

# Utilization and Sufficiency of IEC Materials Related to HIV/AIDS Among Adults in the Community, Kerala – An Explanatory Sequential Mixed Method Approach

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## ABSTRACT

This study aimed to assess the utilization and sufficiency of information, education and communication (IEC) materials related to HIV/AIDS among adults aged 18 to 49 years in Kerala. The study adopted mixed-method approach and was conducted through cross-sectional survey using multistage cluster sampling method (n=750) and in-depth interviews through purposive sampling method (n=35). Majority of the adults (72.9 percent) had not seen any IEC materials related to HIV/AIDS during the last six months. Just over half of the adults reported that the IEC materials they found were very useful (58%) and rest were not (42%). Lack of persuasiveness, diversified focus, poor clarity of messages, lack of precision and aesthetic appeal were the main reasons cited by the participants for the non-usefulness. Television was the most preferred source of information (90.7 percent). Overall knowledge on HIV/AIDS among adults in Kerala was found to be less than 50% (CI: 40±5.87%). The study found a statistically significant association between knowledge of HIV/AIDS and area of residence (p<0.05). The qualitative findings could be summarized into two themes: Enabling factors in the development and utilization of IEC materials and barriers in the utilization of IEC materials. The availability and accessibility of need-based and context-specific mutually reinforcing IEC messages should therefore be ensured by effective interdepartmental collaboration.

**Keywords:** HIV and AIDS IEC, KSACS, community adults, comprehensive assessment

## INTRODUCTION

Human Immunodeficiency Virus/ Acquired Immuno Deficiency Syndrome (HIV/AIDS) is a serious public health issue that has affected over 37.9 million individuals globally, with adults making up more than 80 per cent of those infected [1]. India is estimated to have the third-highest absolute burden of HIV, with around 2.3 million People Living with HIV (PLHIV) in 2021,

of whom 63000 were newly infected, and 42,000 annual fatalities linked to the virus [2,3,4,5,6]. Based on the figures released by the National AIDS Control Society (NACO), there has been a drop in HIV/AIDS prevalence in India, with the state of Kerala reported lowest prevalence [7]. However, the state is highly vulnerable due to its geographical location and the influx of migrants. Based on the recent NFHS-5

report, less than 50 per cent of adults in Kerala had comprehensive knowledge of HIV/AIDS in terms of modes of prevention and transmission [8]. This increases the state's vulnerability and likelihood of infection and will turn into a high-risk region in upcoming years if the appropriate actions are not successfully taken beforehand. Previous studies have shown that a lack of accurate and complete knowledge of HIV, especially on the modes of transmission and management is a major reason for incident HIV infections. Despite antiretroviral therapies having the potential to prolong life, their adverse side effects and limited accessibility have resulted in poor treatment adherence [9,10]

Health education is an important concept that encourages people to establish preventive behaviors, take precautions to avoid health problems, improve self-care and enhance quality of care at lower costs. Health learning materials such as printed materials (posters, leaflets, and flip charts), audio, and audiovisuals are useful in bringing about intended behavioral change [11,12]. Therefore, behavioral change interventions especially Information, Education, and Communication (IEC) activities are the key and cost-effective approach to prevent and control HIV/AIDS as well as to promote positive behavior in the community. As part of the National Aids Control Programme (NACP), NACO has established separate IEC divisions in all State AIDS Control Societies (38 including Union territories) to improve knowledge, generate demand for care, support and treatment services and strengthen the enabling environment by facilitating appropriate changes in societal norms which reinforce positive attitudes, beliefs and practices to reduce stigma and discrimination towards HIV/AIDS [7].

The IEC division of KSACS prepares many IEC materials annually, but the usefulness and sufficiency of IEC materials has not been analyzed [13]. Previous studies on the comprehensive assessment of IEC materials related to HIV / AIDS conducted across the

country showed that IEC messages should be tailored to the needs, interests, expectations, motives and goals of adults and its focus needs to be shifted from viewing adults as docile to seeing them as unique individuals with complex, diverse thoughts, and highly contextualized identities [14,15,16]. Therefore it is imperative to assess the adult's needs for HIV/AIDS-related IEC materials regularly and whether the available materials fulfil the requirements. Studies regarding the knowledge and attitude towards HIV/AIDS among the general and high-risk population have revealed considerable variation in responses, with the majority of these studies lacking adequate sample size, so the findings could not be generalized. This study mainly aimed to assess the utilization and sufficiency of IEC materials related to HIV/AIDS among adults aged 18 to 49 years in Kerala.

