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Assessment of oral health literacy among backbone of primary health care workers: A descriptive cross-sectional study

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Abstract
Background: Health is wealth if maintained accurately. Oral health is of prime concern as it can save from many diseases as well as not maintaining oral health can also lead to various diseases. Primary health care workers like ASHA and Anganwadi act as a bridge between Doctors and the general public. Thus, assessment of oral health literacy is vital among primary health care workers.
Aim: To improve the oral health literacy level of primary health care workers of Udaipur city, India, Rajasthan.
Materials and Method: A Descriptive cross-sectional study was conducted among ASHA and Anganwadi workers of Udaipur city for a duration of 3 months. Oral health literacy assessment was done using the health literacy in Dentistry scale (HeLD). Statistical analysis included Descriptive statistics, One way ANOVA with a 95% confidence interval and 5% significance level.
Results: All the study participants were having High oral health literacy as per the obtained scores with no significant difference between sociodemographic variables and the Oral health literacy of study participants.
Conclusion: The present study concludes the adequate amount of oral health literacy among ASHA and Anganwadi workers of Udaipur city.

Keywords: Oral health literacy, ASHA, Anganwadi workers, HeLD scale

Introduction

Health literacy has been found to be a strong predictor of an individual's" health, health behaviour and health outcomes. World Health Organization's (WHO"s) 7th Global Conference on Health Promotion also lists"s health literacy as one of the five key tracks for promoting health [1].

WHO defines health literacy as the achievement of a level of knowledge, personal skills and confidence to take action to improve personal and community health by changing personal lifestyles and living conditions? Thus, health literacy means more than being able to read pamphlets and make appointments. By improving people's access to health information, and their capacity to use it effectively, health literacy is critical to empowerment [2].

Tools to measure oral health literacy

There are no standard tools that are universally accepted to calculate and evaluate the oral health worldwide. To date, there are around twenty-two oral health literacy tools available for evaluating oral health literacy. The widely used tools are as follows [3].

ICDS is the world's largest community-based outreach program which offers a package of health, nutrition and education services to children below six years and pregnant and nursing mothers. The Integrated Child Development Services scheme (ICDS) was started in Karnataka on 2nd October 1975 with a pilot project at T. Narasipura in Mysore District with just 100 Anganwadi Centers [4].

The Integrated Child Development Schemes are a collaborative effort of the central and state government. It is implemented through a platform of the Anganwadi centre at the village/ habitation level.

Abbreviation	Name of tool	Year	Authors	Type of tool
REALD-99	Rapid Estimate of Adult Literacy in Dentistry	2007	Richman et al.	99 item word recognition
REALD-30	Rapid Estimate of Adult Literacy in Dentistry −30	2007	Lee et al.	30 item word recognition common dental words
ToFHLiD	Test of Functional Health Literacy in Dentistry	2007	Gong et al.	Reading comprehension and numeracy 68 item reading comprehension and 12 item numeracy
OHLI	Oral Health Literacy Instrument	2009	Sabbahi et al.	Reading comprehension and numeracy
REALM-D	Rapid Estimate of Adult Literacy in Medicine and Dentistry	2010	Atchinson et al.	84 item word recognition
CMOHK	Comprehensive Measure of Oral Health Knowledge	2010	Macek et al.	44 questions conceptual knowledge
BHLOHKP	Baltimore Health Literacy and Oral Health Knowledge Project survey	2011	Macek et al.	44 item questionnaire conceptual knowledge across 4 domains
HKREALD-30	Hong Kong Rapid Estimate of Adult Literacy in Dentistry	2012 2013	Wong et al. Bridges et al.	Adaptation of the REALD-99 translated to Chinese and shortened to the REALD-30
OHLA-S	Oral Health Literacy Assessment-Spanish	2012	Lee et al.	Developed using the REALD-30 word recognition and comprehension
OHLA-E	Oral Health Literacy Assessment-English	2012	Lee et al.	Developed using the REALD-30 word recognition and comprehension
REALMD-20	Rapid Estimate of Adult Literacy in Dentistry-20	2013	Gironda et al.	20 item word recognition
HKOHLAT-P	Hong Kong Oral Health Literacy Assessment Task for Paediatric Dentistry	2013 2013	Wong et al. Bridges et al.	Mainly literacy and numeracy tasks
OHL-AQ	Oral Health Literacy Adults Questionnaire	2013	Sistani et al.	17 items in 4 sections, reading comprehension, numeracy, literacy and decision making
HeLD	Health Literacy in Dentistry	2013	Jones et al.	Modelled on the HeLMS

