

# How to make services adolescent friendly? A cross-sectional study on awareness of adolescent friendly health clinics in Central India

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## ABSTRACT

**Background:** India's flagship program on adolescent health - Rashtriya Kishor Swasthya Karyakram (RKSK) emphasises the importance of strengthening Adolescent Friendly Health Clinics (AFHCs) under its facility-based approach for improving the health of adolescents. AFHCs are intended to provide targeted intervention in six domains - nutrition, injuries & violence (including gender-based violence), mental health, sexual & reproductive health, substance abuse and noncommunicable diseases. **Objective:** The current study was conducted to assess the determinants of awareness and utilisation of AFHC services in districts with RKSK services in Madhya Pradesh. **Subjects:** In total, 1605 adolescents (both males and females) within the age group of 10-19 years were included in the study. **Methods:** Multistage stratified random sampling was employed to enrol participants from three districts of Madhya Pradesh, where AFHC services have been launched. **Results:** The mean age of the participants was  $15.07 \pm 2.32$  years. Only 153 (9.5%) adolescents were aware of AFHC services. On multivariate logistic regression, awareness of AFHC was seen to be associated with being aware of RKSK, being a part of the peer educator-led peer group, having had adolescent health days organised in the village and belonging from one of the financially better off districts. Utilisation rate of AFHC services was lower still - at 2.74%. **Conclusion:** Both awareness and utilisation of AFHC services remain very low among adolescents. There is a pressing need to focus on awareness generation campaigns - via mass media, but more importantly, through community health workers and peer educators - in order to sensitise target beneficiaries about the available services.

**Keywords:** Adolescent health, patient acceptance of health care, primary health care, young adult

## Introduction

India houses the largest number of adolescents in the world - at 253 million.<sup>[1]</sup> Adolescence is a phase of rapid physical, mental and psychological growth and development. Many diseases of adulthood have their origins in adolescence.<sup>[2,3]</sup> Consequently,

ensuring healthy and empowered adolescents is essential for ensuring India's continued social, economic and political growth. World Health Organization reaffirms that in order to ensure universal health coverage, existing health systems need to be transformed to more effectively respond to the needs of the adolescent.<sup>[4]</sup>

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The Rashtriya Kishor Swasthya Karyakram (RKSK) was launched across India in 2014 by the Government of India to respond to the particular health needs of adolescents by providing Adolescent Friendly Health Services. The programme operates

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through the coordinated efforts of a network of peer educators and Adolescent Friendly Health Clinics (AFHCs), selected in coordination with community health workers (CHWs) and leaders of the community. There are four peer educators (two boys and two girls) from each village of 1000 population.<sup>[5]</sup> Each peer educator – called *Saathiya* (translation: companion) – is expected to form a group of 15–20 adolescents and meet on a weekly basis. During these meetings – called the Kishor Samooh Saathiya Brigade (KSSB), they impart important fact-based information on various commonly encountered health issues in a sensitive and acceptable manner.<sup>[6]</sup> They also organise Adolescent Health Days – called Kishor Swasthya Melas (KSMs) in their respective villages once every quarterly in coordination with CHWs.<sup>[7]</sup> In addition, they form a vital link between their peers and AFHCs. AFHCs are intended to be the first point of contact between an adolescent beneficiary and the formal healthcare system. These clinics are established at the PHC level to provide interventional services in six domains – nutrition, injuries and violence (including gender-based violence), mental health, sexual and reproductive health, substance abuse and noncommunicable diseases.<sup>[8]</sup> Saathiyas in conjunction with AFHCs, therefore, form an important component of the “life cycle” approach taken for child and adolescent health.<sup>[9]</sup>

Madhya Pradesh was one of the first states in India where RKSK was rolled out with initial launch in 11 districts in 2014. It is also one of the poorest states in the country,<sup>[10,11]</sup> with one of the highest populations of adolescents – around 16 million<sup>[12]</sup> in the country. Programs like RKSK are therefore of special interest for both the beneficiaries – who can obtain affordable, accessible and curative healthcare services through AFHCs at a very low cost – and to the primary healthcare service provider – who can deliver preventive and curative healthcare services to a sensitive age group by utilising services of *Saathiyas*. Evidence from other settings has shown that poor awareness of AFHC services remains an important barrier to accessing these services.<sup>[13,14]</sup> However, there is very little data on awareness and utilisation of AFHC services and their determinants from Madhya Pradesh. Therefore, the current study was conducted to assess the determinants of awareness and utilisation of AFHC services in Madhya Pradesh.