## **MATERIALS & METHODS**

### ***Study design***

The study adopted a sequential explanatory mixed method approach. It is a method that initially collects and analyses quantitative data, and then qualitative data to explain quantitative findings which makes a better understanding of the problem [17]. Thus an initial cross-sectional survey was conducted to assess the availability, and utilization of IEC materials related to HIV/AIDS among adults in the community and their knowledge on HIV/AIDS. It is followed by a qualitative study to gain in-depth insights into the quantitative results in terms of facilitating and challenging factors in the utilization of IEC materials (figure 1). At the intermediate stage, the two phases got interconnected, with the rationale being that quantitative data offer a broad understanding of the research problem, and qualitative data further explore and clarify these findings by providing a more in-depth look at the perspectives of the participants.

**Study setting, study population, sample size, and sampling method**

The cross-sectional survey was conducted in six randomly selected districts of Kerala. The districts were selected based on the priority list shared by KSACS (sampling frame) (table 1). Earlier KSACS conducted a study to estimate the prevalence of PLHIV in all fourteen districts of Kerala and categorized the districts as high, medium, low and very low priority districts. We used that list as the sampling frame. Thus two districts were randomly selected from each category. The sample size for the cross-sectional survey was estimated using OpenEpi 3.01, with an assumption of comprehensive knowledge on HIV/AIDS in the community as 40 percent<sup>[6]</sup>, design effect as 2 and 5 percent as non-response rate, the total sample size was rounded to be

750. The study participants were selected using multistage cluster sampling method. From each district, two blocks (one rural and one urban) were randomly selected, from each block, five wards were randomly selected, then from each ward, the households were randomly selected using Kish Method and from each household one person who belonged to age group 18-49 years who gave consent was selected for the survey.

For the qualitative study, the study participants were purposively selected, based on the interactions during the initial cross-sectional survey. The study participants included officials in the IEC wing of KSACS (Key informant interviews ((KIIs)) and five adults from each district (in-depth interviews (IDIs)). Thus a total of five KIIs and 30 IDIs were conducted.

Category	Description	Districts	Sample size
High	$P \geq 1\%$ or PLHIV $\geq 5000$	Palakkad	125
Moderate	$0.4\% \leq P < 1\%$ or PLHIV $2500 \leq 5000$	Thrissur	125
Low	$0.20\% \leq P < 0.40\%$ or PLHIV $1000 - 2500$	Kasaragode, Kannur, Kozhikode, Malappuram, Ernakulam, Alappuzha, Kollam, Thiruvananthapuram	2*125
Very low	$P < 0.20\%$ or PLHIV $< 1000$	Wayanad, Idukki, Kottayam, Pathanamthitta	2* 125

**Table 1: Sampling frame**

**Data collection methods and tools**

The cross-sectional survey was conducted using a semi-structured questionnaire with open-ended questions. The questionnaire had mainly five sections including (i) Socio-demographic characteristics of participants, (ii) utilization of IEC materials, (iii) sufficiency and usefulness of IEC materials, (iv) Knowledge level in terms of modes of transmission, prevention and control of HIV/AIDS, and (v) myths and misconceptions regarding HIV/AIDS. The qualitative part of the study was conducted using KII and IDI guidelines. Also, after in-depth interviews, the field investigators showed ten recently published IEC materials to the respondents to gather more details.

**Data processing and analysis**

The quantitative data was entered in Microsoft Excel 365, then exported into SPSS version 24. We employed descriptive statistics to ascertain the frequency of variables. Then the variables were coded and recoded for bivariate analysis to determine statistical significance. The KIIs and IDIs were transcribed verbatim and then translated from local language into English to generate textual data that is better suited for qualitative interpretations. Hybrid coding approach was used to identify key themes (figure 1). Initially, the investigators read and reread all transcripts to get familiarity, then each transcript was coded line by line by PI and Co-PIs. Codes were then collated into meaningful groups to identify categories and major themes.

