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## Knowledge assessment of Anganwadi workers during COVID-19 in Hisar district, Haryana

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### Abstract

The COVID-19 pandemic has posed unprecedented challenges to various sectors, including the healthcare and social welfare systems. Anganwadi workers, being at the forefront of delivering essential services to vulnerable populations, play a crucial role in ensuring the well-being of women and children. However, assessing their knowledge regarding COVID-19 and related preventive measures has been essential to evaluate their preparedness and effectiveness in mitigating the transmission of the virus. The present study aimed at assessing the knowledge of Anganwadi workers during the COVID-19 pandemic. The study was conducted in Hisar district of Haryana state. A number of 100 Anganwadi workers was selected from 10 villages of the Hisar district. Majority of the Anganwadi worker carried out non-formal education through online mode and phone call and had visited home to home for contacting the family of new born baby. More than half of the Anganwadi workers get information of COVID-19 from watching TV channels, interaction with colleagues and from official circular. The respondents had good knowledge on preventive practices and almost half of the respondents follow the preventive practices and reported that some time due to non-cooperative staff and community members they could not follow measures to maintain social distance. The respondents possessed the knowledge of social distance measure and also follow these measures during COVID-19. The respondents was not able to carried out developmental activity during COVID-19 pandemic.

**Keywords:** Vegetable garden, Palghar district, tribal families, nutritional garden, constraints faced, suggestion

### Introduction

The COVID-19 pandemic has significantly impacted communities worldwide, posing unprecedented challenges for public health systems and frontline workers. Among the crucial individuals contributing to community health and welfare are Anganwadi workers.

Anganwadi workers play a vital role in delivering essential services, especially in rural and marginalized areas, where they provide nutrition, healthcare, and early childhood education to children and mothers. During the COVID-19 pandemic, Anganwadi workers have faced unique challenges as they continue to fulfil their responsibilities while adapting to the changing circumstances. Assessing their knowledge and understanding of COVID-19-related information is essential to ensure the efficient and safe delivery of services, prevent the spread of the virus, and safeguard the well-being of the communities they serve.

As the pandemic, rapidly spread worldwide, different policies and programmes were conceptualized and implemented to try to mitigate the impact or difficulties caused due to COVID-19 pandemic (Adhikari *et al.*, 2020) [1]. It allows policymakers, administrators, and stakeholders to identify gaps in knowledge, address training needs, and enhance the overall response to public health emergencies (Bhambal *et al.*, 2015) [3]. The COVID-19 pandemic introduced new challenges for Anganwadi workers, as they were required to adapt their regular activities and deliver critical services while ensuring the safety of beneficiaries and themselves. These workers had to quickly acquire accurate information about COVID-19 prevention, transmission, and mitigation strategies to effectively serve their communities.

Knowledge assessment is a vital tool for evaluating the preparedness and effectiveness of healthcare workers during any crisis, including the ongoing COVID-19 pandemic. Knowledge assess becomes essential to evaluate their understanding of the evolving guidelines and protocols, and to identify areas where additional training and support may be required. Assessing the knowledge of Anganwadi workers during COVID-19 serves multiple purposes.

Firstly, it helps ensure that accurate and updated information is disseminated to beneficiaries, preventing the spread of misinformation. Secondly, it enables the identification of specific areas of weakness or misconceptions among workers, which can then be addressed through targeted training programs. Lastly, it allows policymakers and administrators to evaluate the overall effectiveness of the training initiatives implemented for Anganwadi workers and make informed decisions for improvement. Knowledge assessment plays a crucial role in evaluating the preparedness and effectiveness of Anganwadi workers during the COVID-19 pandemic.

By identifying gaps in knowledge, appropriate interventions can be implemented to enhance their understanding of COVID-19 and improve their ability to deliver essential services. The findings from these assessments enable informed decision-making, ensuring that Anganwadi workers are equipped with accurate information to effectively protect and support vulnerable populations during public health emergencies.

