International Journal of Medical and Pharmaceutical Research

Online ISSN-2958-3683 | Print ISSN-2958-3675
Frequency: Bi-Monthly
Available online on: https://ijmpr.in/

Original Article

BURNOUT SYNDROME AND ITS PREDICTORS AMONG ASHA: A CROSS SECTIONAL STUDY IN RAJASTHAN

Dr Sandeep Kumar Uppadhaya[1], Dr Sanjay Jain[2], Dr Megha Sharma[3], Dr Arpit Asopa[4], Dr Shailendra Vashistha[5]

[1] Associate Professor, Department of Community Medicine, RVRS Medical College, Bhilwara.
[2] Assistant Professor, Department of Community Medicine, RVRS Medical College, Bhilwara.
[3] Assistant Professor, Department of Microbiology, KM Medical College, Mathura.
[4] MBBS, RVRS Medical College, Bhilwara.
[5] Assistant Professor, Department of Immuno-Haematology and Transfusion Medicine, GMC, Kota.

Corresponding Author:

Dr Shailendra Vashistha
Assistant Professor, Department of Immuno-Haematology and Transfusion Medicine, GMC, Kota, Rajasthan, India; Email ID: drvashistha.ihtm@gmail.com;
Orcid ID: 0000-0001-8756-907X

Received: 08-12-2025
Accepted: 20-12-2025
Available online: 27-12-2025

ABSTRACT

Introduction: Burnout, a state of physical and emotional exhaustion, is an emerging challenge in health care system and it is very common among Accredited Social Health Activist (ASHA) workers because of their exhausting field work. There has been a paucity of literature about burnout in India in ASHA workers.
Objective: The aim of present study was to investigate the level of burnout among ASHA workers, and its associated factors, in the Bhilwara district of Rajasthan.
Materials and Methods: In this cross-sectional study, total 80 ASHA workers of two blocks (one rural & one urban) were enrolled. The data collection instrument was the Maslach Burnout Inventory (MBI), which consists of 22 items and the three subscales of emotional exhaustion (EE), depersonalization (DP), and personal achievement (PA). High scores in EE and DP and low scores in PA are indicative of high burnout.
Results: Present study revealed that mean scores of emotional exhaustion, depersonalization and personal accomplishment subscales were 21.55±7.30 (moderate score), 13.71±4.28 (high score) and 38.88±4.52 (moderate score) respectively. The findings showed that 13.8% of ASHA workers had high score on emotional exhaustion subscale, 80% had high score on depersonalization subscale and 8.8% had low score on personal accomplishment subscale. Emotional exhaustion subscale was significantly associated with working experience and family income while depersonalization subscale had significant association with working place. Overall, only 2.5% of ASHA workers had high burnout (high score EE and DP subscale along with low score on PA subscale) but every third (33.75%) ASHA workers had moderate to high level of burnout.
Conclusion: Moderate to high occupational burnout is highly prevalent in ASHA workers. Preventive measures, such as periodic assessment of mental health, stress management programme and improving job satisfaction of ASHA workers is to be need of the hour.

Keywords: *Emotional exhaustion, Mental health, Job satisfaction.*

INTRODUCTION

"Burnout" is a state of extreme mental exhaustion resulting from factors related to one's professional life. The three characteristic features of Burn out are emotional exhaustion, depersonalization and a reduced sense of accomplishment or success.[1] Higher burnout is specially noted among those with heavy workload, inadequate training, inadequate staffing, job dissatisfaction and negative workplace conditions.[2] Community Health Workers (CHWs) became prominent with

the Alma Ata Declaration in 1978 that recognized primary health care as the key element for improving community health.[3]

In this context, Accredited Social Health Activist (ASHA) wasintroduced under National Rural Health Mission (NRHM) as CHWs in India in 2005.With the launch of the National Urban Health Mission in 2013–2014, ASHAs are also now available in urban areas, where they cater to vulnerable communities and people living in informal settlements. ASHA workers hence comprise an important cohort who are affected by emotional states and stress because of their tediousfield work. Low honorarium, tedious register and survey work, long meeting usually out of duty hours, short attendance of beneficiaries in spite of repeated information and communication may lead stress and burnout.Poor well-being and burnout of ASHA workers are adversely affect the health status of the community.