### Trustworthiness

Before the actual data collection, the survey questionnaire and interview guidelines were pre-tested among ten adults in the community. The IDIs were recorded using an audio recorder, and field notes were taken by the field investigators. The PI is a public health specialist with qualitative research experience. At the end of each interview, the field investigators summarized their data collection experience. The data was collected until data saturation attained and then analyzed using qualitative data analysis protocols.

### Ethical considerations

The study obtained ethical clearance from the Institutional Ethics Committee of SHSRC-K (EC/NEW/IND/2022/2909) and got permissions from the Directorate of Local Self Government Department (LSGD) and concerned Local Self Government Institutions (LSGIs). Informed verbal consent was sought from all participants before the data collection process in all instances. Moreover, the participants were informed of their right to withdraw from the study at any point they deemed necessary, without any consequences. The survey, KIIs and IDIs were very friendly and culturally

appropriate. The questions posed during the study were designed to be amicable, appropriate, and pleasant, ensuring that participants were not harmed in any way. Confidentiality and anonymity of the respondents and their responses were guaranteed.

## RESULT

### Implementation of Information Education and Communication on HIV/AIDS prevention

IEC is a public health strategy that uses communication methods and principles to influence or reinforce health-related behaviors in a target audience about a particular issue within a predefined time frame. IEC for promoting behavior change and encouraging and sustaining positive healthy behaviors among individuals and communities is the cornerstone of NACP. Thus as part of NACP, the Kerala State AIDS Control Society is carrying out IEC activities through a vibrant multi-media approach on a 360-degree platform comprised of mass media, mid-media, on-ground mobilization, folk art forms, interpersonal communication and partnership with professional and non-professional educational institutions.

IEC medium	Activities
Social media	Upload posters and short videos in KSACS's official Facebook (FB) page FB Posts will be done as part of important day Observations and general information on HIV Prevention, Elimination of Mother to Child Transmission of HIV (EMTCT), drug abuse and blood donation Videos will be posted on KSCAS's official YouTube channel Online Competitions for Youth - Action Creation & Thought (ACT): Development of short video, trolls and logo recreation
Campaigns	Celebrities in the Kerala film industry are the goodwill ambassadors and Youth Ambassadors of the campaign. Awareness video spots were developed using these celebrities. Know Your Status Campaign started focusing on 95-95-95 targets Folk media campaign focused on Tribal, Coastal and rural areas-themes and messages updated with Global Elimination, Know Your Status, 95-95-95 Target, EMTC
Mass media activities	Spots in television channels and FM channels, Ads were released to be played in film theatres for an average 25 days, talks, interviews and live-phone interviews were done free of cost during events, advertisements based on events, thematic ads and HIV related stories were released in high circulating newspapers and magazines
Printed materials	Production and distribution of Posters, Leaflets, booklets on the themes of HIV Basics, HIV Testing, Sexually Transmitted Infections, New ART Regime, ART Centres, ICTC centers, HIV & COVID-19, HIV-TB Correlation, Voluntary Blood Donations.
Youth interventions	Establishment of Red Ribbon Clubs in Professional & Art Colleges and ITIs all over Kerala Quiz competition for students in hybrid mode Short film competitions Peer educator conferences

**Table 2: Main IEC activities related to HIV / AIDS by KSACS**

The response rate was 100%. Both the quantitative and qualitative findings were combined during the interpretation phase of this study. The quantitative results could be summarized into seven sections and qualitative findings could be summarized into mainly two themes.

### Sociodemographic profile of respondents

The sociodemographic characteristics of the study participants (N=750) are given in Table 3.

The mean age of the respondents was  $35 \pm 9.4$  years. The majority of the study participants were females (70.3 percent), married (72.8 percent), rural residents (73.1 percent) and lived in nuclear families (85.7 percent). About 60 percent of the participants had education below higher secondary level. The average household size of the respondents was  $4.33 \pm 1.3$ . Few participants belonged to the tribal community (4.1 percent), 2.1 percent were pregnant women and 2 percent were adults living with disabilities (2 percent).