## Materials and Methods

*Study design:* The presented information is a part of a larger study conducted to assess the operationalisation and impact of RKSK and AFHCs. Previously conducted studies on AFHC service awareness and utilisation elsewhere in India have shown that only 7.2% of adolescents are aware of AFHC services.<sup>[15]</sup> We, therefore, assumed the prevalence of AFHC service awareness to be 7.2%, with an absolute precision of 2%, to get a sample size of 642. A design effect of 2 was applied as the study employed multistage stratified random sampling, increasing the sample size to 1284. Anticipating a refusal rate of 20%, total sample size increased to 1541, rounded off to 1600. We, therefore, decided to enrol 1600 participants from three randomly selected districts

where RKSK had been implemented and an equal number of participants from three randomly selected districts where RKSK had not been implemented. Here, we present data from the three districts where RKSK has been implemented.

*Study setting:* We employed multistage stratified random sampling for enrolling participants in the study. In the first stage, 3 of the 11 districts in Madhya Pradesh where the RKSK services have been implemented were selected randomly. The three districts selected for the study – Jhabua, Satna and Shahdol – have tribal populations ranging from 80% (in Jhabua)<sup>[16]</sup> to around 15% (Satna).<sup>[17]</sup> Jhabua lies at the western edge of Madhya Pradesh, while both Satna and Shahdol lie to the east. From within each district, three blocks were selected at random in the next stage, bringing the total number of blocks selected for inclusion to nine.

The proportion of urban and rural population in each district was ascertained according to Census 2011 data. The number of rural and urban adolescents in the study were taken to be proportionate to the rural and urban populations of each of these districts. Accordingly, a list of villages and urban wards was procured for each of blocks. A total of seven villages and urban wards were selected from each of the blocks, which were treated as the primary sampling units (PSUs).

On the day of data collection, the data collection team reached the central point of the selected PSU and approached the first visible house in any random direction. Each household with at least one adolescent was considered to be a secondary sampling unit (SSU). Subsequently, the eligible candidate was invited to participate in the study. In case of more than one eligible candidate, the older one was invited to participate. In case the eligible candidate refused to participate, the interviewer moved on to the next SSU. Each eligible candidate was treated as a tertiary sampling unit.

Subsequent to data collection from the participant, the data collection team moved onto the next household to the immediate left of the previous one. We made sure to include only one adolescent from each household. In this way, 13 male and 13 female participants were enrolled in the study from each PSU. Data was collected over a period of 5 months – from November 2017 to March 2018.

The steps of multistage stratified random sampling have been explained in Figure 1.

*Study participants:* Adolescents (both males and females) within the age group of 10–19 years were included in the study. We excluded all adolescents who were enrolled as Saathiyas and those who refused consent.

For the purpose of our study, we designed a tool to collect information on sociodemographic characteristics, internet and media exposure, awareness and utilisation of AFHC services and indicators of nutrition and healthcare.

*Ethical considerations:* Ethics clearance was obtained from the Institutional Human Ethics Committee (IHEC), All India Institute of Medical Sciences, Bhopal (vide IHEC-LOP/2017/EF0069 for Project ID: EF0069) prior to initiation of the study. Written informed assent was obtained from all potential participants prior to enrolling them in the study. Written informed consent was also sought from the parents/guardian of every participant prior to enrolling them in the study.