Empowering ASHA and Anganwadi workers in oral health, and providing basic oral health awareness to the mothers through them is a feasible model for a country like India; where oral health is not a priority in primary health care as yet [5].

Functions performed in an Anganwadi centre under the ICDS scheme are as follows [6]:

Supplementary nutrition, Immunization, Health check-ups, Referral Service, PSE, Nutrition, health and education

Asha-accredited social health activist
They will mobilize the community and facilitate them in accessing health and health-related services available at the Anganwadi/sub-centre/primary health centres.

- An accredited social health activist (ASHA) is a community health worker instituted by the government of India's Ministry of Health and Family Welfare (MoHFW) as a part of the National Rural Health Mission (NRHM). The mission began in 2005; full implementation was targeted for 2012. Once fully implemented, there is to be "an ASHA in every village" in India [7].
- The national guidelines stipulate that ASHAs are selected from the community they serve and receive 23 days of training in the first year and 12 days of training every subsequent year thereafter. The training curriculum aims to impart the knowledge, skills and attitudes required of an ASHA to effectively perform their roles and responsibilities [8].
- She helps to promote referrals for universal immunization, escort clients for RCH services, and construct household toilets and other health care delivery programs. Each ASHA has been provided with a 'village health index register" to maintain records [8].

Since 2013, when the National Urban Health Mission was launched, ASHA are being selected in urban areas as well. Several evaluations and successive Assessing of the knowledge, of Anganwadi and ASHA workers, is the first step towards planning an oral health education program in order to strengthen their skills so that they can efficiently function as oral health guides.

Out of all these available scales of assessing oral health knowledge, HeLD-29 was taken into consideration as the 7 domains present under this scale cover all the details of maintaining proper oral health. Thus, the present study was undertaken to assess oral health literacy among ASHA and Anganwadi workers from the city of lakes, Rajasthan-India

Methodology
- Principal investigator visited the office of the head of primary health care workers of Udaipur city and collected the list of ASHA and Anganwadi workers. Accordingly, a meeting was scheduled with Mukhiya Sevika and all health workers.
- In the meeting, all the details of the study were explained and scheduled the visiting days of the principal investigator for data collection.
- During data collection, the principal investigator distributed the questionnaire to the study participants. the participants were asked to place a right tick beside the selected questions. The investigator was consistently available at the venue in order to clear any query in understanding the questions.
- Multiple follow-up visits were done to cover up the maximum number of ASHA and Anganwadi workers. Sufficient time was given to fill up the questionnaire as well as proper clarification was done by citing various examples related to particular questions to make them understand more clearly.

Statistical analysis
- Domain scores are the un-weighted averages of item scores and a total score is the un-weighted average of the domain scores.
- Data entry will be done in an Excel sheet and further carried out by a descriptive analysis using SPSS 20 software.
- Descriptive statistics were created by computing the

- mean of the coded response for each item.
- In addition, a threshold of 'with little difficulty', 'with some difficulty', 'very difficult' or 'unable to do' was used to dichotomize responses, thereby indicating those with some experience of difficulty in oral health literacy-related functions.
- Test applied: One-way ANOVA.

Study design, study population, study area and study duration
A descriptive cross-sectional study was conducted among the Anganwadi and ASHA health care workers of Udaipur city for a duration of 4 Months.

Informed consent
All the subjects who agreed to participate in the study were requested to give written informed consent prior to the beginning of the study.

Sample size
As per the data received from the Anganwadi authorities, there were a total of 400 Anganwadi and ASHA workers in Udaipur city, out of which 330 were taken for the study based on the inclusion and exclusion criteria.