Variables	Categories	Frequency	Percent
Age in years	18-28	219	29.2
	29-39	237	31.6
	40-49	294	39.2
Gender	Males	221	29.5
	Females	527	70.3
	Transgender	2	0.2
Education level	No formal education	3	0.4
	Lower Primary	25	3.3
	Upper Primary	46	6.1
	High School	179	23.9
	Higher Secondary	204	27.2
	Degree or above	293	39.1
Marital status	Single	192	25.6
	Married	546	72.8
	Widow/widower	8	1.1
	Separated	4	0.5
Occupation	Yes	629	83.9
	No	121	16.1
Area of residence	Rural	548	73.1
	Urban	202	26.9
Religion	Hindu	444	59.2
	Muslim	136	18.1
	Christian	170	22.7
Household size	1	1	0.1
	2-5	643	85.7
	6-9	101	13.5
	>9	5	0.7

Table 3: Sociodemographic characteristics of respondents

### Exposure to IEC materials and its usefulness

Most of the respondents (72.9 percent) had not seen any IEC materials related to HIV/AIDS during the last six months. Many

of them (43.1 percent) belonged to the age group 40-49 years and are resided in rural outskirts of Kerala (77.1 percent). District-wise comparisons are given in figure 1.

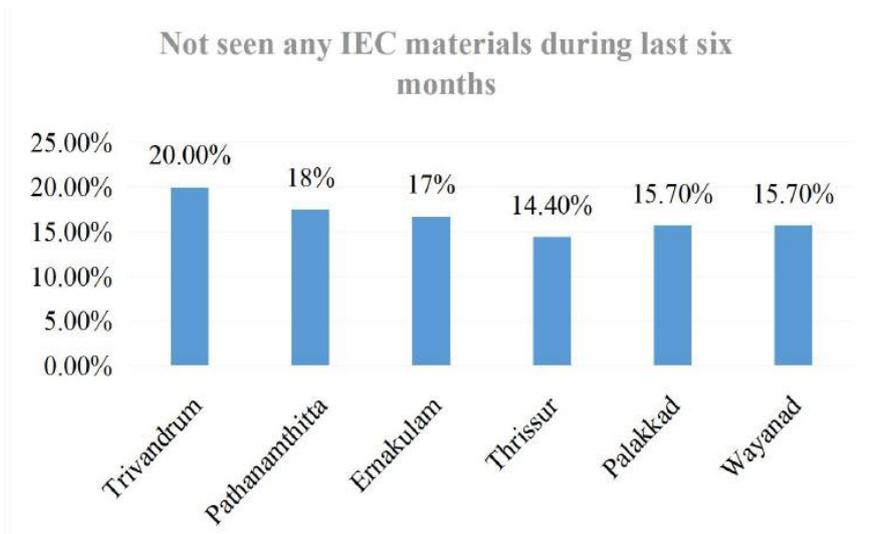


Figure 1: Exposure to IEC materials during the last six months - district-wise comparisons

Among those who were exposed to IEC materials in the past six months, the majority (71.4 percent) were young adults (18 to 39 years), followed by 40-49 age years (28.6 percent). During the cross-sectional survey, just over half of the adults (58 percent) reported that the IEC materials were useful, but the remaining did not. The non-usefulness was more reported in Ernakulam district (32.2 percent). The main reasons for the non-usefulness of IEC materials cited by the respondents were lack of persuasiveness, diversified focus, lacunae

in clarity, lack of precision, and lack of aesthetic appeal.

### Sufficiency of IEC materials

Over fifty percent of the adult population reported that the IEC materials were not easily accessible (53 percent), credible (52.7 percent) and not interesting (73.7 percent). The majority of respondents (60–100 percent) consistently rated posters and television as more reliable information sources. The information on HIV/AIDS and its sources is shown in figure 2. The findings were confirmed through in-depth interviews.