*Statistics:* The data was collected on handheld mobile devices and uploaded real time to cloud-based servers, thereby automatically generating the master chart. At the end of data collection, the master chart was downloaded and cleaned prior to analysis. Data analysis was carried out using SPSS version 21.0 (for Windows). Means (with standard deviation) and frequencies were used to describe continuous data, while proportions were used to describe categorical data. Chi-square tests were used to carry out bivariate analysis. Multivariate logistic regression was carried out to zero-in on independent variables associated with awareness of AFHC services.

## Results

### Sample characteristics

A total of 1605 adolescents (10–19 years old) – 797 males and 808 females were enrolled via multistage stratified sampling from the three shortlisted districts of Jhabua, Shahdol and Satna. The mean age of the participants was  $15.07 \pm 2.32$  years. Mean age of males was  $15.20 \pm 2.35$  years and that of females was  $14.95 \pm 2.28$  years. There were more participants from the older adolescent age group (15–19 years: 60.1%) as compared to the young adolescent age group (10–14 years: 39.9%). Most of the participants (47.6%) were from Scheduled Tribes (STs), followed by Other Backward Castes (25.4%). A majority of the participants were Hindus (93.8%), followed by Gondis (4.0%). Most of the participants were from rural areas (79.6%); only a quarter (25.1%) had pucca dwellings. Even though almost 95% of the families of participants interviewed owned a mobile phone, only one-fourth (23.9%) of the participants had a personal

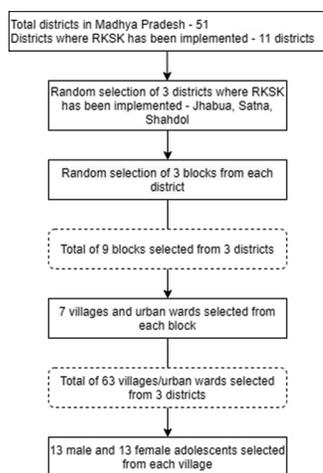
mobile phone. Most of the participants were middle to high school educated (71.6%). In total, 14.8% of the participants were found to be working and 1.9% of the participants had been married by the time of the interview. Detailed information on sociodemographic characteristics of the participants has been presented in Tables 1 and 2.

### Awareness and utilisation of AFHC services

Awareness of AFHC services was found to be extremely low among the adolescents. Only 153 (9.5%) adolescents were aware of AFHC services in the three districts, compared to awareness

**Table 1: Socio-demographic characteristics of participants (n=1605)**

Variable	n	%
District		
Jhabua	528	32.9
Shahdol	530	33.0
Satna	547	34.1
Location of the household		
Rural	1278	79.6
Urban	327	20.4
Type of dwelling		
Kaccha	782	48.7
Pakka	403	25.1
Semi-pakka	420	26.2
Caste category		
General	211	13.1
SC	223	13.9
ST	764	47.6
OBC	407	25.4
Religion		
Hindu	1505	93.8
Muslim	23	1.4
Gondi	65	4.0
Christian	9	0.6
Sikh	2	0.1
Jain	1	0.1
Socio-economic status		
BPL	1241	77.3
APL	364	22.7
Family structure		
Nuclear	1099	68.5
Non-nuclear	506	31.5
Marital status		
Married	31	98.1
Unmarried	1574	1.9
Educational status		
Illiterate	21	1.3
Primary School	128	8.0
Middle School	548	34.1
High School	602	37.5
Intermediate	21	1.3
Graduate	61	3.8
Present occupational status		
Working	237	14.8
Non-working	1368	85.2



**Figure 1:** Sampling methodology employed for enrolling participants in the study

**Table 2: Sources of mass media access for participants (n=1605)**

Variable	n	%
Ownership of mobile phone by family		
Yes	1521	94.8
No	84	5.2
Personal mobile phone ownership		
Yes	384	23.9
No	1221	76.1
Internet on personal phone*		
Yes	192	50.0
No	192	50.0
Knowledge of how to use a computer		
Yes	243	15.1
No	1362	84.9
Frequency of using computers†		
Regularly	31	12.8
Occasionally	152	62.6
Rarely	60	24.6
Ownership of television by the family		
Yes	869	54.1
No	736	45.9
Time spent while watching television‡		
Less than an hour	185	11.5
One to three hours	605	37.7
Three to five hours	69	4.2
More than five hours	10	0.6
Ownership of radio by the family		
Yes	196	12.2
No	1409	87.8
Frequency of listening to radio§		
Daily	69	35.2
Often	23	11.7
Occasional	80	40.8
Never	24	12.1