So, keeping these views in mind present study planned to assess the knowledge of Anganwadi workers and finding the gap which need to fulfil because knowledge assessments can guide the development of tailored training modules, refresher courses, and capacity-building initiatives for Anganwadi workers. These initiatives can focus on strengthening their understanding of COVID-19, equipping them with the necessary skills to implement preventive measures, and ensuring they can effectively communicate accurate information to the communities they serve.

### Review of literature

Bauza *et al.* (2021) [2] conducted study on COVID-19 and analyzed knowledge, perceptions, and preventative actions of village level workers. Respondents reported high compliance with important preventative measures, including staying home as much as possible (94.00%), social distancing (91.00%), washing hands frequently (96.00%), and wearing a facial mask (95.00%).

Additionally, many respondents reported job loss (31.00%), financial challenges (93.00%), challenges related to staying home whether as a preventative measure or due to lockdowns (57.00%), and adverse emotional effects as a result of the pandemic and lockdown. The research revealed high compliance with preventative measures, the pandemic and associated lockdowns also led to many challenges and hardships faced in daily life particularly around job loss, economic security, food security, and emotional wellbeing. The results underscore the vulnerability of marginalized populations to the pandemic and the need for measures that increase resilience to large-scale shocks.

Kalichman *et al.* (2021) [7] have pointed the knowledge of Anganwadi workers regarding the prevention of coronavirus. In the study, it is also mentioned that besides their usual official responsibility of disseminating key health information regarding nutrition, family planning and immunizations to the women and children, they also track data on the spread of COVID-19.

Islam *et al.* (2021) [6] found that social media platforms like Facebook, WhatsApp, Twitter, YouTube and so on has been used to create instantaneous awareness on the precautionary measures of COVID-19. The results also discovered that the educational level of the people has a significant, direct and positive impact on COVID-19 prevention. Therefore, the study suggests more creative use of social media in

preventing the spread of the COVID-19 in Bangladesh.

Maude *et al.* (2021) [8] studied that the key infection prevention and control measures to limit transmission of COVID-19 include social distancing, hand hygiene, use of facemasks and personal protective equipments. However, these have limited or no impact if not applied correctly because of lack of knowledge, inappropriate attitude or incorrect practices.

In order to maximize the impact of infection prevention and control measures on COVID-19 spread, detailed information on the gaps in knowledge, attitudes and practices among the general public and healthcare workers regarding COVID-19 should be assessed. This was used to produce targeted educational videos which addressed these gaps with subsequent improvements on retesting.

Gulati *et al.* (2020) [5] concluded that the Anganwadi workers demonstrating skills in improving public health, women empowerment and community development, their potential remains untapped. Also, it is distressing that they have not been given full recognition either by the administration or by academia leading to a huge knowledge gap. There is an immediate need to undertake regular monitoring and conduct in-depth research based on field-research to fill the knowledge gap and provide evidence-based data for the planning and implementation of policies. The case study found that the Anganwadi system of Jammu and Kashmir and identifies the prevalent challenges to present policy recommendations that could be adopted by policy-makers as well as could be used for conducting further research.

Gong *et al.* (2021) [4] studied that social distancing has a major role in breaking the spreading of Coronavirus but it was difficult to maintain by everyone in general which was one of the reasons for mental stress of healthcare providers.

### Methodology

**Study Area:** The present study was conducted in Haryana State. Hisar district from Haryana state was purposively selected for the survey work due to easy accessibility of the researcher. From selected district two blocks were randomly selected. The Block I is Adampur Mandi and second is Hisar II. From Adampur Mandi five villages were selected name Siswal, Mahobatpur, Sadlpur, Bagla and Kabrel. From the second block i.e. Hisar-II, five villages were selected randomly, namely Neoli-Kalan, Dobhi, Balsamand, Kirtan and Arya-Nagar.

**Selection of the Respondents:** From the selected two blocks Hisar-II and Adampur Mandi the total 100 Anganwadi workers selected randomly from selected villages.