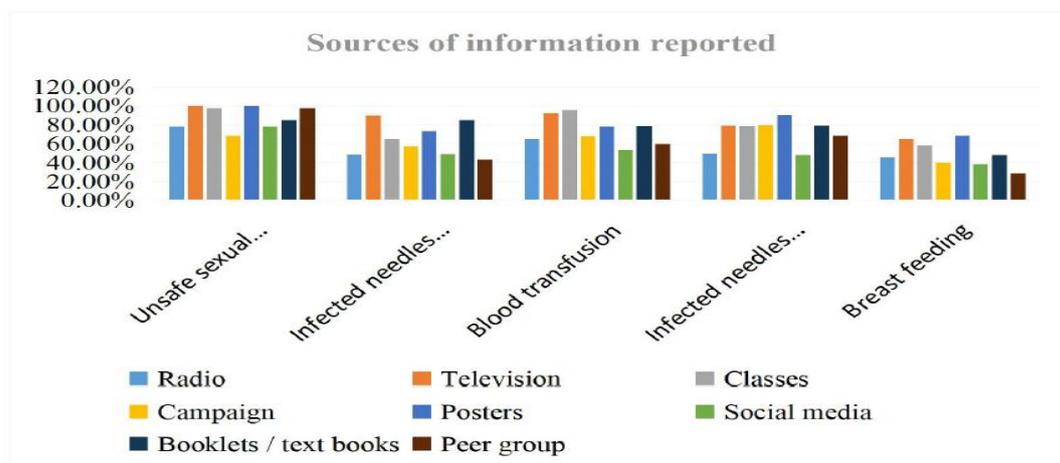


Figure 2: Information on HIV/AIDS and its sources

The majority of participants (90.8 percent) reported that the materials were understandable due to the crisp way in which the pictures and messages were

presented in the IEC materials. This finding was constrained by the IEC's focus on HIV transmission through injections and the IEC's on prevention and control of

HIV/AIDS through sexual transmission. However, messages on the prevention of HIV/AIDS transmission through condom use were presented in a boorish or nasty way. A significant number of participants (92.7 percent) reported that the IEC materials on prevention and mode of transmission of HIV/AIDS from mother to child were ambiguous and difficult to understand. In terms of content, font, or presentation style, the IEC materials lacked visual appeal.

#### **Awareness and source of information**

More than 95 percent of the participants were aware of HIV/AIDS. Television was the main source of information cited by the participants (77.1 percent), followed by newspapers (53.5 percent) and classes (49.9 percent). Campaigns (1.3 percent), posters (23.5 percent) and peer group talks (1.2 percent) were the least reported sources. 15 participants (2 percent) reported that they had never heard about HIV/AIDS. Eight of them (53.3 percent) were coolie workers, four were drivers, one was a homemaker (6.6 percent), and two were self-employed 9 (running small shops) (20 percent).

#### **Preferred sources of IEC**

The most preferred source of information about HIV/AIDS was the mass media, particularly television (90.7 percent). The in-depth interviews revealed that the most efficient way to disseminate factual information about HIV/AIDS is through official television broadcasts, which employ commercial ads, short films, and the inclusion of HIV/AIDS-related messages in between popular television shows (like reality shows or television serials).

#### **Knowledge about HIV/AIDS among adults**

**Regarding transmission:** Majority of the adults knew that HIV/AIDS could spread through unsafe sexual behavior (96.3 percent) and contaminated syringes (93.2 percent). The knowledge regarding transmission from mother to child during

childbirth (81.3 percent) and transmission through blood transfusion (88.4 percent) were found to be comparatively lower. Thirty-four participants believed that HIV/AIDS spread through mucous secretions (4.5 percent), three believed it spread through contaminated food (0.4 percent), two through tattooing (0.3 percent) and two through air (0.3 percent).