\*Assessed for participants with personal mobile phone (n=384). †Assessed for participants with knowledge of operating computers (n=243). ‡Assessed for participants whose families owned a television (n=869). §Assessed for participants whose families owned a radio (n=196)

of RKSK, which stood at around 25% [Table 1]. On bivariate analysis, it was seen that awareness of AFHC services was seen to be significantly more in participants who were from Shahdol district, were from the older adolescent age group, had rural residences, were females, high school and above educated, knew how to operate computers, owned a radio and listened to it daily, read the newspaper, were aware of Government programmes for the adolescent, were aware of RKSK, were a part of a Saathiya-led peer groups (KSSBs), or had an adolescent health day (KSM) organised in their village [Table 3].

Only 44 (2.74%) of the participants interviewed said that they had utilised AFHC services. On bivariate analysis, utilisation of AFHC services was seen to be significantly associated with adolescent health days (KSMs) being organised in the, and having Saathiyas as the source of information on AFHCs [Table 4].

On multivariate logistic regression, we found that the district participants belonged to had a significant effect on their

awareness of AFHC services. Participants from Shahdol had more than twice the odds of knowing of AFHC services, as compared to reference district (Jhabua). Awareness of RKSK, being a part of Saathiya-led peer groups (KSSBs), and having had Adolescent health days (KSMs) organised in the village were also found to be significantly associated with awareness of AFHC services [Table 5].

## Discussion

Our study found that there was a lower awareness and lower utilisation of AFHC services in the interviewed participants than that found in studies conducted elsewhere in India.<sup>[3,4]</sup> This difference might be due to a difference in the study population, as studies conducted in populations similar to ours (predominantly rural, tribal) have shown similar awareness of AFHC services.<sup>[15,18]</sup> Distribution of and access to healthcare delivery systems is asymmetric between rural, urban and tribal India, which in turn has an impact on awareness and utilisation of these systems by the target beneficiaries.<sup>[19]</sup>

In addition, health programmes in India are generally plagued by issues of slow and poor implementation.<sup>[20]</sup> AFHC implementation in other parts of India has been found to be slow due to a host of reasons, including inadequate and often untrained service providers and low prioritisation by programme managers.<sup>[21]</sup> It has been found that although significant fund allocation has been ensured for RKSK, its implementation, monitoring and technical support to frontline workers still remains a matter of concern.<sup>[22,23]</sup> Furthermore, there was only a 3-year gap in between implementation of AFHC and our evaluation. All these factors may have acted together to impede permeation of AFHC services to grassroots level.

Other barriers, including sociocultural barriers may also be responsible for low awareness as well as utilisation of AFHC services in our setting, similar to findings from elsewhere in India<sup>[24]</sup> and other countries.<sup>[14,25]</sup> A rapid review of RKSK from four states in India found that improving the quality of service delivery and training of functionaries at all levels – including peer educators needs to be further emphasised.<sup>[6]</sup> Better programmatic coverage can be achieved by primary healthcare providers by ensuring provision of AFHC services which are culturally sensitive, acceptable, adolescent friendly and reflexive to the needs of beneficiaries.<sup>[26]</sup>

A significant difference was also seen among participants according to the district they belonged to – participants from Shahdol had significantly higher odds of being aware of AFHC services as compared to the participants from Jhabua. Jhabua is a predominantly tribal district and is also one of the poorest districts of India – both in terms of gross and net district domestic product,<sup>[27]</sup> as well as in terms of multidimensional poverty.<sup>[28]</sup> The link between poverty and poor awareness and access to healthcare is already well established.<sup>[29]</sup> In addition, STs, who comprise the major chunk of population in Jhabua, have