**Tool used:** Data was collected personally using interview schedule which was comprised of questions related to the objectives and variables of the study.

### Results

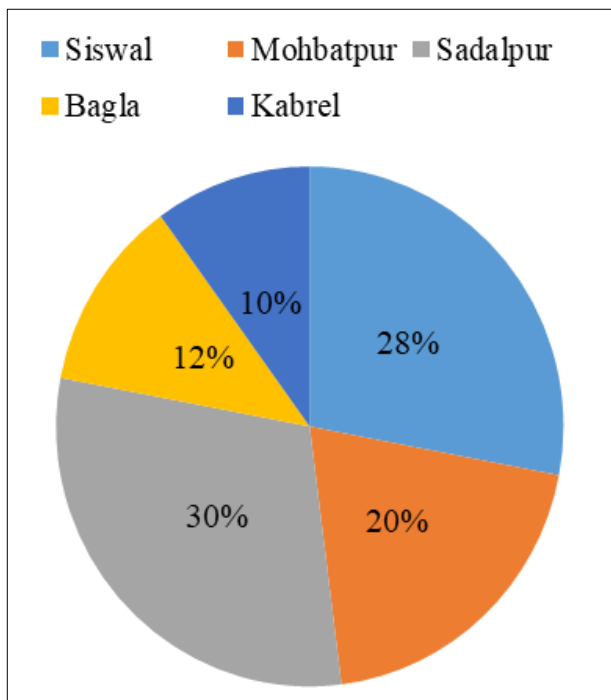
#### Information regarding Anganwadi centres

**Number of Anganwadis in villages:** Two blocks were selected in the Hisar district of Haryana state *i.e.* Adampur Mandi and Hisar-II.

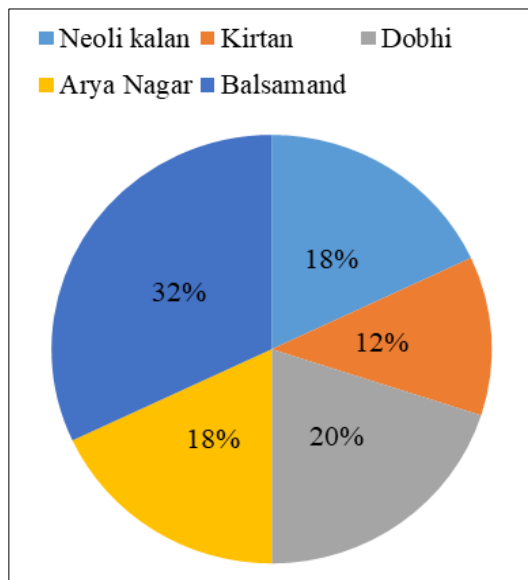
The data in Table 1 shows that in Balsamand village maximum Anganwadis (16) were found followed by 15 in Sadalpur and 14 in Siswal. Thus, it can be concluded that most of the villages had 5 to 10 Anganwadi centre and maximum Anganwadi centres were in village Balsamand, Sadalpur and Siswal.

**Table 1:** Number of Anganwadis in villages

Name of villages	No. of Anganwadis
<b>Block I</b>	
Siswal	14
Mohbatpur	10
Sadalpur	15
Bagla	6
Kabrel	5
<b>Block II</b>	
Neolikalan	9
Kirtan	6
Dobhi	10
Arya Nagar	9
Balsamand	16



**Fig 1:** Block I



**Fig 2:** Block II

**Trainings/Workshops/Meetings attended by Anganwadi workers during COVID-19:** The Anganwadi workers worked very hard in the duration of COVID-19 pandemic. They had not provided any special training to face rising problems in the duration of COVID-19 pandemic. Ninety-one percent Anganwadi workers attended in services training of one day duration during COVID-19 pandemic. The data in Table showed that all respondents attended regular meeting with CDPO and supervisor. All Anganwadis were visited by supervisors regularly in their Anganwadi centres. The supervisors checked recorded register of children, pregnant and lactating women and the other work like ration, transportation, availability of resources during COVID-19 period. Sixty-four percent of respondents visited families under survey to get record of pregnant, lactating and children. Seventy-two percent of respondents conducted meetings through virtual mode with their supervisors during COVID-19.