Inclusion criteria
- Anganwadi and ASHA health care workers of Udaipur city.

Exclusion criteria
- Health care workers other than ASHA and Anganwadi.
- Health care workers who are not willing to participate.

Questionnaire
A structured questionnaire was developed consisting of-
1. First part related to sociodemographic details including - name, age, household members, educational status and family income
2. Second part consisted of questions related to oral health literacy which was measured by HELD-29.

The Health Literacy in Dentistry scale (HeLD-29) consists of 29 items that cover seven oral health literacy domains: Communication, Understanding, Receptivity, Utilization, Support, Finance and access.

Results
Table 1 shows sociodemographic details of study participants.

Majority of the subjects were aged between 30 – 39 years [n=126 (8.2%)], whereas maximum study participants have a background till graduation [n=114 (34.5%)]. The maximum number of healthcare workers have an income between Rs. 2260–3765 [n=138(41.8%)]. The majority of study participants were Anganwadi health care workers [n=231(70%)].

Table 2 shows an assessment of the mean score of domains of oral health literacy of the HeLD-29 questionnaire as per sociodemographic details. Based on the obtained p value there is no significant difference between sociodemographic variables with respect to all 7 domains of the oral health literacy.

Table 3 shows assessment of total oral health literacy score as per various sociodemographic details. Based on the p value there is no significant difference in the oral health literacy score between the age groups, education level of study participants and income of the individual.

Table 4 shows the distribution of oral health literacy scores among study participants. Scores were distributed based on the median value obtained from the questionnaire. All the study participants were having High oral health literacy as per the obtained scores.

Table 1: Distribution of sociodemographic details among the study participants.

Variables	Frequency	Percentage
Age		
20-29	38	11.5
30-39	126	38.2
40-49	106	32.1
50-59	60	18.2
Education level		
10th standard	96	29.1
12th standard	108	32.7
Graduate	114	34.5
Post graduate	12	3.6
Per-capita income		
>7533	30	9.1
3766-7532	102	30.9
2260-3765	138	41.8
1130-2259	60	18.2
<1129	0	0
Health workers		
Anganwadi	231	70
ASHA	99	30
Total	330	100

Table 2: Comparative assessment of mean score of domains of oral health literacy of HELD-29 questionnaire according to sociodemographic details

Oral health literacy domains	Sociodemographic variables											
	Age				Education				Socioeconomic status			
	20-29 yrs	30-39 Yrs	40-49 yrs	50-59 Yrs	10th Std.	12 Std.	Graduation	PG	I	II	III	IV
Communications	33±1.26	33.51±1.55	33.82±1.43	33.3±1.73	33.35±1.50	33.75±1.58	33.53±1.51	33.91±0.99	33.73±1.46	33.50±1.50	33.57±1.52	33.56±1.59
p-value	0.16				0.25				0.9			
Understanding	14.94±0.32	14.88±0.45	14.92±0.38	14.93±0.36	14.91±0.40	14.88±0.46	14.94±0.32	14.833±0.57	14.93±0.36	14.92±0.39	14.92±0.37	14.86±0.50
p-value	0.81				0.64				0.78			
Receptivity	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0	25±0.0
p-value	_				_				_			
Utilization	19.89±0.50	19.84±0.61	19.77±0.72	19.8 ±0.68	19.84±0.62	19.76±0.71	19.85±0.57	19.66±0.88	19.86±0.57	19.80±0.67	19.82±0.63	19.8±0.68
p-value	0.59				0.59				0.96			
Support	14.84±0.67	15.85±0.64	14.91±0.49	14.85±0.65	14.90±0.52	14.80±0.74	14.92±0.48	14.75±0.86	15±0	14.82±0.70	14.89±0.56	14.85±0.65
p-value	0.85				0.41				0.53			
Economic barriers	13.89±2.06	13.73±1.95	13.87±1.86	13.55±1.92	13.84±1.78	13.56±2.16	13.89±1.77	13.66±2.26	14.0±2.10	13.63±1.93	13.90±1.83	13.53±2.04
p-value	0.72				0.60				0.47			
Accessibility	19.65±1.07	19.35±1.44	19.30±1.53	19.03±1.72	19.29±1.52	19.47±1.36	19.15±1.58	19.58±1.44	19.66±1.09	19.50±1.28	19.01±1.73	19.50±1.29
p-value	0.23				0.41				0.019			

Test applied- One-way ANOVA; p-value ≤0.05 details.