**Table 3: Table depicting significant determinants of awareness of AFHC services on bivariate analysis (n=1605)**

Variable	n	Awareness of AFHC services (n=1605)		$\chi^2$	P
		Yes (%)	No (%)		
Districts					
Jhabua	528	19 (3.6)	509 (96.4)	49.26	0.000*
Satna	530	46 (8.7)	484 (91.3)		
Shahdol	547	88 (16.1)	459 (83.9)		
Location of the house					
Rural	1278	150 (11.7)	1128 (88.3)	35.35	0.000*
Urban	327	3 (0.9)	324 (99.1)		
Age categories					
10-14 years	640	31 (4.8)	609 (95.2)	27.14	0.000*
15-19 years	965	122 (12.6)	843 (87.4)		
Gender of the participant					
Male	797	60 (7.5)	737 (92.5)	7.38	0.007*
Female	808	93 (11.5)	715 (88.5)		
Educational status					
Middle school or below	697	25 (3.6)	672 (96.4)	50.51	0.000*
High school and above	908	128 (14.1)	780 (85.9)		
Knowledge of operating computers					
Yes	243	32 (13.2)	211 (86.8)	4.39	0.036*
No	1362	121 (8.9)	1241 (91.1)		
TV ownership in family					
Yes	869	81 (9.3)	788 (90.7)	0.098	0.750
No	736	72 (9.8)	664 (90.2)		
Radio ownership in family					
Yes	196	33 (16.8)	163 (83.2)	13.81	0.000*
No	1409	120 (8.5)	1289 (91.5)		
Frequency of listening to radio*					
Daily	69	21 (30.4)	48 (69.6)	15.75	0.001*
Often	23	3 (13.1)	20 (86.9)		
Occasional	80	5 (6.3)	75 (93.7)		
Never	24	4 (15.6)	20 (84.4)		
Reads newspaper					
Yes	402	55 (13.7)	347 (86.3)	10.71	0.001*
No	1203	98 (8.2)	1105 (91.8)		
Aware of Govt programmes for the adolescent					
Yes	918	152 (16.6)	766 (83.4)	122.73	0.000*
No	687	1 (0.2)	686 (99.8)		
Aware of RKSK					
Yes	410	149 (36.3)	261 (63.7)	458.92	0.000*
No	1195	4 (0.3)	1191 (99.7)		
Part of Kishore Samooh Sathiya Brigade (KSSB)					
Yes	198	108 (54.5)	90 (45.5)	530.65	0.000*
No	1407	45 (3.2)	1362 (96.8)		
Kishore Swasthya Mela (KSM) organised in village					
Yes	243	108 (44.4)	135 (55.6)	404.71	0.000*
No	1362	45 (3.3)	1317 (96.7)		

\*Awareness of AFHC services calculated only for those who own a radio in the family (n=196)

always heavily relied on a parallel system of traditional healers. This limits the avenues through which awareness of health programmes<sup>[19,30]</sup> can be generated, which are almost exclusively launched through the formal healthcare system. STs also suffer from structural and systemic barriers – such as long distances, long waiting times and poor care, which impede awareness of and access to healthcare services.<sup>[31,32]</sup> These factors may have led to poor awareness of AFHC services in Jhabua as compared

to relatively prosperous and less tribal districts and should be further explored and addressed to improve AFHC awareness.

Mass media campaigns are known to be highly effective in bringing about desirable changes in health behaviours.<sup>[33]</sup> However, consumption of mass media (televisions, radios and newspapers) was not found to be a significant determinant of AFHC awareness or utilisation in our study. This might be ascribed to two reasons.

