	0.232
Marital status	Married	94 (54.02%)	80 (45.98%)	0.94(0.62–1.43)	0.0672	1.14 (0.50–1.41)	0.221
	Unmarried	104 (55.32%)	84 (44.68%)	1.00		1:00	
Profession	Nurse	141 (62.39%)	85 (37.61%)	1.00		1:00	
	Midwife	20 (40.82%)	29 (59.18%)	0.41(0.22–0.78)	0.0145	0.39(0.18–1.84)	0.311
	Physician	37 (42.53%)	50 (57.47%)	0.44(0.26–0.73)	0.0313	0.78(0.43–1.43)	0.092
weekly working hours	≤ 72 h	142 (53.58%)	123 46.42 (%)	1.00		1:00	
	≥ 72 h	56 (57.73%)	41 (42.27%)	1.18(0.73–1.89)	0.212	1.05(0.60–1.83)	0.881
Alcohol drinking	Low risk	88 (43.78%)	113 (56.22%)	1.00		1:00	
	Increasing risk	65 (61.90%)	40 (38.10%)	2.08(1.26–3.387.78)	0.0065	1.68 (0.98–2.91)	0.084
	Higher risk	10 (66.67%)	5 (33.33%)	2.56(0.84–7.78)		1.43 (0.42–4.81)	0.091
	Dependence	35 (85.37%)	6 (14.63%)	7.49(3.01–18.60)	0.043	<b>6.41 (2.37–17.29)*</b>	<b>0.0001</b>
Sleep problem	No	48 (32.43%)	100 (67.57%)	1.00		1:00	
	Yes	150 (70.09%)	64 (29.91%)	4.88(3.10–7.67)	0.003	<b>3.88( 2.33–6.46)*</b>	<b>0.0001</b>
Social support	Poor	132 (66.33%)	67 (33.67%)	5.17( 2.70–11.70)	0.002	<b>4.71(2.21–10.01)*</b>	<b>0.0005</b>
	Intermediate	50 (47.62%)	55 (52.38%)	2.38( 1.19–7.19)	0.001	<b>2.41 (1.07–5.42)*</b>	<b>0.031</b>
	Strong	16 (27.59%)	42 (72.41%)	1.00		1:00	
	Yes	145 (55.77%)	115(44.23%)	0.89(0.56–1.42)	0.112	0.92(0.53–1.61)	0.220
Intention to leave working	Yes	145 (55.77%)	115(44.23%)	0.89(0.56–1.42)	0.112	0.92(0.53–1.61)	0.220
	No	53 (53%)	47 (47%)	1.00		1:00	

\* Statistically significant at *p* value less than 0.05

hospital where we expect better salary and job satisfaction than those working in public hospitals that reduce the chance of burnout syndrome [54].

According to the findings, all three dimensions of burnout among health professionals are generally high. In particular, 23.76% reported high emotional exhaustion, 67.68% reported high depersonalization, and 22.65% reported low personal accomplishment, all of which contributed to a high level of burnout. A similar study was conducted in Yemen [55], but Malaysia [56], Brazil [40, 57] and Bosnia and Herzegovina [57] showed different results from this study. The proportion of health professional in the highest group, that is, in high EE, DP, and low PA, is far lower than in this study in all three dimensions of burnout. The Egyptian study bears some similarities to this one [58] and Hungarian [59] studies is low PA dimension of burnout syndrome.

These disparities could be attributed to differences in workplace culture, the number of patients treated by a single health professional, the nature of the health

system, the responsibility and role expected of a from each profession, and Ethiopia's poor labor conditions.

Social support one of the significantly associated variable with burnout syndrome. Participants with poor social support were 4.71 times most likely and those with intermediate social support has 2.4 times more likely to have burnout syndrome than those with strong social support. This finding is also supported by the study conducted in China [60]. A plausible explanation to this could be the fact that health professional with good social support can have good mental, good social interaction and emotional health [61], where this leads to the decrement of emotional exhaustion and depersonalization with increment of personal accomplishment.

The odds of health professional with alcohol dependence was 6.41 times more likely to have burnout syndrome as compared with health professional who had low risk of alcohol (AOR=6.41, 95% CI=2.37–17.29).

This study is similar to those who used at least one substance had 2.24 times the risk of burnout, and those who



worked without supervision had 4.65 times the risk of burnout. The finding of this study was higher than studies conducted in Malawi [27, 62]. This could be because of socio culture related to drinking habit and substance abuse can cause depression, tension, and reliance [44].

The odds of health professional with sleep problem was almost 4 times more likely to have burnout syndrome as compared with health professional who had normal sleep condition (AOR=3.88, 95% CI=2.33–6.46). Burnout is more common in health professionals with sleep problem that results from frequent awakening from sleep to see critical cases and emergency cases during duty time and prolonged working hours during night time.

Moreover, health care activities demands high alertness and psycho-motor skills to treat patient effectively, this demands adequate sleep and mental refreshment. Mentally not refreshed health professionals are easily fatigued and are prone to burnout. It is also worth noting that working longer hours without getting adequate sleep is associated with greater emotional exhaustion. This could be due to increased exposure to high-pressure, cognitively demanding jobs and declining sleep quality [63].

### Strength and limitation of the study

The first strength is that we included health care professionals from a variety of department in three different teaching hospitals in southern and Sidama region of Ethiopia which increases generalizability. Secondly high response rate, our study also has some limitations that must be considered. The data was collected through self-report of the respondents, so there could be under and over reporting of the outcome variable. Moreover, the fact that the study is cross sectional limited us to see temporal relationship and since it was not comparative study it is difficult to compare the difference between public and private hospitals.

### Conclusion

In conclusion, this study revealed that the prevalence of burnout syndrome is significantly high among health professionals working in the selected university hospitals of sidama region and southern Ethiopia. Sleep problems, alcohol consumption, and intermediate and low social support were discovered to be significant predictor variables for burnout syndrome.

### Recommendation

As a result, Hospital managers, directors should promote social support for the staff through community forum and staff forum. Human Resource Department (HRM)

departments should design technique to enhance social support like social committee that advocates and supports social interaction and social support.

HRM director should work on the strategies to reduce health professionals sleep problem and minimize prolonged working hour that could result in sleep problem by recruiting adequate staff.

Medical directors and CEO should arrange night duty program that minimize workload and sleep disturbance and promote healthy sleep pattern among health professionals.

Minister of health and minister of Education should advocate alcohol consumption reduction by establishing and supporting rehabilitation center, sport clubs and staff friendly services to reduce alcohol dependence and substance use among health professionals.

### Abbreviations

BOS	Burnout Syndrome
DP	Depersonalization
DURH	Dilla University Referral Hospital
EE	Emotional Exhaustion
HPs	Health Professionals
HUCSH	Hawassa University Comprehensive Specialized Hospital
MBI	Maslach Burnout Inventory
PA	Personal Accomplishment
WSUCSH	Wolayta Sodo University Comprehensive Specialized Hospital

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### Authors' contributions

Dr. Bereket Bizuneh, Dr. Endrias Markos, Dr. Don Eliseo Lucero, Terefe Markos, and Hailemariam Getachew have made substantial contributions to conception, design, analysis, and interpretation of data, and participated in the critical review. They also contributed to conception, design, and acquisition of data, analysis, and interpretation of data as well as on preparing the manuscript to this study.

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### Data availability

Data and material can be available where appropriate the data also be available as a supplementary files.

### Declarations

#### Ethics approval and consent to participate

Ethical approval was made by Hawassa University institutional review Board (IRB) with Ethical clearance reference number of IRB/181/15 and consent to participate was obtained from all the participants.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare no competing interests.

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