Although work related burnout has been studied widely in the western/developed countries in community health workers.[4,5] There has been a paucity of literature about burnout in India in community health workers. So this study was planned with aim to assess burnout and its predictors among community health workers (ASHA Workers), so that preventive measures against burnout can be implemented as early as possible.

OBJECTIVES

1. To estimate the burnout among community health workers (ASHA Workers).
2. To determine the predictors influencing Burnout among community health workers (ASHA Workers).

MATERIALS AND METHODS

Study Area- The present study was conducted in urban and rural block of a district of Rajasthan. This district has nine rural blocks (74 Rural PHCs) and one urban block (9 Urban PHC). For this study one urban block & one rural block were included. Out of nine rural blocks, one rural block was selected randomly through lottery method.

Study Design- Cross sectional study.
Study Period-The present study was conducted from 15 June 2022 to 15 August 2022.
Sample Size-Considering the reported prevalence of burnout in healthcare workers which was 25% from the previous study[19], with 10% absolute precision and 95% confidence level, the required number of study subject is 72. Considering 10% non- response rate, the final sample size is80.

$$N= Z^2PQ/ d^2$$

Where n= Sample Size,
Z= Statistic corresponding to level of confidence (at 95% confidence level, Z=1.96),
P= Prevalence (from previous study),
Q= 1-P,
d= Absolute Precision (10%).

So, N= 1.96*1.96*25*75/10*10= 72.03 = 72
Considering 10% non-response rate, 72+ 72*10/100= 79.2 = 80

Inclusion Criteria:

1. ASHA workers working for at least six months were included in the study.
2. ASHA workers given their consent to participate in the study.

Exclusion Criteria: ASHA workers already diagnosed with any mental health illness.

Method of Data Collection- After taking permission from institutional ethical committee,a list of All ASHA workers of selected both block was prepared(in alphabetical order) with the help of office ofChief Medical andHealth Officer (CMHO) of district.Then required number of study participants was selected by systemic random sampling. After explaining in detail about the purpose of study andensuring confidentiality, informed written consent was taken from the study participants (who fulfill inclusion criteria). After this, data will be collected by face to face interview technique. Socio-demographic data and other related information were collected with the help of pretested semi structured questionnaire and Burnout was assessed by modified **Maslach Burnout Inventory (MBI)** questionnaire.

After data collection, all data were entered in Microsoft excel and was analysed by appropriate statistical test. Frequency, mean and standarddeviation were calculated for descriptive statistics.Chisquare test was applied to find association between socio-demographic variables and burnout subscales. P-values less than 0.05 considered as statistically significant.

The **Maslach Burnout Inventory (MBI)** questionnaire was developed by Maslach and Jackson in1980, and it includes 22 separate items that measure the frequency and the intensity of burnoutamong the personnel of human services in three aspects, namely, emotional exhaustion [EE] (9 item), depersonalization [DP] (5 items), and personal accomplishment

[PA] (8 items). All 22 items are scored on a seven-point scale ranging from never (0) to everyday (6). The scores can range from 0 to 54 on the EE subscale, from 0 to 30 on the DP subscale, and from 0 to 48 on the PA subscale.[6] The total scores of each dimension are summed up and categorized into low (EE<17, DP<5, PA<33), moderate (EE=18-29, DP=6-11, PA=34-39) or high (EE>30, DP>12, PA>40). On the basis of score in subscales, burnout level is classified as low, moderate and high.According to the primary definition by Maslach, high scores in EE and DP and low scores in PA are considered as high burnout.[7]

RESULTS

In the present study, mean score of emotional exhaustion, depersonalization and personal accomplishment was 21.55±7.30, 13.71±4.28 and 38.88±4.52 respectively.13.8% of ASHA workers had high emotional exhaustion while 64 (80%) had high depersonalization. 8.8% study participants had low score on personal accomplishment subscale respectively. (Figure 1)

Present study revealed that only 2 (2.5%) subjects had high burnout (high score EE and DP subscale along with low score on PA subscale) but almost one third (33.75%) of study participant had come under range of high to moderate burnout (high to moderate score EE and DP subscale along withlow to moderate score on PA subscale).

