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# Nutrition and health status of Anganwadi workers in urban centers of Faridabad district, Haryana, India

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## Abstract

**Background:** The performance of Anganwadi workers (AWWs**)** is often hindered by a lack of supervision, resources, infrastructure, helpers, fair honorarium, and the stress associated with their workload. This study aimed to assess the nutrition and health status of AWWs, who are relentlessly working toward improving the nutrition and health status of children, pregnant, and lactating mothers.

**Design and methods:** A cross-sectional descriptive study was conducted among 46 AWWs aged 25 years and above working at the Anganwadi centers (AWCs) of Faridabad district, Haryana. Participants inclusion into the study was based on attending at least one training program and were willing to participate in the study. The nutrition knowledge was determined on ICMR dietary guidelines for adults; Minimum dietary diversity-women were assessed using 29-item diet quality questionnaire for India, practice and attitude toward healthy habits were assessed. Weight and Height were recorded and the body mass indexes (BMI) were computed.

**Results:** Findings revealed that though majority of AWWs were attended frequent nutrition training; having 10–15 years of experience and high nutrition knowledge score (9.8) and positive attitude and better healthy habits still their Mean Dietary Diversity-Women (MDD-W) score was 4.9, indicating poor dietary diversity, as it falls below the standard of consuming foods from at least five different food groups (38%). Approximately 80% of the AWWs were categorize as overweight and obese. Negative correlation was found between nutrition knowledge and diet quality indicators.

**Conclusions:** The study explored that most AWWs in Faridabad had appropriate dietary practices and food intakes but still had high BMI, which increased their vulnerability to health outcomes and impacted their work performance.

## Keywords

nutritional training, nutritional and health status, Anganwadi workers, workload

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## Introduction

Anganwadi has evolved as part of the Integrated Child Development Services (ICDS) to provide immediate care to maternal and child health, aiming to combat child hunger and malnutrition.[1] Anganwadi Workers (AWWs) are playing a critical role in India's Integrated Child Development Services (ICDS) program. They provide essential services related to health, nutrition, and early childhood education to children 0–6 years and mothers in rural and urban areas at the grassroots level. These workers are predominantly women and often selected from the local community and trained to manage Anganwadi centers. Studies have shown that AWWs typically belong to the middle age group, with a significant portion having completed high school education.[2] They face various challenges, including inadequate infrastructure, heavy workloads, and limited support, which can impact their effectiveness and well-being.[3] Women of reproductive age

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(15–49 years) are most vulnerable group to achieve the appropriate nutritional status. It is a critical public health concern, which is directly affecting their health and that of their children. Research indicates that women in this age group often suffer from malnutrition, characterized by both undernutrition and overnutrition.[4–6] Sixty percent of the women (15–49 years) in Haryana are suffering from anemia.[7] A study conducted in the indigenous communities of Attappady, Kerala, found that nearly 50% of women were malnourished, with significant rates of chronic energy deficiency and obesity.[6] Another study conducted among female nurses from Government hospital in Delhi reported high overweight and obese rates (70%).[8] These nutritional challenges are compounded by socio-economic factors, limited access to diverse foods, and cultural practices.[9] Working women are facing another significant challenge of balancing work and personal life particularly those in the reproductive age group. The dual responsibilities of women to manage household duties and professional work could lead to stress and affect their overall well-being.[9] Studies have reported that work-life balance is a major issue for working women, with many experiencing conflicts between their professional and personal roles.[10] This imbalance can lead to lack of proper nutrition, job dissatisfaction and home & workplace performance, further exacerbating the stress and health issues faced by these women.[10] To enhance the efficiency and productivity among working women, their nutritional status is of paramount importance. Adequate nutrition is essential for maintaining physical and mental health, which in turn influences work performance and overall quality of life.[4,11] Research has shown that poor nutritional status can lead to decreased work performance, impaired immune function, and lower physical stamina.[5,12] Therefore, it is crucial to address the nutritional needs of working women to enhance their efficiency and contribute to their well-being.[12,13] AWWs often have extensive responsibilities. A study assessed the time distribution among various duties of 260 Anganwadi workers in Madhya Pradesh. It was found that 52% of their time was spent directly on children, with 26% on preschool work, 15% on feeding, and 11% on childcare. Despite spending significant time on these activities, other responsibilities were often left unattended within the 6-h working day. This might be impacting their health and nutritional status.[14] The performance of Anganwadi workers is crucial for eradicating malnutrition and improving health status in India. Various factors influence the performance of Anganwadi workers, including age, profile, training, workload management, and support systems. A qualitative study identified individual, community, and organizational factors influence the performance of Anganwadi workers such as work environment, honorarium, supervision, human resources, family support, finances, material supply, and infrastructure.[15] As part of ICDC program, training of AWWs on ICDS components is regular and mandatory. A study on the effect of training on the nutritional knowledge of Anganwadi workers in Uttarkashi, Uttarakhand found that age and demographic profile could influence performance, whereas training improves their knowledge significantly.[16] Another study conducted in 2023 (South India) found that 78.58% had a knowledge assessment score above 50%; highlighting the importance of continuous training and reorientation to enhance their knowledge and performance.[17] The responsibilities and contributions of Anganwadi workers are crucial for better community health outcomes.