**Table 2:** Trainings / workshops / meetings attended by Anganwadi workers during COVID-19

Sr. No.	Category	f (%)	
1.	Receive Training	In services training	91 (91.00)
		Refresher training	0 (0.00)
		Special training	0 (0.00)
		No training provided	0 (0.00)
2.	Attend meeting conducted by Supervisors	Yes	100 (100.00)
3.	Attend meeting conducted by CDPO	Yes	100 (100.00)
4.	Visit to family under survey	Yes	64 (64.00)
5.	Online meeting	Yes	72 (72.00)

**Mode of non-formal education during COVID-19:** Due to lockdown majority of the respondents provided non-formal education through online mode (57.00%), followed by phone

call (45.00%), home to home visits (30.00%). Twelve percent of respondents did not provide any education because they were not comfortable with their virtual meetings.

**Table 3:** Mode of non-formal education during COVID-19

Sr.no	Mode	f (%)
1.	Online	57(57.00)
2.	Through phone call	45(45.00)
3.	Visit home to home	30(30.00)
4.	Not provided	12(12.00)

**Mode of Contact to family of new born baby during COVID-19:** The majority of respondents (80.00%) contacted to new born baby’s family by visiting home to home because

the families not give response on phone call and some Anganwadi workers have their own reason like not satisfy with phone call data, more comfort by communicating face to

face and believing that home visit is necessary for getting correct details.

Other method used by them were phone call (59.00%) and personal contact with their relatives and neighbours (4.00%) to get information about the family of new born baby.

**Table 4:** Mode of Contact to family of new born baby during COVID-19

Sr. No.	Mode of contact	f (%)
1.	Through phone call	59(59.00)
2.	Visit home to home	80(80.00)
3.	Any other	4(4.00)

**Communication profile of Anganwadi workers**

**Media ownership:** Data in Table revealed that 31 percent respondents owned newspaper and 2 percent owned magazine. In electronic media 84 percent respondent had their own phone followed by 57 percent had television and 5 percent had radio.

**Table 5:** Media ownership of Anganwadi workers

Sr. No.	Media ownership	f (%)
<b>Print media</b>		
1.	News paper	31(31.00)
2.	Magazines	2(2.00)
<b>Electronic</b>		
1.	Radio	5(5.00)
2.	Telephone/landline	2(2.00)
3.	Mobile phone	84(84.00)
4.	Television	57(57.00)

**Media exposure:** Data in Table regarding media usage indicated that respondents used more electronic media than

print media. In electronic media 99 percent of the respondents used mobile phone and very few Anganwadi workers have not their phone, they use their family member's phone.

Eighty seven percent used phone with internet and only 2 percent had used landline phone. The reason for not using internet in mobile phone was that they don't have knowledge regarding internet usage.

Seventy-six percent used television for entertainment and news purpose. In print media only 24 percent read newspaper, 34 percent read leaflet/pamphlets and 15 percent read magazines available in the Anganwadi centres.