Figure 1: Distribution of study subjects according to score on MBI subscales

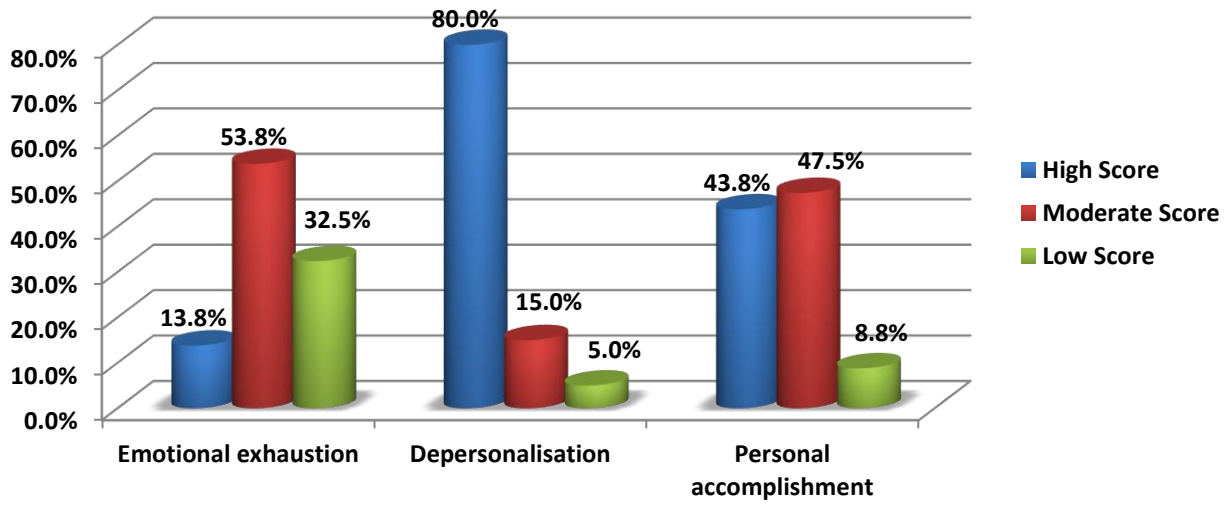

Table 1:Scores on the MBI subscales

	Emotional exhaustion		Depersonalisation		Personal accomplishment	
	N	%	N	%	N	%
High	11	13.8	64	80	35	43.8
Moderate	43	53.8	12	15	38	47.5
Low	26	32.5	4	5	7	8.8
Mean±SD	21.55±7.30		13.71±4.28		38.88±4.52	

Table 2: Distribution of MBI score of study subjects according to age (in years)

MBI Subscale		Age group (in years)			
		≤40		>40	
		N	%	N	%
Emotional exhaustion	High	4	36.36%	7	63.64%
	Moderate	15	34.88%	28	65.12%
	Low	11	42.31%	15	57.69%
Depersonalization	High	24	37.50%	40	62.50%
	Moderate	6	50.00%	6	50.00%
	Low	0	0.00%	4	100.00%
Personal accomplishment	High	16	45.71%	19	54.29%
	Moderate	13	34.21%	25	65.79%
	Low	1	14.29%	6	85.71%

Table 3: Distribution of MBI score ofstudy subjects according to religion

MBI Subscales		Religion					
		Hindu		Other		Muslim	
		N	%	N	%	N	%
Emotional exhaustion	High	9	81.8%	1	9.1%	1	9.1%
	Moderate	36	83.7%	2	4.7%	5	11.6%
	Low	17	65.4%	1	3.8%	8	30.8%
Depersonalisation	High	50	78.1%	3	4.7%	11	17.2%
	Moderate	9	75.0%	0	0.0%	3	25.0%
	Low	3	75.0%	1	25.0%	0	0.0%
Personal accomplishment	High	30	85.7%	1	2.9%	4	11.4%
	Moderate	28	73.7%	3	7.9%	7	18.4%
	Low	4	57.1%	0	0.0%	3	42.9%