**Regarding prevention:** More than half (59.7 percent) believed that the correct use of condoms during sexual intercourse would protect them from the disease and it is crucial to prevent disease transmission. However, 40 percent of people disagreed and argued that condom use reduces sexual pleasure and comfort. Over sixty percent of the adults (63.1 percent) knew that one can protect oneself from infection by engaging in sexual activity with one faithful, uninfected partner. A little more than half of the adults (52.9 percent) believed that having multiple sexual relationships with uninfected partners could not spread HIV/AIDS. Few participants (47.5 percent) felt that abstaining from sexual activity could be a useful self-defense strategy to prevent or protect against HIV/AIDS. Over 60 percent of the adults were unaware on how to prevent HIV/AIDS transmission from mother to child during and after childbirth. The majority of respondents (82.7 percent) believed that refraining from breastfeeding could prevent HIV/AIDS transmission from mother to child. The most startling finding was few respondents (2.4 percent) believed that separating the child from mother would stop the child from contracting HIV/AIDS.

**Regarding testing centers and management:** More than half of the participants (57 percent) had never heard about the Integrated Counselling and Testing Centre (ICTC). Out of 316 respondents who are aware of the ICTC, 56.3 percent reported that the center provides HIV testing and counseling services and 0.9 percent stated that the

ICTC dispenses medication. Majority of respondents (67.2 percent) were not aware of the location of ICTC, which closer to their residence.

**Myths and misconceptions:** A few adults (6.8 percent) expressed concern about the possibility of the disease transmission through sharing of utensils with an infected person. Fifty adults (6.7%) were worried that hugs could spread HIV, while mosquito bites (20%) and deep/passionate kissing (21.9%) especially lip locks were thought to be potential HIV carriers. More than one-quarter of the adults (31.2 percent) believed they could tell if their partner was HIV positive just by looking at their symptoms. Roughly 21% of respondents felt that HIV/AIDS is a serious illness, and 31% of them thought that a person's life ends when they contract the virus. More than half of the adults, (53 percent) had stigma towards HIV/AIDS. Two-thirds of the participants (67.9 percent) believed that there is no cure for HIV/AIDS.

### Gaps in existing IEC materials and suggestions to improve the quality of IEC materials

Lack of accessibility to the IEC materials was the main gap reported (33.6 percent) followed by the use of irritable language (31.8 percent), small font size (18.6 percent), unattractive content/ not catchy (10 percent), and difficult comprehension (6 percent). Majority of adults (70.5 percent) stated that developing sustainable distribution mechanisms through various departments is necessary to improve the accessibility of IEC materials. The remaining (29.5 percent) proposed extending IEC activities with assistance from local self-government institutions through campaigns and folk arts in residential associations and rural areas. Majority of the respondents (67.1 percent) recommended improving the availability of IEC materials through the establishment of a sustainable distribution mechanism (figure 4).

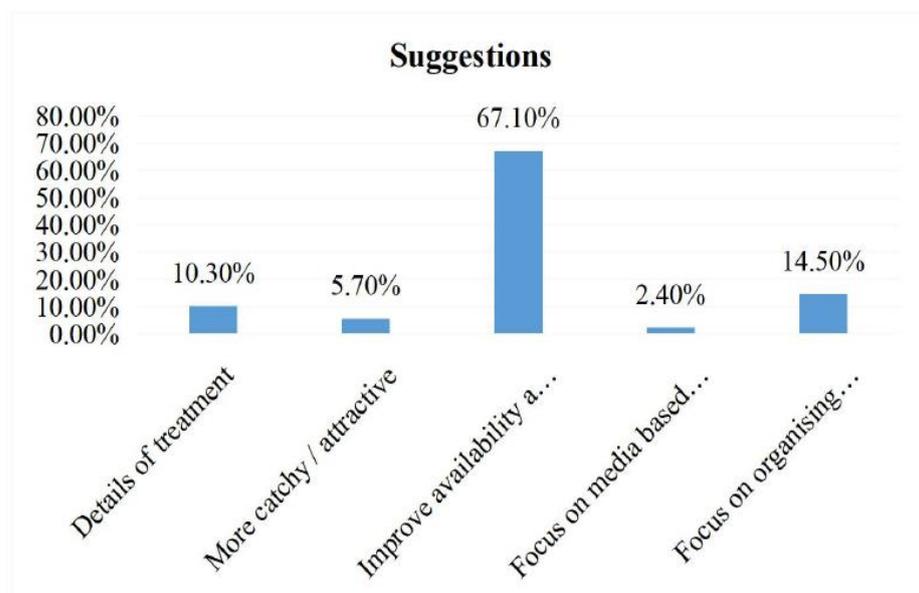


Figure 3: Suggestions to improve accessibility of IEC materials

### Overall knowledge of HIV/AIDS

For the analysis purpose, the variables were coded and recoded and defined overall knowledge about HIV/AIDS as the individuals are aware of HIV/AIDS