This study aimed to understand the socio-demographic profile, nutritional, and health status of Anganwadi Workers. It is essential for developing targeted interventions that can improve their health and efficiency and support the overall well-being of women in this critical age group.

## Methodology

This cross-sectional study was carried out from February 2024 to March 2024 to assess the nutrition and health status of AWWs in urban centers of Faridabad district Haryana. There are a total of 1294 AWCs and 1207 AWWs in Faridabad district. However, in the current study, 60 AWCs catering to a large number of beneficiaries were selected to identify the sample using the purposive sampling technique. Anganwadi workers who met the following inclusion criteria were included in the study; they attended at least one ICDS training including nutrition components and were of age group 25 years and above. A total of 46 AWW who consented to participate in the study were finally selected to constitute the study sample.

An interviewee-administered questionnaire was designed to obtain the information regarding their demographic profile, nutrition knowledge based on dietary guidelines for Indian adults, practice, and attitude related to healthy habits, health status, food-item based frequency of food consumed in last 1 month and diet quality. It was pilot tested and modified before being administered to collect data.

The nutritional knowledge score of participants was calculated based on a total of 12 current dietary guidelines.[18] The participants who were aware of the current dietary guidelines were provided with one point; the highest possible nutrition knowledge score was 12.

A standardized 29-item Diet Quality Questionnaire (DQQ) where the consumption of each distinct food group on the previous day or night was asked to answer as yes/no.[19] It was used to compute MDD and dietary diversity score (DDS), foods consumed in moderation (NCD-risk score), and foods that can help prevent NCDs (NCD-protect score). The MDD for women was defined as consumption of 5 of 10 food groups.[20] The NCD-protect score reflects consumption of a variety of plant-based foods associated with lower risk of NCDs. The NCD-risk score

assesses consumption of foods high in sugar, salt, fat, and processed meat, associated with higher risk of NCDs.[19,20] The purpose of using DQQ is to assess adherence to nutritional guidelines and recommendations for a healthy diet. The nutritional status of each AWW was assessed with the help of anthropometric measurements such as Height (cm) and Weight (kg) using standardized techniques and standardized instrument (Seca). Based on these measurements, body mass index (BMI) was determined. BMI was calculated by dividing weight in kilograms by the square of height in meters. The revised definition of BMI classification given by Misra et al. was used to categories the AWWs as underweight, normal, overweight, and obese.[21] Responses to each question were numerically coded and analyzed in SPSS version 26.0. The continuous data were presented as Mean ± SD, while categorical data were presented as frequency and percentage. The DQQ data was analyzed using Diet Quality Questionnaire Indicator Calculator (Indicator Calculator—Global Diet Quality Project). The correlation between indicators of DQQ and the nutritional knowledge scores of the Anganwadi works was calculated. The mean score of all participants' nutritional knowledge was calculated, providing an overall measure of their understanding of nutrition. The ethical approval to carry out the study was obtained from the Institutional Ethics Committee (MRIIRS/SAHS/N&D/2023-34/N-004). All the participants were provided with information regarding the study and duly signed inform consent was obtained from each one of them.

