

How healthy is our primary health care workforce? A cross-sectional study

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ABSTRACT

Context: Progress of any nation depends on the health status of the population. A nation's health directly and indirectly depends on the quality of health-care facilities and how healthy the health care workforce is in that country. To achieve the health for all goal and to provide for most of the health services like maternal health services, child health services, nutrition, vaccination, and family planning services, the Indian health system have multipurpose health workers (female and male) and Accredited Social Health Activist to provide these services at the grass-root level. There is a paucity of literature revealing the health problems or the health status of grassroot level primary health care worker in India or abroad. **Methods and Material:** All the grass-root level health workers, i.e., MPHWF and ASHAs in the BMC area were included in this cross-sectional study. Data was collected using a semi-structured interview schedule, followed by general examination and anthropometry using standard procedures. **Results:** Half of the study participants 111 (50.2%) were having some or other kind of health issues during the data collection time; among them, 107 (48.4%) had a chronic disease condition. 10% of them had diabetes mellitus. More than half of the study participants 141 (63.8%) were found to be obese and hypertension was found in 27 (12.2%) study participants. 21 (9.5%) study participants were under high depression. One-fourth of the health workers among those who could conceive had not gone for antenatal check-ups and more than one-third (33.5%) never consumed iron and folic acid (IFA) tablets during their first pregnancy. 19.1% have children with incomplete immunization as per age. One-fifth of the participants know about the balanced diet and half of them could not ensure that their family eat a balanced diet and in the majority, the diet was calorie deficient as per the daily requirement. **Conclusions:** There is an urgent need to formulate a policy to improve the health of the primary care grass-root level health-care workers and regular on-the-job training on nutrition needs to be given to them.

Keywords: Health care workers, health status, nutrition status

Introduction

The workforce is the main backbone of any nation's progress and development. It is vital to have a healthy workforce at every sector of the work and more than that the health of this workforce depends on the quality of health care facilities and how healthy the health-care workforce is in that country. Primary health care was decided as the key strategy for achieving health for all by

the world in the international conference on health at Alma-Ata in 1978.^[1] Much before this Alma-Ata Declaration, India had the concept of primary health care after the recommendation of the Bhore Committee (1943–1946).^[2] To achieve the health for all goal, after the recommendation of Kartar Singh committee, India started to have subcenters for every 5000 people manned by an ANM (axillary nursing midwifery) now termed as multipurpose health worker female (MPHWF) and a multipurpose health worker male (MPHWM). Most of the health services like maternal health services, child health services, nutrition, vaccination, and family planning services were being provided by the MPHWF at the grass-root level of the Indian health system. After the National Rural Health Mission (NRHM)

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came into force in 2005, the Indian health system added another grass root level health care worker named as Accredited Social Health Activist (ASHA). ASHAs are meant to serve as a key communication mechanism between the healthcare system and rural populations.^[3] ASHA plays a vital role in motivating women for institutional delivery, immunization of children and pregnant ladies, encouraging family planning, treating basic illness and injury with first aid, and help MPHWF in keeping demographic records and improving village sanitation.^[3] India is short of 1.94 million nursing healthcare staff and Odisha has the highest vacancies, i.e., 62% at nurses in rural public health centres in terms of the required number.^[4,5]

The literature review revealed that there have been studies to know the health status of different workers like factory workers and migrant workers and health care worker like doctors and nurses working in hospitals.^[6-12] But there is paucity in literature in revealing the morbidity or health status of the grassroots-level primary care health workers in India or abroad except studies related to the work stress or mental health of the frontline health care workers.^[13,14] With this background in mind, the present study was conceived to know the morbidity profile, nutritional status, and mental health status of the grass-root level health care workers in an urban area of Odisha.

Subjects and Methods

Study design

It is an observational study.

General setting

The state of Odisha is one among the least-developed states of India.^[15] There are 30 districts with 314 blocks and 42 million population out of which 35 million people reside in the rural area. Like other states of India, in Odisha, health is a state subject and all the essential drugs are being supplied free to the patients at all the govt. health facilities.