Table 4: Distribution of MBI score of study subjects according to type of family

MBI Subscales		Type of family					
		Joint		Nuclear		Third generation	
		N	%	N	%	N	%
Emotional exhaustion	High	3	27.3%	4	36.4%	4	36.4%
	Moderate	14	32.6%	19	44.2%	10	23.3%
	Low	10	38.5%	7	26.9%	9	34.6%
Depersonalisation	High	24	37.5%	21	32.8%	19	29.7%
	Moderate	2	16.7%	6	50.0%	4	33.3%
	Low	1	25.0%	3	75.0%	0	0.0%
Personal accomplishment	High	12	34.3%	15	42.9%	8	22.9%
	Moderate	14	36.8%	11	28.9%	13	34.2%
	Low	1	14.3%	4	57.1%	2	28.6%

Table 5: Distribution of MBI score of study subjects according to family income

MBI Subscales		Family income (monthly in Rupees)			
		≤25000		> 25000	
		N	%	N	%
Emotional exhaustion*	High	2	18.2%	9	81.8%
	Moderate	22	51.2%	21	48.8%
	Low	18	69.2%	8	30.8%
Depersonalisation	High	32	50.0%	32	50.0%
	Moderate	6	50.0%	6	50.0%
	Low	4	100.0%	0	0.0%
Personal accomplishment	High	19	54.3%	16	45.7%
	Moderate	18	47.4%	20	52.6%
	Low	5	71.4%	2	28.6%

*significant P- Value (Chi-square = 8.144 with 2 degrees of freedom; P = 0.017)

Table 6: Distribution of MBI score of study subjects according to marital status

MBI Subscales		Marital status			
		Single /Widow/ Divorced		Married	
		N	%	N	%
Emotional exhaustion	High	2	18.20%	9	81.80%
	Moderate	2	4.70%	41	95.30%
	Low	5	19.20%	21	80.80%
Depersonalization	High	8	12.50%	56	87.50%
	Moderate	1	8.30%	11	91.70%
	Low	0	0.00%	4	100.00%
Personal accomplishment	High	5	14.30%	30	85.70%
	Moderate	3	7.90%	35	92.10%
	Low	1	14.30%	6	85.70%

Table 7: Distribution of MBI score of study subjects according to educational qualification

MBI Subscales		Edu Upto 10th standard		Edu Above 10th standard	
		N	%	N	%
Emotional exhaustion	High	2	18.20%	9	81.80%
	Moderate	18	41.90%	25	58.10%
	Low	12	46.10%	14	53.80%
Depersonalisation	High	25	39.10%	39	60.90%
	Moderate	6	50.00%	6	50.00%
	Low	1	25.00%	3	75.00%
Personal accomplishment	High	14	40.00%	21	60.00%
	Moderate	15	39.50%	23	60.50%
	Low	3	42.90%	4	57.20%

Table 8: Distribution of MBI score of study subjects according to residing place

MBI Subscales		Rural		Urban	
		N	%	N	%
Emotional exhaustion	High	4	36.4%	7	63.6%
	Moderate	24	55.8%	19	44.2%
	Low	12	46.2%	14	53.8%
Depersonalisation*	High	31	48.4%	33	51.6%
	Moderate	9	75.0%	3	25.0%
	Low	0	0.0%	4	100.0%
Personal accomplishment	High	18	51.4%	17	48.6%
	Moderate	18	47.4%	20	52.6%
	Low	4	57.1%	3	42.9%

*significant P- Value (Chi-square = 7.062 with 2 degrees of freedom; P = 0.029)

Table 9: Distribution of MBI score of study subjects according to working experience

MBI Subscales		≤10 year work ex		>10 year work ex	
		N	%	N	%
Emotional exhaustion*	High	0	0.00%	11	100.00%
	Moderate	16	37.20%	27	62.80%
	Low	19	73.10%	7	26.90%
Depersonalization	High	28	43.70%	36	56.30%
	Moderate	7	58.40%	5	41.70%
	Low	0	0.00%	4	100.00%
Personal accomplishment#	High	9	25.80%	26	74.30%
	Moderate	22	57.80%	16	42.10%
	Low	4	57.20%	3	42.90%

