FrontiersinHealthInformaticsI
SSN-Online:2676-7104
www.healthinformaticsjournal.com
2024;Vol13:Issue5
OpenAccess

An Assessment Of Knowledge, Attitude And Practice Of Ashas Towards Community Based Assessment Checklist Form In Ayushman Bharat Comprehensive Primary Healthcare
Running Title: Kap Of Asha Workers Towards Cbac Form In Ayushman Bharat

Divya Juneja[1], Dr Greeshma Manoj[2]
[1]PhD, Department of Economics, Christ (Deemed to be University), Bengaluru, Karnataka.
[2]Adjunct Associate Professor, Department of Liberal Arts, Rochester Institute of Technology, Dubai Silicon Oasis, United Arab Emirates.

Cite this paper as: Divya Juneja ,Dr Greeshma Manoj,(2024). An Assessment Of Knowledge, Attitude And Practice Of Ashas Towards Community Based Assessment Checklist Form In Ayushman Bharat Comprehensive Primary Healthcare Running Title: Kap Of Asha Workers Towards Cbac Form In Ayushman Bharat .*Frontiers in Health Informatics*, *13 (5) 402-411*

ABSTRACT

Background: Screening for common non-communicable diseases (NCDs) is a key service provided by Ayushman Bharat Health and Wellness Centres. Community-Based Assessment Checklist (CBAC) is a crucialtool used byAccredited Social Health Activists (ASHA) for this screening.This studyassesses the Knowledge, Attitude, and Practice(KAP) of ASHA workers towards CBAC form and the factors associated with it.

Method:A systematic questionnaire was administered to document the KAP of 75 ASHAs in the Karnal district of Haryana. The association between KAP scores and demographic characteristics was analyzed using an independent sample t-test and ANOVA. Multivariate linear regression analysis identified factors associated with the KAP scores.

Results: The analysis shows that approximately 46.7% of ASHAs had inadequate knowledge, and 41.35were in the poor practicerange concerning the CBAC form. Multivariate linear regression showed that age and experience were the main factors influencing knowledge and practice. Education was not a significant factor.

Conclusion: The primary determinants of ASHA knowledge and practice were age and experience; education was not shown to be a major influence. Age, education, and experience all had minimal influence on attitude, suggesting that ASHAs had a positive outlook towardthe necessity of NCD screening.

Keywords

Non-communicable diseases, Primary health care,Accredited Social Health Activist, Community based Assessment Checklist form.

Conflict of Interest Statement

The author declares that there are no conflict of interests regarding the publication of this manuscript.

Introduction

During 1990 - 2015, Millennium Development Goals (MDGs) were prioritized in national and state healthprograms.High infant and maternal mortality rates demanded paramount attention and very little progress was made in comprehensive primary health care (CPHC).

However, in December 2014, a task force was established for the implementation of CPHC which aimed to addressa range of issues like communicable and non-communicable diseases, health promotion, yoga, and rehabilitation. Based

upon its recommendation, the National Health Policy (NHP) in 2019 endorsed the establishment of Ayushman Bharat - Health & Wellness Centres (AB-HWCs) to deliver CPHC anda range of preventive, curative, palliative, and rehabilitative care.[1]

AB-HWCs have been directed to undertake a population-based NCD screening. This program seeks to screen all adults over 30 years of age for NCDs such as hypertension, diabetes, oral cancer, breast cancer, cervical cancer and refer to secondary and tertiary level care for thorough diagnosis, treatment, and management.[2]For execution of this screening program, Community Based Assessment Checklist (CBAC) is being used.[3] This form is filled by ASHA (Accredited Social Health Activist), a trained female community health activist designated to work as a connecting link between the community and the public health system.[4] CBAC identifies the lifestyle habits and risk factors associated with NCDs. By evaluating medical history and looking for early symptoms, it also aids in the early detection of NCDs[3].