**Table 4: Univariate analysis of determinants of utilisation of AFHC services (n=153)**

Variable	n	Utilization of AFHC services (n=153)		$\chi^2$	P
		Yes (%)	No (%)		
Kishore Swasthya Mela (KSM) organised in village					
Yes	108	38 (35.2)	70 (64.8)	7.40	0.007*
No	45	6 (13.3)	39 (86.7)		
Source of information on AFHCs					
ASHA	26	12 (46.1)	14 (53.9)	8.61	0.035*
AWW	2	0 (0.0)	2 (100.0)		
Counsellor	16	1 (6.3)	15 (93.7)		
SAATHIYA	109	31 (28.4)	78 (71.6)		

**Table 5: Logistic regression of determinants of awareness of AFHC**

Predictor variables		B	SE	Df	P	aOR	Confidence Interval (95% CI)
Variable	Outcome						
District	Shahdol	0.718	0.347	1	0.039*	2.04	1.04-4.05
	Satna	0.605	0.370	1	0.102	1.98	0.89-3.78
	Jhabua (Ref.)						
Aware of RKSK	Yes	3.469	0.664	1	0.000*	32.11	8.75-117.89
	No (Ref.)						
Part of Kishore Samooh Sathiya Brigade	Yes	1.453	0.262	1	0.000*	4.28	2.56-7.14
	No (Ref.)						
Kishore Swasthya Mela organised in village	Yes	1.086	0.267	1	0.000*	2.96	1.75-4.996
	No (Ref.)						

First, mass media as a whole remains misutilised for sensitising beneficiaries about healthcare programmes targeted at them leading to systemic inability to tap into its full potential – both in India and elsewhere<sup>[34,35]</sup> as a demand-generation tool. Second, the mass media campaigns mounted may not be tailored to effectively reach the target beneficiary due to a paucity of theory and evidence-informed and contextually tailored mass media campaigns.<sup>[36,37]</sup> It is expected that well-designed mass media campaigns would be more effective in sensitising adolescents – and thereby increase awareness and utilisation of AFHC services. Social media and personalised messaging services have been used effectively to bring about desirable changes in health behaviour in adolescents.<sup>[38]</sup> However, in our study, we found that only around 25% of adolescents owned a personal mobile phone, with even lesser (50% of personal mobile phone owners) had internet connectivity on them, thereby limiting its impact. On the other hand, we found that the presence of Saathiyas and organising adolescent health days (KSMs) were effective in generating awareness and boosting utilisation of AFHCs. Awareness of AFHC services was also found to be significantly associated with having knowledge of RKSK. Shahdol – the district with the highest number of adolescents aware of and utilising AFHC services – also had the highest proportion of Saathiyas and adolescent health days (KSMs) responsible for generating awareness about AFHC services. All these determinants closely reflect the success of the efforts made by peer educators to generate awareness regarding available services. Peer educators have been found to be effective both in formal<sup>[39]</sup> and informal settings. Similarly, group-based peer activities such as KSMs have also been found to be effective in bringing about desirable change in health behaviour. Therefore,

recruiting and training more Saathiyas and organising periodic KSMs should prove to be more cost-effective and sustainable in generating awareness and increasing utilisation of AFHC services.

Our study assesses awareness and utilisation of AFHC services in a hitherto unexplored predominantly tribal and rural population from Madhya Pradesh. The survey was carried out by teams of well-trained personnel under strict supervision. Furthermore, our study covered a large population of adolescents, thereby increasing its representativeness. On the other hand, a few participants might also not have been able to reveal some information due to perceived shame or apprehension.

## Conclusion

In conclusion, in our study, we found that both awareness and utilisation of AFHC services remain very low among youth even after 3 years of launching the programme. There is, therefore, a pressing need to focus on outreach campaigns – primarily through CHWs and peer educators. At the same time, efforts also need to be made to make the facilities more accessible which would facilitate its utilisation by poor rural and tribal youth. Providing standardised, adolescent-friendly and culturally sensitive services would go a long way in ensuring optimum awareness and utilisation of AFHC services.

## Summary

- RKSK services remain underutilised across urban and rural settings in Central India.

- Ensuring accessibility and awareness about RKSK services may provide a fillip to their utilisation by intended beneficiaries.
- Engaging and training more peer educators would prove to be a cost effective and sustainable method of generating awareness about and engaging beneficiaries in ongoing RKSK activities, as compared to using mass media and social media campaigns.

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### Conflicts of interest

There are no conflicts of interest.

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