**Table 6:** Media exposure of Anganwadi workers

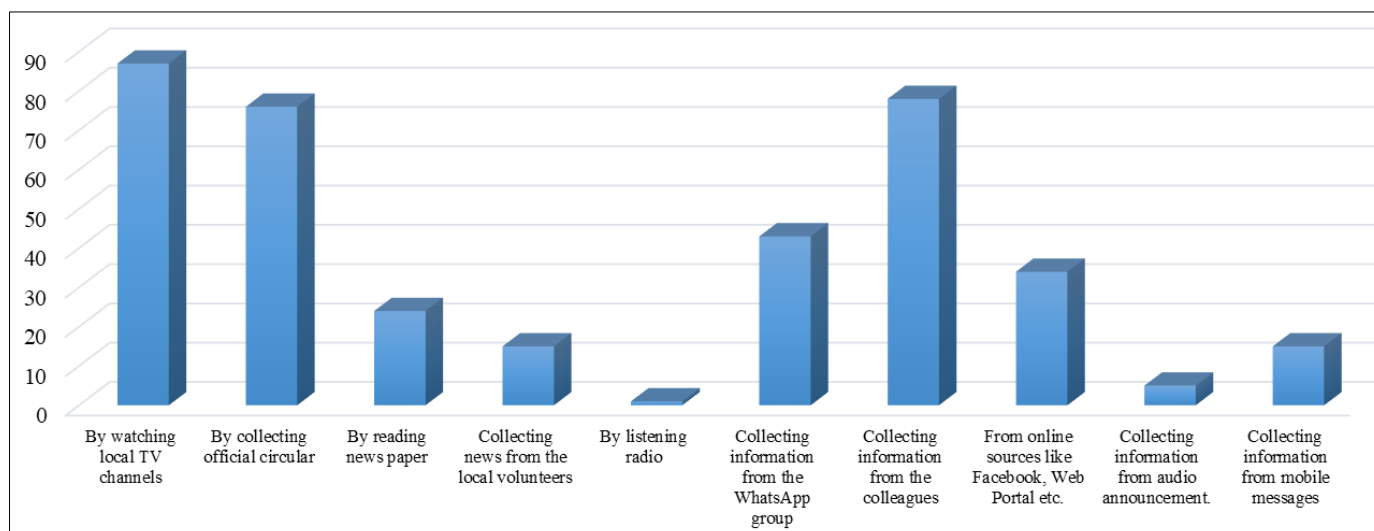
Sr. No.	Media exposure	f (%)
<b>Print media</b>		
1.	News paper	24(24.00)
2.	Magazines	15(15.00)
3.	Leaflet/pamphlets	34(34.00)
<b>Electronic media</b>		
1.	Telephone/landline	2(2.00)
2.	Mobile phone	99(99.00)
3.	Mobile phone with internet	87(87.00)
4.	Television	76(76.00)

**Information sources used by Anganwadi workers during COVID-19**

The data in Table showed that majority of the respondents get information from watching TV channels (87.00%) and interaction with colleagues (78.00%) and other information sources reported were official circular (76.00%), WhatsApp (43.00%), Facebook and web portal (34.00%), by reading newspaper (24.00%), collecting news from local volunteers (15.00%), audio announcements (5.00%) and mobile messages (5.00%).

**Table 7:** Information sources used by Anganwadi workers during COVID-19

Sr. No	Sources of Information	f	%	Rank
1.	By watching local TV channels	87	87.00	I
2.	By collecting official circular	76	76.00	III
3.	By reading news paper	24	24.00	VI
4.	Collecting news from the local volunteers	15	15.00	VII
5.	By listening radio	1	1.00	IX
6.	Collecting information from the WhatsApp group	43	43.00	IV
8.	Collecting information from the colleagues	78	78.00	II
9.	From online sources like Facebook, Web Portal etc.	34	34.00	V
10.	Collecting information from audio announcement.	5	5.00	VIII
11.	Collecting information from mobile messages	15	15.00	VII



**Fig 3:** Information sources used by Anganwadi workers during COVID-19



### Knowledge regarding preventive practices during duty of COVID-19 by the Anganwadi workers

The data in Table revealed that hundred percent the respondents had knowledge for using face mask while going

outside. Ninety three percent of the respondents had knowledge about avoid hand shaking among colleagues. Knowledge to wash and sanitize grocery, vegetables, fruits and other items was possessed by 90 percent of respondents.