## Results

The socio-demographic profile of the study participants has been presented in Table 1. Over 50% were aged 41–50, and 65.2% earned INR 10,000-15,000 monthly. More than half completed high school, and 26.5% were graduates or postgraduates. Most were Hindu (97.8%), with 20% being widowed or divorced. The majority had served 11–15 years as AWW, working 5–6 h daily. About 56.5% attended one to two nutrition training sessions within 3 months of joining, and 43.5% attended frequent training (once in every month). Most of them have received training on ICDS program components. Table 2 depicting the factors affecting Anganwadi work. Over 80% reported facing issues like inadequate infrastructure, multiple tasks, lack of training, and health problems affecting their performance.

The nutritional knowledge, dietary diversity, and diet quality indicators scores for AWWs are presented in Table 3. More than half of AWWs meet the "Minimum Dietary Diversity for Women" (MDD-W), with an overall Dietary Diversity Score (DDS) of 4.9, indicating inadequate micronutrient intake. The mean MDD-W is 0.36 ± 0.48, showing low fruit and vegetable consumption. The NCD-Protect score averages 3.97 ± 1.42, while the NCD-Risk score is 2.65 ± 1.36. The Global Dietary Risk (GDR) score averages 10.32 ± 1.77, and the Nutritional Knowledge Score is 9.89 ± 1.26, suggesting a generally good level of nutritional knowledge among the AWWs. Most AWWs are aware of balanced diets and the importance of fruits, vegetables, and micronutrients. However, only 36% of them were consuming all six food groups recommended by ICMR. The data presented in Table 4 shows the challenges faced by the AWWs to consume healthy diet. Nearly 50% had reported workload and lack of time due to dual responsibility of home and workplace, were the main challenges to consume healthy balance diet.

Table 5 showed the practices and attitude of AWWs toward healthy habits. More than 50% of AWWs practice healthy habits like including five food groups in their diet (47.8%, always), eat seasonal fruits and vegetables (65.2%, always), drink enough water every day (73.9%, always), consumption of fast food (71.8%, never). Despite this 82.6% of AWWs always skip their breakfast. This is due to

**Table 1.** Socio demographic profile of the study participants ($n = 46$).

| Characteristics | Category | Frequency | Percentage |
|---|---|---|---|
| Age | 31–40 years | 11 | 23.9 |
| | 41–50 years | 24 | 52.2 |
| | Above 50 years | 11 | 23.9 |
| Monthly income (INR) | 5000–10,000 | 15 | 32.6 |
| | 10,000–15,000 | 30 | 65.2 |
| | 15,000–20,000 | 1 | 2.2 |
| Educational status | Up to SSLC | 8 | 17.4 |
| | High school | 26 | 56.5 |
| | Graduate | 6 | 13 |
| | Post graduate | 6 | 13.5 |
| Marital status | Married | 36 | 78.3 |
| | Widowed | 9 | 19.6 |
| | Divorced | 1 | 2.2 |
| Religion | Hindu | 45 | 97.8 |
| | Others | 1 | 2.2 |
| Duration as AWWs | 1–5 years | 1 | 2.2 |
| | 6–10 years | 2 | 4.3 |
| | 11–15 years | 27 | 58.7 |
| | Above 20 years | 16 | 34.8 |
| Working duration in AWC (h) | 5–6 | 37 | 80.4 |
| | 7–8 | 7 | 15.2 |
| | More than that | 2 | 4.3 |
| Nutrition specific training | Only one training | 5 | 10.9 |
| | 1–2 training in 3 months | 21 | 45.7 |
| | Frequent training[a] | 20 | 43.5 |
| ICDS component specific training | No training | 1 | 2.2 |
| | Only one training | 4 | 8.7 |
| | 1–2 training in 3 months | 19 | 41.3 |
| | Frequents training | 22 | 47.8 |

[a]Frequent trainings = once in every month

**Table 2.** Factors affecting the AWCs works ($n = 46$).

| Factors affecting the AWCs works | Always Frequency (%) | Sometime Frequency (%) | Never Frequency (%) |
|---|---|---|---|
| Infrastructure | 9 (19.56) | 18 (39.13) | 10 (21.73) |
| Lack of help | 4 (8.69) | 23 (50) | 8 (17.39) |
| Less time to complete all tasks | 0 | 19 (41.30) | 10 (21.73) |
| Lack of training | 3 (6.52) | 24 (52.17) | 9 (19.56) |
| Own health conditions | 4 (8.69) | 24 (52.17) | 4 (8.69) |