However, ASHAs' attitude and level of understanding of CBAC iscrucial determinant factorof realizing CPHC. Therefore, exploration of their attitude and level of understanding of CBAC is a subject of great importance. Existing literature is deficient of any work done to assess KAP of ASHA towards CBAC in the identification of NCD under Ayushman Bharat. Therefore, this study was designed to explore the KAP statusof ASHAs working under AB-HWCs towardthe CBAC form.

Materials and Methods

Study Type & Study Design- Cross-sectional study.

Study Setting- Karnal district, located in the state of Haryana.

Sampling Technique- Multi stage sampling technique was used. Out of 8 blocks of Karnal district, 4 were randomly selected for the study. One PHC (Primary Health Centres) and its 5 HWCs were chosen per block. Accordingly, a total of 20 HWCs and all the ASHAs associated with those HWCs

Study Population- ASHA workers

Study duration- 3 months

Inclusion criteria- 1. ASHA workers of At least 6 months of experience 2. Aged 18 years and above, and 3. Willingness to provide informed consent to participate in the study.

Data Collection Strategy- A systematic questionnaire was used to document the knowledge, attitude, and practices of 75 ASHAs regarding the CBAC. Cronbach's alpha test was used to check the internal reliability of the questionnaire which came to be 0.77 indicating acceptable internal consistency.[5]

For assessing the knowledge and practice, the questionnaire had 23 questions regarding knowledge and seven questions relating to practices of risk assessment test, cancer screening, hypertension, diabetes, and tuberculosis. Scoring criteria included one pointfor a correct response and zero point foran incorrect response. The mean score of participants was calculated and the participants who scored more than mean score were considered "good" in that particular parameter as opposed to 'poor' who scored less than the mean score.The mean knowledge score was determined to be 19.0 and the mean practice score was 3.69.

The attitude was assessed through eight questions using 5-point Likert Scale with responses ranging from "strongly disagree" (scored 1) to "strongly agree" (scored 5). The highest possible score for each respondent was 40, and the minimum score was 5. These questions aimed to evaluate

The respondents' perspectives and feelings while communicating or counseling the patients diagnosed with NCDs.

Ethical issues and informed consent

The study received ethical committee approval from the Christ (Deemed to be University), Bengaluru, under reference number CU: RCEC/00415/05/22, dated 02/05/2022. After assurances of the data's confidentiality and anonymity, informed consent was obtained from each respondent.

Data analysis

The data were analyzed using STATA Software version 17. The frequencies of responses to knowledge, attitude, and practice were assessed using descriptive statistics. The association between KAP scores and demographic characteristics was analyzed using Independent sample t-test and one-way analysis of variance (ANOVA). A multivariate linear regression analysis was done to find out factors associated with the KAP scores. The model used to characterize the factors related to ASHA workers' KAP is described as follows:

$Y= \alpha+\beta_1X_1+ \beta_2X_2+ \beta_3X_3$

where Y is the dependent variable (knowledge. Attitude and practice), and X_1, X_2, and X_3 are the independent variables (age, experience, and education level).

To evaluate the correlation between knowledge, attitude and practice related parameters, Spearman's rank correlation coefficient was used. The statistical significance level was selected at $p<0.01$ (two sides).

Results

Majority of the ASHAs in the current study were in 30-49 years' age group and had more than 9 years of experience. The educational status of the respondents shows a highly skewed distribution towards high school degrees-approximately 82.67 percent of the workers were having high school degrees, followed by College/University degrees (14.67%) and only 2.67 percent were post graduated.

Assessment of Knowledge towards the CBAC Form

Table 1 describes the knowledge of ASHAs regarding CBAC. The mean knowledge score was estimated to be 19.06. Out of 75 ASHA workers, 35(46.7%) had poor knowledge whereas 40 (53.3%) showed adequate knowledge of CBAC form. Most of the participants in the study were aware of the effects of smoking, drinking, and risk factors associated with NCD. However, 38 percent of the respondents were not aware of the score of risk assessment test. Of the respondents, 88 percent were aware of the signs and symptoms of oral and breast cancer, but only 63 percent were aware of the signs and symptoms of cervical cancer.