**Table 8:** Knowledge on preventive practices during duty of COVID-19 by the Anganwadi workers

Sr. No.	Preventive Practices	f	%
1.	Knowledge on bad effects of hand shaking among colleagues	93	93.00
2.	Knowledge on sanitization of hands after touching any materials	81	81.00
3.	Knowledge on washing hands for 20 seconds at regular intervals in a day	65	65.00
4.	Knowledge on touching eyes, ears and other materials without washing hands.	62	62.00
5.	Knowledge on using face masks while going out	100	100.00
6.	Knowledge on washing face at intervals in a day	78	78.00
7.	Knowledge to wash and sanitize grocery, vegetables, fruits and other items	90	90.00

Knowledge on sanitization of hands after touching any materials was possessed by 81 percent of respondents. Seventy eight percent respondents had Knowledge of washing face at regular intervals in a day and washing hands at least 20 seconds at regular intervals in a day (65.00%). Sixty two percent respondents possessed knowledge that not to touch eyes, ears and other materials without washing hands. So, we can say that respondents had good knowledge on preventive practices almost half of the respondents follow the preventive practices.

### Knowledge on maintain social distance measures during COVID-19 among Anganwadi workers

Cent percent respondents had knowledge of maintaining 6ft

distance between co-workers. Eighty seven percent respondents had knowledge to maintain 3 ft. distance among family members. Knowledge to maintain distance while shopping in a market area possessed by 78 percent of respondents. Seventy five percent respondents acquired knowledge to avoid social gathering. Fifty six percent respondents know that they had to maintain 6 ft. distance while visiting temple.

The respondents reported that some time due to non-cooperative staff and community members they could not follow measures to maintain social distance. The respondents possessed the knowledge of social distance measures and also follow these measures during COVID-19.

**Table 9:** Knowledge on maintain social distance during COVID-19 practices by the Anganwadi workers

Sr. No.	Practices	f	%
1.	Maintain 6 ft. distance between co- workers	100	100.00
2.	Maintain 3 ft. distance among family members	87	87.00
3.	Maintain 6 ft. distance while visiting temple	56	56.00
4.	Maintain minimum distance while shopping in a market area.	78	78.00
5.	Maintain avoid social gathering (Marriage and funeral ceremony etc.)	75	75.00

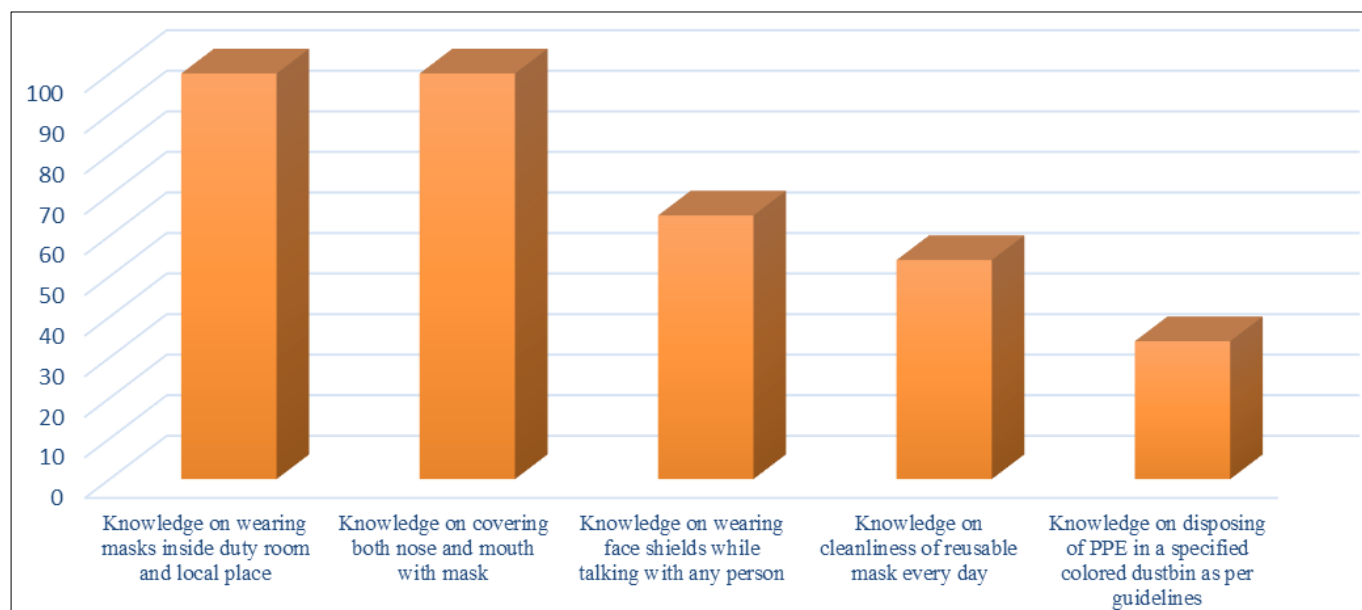
### Knowledge on pattern of use of personal protective equipments (PPE) by the Anganwadi workers