**Table 3.** Means of diet quality indicators and nutrition knowledge ($n = 46$).

| Variable | Anganwadi workers |
|---|---|
| Minimum dietary diversity-Women (MDD-W)[a] (%) | 53 |
| MDD-W (mean ± SD) | 0.36 ± 0.48 |
| Dietary Diversity Score (mean ± SD) | 4.93 ± 1.27 |
| NCD-Protect (mean ± SD) | 3.97 ± 1.42 |
| NCD-Risk (mean ± SD)[b] | 2.65 ± 1.36 |
| GDR-Score (mean ± SD) | 10.32 ± 1.77 |
| Consumed all-5 food groups recommended across countries globally (%)[c] | 38 |
| Consumed all-6 food groups recommended in India (%)[d] | 36 |
| Nutritional knowledge score (mean ± SD)[e] | 9.89 ± 1.26 |

NCD: non-communicable disease; SD: standard deviation.
[a]Minimum dietary diversity for women is defined as consuming ≥5 of 10 food groups (FAO, 2021),
[b]NCD-risk score is defined as mean score of consumption of 8 food groups to limit that may increase women's vulnerability to NCDs, with a range of 0–9 (processed meat is double weighted).
[c]The 5 food groups are starchy staples; vegetables; fruits; pulses, nuts or seeds; animal-source foods.
[d]The 6 food groups are cereal grains; vegetables; fruits; nuts or seeds; pulses, eggs, fish, or meat; dairy.
[e]Nutritional knowledge score- Knowledge of ICMR dietary guideline for adults.

**Table 4.** Challenges in maintaining healthy diet ($n = 46$).

| Characteristic | Frequency | Percentage |
|---|---|---|
| Work load | 22 | 47.8 |
| Lack of time | 22 | 47.8 |
| Availability of food in local area | 9 | 19.6 |
| Quality of food in budget | 8 | 17.4 |
| Knowledge related to healthy diet | 3 | 6.5 |
| Taste of the food | 10 | 21.7 |

the increased workload and lack of help at AWCs. AWWs had a positive attitude toward nutrition training and better nutritional status could improve their work performance. Figure 1 presenting the frequency of food eaten in past 1 month. Approximately two-third of the sample was non-vegetarian. Wheat is their stable cereal consumed daily by 89% of the participants. More than 50% were consuming pulses & legumes daily in any one of their meals. Nearly two-third consumed milk and milk products daily/weekly or monthly. Fifty percent of the AWWs reported that they consume potato daily whereas only 28% consume other vegetables daily. Egg consumption was only among 20% of the AWWs and 86% does not consume any meat and its product. More than 70% of the AWWs reported that they add extra salt or sugar whenever needed in their meal. Consumption fast food and carbonated drinks or packed juices were among the 40% of the AWWs.

The health status of Anganwadi workers presented in Table 6, highlighting their health conditions, medication habits; sleep patterns, physical activity, seating durations, and BMI. Nearly 90% of the study participants had one or more chronic diseases conditions. Nearly 35% of the participants either "always" or "sometimes" take regular medication to control their chronic disease condition. A small number (15%) of participants reported regular health check-ups. Poor sleep was reported by nearly 60% of the participants in the last month due to their busy schedule, heavy workload and lack of facilities. Furthermore 54.3% of the participants reported less than 6 h of sleep during night, followed by feeling sleepy in the daytime. A little more than one quarter of the sample favored doing physical exercise like yoga or walks every day. Only 21.7% of the participants had reported more than 6 h/day desk job. Out of 46 AWWs, only 11% were falling into normal BMI category.