*significant P- Value (Chi-square = 18.390 with 2 degrees of freedom; P = 0.000)
#significant P- Value (Chi-square = 8.226 with 2 degrees of freedom; P = 0.016)

Table 10: Distribution of MBI score of study subjects according to number of children

MBI Subscale		Number of children			
		≤2		>2	
		N	%	N	%
Emotional exhaustion	High	10	90.91%	1	9.09%
	Moderate	29	67.44%	14	32.56%
	Low	19	73.08%	7	26.92%
Depersonalization	High	47	73.44%	17	26.56%
	Moderate	8	66.67%	4	33.33%
	Low	3	75.00%	1	25.00%
Personal accomplishment	High	27	77.14%	8	22.86%
	Moderate	26	68.42%	12	31.58%
	Low	5	71.43%	2	28.57%

Table 11: Distribution of MBI score of study subjects according to suffering from any chronic medical illness

MBI Subscales		Suffering from any chronic medical illness			
		No		Yes	
		N	%	N	%
Emotional exhaustion	High	9	81.8%	2	18.2%
	Moderate	36	83.7%	7	16.3%
	Low	18	69.2%	8	30.8%
Depersonalisation	High	51	79.7%	13	20.3%
	Moderate	8	66.7%	4	33.3%
	Low	4	100.0%	0	0.0%
Personal accomplishment	High	29	82.9%	6	17.1%
	Moderate	28	73.7%	10	26.3%
	Low	6	85.7%	1	14.3%

Table 12: Distribution of MBI score of study subjects according to chronic disease in family member

MBI Subscales		Any family member suffering from any chronic medical illness			
		No		Yes	
		N	%	N	%
Emotional exhaustion	High	7	63.6%	4	36.4%
	Moderate	27	62.8%	16	37.2%
	Low	17	65.4%	9	34.6%
Depersonalisation	High	41	64.1%	23	35.9%
	Moderate	8	66.7%	4	33.3%
	Low	2	50.0%	2	50.0%
Personal accomplishment	High	19	54.3%	16	45.7%
	Moderate	26	68.4%	12	31.6%
	Low	6	85.7%	1	14.3%

Table 13: Distribution of MBI score of study subjects according to Body mass index

MBI Subscale		BMI			
		<25		≥25	
		N	%	N	%
Emotional exhaustion	High	5	45.45%	6	54.55%
	Moderate	26	60.47%	17	39.53%
	Low	18	69.23%	8	30.77%
depersonalization	High	39	60.94%	25	39.06%
	Moderate	6	50.00%	6	50.00%
	Low	4	100.00%	0	0.00%
Personal accomplishment	High	24	68.57%	11	31.43%
	Moderate	22	57.89%	16	42.11%
	Low	3	42.86%	4	57.14%

DISCUSSION

Burnout and work-related stress have been studied widely in developed countries in community health workers, but there is a lack of literature about the same in the Indian context. So this cross-sectional study was carried out for 2 month period in two blocks (one rural & one urban) of Bhilwara district of Rajasthan to assess burnout and its predictors among community health workers.

There were 80 ASHA workers included in the present study. More than half (62.5%) of the study subjects were more than 40 years old. This is almost similar to study done by **Scaria SC**[8] in Kerala in which 60% ASHA workers were more than 40 years old.In the present study, mean age of ASHAs were 43.68±7.78 yearswhich is higher compare to study done by **Zarei E, et al**[9] and **Bijari B, et al**[10] in which mean age of participants were 33.5±8.3 years and 39±8.4 years respectively. In current study, 77.5% ASHAs were related to Hindu religion. In present study majority of subject belongs to nuclear (37.5%) familywhich was congruent to study done by **Pulagam P, et al (2020)**[11] in which majority of participants belong to nuclear family.