The data in Table revealed that all the respondents had knowledge on wearing masks inside duty room and local place and covering both nose and mouth with mask. More than half of the respondents had knowledge of wearing face shields while talking with any person (65.00%) and cleanliness of reusable mask every day (54.00%). Only 34 percent of respondents had knowledge on disposing of

personal protective equipments in a specified colored dustbin as per guidelines of government. By analysing overall knowledge it was found that the anganwadi workers have not enough knowledge about personal protective equipments (PPE). The main reason was that they have not getting proper trainings. They attended only one day in service training that is not enough for managing personal protective equipments (PPE) by the Anganwadi workers.

**Table 10:** Knowledge on pattern of use of personal protective equipments (PPE) by the Anganwadi workers

Sr. No.	Personal protective equipments	f	%
1.	Knowledge on wearing masks inside duty room and local place	100	100.00
2.	Knowledge on covering both nose and mouth with mask	100	100.00
3.	Knowledge on wearing face shields while talking with any person	65	65.00
4.	Knowledge on cleanliness of reusable mask every day	54	54.00
5.	Knowledge on disposing of PPE in a specified colored dustbin as per guidelines	34	34.00



**Fig 4:** Knowledge on pattern of use of personal protective equipments (PPE) by the Anganwadi workers

**Different activities performed by Anganwadi workers during COVID-19**

**Physical activities carried out by Anganwadi workers during COVID-19:** Before COVID-19, various outdoor and indoor games were included for physical development of

children. But during COVID-19, the respondents were not carried out all games except Swing the statue (2.00%) and Red light green light, stop! (7.00%). These games were carried out by virtual mode and only few children attended such game classes.

**Table 11:** Physical activities carried out by Anganwadi workers during COVID-19

Sr. No.	Physical developmental activities	During COVID-19 f (%)
<b>Outdoor games</b>		
1.	Running	0(0.00)
2.	Tug of war	0(0.00)
3.	Jump rope	0(0.00)
4.	Hide and sick	0(0.00)
5.	Hopscotch	0(0.00)
6.	Swing the statue	5(5.00)
7.	Red light green light, stop!	7(7.00)
<b>Indoor games</b>		
1.	Yoga	15(15.00)
2.	LUDO	0(0.00)
3.	Carom	0(0.00)
4.	Snake and ladders	0(0.00)
5.	Exercise	15(15.00)
6.	Playing with toys	0(0.00)

**Cognitive and Social activities carried out by Anganwadi workers before and during COVID-19:** The data in Table showed that before COVID-19 the respondents carried out puzzle games Sudoku, clay modelling, practice shapes and colors, practice alphabets and identify noise etc. But during COVID-19 thirty four percent respondents carried out practice shapes, colors and practice alphabets, puzzle games

(7.00%), and clay modeling (6.00%) by online mode and sending YouTube link. In social activity the group game, fantasy play and creative play was carried out by the Anganwadi workers but during COVID-19 respondents were not able to carry social development activities due to social distance measures etc.