prevention, transmission and management. Thus the comprehensive knowledge on HIV/AIDS among adults in Kerala was found to be less than 50% (CI: 40±5.87%). The study found a statistically significant

association between knowledge of HIV/AIDS and area of residence ( $p < 0.05$ ). Compared to unmarried, married couples had more misconceptions related to the transmission of HIV/AIDS and found a

statistically significant association ( $p = 0.005$ ). A statistical significant association was also found between misconception and marriage and household size ( $p \leq 0.05$ ) (table 4).

Variables	Categories	Overall knowledge regarding HIV/AIDS		Total (%)	Chi square value	p value
		Yes	No			
Age	18-28	9 (4.1)	210 (95.9)	219 (100.0)	3.60	0.16
	29-39	3 (1.3)	234 (98.7)	237 (100.0)		
	39-49	10 (3.4)	284 (96.6)	294 (100.0)		
Gender	Males	11 (5.0)	210 (95.0)	221 (100.0)	4.62	0.09
	Females	11 (2.1)	516 (97.9)	527 (100.0)		
	Others					
Marital status	Unmarried	8 (4.2)	184 (95.8)	192 (100.0)	2.84	0.24
	Married	3 (2.4)	533 (97.6)	546 (100.0)		
	Married but separated	1 (8.3)	11 (91.7)	12 (100.0)		
Area of residence	Rural	11 (2.0)	537 (98.0)	548 (100.0)	6.12	<b><math>p &lt; 0.05</math></b>
	Urban	11 (5.4)	191 (94.6)	202 (100.0)		
Education	No formal education	1 (4.0)	24 (96.0)	25 (100.0)	0.15	0.92
	Elementary	7 (3.1)	218 (96.9)	225 (100.0)		
	High school and above	14 (2.8)	486 (97.2)	500 (100.0)		
Religion	Hindu	17 (3.8)	427 (96.2)	444 (100.0)	3.08	0.21
	Christian	2 (1.5)	134 (98.5)	136 (100.0)		
	Muslim	3 (1.8)	167 (98.2)	170 (100.0)		
Household size	$\leq 4$	20 (3.1)	624 (96.9)	644 (100.0)	0.47	0.49
	$> 4$	2 (1.9)	104 (98.1)	106 (100.0)		

**Table 4: Association between sociodemographic profile and overall knowledge**

Misconceptions regarding HIV/AIDS transmission were less reported among those with higher education and found statistically significant association ( $p < 0.001$ ). Spearman correlation was done to determine the relationship between the content of the message and attitude. We found that the content of the message and attitude had moderate positive correlation,  $r = 0.34$  and had a statistically significant association ( $p < 0.001$ ).

The qualitative findings could be summarized into mainly two themes: Enabling factors and barriers in the utilization of IEC materials.

### **1. Enabling factors in the development and utilization of IEC materials**

**1.1. Conceptualization of messages through a need-based survey** -The findings revealed that existing IEC materials were

conceptualized based on a survey to ascertain the community's needs. The IEC wing of KSACS always focused on incorporating sociocultural aspects of the community while developing IEC materials. The current process for conceptualizing IEC materials could be used as a model for future need-based IEC development efforts by other SACS.