Table 7 illustrates the correlation between Nutritional Knowledge Score and the Minimum Dietary Diversity for Women (MDD-W), Dietary Diversity Score (DDS), NCD-Protect, NCD-Risk, and GDR-Score. Higher nutritional knowledge correlates negatively with the Minimum Dietary

**Table 5.** Practices and attitude of AWWs toward Healthy habits n = 46.

| Characteristics | Frequency (%) | | |
|---|---|---|---|
| | Always | Sometimes | Never |
| Includes five food groups in your daily diet | 22 (47.8) | 24 (52.2) | 0 |
| Eat seasonal fruits & vegetables | 30 (65.2) | 14 (30.4) | 2 (4.3) |
| Skip Breakfast | 38 (82.6) | 6 (13.0) | 2 (4.3) |
| Eat balance diet | 29 (63.0) | 14 (30.4) | 3 (6.5) |
| Drink enough water everyday | 34 (73.9) | 11 (23.9) | 1 (2.2) |
| Frequency of fast food consumption | 2 (4.3) | 11 (23.9) | 33 (71.8) |
| Better nutritional status can improve work performance | 35 (76.1) | 9 (19.6) | 2 (4.3) |
| Nutrition Training improves Health eating habits | 46 (100) | 0 | 0 |

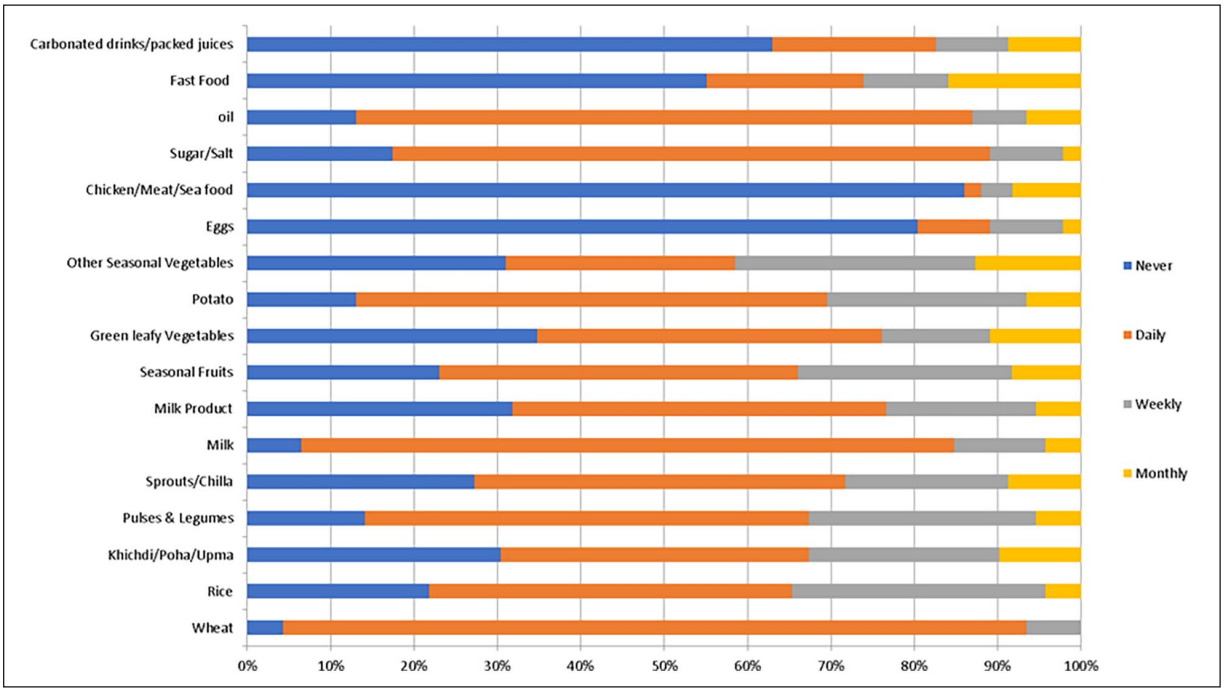


**Figure 1.** Frequency of food consumption in past 1 month.

Diversity for Women ($r = -0.22$) and the Dietary Diversity Score ($r = -0.18$), indicating that better-informed AWWs may not achieve higher dietary variety. NKS also has a slight negative correlation with NCD-PROTECT ($r = -0.08$) and a weak positive correlation with NCD-RISK ($r = 0.05$), suggesting that more knowledge does not necessarily reduce non-communicable disease risk. Additionally, NKS negatively correlates with the GDR-SCORE ($r = -0.11$), implying poorer health outcomes despite higher nutritional knowledge. Overall, these findings suggest that other factors may significantly influence dietary diversity and health beyond just nutritional knowledge.