Table 3: Comparative assessment of total Oral Health Literacy score according to various sociodemographic details

Sociodemographic variables	Total OHL	p-value
Age (in years)		
20-29	141±3.43	
30-39	141.19±1.9	0.25
40-49	141.61±3.58	
50-59	140.48±4.23	
Education		
10th std	141.15±3.73	
12th std	141.25±3.85	0.98
Graduation	141.31±3.57	
PG	141.41±3.98	
SES(INR)		
>7533	142.2±3.03	
3766-7532	141.196±3.75	0.53
2260-3765	141.144±3.92	
1130-2259	141.11±3.44	

Test applied- One-way ANOVA; p-value ≤0.05

Table 4: Distribution of Oral Health Literacy scores among the study participants

Oral health literacy scores	Frequency (n)	Percentage (%)
High OHL (88-145)	330	100
Low OHL (29-87)	0	0
Total	330	100

Discussion

ASHA and Anganwadi workers with appropriate knowledge of oral health problems could bring a positive change in the oral health status of an urban as well as rural population, as these workers belong to the same community they serve, and people trust them more easily.

The present study was carried out among 330 ASHA and Anganwadi workers. The number of participants was almost similar to the studies conducted by K.M Shwetha (2016) [9] and Sequeira et al. (2000) [10].

In the present study maximum (38%) of the participants were in the age group of 30-39 years which was similar to the findings of Ghanshyam et al. (2014) [11] and Muthyala Pavana Sandhya (2014) [12]. The majority of participants have their education level till Graduation which was in accordance with the study done by Ramandeep Singh Gambhir et al. (2016) [13].

In the present study, nearly half (42%) of the study participants were having per capita income under social class 3 modified BG Prasad's Social classification-2020 [14]. whereas in the study done by M.C Sandhyarani et al. (2013) [4] the monthly income of Anganwadi workers was more than 33%. This disparity of study results can be attributed to the fact that the present study includes both ASHA and Anganwadi workers and per capita income is calculated which can have fluctuations depending upon the number of family members whereas in a study done by M.C Sandhyarani et al. (2013) [4], al includes only Anganwadi workers and only monthly income of individual Anganwadi workers are taken into consideration.

In the present study, mean values were high in relation to all the domains and sociodemographic variables of the study participants. This might be due to the fact that study participants belong to the urban population where people get to socialize in various ways and being ground-level healthcare workers, study participants meet various people in different communities, from different fraternities, which makes it easy for them to gain some or the other knowledge based on health by coming across various kinds of problems faced by an individual of the community, and makes it more easier for them to gain knowledgeable ideas even after having basic education qualification.

As the mean values were high with all the responses of domains included in the questionnaire, high oral health literacy scores were obtained in comparison with the sociodemographic details including age, education level and socioeconomic status of the study participants.

In the study done by Dr M.S. Gomez et al. (2015) [15] Oral health literacy was found to be moderate whereas, in the present study, oral health literacy is high. This disparity in study results can be attributed to the fact that the target population of the present study includes both ASHA and anganwadi workers whereas in the study done by Dr M.S. Gomez et al. (2015) [15] study participants were patients attending dental college and hospital.

Conclusion

The present study concludes the adequate amount of oral health literacy among ASHA and Anganwadi workers.

There was not any significant correlation between oral health literacy and the socio-demographic details of the study participants. This might be due to the exposure among the urban population of study participants and attending the health care centre on a regular basis which makes them aware of the responsibilities and also helps in gaining more knowledge regarding oral health through various oral health programmes organized at the health care centre by oral health care professionals.

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