Specific setting

Bhubaneswar, the capital of Odisha is one of the key urban centers of India. The Bhubaneswar Municipal Corporation (BMC) covers an area of 135 square kilometres (2012) with a population of 885363 and a population density of 6228.4 people per sq. km. Nineteen per cent of the population reside in the slum area. Bhubaneswar have three govt. tertiary hospitals, two urban community health centers, 16 urban primary health centers (UPHC), three dispensaries,^[16] and 102 integrated child development scheme services (ICDS) anganwadi centers. There are 89 MPHWF and 158 ASHA workers. The present study was carried out in the BMC area.

Study subjects & sample size

All the grass-root level health workers, i.e., MPHWF (F) and ASHAs in the BMC area were included for the study purpose. The inclusion criteria: MPHWF and ASHA were contacted at

their respective UPHCs on a preintimated date for the study purpose. Exclusion criteria: Those workers found absent on three subsequent visits and those did not give consent were excluded.

Study period

The study was carried out from October 2018 to October 2019

Data collection and ethical clearance

Data was collected using a semi-structured interview schedule. The first part of the schedule contained the basic demographic, socioeconomic status, and addiction-related questions. It was planned to use alcohol use disorders identification test (AUDIT) for alcohol addiction, global adult tobacco survey (GATS) questionnaire, and drug use questionnaire (DAST-20) for tobacco and drug use addictions, respectively, in the participants. The second part of the schedule contained questions related to their health-seeking behavior. The subsequent part of the schedule was related to mental health status or depression screening using the PHQ 9 Odia version.^[17] Last part of the schedule contained information related to general physical examination and dietary assessment of the study participants. General physical examination was conducted by doctors and the weight and height of the study participants were measured adopting all standard equipment to calculate the body mass index (BMI). The blood pressure (BP) was measured by a digital BP apparatus which was being calibrated with a mercury BP apparatus every week. Dietary assessment of the study participants was carried out by the 24 hours recall method.^[18] The present study has received the ethical clearance from the institutional ethical committee of All India Institute Medical Sciences, Bhubaneswar. The data so collected was coded to conceal the identity before entry in the excel sheet. The data so collected was double entered in the excel sheet and compared to check for any error. Approval from the IEC of AIIMS Bhubaneswar has been obtained for the study. Letter number T/IM-F/17-18/14 dated: 12 /October/ 2017.

Results

In Bhubaneswar Urban area, a total of 257 grass-root level health care workers are working, out of whom 221 health workers could be recruited in this study after obtaining informed consent. Eight health workers did not give consent for the study and rest 28 health workers could not be contacted during the data collection period at their working area due to their involvement in other assignments. The participants mean age was 38.4 ± 8.3 years. The other sociodemographic details of the recruited health workers are shown in Table 1.

Although tobacco chewing is a common practice in this part of the country, it is thought that the health workers might be avoiding the same. But in the present study, 22 (10%) of the study participants have a regular habit of chewing tobacco. There are no significant buccal mucosal changes observed among them.

Table 1: Sociodemographic profiles of the grass-root level health workers of Bhubaneswar municipality area (n=221)

Variable	Number of health worker	Percentage
Occupation		
ASHA	146	66.1
MPHW F	75	33.9
Caste		
General	113	51.1
SC	56	25.3
OBC	43	19.5
ST	9	4.1
Marital status		
Married	197	89.1
Unmarried	24	10.9
Type of family		
Nuclear	158	71.5
Joint	63	28.5
Educational Qualification		
10 + 2	62	28.1
Graduate	55	24.9
Matriculate	53	24.0
Middle	45	20.4
Higher	6	2.7
Socioeconomic status		
Upper lower	103	46.6
Lower middle	66	29.9
Upper middle	52	23.5
Total	221	100

Table 2: Health-related conditions among the grass-root level health workers of Bhubaneswar urban area (n=221)

Variable	Number of health worker	Percentage
BMI		
Obese	141	63.8
Normal	43	19.5
Overweight	29	13.1
Below normal	8	3.6
Pallor		
Absent	132	59.7
Present	89	40.3
Type health issue		
Nothing	110	49.8
Chronic	107	48.4
Acute	4	1.8
Major chronic health problems (n≠221or≠107)		
Endocrinology	33	30.8
Nervous system	22	20.6
CVS	17	15.9
GI	13	12.1
GU	12	11.2
Musculoskeletal	10	9.3
Skin	4	3.7
Respiratory	4	3.7
Lymphatics	2	1.9

Table 2 shows the health-related conditions of the study participants. Half of the study participants 111 (50.2%) were having some or other kind of health issues during the data

collection time. Out of the total participants, 107 (48.4%) had a chronic disease condition and 16 (14.4%) of them were not having treatment for the same. There was no specific reason cited by them for not having the treatment. Among the chronic health conditions, endocrinological disorder was found to be most common in the study participants (30.8%) and Diabetes was the most common endocrinological disorder (10%) followed by thyroid-related problems (6.7%).