Table 1- Responses to Knowledge towards CBAC form

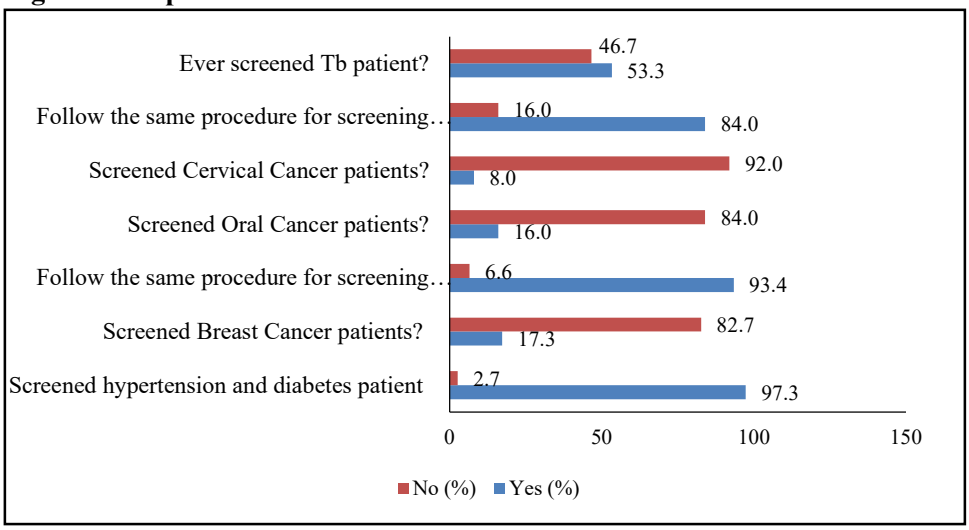
Statements	N%	
	Correct Response	Incorrect Response
What is the effect of smoking bidi/ Cigarette?	63 (84.00)	12 (16.00)
What is the effect of smokeless tobacco like gutkha, Khaini?	56 (74.67)	19 (25.33)
What is the effect of drinking excessive alcohol?	67 (89.33)	8 (10.67)
Why one should exercise 150 min in a week?	74 (98.67)	1 (1.33)
Why family history of high BP, diabetes, heart disease is important?	69 (92.00)	6 (8.00)
Risk factors associated with NCDs	67 (89.33)	8 (10.67)
What does score 4 of Risk assessment test indicate?	46 (61.33)	29 (38.67)
What you do if the score is equal or more than 4?	51 (68.00)	24 (32.00)
The age of beneficiary for hypertension and Diabetes screening	72 (96.00)	3 (4.00)
When and how should BP be checked?	70 (93.33)	5 (6.67)
When and how should blood sugar be checked?	63 (84.00)	12 (16.00)
The range of Normal BP level	62 (82.67)	13 (17.33)
The Normal sugar level	62 (82.67)	13 (17.33)
What are the sign and symptoms of Diabetic Neuropathy?	48 (64.00)	27 (36.00)

Method of screening used for breast cancer	63 (84.00)	12 (16.00)
Method of screening used for Oral cancer	59 (78.67)	16 (21.33)
Method of screening used for Cervical cancer	47 (62.67)	28 (37.33)
What are the sign and symptoms of Oral Cancer?	66 (88.00)	9 (12.00)
What are the sign and symptoms of Breast Cancer?	65 (86.67)	10 (13.33)
What are the sign and symptoms of Cervical Cancer?	50 (66.67)	25 (33.33)
What does shortness of breath, coughing, blood in sputum indicate	69 (92.00)	6 (8.00)
How does tuberculosis spread from one person to another?	68 (90.67)	7 (9.33)
Can tuberculosis be cured?	71 (94.67)	4 (5.33)

Assessment of Practice towards the CBAC Form

Figure 1 depicts the assessment of practice towards CBAC. The mean value of practice was 3.69. 41.3 percent ASHA workers were within the bad practice range, i.e. had score <3.69, whereas 58.67 percent showed good practice towards CBAC form. Whereas as high as 97 percent ASHAs had routinely been screening the population for hypertension and diabetes following the recommended procedure, the same was not true for screening of cancer.92 percentASHAshad never screened the public for cervical cancer and83 percent had never screened for breast and oral cancer.