## Discussion

This study is a preliminary attempt to determine nutrition knowledge, practices and attitude regarding healthy habits, nutritional and health status, and diet quality of AWWs in the urban centers of the Faridabad District, Haryana as is very limited/no information available on these aspects. Present study demonstrated that majority of AWWs belonging to 41–50 years of age, 65.2% earn a modest monthly salary of INR 10,000–15,000. Overall, the study insights highlight a workforce that is experienced, modestly compensated, and socially stable, predominantly composed of married, high school-educated Hindus. Most AWWs were involved for a minimum of 5–6 h/day at AWCs and frequently trained on ICDS components. The demographic data showed similarities to the study conducted with AWWs from different parts of India[1,12,17,22,23]

AWWs play a crucial role in disseminating health information and providing community services, still faces numerous challenges that may affect their performance, including poor nutrition and health. Several studies from

**Table 6.** Health status of the study participants ($n = 46$).

| Characteristics | Categories | Frequency | Percentage |
|---|---|---|---|
| Have you ever been told by doctor that you are suffering from disease following | Hypertension | 13 | 28.3 |
| | Diabetic | 3 | 6.5 |
| | Respiratory disease (asthma, bronchitis, etc.) | 6 | 13 |
| | Neurological | 16 | 34.8 |
| | Gastrointestinal | 3 | 6.5 |
| | No disease | 5 | 10.9 |
| How frequently do you take regular medication | Always | 15 | 32.6 |
| | Sometimes | 17 | 37 |
| | Never | 14 | 30.4 |
| How frequently do you take regular health check-up | Always | 7 | 15.2 |
| | Sometimes | 27 | 58.7 |
| | Never | 12 | 26.1 |
| How often has poor sleep troubled in last month? | Always | 11 | 23.4 |
| | Sometimes | 18 | 39.1 |
| | Never | 17 | 37.5 |
| Average sleep at night | Less than 5 h | 7 | 15.2 |
| | 5–6 h | 18 | 39.1 |
| | 6–8 h | 20 | 43.5 |
| | More than 8 h | 1 | 2.2 |
| How often do you feel sleepy in the day time? | Always | 7 | 15.2 |
| | Sometimes | 15 | 32.6 |
| | Never | 24 | 52.2 |
| During last week how many days did you do physical activity like yoga, walking or aerobic exercise | Everyday | 15 | 32.6 |
| | Alternate days | 9 | 19.6 |
| | Once a week | 12 | 26.1 |
| | Never | 10 | 21.7 |
| Seating hours/day | 1–3 h | 21 | 45.7 |
| | 3–5 h | 15 | 32.6 |
| | More than 6 h | 10 | 21.7 |
| Body Mass Index (BMI; kg/m$^2$) | Normal weight (18.0–22.9) | 5 | 11 |
| | Overweight (23.0–24.9) | 26 | 56 |
| | Obese (>25.0) | 15 | 33 |

**Table 7.** Correlation between diet quality and nutritional knowledge.

| Variable | MDD-W | Dietary diversity score (DDS) | NCD-protect | NCD-risk | GRD-score | Nutritional knowledge score |
|---|---|---|---|---|---|---|
| MDD-W | 1.00 | | | | | |
| Dietary diversity score (DDS) | 0.64 | 1.00 | | | | |
| NCD-protect | 0.62 | 0.83 | 1.00 | | | |
| NCD-risk | −0.10 | 0.15 | 0.19 | 1.00 | | |
| GDR-score | 0.57 | 0.55 | 0.65 | −0.61 | 1.00 | |
| Nutritional knowledge score | −0.22 | −0.18 | −0.08 | 0.05 | −0.11 | 1.00 |

other parts of the India reported the challenges related to AWWs work situation such as work overload, inadequate salary and engagement in other work etc.[1,3,24] Addressing the work-related issues through better resource allocation and support systems could enhance the effectiveness of AWWs.[25] The nutritional knowledge of Anganwadi workers is extensive, reflecting a comprehensive understanding of dietary practices and their health impacts. The essential components of a balanced diet, such as chapatti, rice, fruits, salads, curds, and vegetables, are well recognized. Nearly all workers prioritized daily fruit consumption (98.3%) and understood protein sources, such as milk products, dals, and soybeans (93.5%). Awareness of Vitamin C-rich foods (97.8%) and iron sources, such as