**Table 12:** Cognitive activities carried out by Anganwadi workers before and during COVID-19

Sr. No.	Cognitive Developmental Activities	During COVID-19 f (%)
1.	Puzzle games	7(7.00)
2.	Sudoku	0(0.00)
3.	Clay modeling	6(6.00)
4.	Practice shapes and colours	34(34.00)
5.	Practice alphabets	34(34.00)
6.	Identify noise	0(0.00)

### Emotional developmental and language developmental activities carried out by Anganwadi workers during COVID-19

In emotional developmental activities that the respondents conducted before COVID-19 were role play activity, puppets playing, drawing and listening games. During COVID-19 only drawing activity was carried out by respondents (8.00%). The Anganwadi workers carried out activities like poem, story-telling, rhymes, tongue twisters for language development of children before COVID-19. During COVID-19 only 34 percent respondents were able to sending the videos of poems, story and rhymes (33.00%) for the language development of children. Some children made video and audio of poems, story and rhymes and sent to the Anganwadi workers.

**Table 13:** Emotional developmental activities carried out by Anganwadi workers before and during COVID-19

Sr. No.	Emotional developmental activities	During COVID-19
		f (%)
1.	Role play	0(0.00)
2.	Puppets	0(0.00)
3.	Listening games	0(0.00)
4.	Drawing	8(8.00)

**Table 14:** Language developmental activities carried out by Anganwadi workers before and during COVID-19

Sr. No.	Language developmental activities	Before COVID-19
		f (%)
1.	Story telling	34(34.00)
2.	Rhymes	33(33.0)
3.	Tongue twisters	0(0.00)
4.	Poem	34(34.00)

### Correlation of independent variable and knowledge of Anganwadi workers during COVID-19

The data in Table revealed that knowledge negatively correlated with age and working experience. In this study the majority of respondents were between age group of above 40 were not aware about the proper knowledge regarding developmental activity, nutrition knowledge, anthropological measurement etc. They were less educated and their confidence level were also low as comparison to young respondents. This could be the main reason of the knowledge is negatively correlated with age and working experience. With education the knowledge is positively correlated. As it was justified that with education knowledge of respondent's increase.

**Table 15:** Correlation of independent variable and knowledge of Anganwadi workers during COVID-19.

Sr. No.	Independent variable	Knowledge
1.	Age	-.332**
2.	Family type	.001
3.	Family size	.006
4.	Education	.237*
5.	Marital status	-.074
6.	Income	.080
7.	Caste	-.138
8.	Land	.082
9.	Working experiences	-.507**

\*\* Significant at 0.05 level of significance

\* Significant at 0.01 level of significance

### Conclusion

The knowledge assessment of Anganwadi workers during the COVID-19 pandemic has been a crucial aspect of ensuring their preparedness and effectiveness in serving their communities. This assessment has provided insights into the workers' understanding of the virus, preventive measures, and their ability to implement appropriate protocols to safeguard the health and well-being of the children and families they serve. Overall, the knowledge assessment has revealed both strengths and areas for improvement among Anganwadi workers. Many workers have demonstrated a solid understanding of the virus, its transmission, and basic preventive measures such as hand hygiene, wearing masks, and maintaining physical distance. They have also shown competence in recognizing COVID-19 symptoms and referring suspected cases for testing and treatment.

However, the study has also highlighted certain knowledge gaps that need to be addressed. Some workers may require further education and training on specific topics such as proper donning and doffing of personal protective equipment (PPE), infection control practices, and the importance of vaccination. To address these gaps, it is essential to provide targeted training programs and resources for Anganwadi workers. These initiatives should focus on reinforcing existing knowledge, introducing new information, and providing practical guidance on implementing preventive measures effectively.

Furthermore, collaboration between government agencies, healthcare professionals, and NGOs can play a significant role in supporting Anganwadi workers and providing them with accurate and up-to-date information. The dissemination of reliable resources, clear guidelines, and access to expert advice will enhance the workers' knowledge base and enable them to serve as effective frontline responders during the pandemic.

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