Figure 1:Responses to Practice towards CBAC form



Assessment of Attitude towards the CBAC Form

Table 2represents the attitude of ASHA workers regardingthe CBAC. The attitude was assessed using 5-point Likert Scale with responses fromstrongly disagree (scored 1), disagree (scored 2), neutral (scored 3), agree (scored 4), and strongly agree (scored 5). The highest score expected was 40, and the minimum score was 5 for each respondent. In the survey, the ASHA workers' attitude score was in the range of 37-40, which indicates a positive and optimistic attitude towards the CBAC form. 100 percent of the respondents concurred that screening of cancer can lead to more effective cancer treatment. 85 percent of them were open to communicating with the patient of TB. 97.33 percent of respondents were of the opinion that cancer patients should be given adequate treatment.

Table 2- Responses to Attitude towards CBAC form

	N(%)				
Statement	**Strongly disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly agree**
It is important to consult a doctor if the member of your family is diagnosed with TB.	2 (2.67)	1 (1.33)	0	4 (5.33)	68 (90.6)
There is no fear in communicating with the patient of TB	3 (4.00)	4 (5.33)	1 (1.33)	3 (4.00)	64 (85.33)
There is no fear in communicating with the patient of BP, Sugar, Cancer	1 (1.33)	0	0	2 (2.67)	72 (96.00)
It is not embarrassing to talk to family/friends about symptoms of breast/cervical cancer	1 (1.33)	0	0	0	74 (98.6)
Cancer patients should be given expensive treatment as the survival rate is less.	0	0	2 (2.67)	0	73 (97.33)
Screening of Cancer can help in early detection and better treatment	0	0	0	0	75 (100.00)
It is beneficial to have early screening of breast/ Cervical Cancer	0	0	0	3 (4.00)	72 (96.00)
Screening of cancer will cause no harm to patient?	0	0	0	2 (2.67)	73 (97.33)

Table 3- Comparison of Social and Demographic Characteristics and mean KAP score

Correlation between Knowledge, Attitude, and Practice

Spearman Rank Correlation was used to check the relationship between three independent variables: knowledge, attitude, and practice. There exists a positive linear correlation between knowledge and practice ($r=0.67$, $p<0.01$). It indicates that practice of the ASHA workers is the outcome of their knowledge.[6] However, the attitude of the ASHAs was independent of their knowledge ($r=-0.03$, $p=0.78$) and practice ($r=-0.02$, $p=0.83$), indicating no significant correlation between these variables.

Demographic Characteristics and Mean KAP scores

The ANOVA (Analysis of Variance) shows the association of demographic characteristics and mean KAP scores as given in Table 3. For all age groups and levels of experience, the knowledge

and practice scores were statistically significant at 1 percent level, indicating that age group and degree of experience are the main determinants of ASHA's knowledge and practice. Education leveldidn't have a significant association with knowledge and practice score at 1 percent level, indicating that education was not a significant determinant for the effective performance of the

Variable	N	%	Knowledge Score			Practice Score			Attitude Score	
			Mean	SD	P	Mean	SD	P	Mean	SD
AGE										
18-29	8	10.67	15.62	1.92	<0.001	3.37	0.51	<0.001	38.37	2.38
30-39	34	45.33	17.88	2.55		3.44	0.82		39.14	1.9
40-49	30	40.33	20.97	1.51		3.97	0.71		39.47	1.25
50-59	3	4	22.67	0.57		4.67	0.57		38.33	2.08
EXPERIENCE										
1-4	10	13.33	14.6	2.31	<0.001	2.9	0.56	<0.001	39.2	1.47
5-8	8	10.67	17.37	1.99		3.6	0.74		39.62	1.06
9-12	27	36	18.59	1.9		3.7	0.66		38.81	2.13
13-16	30	40	21.43	1.04		3.97	0.85		39.33	1.58
EDUCATION										
High school or below	62	82.67	19.41	2.71	0.034	3.7	0.79	0.920	39.12	1.79
College/University degree	11	14.67	17.72	3.03		3.63	0.92		39.27	1.61
Postgraduate degree	2	2.67	15.5	2.12		3.5	0.7		39.5	0.7

ASHA workers. The research also revealed that the attitude scores did not differ significantly by age, experience, or education.