green leafy vegetables (80.4%), is high, although recognition of legumes as iron-rich is less common. Overall, their nutritional knowledge was robust, scoring 9.8 out of 12, demonstrating a strong foundation for promoting healthy dietary habits. These findings are in consensus with the study conducted among AWWs in Chandigarh and Gujarat, reported best nutritional and health education among 77.14%.[3,12] Given their good nutritional knowledge, healthy eating attitudes and practices of Anganwadi workers demonstrate a positive trend. Despite challenges, such as workload and time constraints, many recognize the benefits of good nutrition for both health and work performance. Overall, a significant majority (63%) found their dietary intake satisfactory, with others following specific dieting programs because of health concerns. Finally, a holistic approach encompassing all the factors of maintaining good health, such as nutritious food, physical activity, avoiding junk meals, and not skipping meals, was accepted. All the above-mentioned measures are always considered important by only 28.3% of the workers and are never disregarded by any. However, exercise was prioritized less, with 82.6% not engaging in it regularly. Similar findings were reported in a study conducted among nurses following appropriate dietary habits.[8] AWWs were having good dietary practices; still most of them were having chronic disease condition, following irregular medication and routine check-ups. Most AWWs were having poor sleep (5–6 h) and no physical. It was worrisome to find that 80% of the AWWs were categorized as overweight and obese. Similar findings were noted in studies conducted on health workers such as nurses or community health workers.[4,8,12] This could be due to spending substantial amounts of time on administrative tasks, long seating hours, taking away their ability to spend time on their own health.[14] Using the Diet Quality Questionnaire (DQQ), the study found that AWWs had a low Dietary Diversity for Women (MDD-W) score of 4.9, indicating inadequate dietary diversity, negatively correlated with their nutrition knowledge score. They were having poor health outcomes despite having high NKS and good dietary practices. This may likely be due to a lack of support and training, but more research is required to substantiate this among AWWs. Studies reported the benefit of re-training in enhancement of the knowledge regarding ICDS components, but not on their own health outcomes.[2] However, a systematic review and meta-analysis revealed that workplace tailored dietary interventions significantly decreases energy intake, weight, blood pressure, total cholesterol, and LDL cholesterol among health care workers.[13]

The present study had tried to highlight an important public health concern toward health and nutritional status of the frontline health workers. However, the study had a few research limitations. The sample size is small, and a purposive sampling technique was used to identify AWWs. This is due to logistical and time constraints; therefore, the findings could not be generalizable to all AWWs or to different regions, limiting the applicability of the results. However, this study might serve as pilot studies, paving the way for larger and more comprehensive research.

## Conclusion

This study focused on assessing the AWWs own health conditions and nutritional status, unlike previous studies that predominantly examined their work profiles or the conditions of beneficiaries at Anganwadi Centers (AWCs). Despite their high knowledge scores and health consciousness, certain factors continue to affect the performance and nutritional health status of AWWS. Therefore, further studies are needed to improve both their health conditions and overall performance.

### List of abbreviations

- AWWs- Anganwadi Workers
- AWCs- Anganwadi Centers
- WHO- World Health Organization
- DQQ- Diet Quality Questionnaire
- MDD-W- Minimum Dietary Diversity for Women
- GDR- Global Dietary Recommendation
- NCDs- Noncommunicable Diseases
- ANMS -Auxiliary Nurse and Midwife
- ASHA- Accredited Social Health Activist
- CHWS- Community Health Workers
- CDPO- Child Development Project Officer
- AWTCs- Anganwadi Workers Training Centers
- NPAG- Nutrition Programme for Adolescents Girls

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### Consent to participate

I agree to participate in the research project titled Impact of AWW's nutritional training and workload on their nutritional status and health, conducted by researcher Ms. Devanshi Kumari, MSc Nutrition & Dietetic Student, MRIIRS who have discussed the research project with me. I have received, read and kept a copy of the information letter/plain language statement. I have

had the opportunity to ask questions about this research and I have received satisfactory answers. I understand the general purposes, risks and methods of this research. I consent to participate in the research project.

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## Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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