In the our study, More than half of ASHAs (56.25%) had more than 10 years working experience which was congruent to study done **by Zarei E, et al**[9](71.6%) and incongruent to studies done by **Pulagam P, et al**[11](28%) and**Scaria SC**.[8] in Kerala (15%).

In the present study, 48 (60%) were educated above10th standard. This observation was almost similar to study done by **Pulagam P, et al**[11] in Kerala on ASHA workers (69.3%).

In the our study revealed that 15 (18.75%) ASHA workers itself were suffered from any chronic medical illness. This result was similar to study done by **Pulagam P, et al**[11] on ASHA workers where 16% ASHA workers were suffered from type-2 diabetes and hypertension.

In the present study only 26.25% of study subjects had more than 2 children. Similar to this finding, 27.8% of study participant had more than 3 children in study done by **Bijari B, et al**[10] in Iran on primary health workers.

In the current study, 38.75% of ASHA workers had fallen in category of overweight and obese according to body mass index (BMI≥25Kg/m^2).

In the present study, mean score of emotional exhaustion, depersonalization and personal accomplishment was 21.55±7.30, 13.71±4.28 and 38.88±4.52 respectively. These observations were dissimilar to study done by **Zarei E, et al**[9] in which mean score of emotional exhaustion, depersonalization and personal accomplishment was 29.68±8.2, 16.89±4.8 and 20.92±5.1 respectively.

In our study, Majority of study subject had moderate score on emotional exhaustion subscale (53.8%) and personal accomplishment subscale (47.5% while high score on depersonalization subscale (80%). These observations were different in relation to emotional exhaustion and personal accomplishment subscale while similar on depersonalization subscale in study done by **Zarei E, et al**[9]**.** Depersonalization represents the interpersonal dimension of burnout. The feeling of apathy towards beneficiaries due to too much contactwith them and lack of adequate support from supervisors and colleagues can be the main reasons for depersonalization.

In the present study only 2 (2.5%) had high burnout according to the MBI classification (high score EE and DP subscale along with low score on PA subscale). The Proportion of high burnout was low in the present study when compare with other studies. The prevalence of burnout has been reported at 17.3% in Iran's PHC system[12], 2.6% in health professionals of Ecuador [13], 7% in Brazil's PHC staff[14], and 54% in Iranian nurses[15]. In addition, findings of the review studies showed the prevalence of burnout in medical residents to be 35.7%[16], and among physicians it was 67%[17]. The difference in the prevalence rates of burnout may be due to the differences in socio-economic status of the study subjects in different countries, differences in patients' expectations, organizational factors and personal (e.g. demographic characteristics, individual attitudes, andpersonality).Another possible reason that the classification of the prevalence rates and the cut-off points for high levels of burnout were very different among various studies.[18]

In the present study revealed that emotional exhaustion subscale was showed statistically significant association with working experience and family income only. EE was significantly higher in more than 10 years working experience and family income more than 25000. Possible reason due to increasing age and long working duration they were exhausted.

Depersonalization subscale was showed statistically significant association with working place. ASHA workers residing/ working in urban area were significantly higher depersonalization score. This may be because of socialization in urban area was less compare to rural area. So they were felt depersonalized. Personal accomplishment subscale was not statistically significant with any socio-demographic variable.

CONCLUSION

The observations of the present study concluded that proportion of only high burnout in community health workers (ASHA Workers) was low according to Maslach Burnout Inventory (MBI) but every third ASHA had moderate to high burnout.So for prevention ofhigh burnout, periodic assessment of mental health, strengthening program for communication skills and mental health and stress management program for ASHA workers should be planned at the earliest. Improving job satisfaction through rewards, incentives, career development, and educational opportunities can lead to an increase in the sense of personal achievement. Depersonalization can be reduced through supportive working environment, employee involvement, role resolution, and support from supervisors and colleagues.

LIMITATIONS

In the present study, strong causal relationships can't be inferred because the study design was cross-sectional and sample size was small. For better establishment of casual relationship between burnout and predictors, longitudinal study

designs will be planned with large sample size in future. Another major limitation, data of this study was self-reported and subjective in nature which may beassociated with social desirability bias and interviewer bias. Participants might have expressed their opinions toostrongly or weakly.