Factors influencing the KAP of ASHA workers towards CBAC form.

Table 4 depicts the result of the multivariate linear regression, which highlights the different factors that influence the knowledge, attitude, and practice of ASHA workers towards the CBAC form. Controlling the other variables in the model, the knowledge of ASHA workers in 30-39, 40-49, and 50-59 age groups was associated with average increase in knowledge score by 1.52, 3.08, and 4.20 units as compared to the reference group 18-29. The relationship was statistically significant at 1 percent level. In practice parameter, the regression coefficient of practice proved to be significant at 1 percent for all the age groups. 50-59 age group showed maximum increase of practice score by an average of 2.23 units as compared to the reference group.On the contrary, the regression coefficient of attitude proved to be insignificant for all the age groups.This leads us to the inferencethat age group is positively correlated with knowledge and practice score and plays a significant role in defining the knowledge and practice score of ASHA workers.

The experience of 5-8, 9-12, and 13-16 years wasassociated with average increase in knowledge score by 1.73, 2.99, and 4.66 units as compared to the reference group of 1-4 years.Among them, the experience of 13-16 years was associated with highest average rise in knowledge score.Similarly, ASHA employees with 13-16 years of experience showed anincrease in the practice score by an average of 1.45 units at 1 percent level of significance, demonstrating that more experience is associated with better performance.However, attitude did not appear to be influenced by age and experience. Also, level of education didn't affect any of the three parameters of KAP score.

Table 4: **Results of Multiple Linear Regression of KAP related factor towards CBAC form**

Variable	β (95%CI)	Standard Error	t	P
Knowledge				
Age				
18-29	Reference			
30-39	1.529 (0.330-2.729)	0.6	2.55	<0.001
40-49	3.089 (1.714-4.465)	0.688	4.49	<0.001
50-59	4.201 (1.960-4.442)	1.122	3.74	<0.001
Experience				
1-4	Reference			
5-8	1.734 (0.240-3.227)	0.748	2.32	0.024
9-12	2.991 (1.793-4.189)	0.6	4.99	<0.001
13-16	4.669 (3.271-6.067	0.7	6.67	<0.001
Education				
High/ Secondary degree	Reference			
College/University degree	-0.561 (-1.594-0.470)	0.517	1.09	0.281
Postgraduate degree	-2.288 (-4.153-0.063)	1.114	2.05	0.044
Practice				
Age				
18-29	Reference			
30-39	0.790 (0.266-1.315)	0.262	3.01	<0.001
40-49	1.016 (0.415-1.617)	0.301	3.37	<0.001
50-59	2.236 (1.256-3.215)	0.49	4.56	<0.001
Experience				
1-4	Reference			
5-8	0.832 (0.179-1.486)	0.327	2.55	<0.001
9-12	0.954 (0.430-1.478)	0.262	3.64	<0.001
13-16	1.455 (0.844-2.066)	0.306	4.75	<0.001
Education				
High/ Secondary degree	Reference			
College/University degree	0.070 (-0.381-0.521)	0.226	0.31	0.757
Postgraduate degree	0.334 (1.715-2.854)	0.487	0.69	0.495
Attitude				
Age				
18-29	Reference			
30-39	0.747 (-0.693-2.189)	0.722	1.04	0.304
40-49	1.074 (-0.578-2.726)	0.877	1.3	0.199
50-59	-0.162 (-2.855-2.529)	1.348	0.12	0.904
Experience				
1-4	Reference			
5-8	0.283 (-1.511-2.078)	0.899	0.32	0.754