More than half of the study participants, i.e., 141 (63.8%) were found to be obese. Hypertension was there among 27 (12.2%) study participants. None of the study participants were newly diagnosed as hypertensive during our study period. Eye problem was found in 102 (46.1%) health workers; 68 (66.6%) had presbyopia or refractive error and 89 (40.3%) were having pallor. We could identify 21 (9.5%) study participants with major depression with moderately severe and 2 (0.9%) with major depression (Data not presented in this publication).

Government hospital or public health care facilities is the most preferred for pregnancy-related services but around one-fourth of the ever pregnant health workers among had not gone for antenatal check-ups and more than one third i.e., 63 (33.5%) never consumed iron and folic acid (IFA) tablets during their first pregnancy as shown in Table 3. Of 221 female health workers, 188 have one or more child and among them, 36 (19.1%) have children with incomplete immunization as per age and 25 (13.2%) have given one or more extra vaccine other than the national immunization schedule to their children.

195 (88.2%) of the study participants' family were selective nonvegetarian, avoid eating nonvegetarian food during specific days of the week. 26 (11.7%) of them were pure vegetarians. One-fifth of the participants, i.e., 47 (21.2%) could tell something about the balanced diet and half of them could not ensure that their family eat a balanced diet. One day recall method of dietary assessment of the health worker revealed that the majority of their diet was calorie deficient as per the daily requirement. Around one fourth, i.e., 53 (23.9%) had Rashtriya Swasthya BimaYojan (RBSY) as health insurance scheme and only two had private health insurance as family health insurance coverage.

Discussion

A healthy body and healthy mind can work in its optimum capacity and give its best at home and work. The private sector in India and abroad has started providing the best possible health care and working environment to its employees so that they can get the best out of them and improve the working capacity of the workforce.

Health or morbidity status of an individual depends on different factors as health is a multidimensional entity. Besides physical, mental, and social dimensions, the vocational dimension plays an important role in an individual's health status. The literature review by the authors revealed paucity in studies which tried to

Table 3: Maternal and childcare-related variables among the grass-root level health workers of Bhubaneswar urban area

Variable	Number of health worker	Percentage
Number of children in ever married (n=197)		
<2	162	73.3
>2	59	26.7
Place of ANC Check-ups are done during First pregnancy by workers with at least one child (n=188)	41	21.8
Private Hospital	46	24.5
None	101	53.7
Govt hospital		
IFA tablet consumption during pregnancy		
Incomplete	2	1.1
Not consumed at all	63	33.5
Complete	123	65.4
Immunization status of the children of the workers (n=188)		
Incomplete	36	19.1
Complete as per age	152	80.9

find the health or morbidity status of the health care workers, who are responsible for the provision of basic health care and health education to the population at the grass-root level.

This observational study was conducted among the grass-root level healthcare worker in Bhubaneswar municipality area, who are the key persons to provide the maternal and child health care services along with nutritional education to the general public especially in the slum area, to know their morbidity status, nutritional status, and health-seeking behavior.

In this part of India, it is a common practice among the people to use smokeless tobacco and among females, it is more than 33%.^[19] It is a common perception that the health care professional and worker do not indulge in hazardous habits but the present study revealed 10% of the study participants (female health care workers) have a regular habit of smokeless tobacco use but the oral examination of the participants could not find any mucosal change in the mouth.