CONFLICT OF INTEREST: No conflict of interest.

REFERENCES

1. Richelson G. Burn-out: The high cost of high achievement. Garden City, NY: Anchor Press; 1980
2. Laschinger HK, Fida R. New nurses burnout and workplace wellbeing: The influence of authentic leadership and psychological capital. Burnout Res 2014;1:19-28.
3. World Health Organisation (WHO). Alma Ata Declaration. Geneva: World Health Organization; 1978. http://www.who.int/publications/almaata_declaration_en.pdf (Accessed on 15 February 2022).
4. Dewa CS, Loong D, Bonato S, Thanh NX, Jacobs P. How does burnout affect physician productivity? A systematic literature review. BMC Health Serv Res 2014;14:1-12.
5. Epp K. Burnout in critical care nurses: A literature review. Dynamics 2012;23:25-31
6. InformedHealth.org [Internet]. Cologne, Germany: Institute for Quality and Efficiency in Health Care (IQWiG); 2006-. Depression: What is burnout? [Accessed on 2022 October 10].
7. Maslach C, Jackson SE. Maslach Burnout Inventory manual, 2nd ed. Palo Alto; 1986.
8. Scaria SC. Occupational Stress Among Accredited Social Health Activists (Asha's) in Vandiperiyar Gram Panchayat, Kerala;2016-2018
9. Zarei E, Ahmadi F, Sial MS, Hwang J, Phung AT, Usman SM. Prevalence of Burnout among Primary Health Care Staff and Its Predictors: A Study in Iran. Int. J. Environ. Res. Public Health 2019;16:2249
10. Bijari B, Abbasi A. Prevalence of Burnout Syndrome and Associated Factors Among Rural Health Workers (*Behvarzes*) in South Khorasan. Iran Red Crescent Med J. 2016; 18(10):e25390.
11. Pulagam P, Satyanarayana PT. Stress, anxiety, work-related burnout among primary health care worker: A community based cross sectional study in Kolar. J Family Med Prim Care 2021;10:1845-51.
12. Amiri, M.; Khosravi, A.; Eghtesadi, A.R.; Sadeghi, Z.; Abedi, G.; Ranjbar, M.; Mehrabian, F. Burnout and its influencing factors among primary health care providers in the North East of Iran. PLoS ONE 2016, 11,e0167648.
13. Ramírez, M.R.; Otero, P.; Blanco, V.; Ontaneda, M.P.; Díaz, O.; Vázquez, F.L. Prevalence and correlates of burnout in health professionals in Ecuador. Compr. Psychiatry **2018**, 82, 73–83.
14. Silva, S.C.P.S.; Nunes, M.A.P.; Santana, V.R.; Reis, F.P.; Machado Neto, J.; Lima, S.O. Burnout syndrome in professionals of the primary healthcare network in Aracaju, Brazil. Ci*ê*nc. Sa*ú*deColetiva2015;20(10):3011–20.
15. Khammar, A.; Dalvand, S.; Hashemian, A.H.; Poursadeghiyan, M.; Yarmohammadi, S.; Babakhani, J.;Yarmohammadi, H. Data for the prevalence of nurses' burnout in Iran (a meta-analysis dataset). Data Brief2018;20:1779–86.
16. Rodrigues, H.; Cobucci, R.; Oliveira, A.; Cabral, J.V.; Medeiros, L.; Gurgel, K.; Souza, T.; Gonçalves, A.K. Burnout syndrome among medical residents: A systematic review and meta-analysis. PLoS ONE 2018, 13e0206840.
17. Rotenstein, L.S.; Torre, M.; Ramos, M.A.; Rosales, R.C.; Guille, C.; Sen, S.; Mata, D.A. Prevalence of burnout.among physicians: A systematic review. JAMA . 2018;320(11):1131-50.
18. Doulougeri, K.; Georganta, K.; Montgomery, A. "Diagnosing" burnout among healthcare professionals: Canwe find consensus? Cogent Med. 2016, 3, 1237605