9-12	-0.532 (-1.972-0.907)	0.721	0.74	0.463
13-16	-0.142 (-1.822-1.537)	0.841	0.17	0.866
Education				
High/ Secondary degree	Reference			
College/University degree	0.159 (-1.081-1.399)	0.621	0.26	0.799
Postgraduate degree	0.269 (-2.404-2.942)	1.339	0.2	0.841

Discussion

Screening of NCDs is crucial to meet the goal of comprehensive primary health care for all. ASHA workers, critical link between healthcare delivery system and community, have been entrusted to disseminate information to the community on the determinants of health, details of health services and the need for timely intervention for health issues.[7,8]Meeting the goal of CPHC is therefore, contingent upon the robustness of their knowledge and willingness to engage and disseminate details to the community.

Present survey was carried out in Karnal district of Haryana state. Haryana was among the first states to launch the scheme in August 2018. In approximately two years, the state verified 22.46 lakh additional beneficiaries of the scheme and added 545 empaneled hospitals.[9] Haryana is the first state to link Ayushman cards with Adhar cards to maintain complete transparency.[10] Karnal, one of the highest-performing district of Haryana in terms of implementing the scheme, was chosen for the study.

The findings of the current survey showed that only about half of the ASHAs (53.3%) had adequate knowledge about CBAC form, while rest half (46.7%) were within poor knowledge range. However, the categorization between good and bad was based on the mean knowledge score, which was as high as 19.06 against a maximum possible knowledge score of 23. This indicates that in general, the ASHAs had a high knowledge score, which can be attributed to the numerous trainings provided to them by the government on timely basis and also to the closely knitted structure of Indian villages where ASHAs have a chance to continuously learn from their experienced colleagues. It was also found that the knowledge score was more for questions based on prevalent health issues like diabetes, hypertension, alcohol, smoking tobacco etc, but less for questions like cervical cancer and oral cancer. This indicates that the main factor contributing to their knowledge was experience, and not previous education, as has also been supported by the data obtained from this survey.

Similarly, the main determinant of high practice scope of ASHAs were age and years of experience; and no major difference in practice was observed when compared with the level of education. Hence, our study supports that ASHA, with a secondary or high level of education, if provided proper training and good environment to learn from experience, are capable to successfully accomplish the difficult duties of healthcare worker assigned to them.[11]It was also reported that the questions with lowest practice scores were those reflected to the screening of breast and cervical cancer. The cause for poor score in these, as mentioned by most of the ASHAs, was the inability to obtain consent for cancer screening examination from public, and not their own hesitation in performing the examination, as was highlighted by the attitude score in the survey. The ASHA respondents of current survey tended to have a good attitude and were quite optimistic about the significance of NCD screening, regardless of their age, level of experience, or education.

59 percent of the ASHA workers were in good practice range. But the reason of less practice score of the remaining ASHAs may due to be the population overburden. From the survey, it was found that ASHAs were more likely to serve a larger population than the recommended norm of 1000. This has been reported earlier also that approximately one-third of the ASHA workers were overburdened by a population which was the main cause of their low performance.[6,12]

A positive attitude, as depicted by us and others of ASHA is an invaluable asset for a densely populated country that can be utilized to its full potential using more training, supervision, adequate resources, and remuneration. [13,14]

Conclusion

Overall the study concludes that ASHAs have good knowledge, practice, and attitude regarding the CBAC form. The age and experience were the main factors in determining the knowledge and practice of ASHAs, however, education was not found to be a significant factor. Age, education, or experience had negligible effects on attitude, indicating that ASHAs had a positive outlook towards the need of NCD screening. In the future, this study may be expanded to include more sites and communities, as well as more targeted approaches and techniques to obtain knowledge from the participants.

Authors Contribution

All authors have contributed equally

Limitation of the study

Small Sample size of the study

Relevance of the study

The study is relevant in the current era, as it underscores the critical role of ASHA workers in early detection and management of non-communicable diseases, which are increasingly prevalent and pose significant public health challenges.