Studies conducted in a different part of India among factory workers have revealed that musculoskeletal problem is the most common morbidity among the factory workers and genitourinary problem among the female factory workers.^[8] In the present study, the most common morbidity among the healthcare worker is a one or other type of chronic disease. Hypertension was the most prevalent chronic disease in 12.2% of the study participants, the prevalence of the disease is below the national average of 29.8% and 34.5% for East India.^[20] Diabetes mellitus (DM) was found in 10% of the health-care workers and its prevalence among the health worker is little higher than the national average of 7%.^[21] Around three fourth of the study participants were found to be obese or overweight, i.e., 76.9% (63.8% obese + 13.1% overweight) which is much higher than the national figure of 20.4% which is one of the most important modifiable risk factors of chronic diseases.^[21] Thyroid-related disorder is another endocrinological problem among the female health care workers in the present study. Although the responsibility of imparting dietary education to the

pregnant female, adolescent girls, and for the infants lies on the shoulders of these grass-root level health workers, only one-fifth of the participants, i.e., 21.2% could tell something about the balanced diet and half of them could not ensure that their family eat a balanced diet. The one day recall method of dietary assessment of the health workers revealed that the majority of their diet was calorie deficient as per the daily requirement. Although the finding is not in the line of the prevalence of obesity or overweight among the study participants, it may be possible that they are aware of their weight gain and under diet control. Iron deficiency anemia is the most common cause for disability in India^[22] and more than half of the Indian females are anemic. We could not carry out any blood investigation among the study participants but clinical evaluations showed that 40.3% were having pallor. In India, female health care workers have the responsibility of providing the maternal and child health care services in the grassroot level, whether it is in a rural area or urban area. A lot of work has been done in the past decades to decrease maternal and infant mortality by implementing national programs like National Health Mission and the provision of essential obstetric care, better contraceptive methods, and improved immunization services throughout the country. More than half, i.e., 53.3% ever married health worker in the present study had never used any contraceptive method and more than half of the eligible couples were not using any contraceptive method. As the mean age of participants was 38 years and most of them had completed the family, we found tubectomy as the most preferred method of contraception among them. All the health workers were aware of different contraceptives available for use in the national program.

Globally 38.2% pregnant females were anemic.^[23] The prevalence of moderate-to-severe anemia in pregnancy ranged from 40% to 60% in India.^[24] More than 60% of anemia cases are estimated to be due to iron deficiency.^[25] Oral iron therapy is recommended for correction of the mild-to-moderate anemia worldwide.^[23,26] In India, under the maternal and child health program, all the pregnant females are prescribed with a daily dose of IFA tablet from the second trimester till 100 days after delivery.^[27,28]

Consumption of iron and folic acid (IFA) tablets have an impact on the hemoglobin status and later on the pregnancy outcome. A total of 33.5% of the female health care workers never consumed iron and folic acid (IFA) tablets during their first pregnancy, although at present all of them know the correct dose and prescription of IFA tablet during pregnancy.

Employees' State Insurance Scheme of India is an integrated social security scheme tailored to provide social protection to workers and their dependents, in the organized sector, in contingencies, such as sickness, maternity, and death or disablement due to an employment injury or occupational hazard.^[29] Such kind of insurance scheme is not present as of now for the health care workers. Majority of the study participants had no health insurance and less than one fourth have Rashtriya Swasthya Bima Yojan (RBSY).

The primary care physicians and the grass-root level health care workers act as a team to provide the health services at the primary care level. The physical and mental wellbeing of the primary care health worker affect their work output like the provision of health service to the population and this directly affects the workload of the primary care physicians. As the findings of the study suggest there is a greater prevalence of chronic disease and depression among the health workers and a significant number of them are not under treatment, the primary care physicians can take steps to decrease the morbidity due to chronic disease among their team members by regular interval health check-up besides screening for the mental health status by using simple tools like PHQ-9.

The study finding suggests that there is a lack of nutrition-related knowledge in grass-root level primary care health workers. Much emphasis on the same is to be given in the on-job and refresher course training which is lacking in present training modules.^[30]

Conclusion

More than half of the health care workforce at the grass-root level have some or other type of chronic disease without any health insurance coverage. Obesity is the leading cause for the morbidity. Majority of them prefer the government health set up for consultation. A number of them have not used the antenatal services although they promote the same in the community. The nutritional status and knowledge about healthy nutrition are poor in the grass-root level health workers. This study throws light on the poor health status of the workforce engaged in the health sector. It is high time that specific focus should be given on the wellbeing of the health-care providers who shoulder the responsibility of wellbeing of the population.

Declaration of participant consent

The authors certify that they have obtained all appropriate participant consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The participant understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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