Financial Support and Sponsorship

ICSSR (Indian Council of Social Science Research)

Conflict of Interest

There are no conflict of interest

Acknowledgement

I 'Divya Juneja' is a recipient of 'Indian Council of Social Science Research Doctoral' (ICSSR) Fellowship. My article is largely an outcome of my doctoral work sponsored by ICSSR. However, the responsibility for the facts stated, opinions expressed and the conclusions drawn is entirely of mine.

References

1. Ministry of Health and Family Welfare. National Health Mission. Ayushman Bharat Health and Wellness Centres; 2021.
2. Ministry of Health and Family Welfare. Ayushman Bharat Comprehensive Primary Healthcare Population based NCD Screening Program [Internet]. 2019 [cited 2023 Feb 8]. Available from: /https://nhm.gov.in/New_Updates_2018/Presentation/Goa_19th_20th_August_2019/CPHC_NCD_Aug_19.pdf.
3. National TB Elimination Program. Community-based Assessment Checklist (CBAC) Form for early detection of NCDs and Tuberculosis [Internet]. [cited 2023 Apr 19]. Available from: https://ntep.in/node/4746/CP-community-based-assessment-checklist-cbac-form-early-detection-ncds-and-tuberculosis
4. National Health Mission. About Accredited Social Health Activist (ASHA) [Internet]. [cited 2023 Apr 19]. Available from: https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=1161&lid=649
5. Taber KS. The use of Cronbach's alpha when developing and reporting research instruments in science education. Research in science education. 2018 Dec;48:1273-96.

6. Mondal N, Murhekar MV. Factors associated with low performance of accredited social health activist (ASHA) regarding maternal care in Howrah district, West Bengal, 2015– '16: an unmatched case control study. Clinical Epidemiology and Global Health. 2018 Mar 1;6(1):21-8.
7. Press Information Bureau. Ministry of Health and Family Welfare- ASHA workers [Internet]. 2020 Mar 13 [cited 2023 Jun 6].
Available from: https://pib.gov.in/Pressreleaseshare.aspx?PRID=1606212
8. Mahyavanshi DK, Patel MG, Kartha G, Purani SK, Nagar SS. A cross sectional study of the knowledge, attitude and practice of ASHA workers regarding child health (under five years of age) in Surendranagar district infection. 2011;72:55-38.
9. Haryana Ayushman Bharat paid claim of Rs 169.06 crore in last 2 yrs: CEO. The Indian Express [Internet]. 2022 Sep 23 [cited 2023 Mar 12].
Available from: https://indianexpress.com/article/cities/chandigarh/haryana-ayushman-bharat-paid-claim-of-rs-169-06-crore-in-last-2-yrs-ceo-6608065/
10. Haryana CM launches scheme to expand Ayushman Bharat benefits to 28 lakh families. Daily Pioneer [Internet]. 2022 Nov 22 [cited 2023 Jan 24]. Available from: https://www.livemint.com/news/india/haryana-expansion-of-ayushman-bharat-scheme-to-now-cover-28-lakh-families-11668523502239.html
11. Khanna D, Khargekar N, Budukh A. Knowledge, attitude, and practice about cervical cancer and its screening among community healthcare workers of Varanasi district, Uttar Pradesh, India. Journal of Family Medicine and Primary Care. 2019 May;8(5):1715.
12. Kohli C, Kishore J, Sharma S, Nayak H. Knowledge and practice of Accredited Social Health Activists for maternal healthcare delivery in Delhi. Journal of family medicine and primary care. 2015 Jul;4(3):359.
13. Inamdar V, Jain P. ASHA Workers and the Burden of Unpaid Care Work. The Bastion [Internet]. 2021 Jan 5 [cited 2022 Dec 23]. Available from: https://thebastion.co.in/covid-19/asha-workers-and-the-burden-of-unpaid-care-work/
14. ul Haq N, Hassali MA, Shafie AA, Saleem F, Farooqui M, Haseeb A, Aljadhey H. A cross- sectional assessment of knowledge, attitude and practice among Hepatitis-B patients in Quetta, Pakistan. BMC Public Health. 2013 Dec;13:1-9