*“An ideal IEC material should be able to provide health education, lower medical errors, avoid misconceptions, act as guidelines, and provide up-to-date information, information education and communication materials ..... For these reasons, we will conduct a survey to understand what the community expects.....You know, we surveyed a rural community in Thiruvananthapuram district during the last financial year and realized what the community wants*

..... it's an eye opener for the IEC wing of KSCAS. Then we developed some IEC materials based on expert's opinion" KII2  
"We developed IEC materials for migrants in their language.....develop IEC materials for adults, students in local language.....for commercial sex workers in local language....." KII  
3eye-opener

1.2. Celebrities as goodwill ambassadors:  
The Kerala State AIDS Committee (KSACS) has developed commercials/advertisements promoting HIV/AIDS prevention and control, using well-known actors and actresses in the Malayalam film industry as spokespersons. The public responded positively to the celebrities' messages and applauded them. Every participant in the in-depth interviews acknowledged having seen the commercials and reported that the content was more appealing. The IDIs reaffirmed the community's desire to see prominent figures in HIV/AIDS advertisements, ideally actors from the film industry

"Long years back there was an advertisement done by Mohanlal.....HIV / AIDS is not a disease it's a condition.....come... Let's join together to prevent HIV/AIDS...".(IDI3)

"Compared to what I saw in my 30s, nowadays I could not see any ads related to HIV/AIDS prevention and control ..... at that time there was an ad by Mohanlal our Lalettan.....still, I am remembering his words....." (IDI 5)

"We have Malayalam actors like Mohanlal sir (2007) and Manju Warriar chechi (2020) as our goodwill ambassadors... actor Niraj Madhav as our youth ambassador (2020) .....their talks, messages are highly welcomed by the community and it made an impact in the community....." KIII1

1.3. Utilization of panchayat raj institutions - The opportunity of decentralized governance has been utilized to raise awareness among the public and efforts have been made to make the IEC activities more community-based.

"We had a project.....: HIV literacy panchayat.....executed in Parassala panchayat.....The project planned to create mass awareness by providing training to a select section of people in every ward who can impart knowledge to the rest of the people. It was very cost-effective, so other states can replicate our model ..... innovative ..... promote community participation ..... and interdepartmental collaborations..... This project was a great success and we replicated this project in other panchayats in Thiruvananthapuram, Palakkad districts also" KII 1, KII2

The sustainability of the project is a major concern, the findings prompt KSACS officials to look into it.

## 2. Barriers in the utilization of IEC materials

### 2.1. Lack of viable distribution mechanism:

The lack of a sustainable mechanism for the distribution of IEC materials was evident in both quantitative and qualitative findings. This highlighted the poor interdepartmental collaboration between KSACS and the departments of public relations, local self-government, and health.

"Initially, we printed IEC materials in bulk and sent to all districts through health (District Medical Offices and District Medical Education offices) and Local self-government departments ..... but everything was eventually dumped in the office" KII3

"We approached many departments, especially health, LSGD, education..... the higher officials were telling that the department is too busy and they have no time to become involved in our IEC activities." KII2

"We requested that several department heads allow us to present awareness classes and distribute our IEC materials during their training sessions for at least twenty to thirty minutes, but none of them were willing". KIII

One participant expressed distress by placing one hand on their head and

*muttered " we have no time.....no time to complete our departmental activities....so please ....."KII 3*

The main concern raised by the KSACS officials was the lack of guidelines on how to distribute IEC materials in the community as well as designated persons who have the authority to do so.

## 2.2. Department/institution level constraints:

According to key informants, poor infrastructure, shortage of funds, strict guidelines on fund expenditure and uniform allocation of funds across all states were the main barriers to the efficient implementation of IEC activities. The exorbitant expenses associated with posting advertisements in print media, online media, news media and other mass media including ads in theaters, FM and television, and bus branding /transit advertising limited the institution to upscale the IEC activities in the community. The other constraint was a lack of assistance/sponsorship from government departments and organizations.

*"We are getting ten lakhs every year ..... an advertisement of ten-second duration costs about fifteen thousand rupees including tax at a time. To post an ad in a theatre for a week*

*would cost seven lakhs..... 7 lakhs. We need support from public departments otherwise .....we don't know what to do.....(KII1)*

*We have ideas, we have contents.....but we don't have funds, manpower....infrastructure.....". (KII2)*

*"State material manager's post remains vacant.....due to lack of funds.....". (IDI 2)*

*We requested plan funds but have not received them yet.....Initially, we received state funds to assist people living with HIV of about Rs.1000/- per month .....but now it is pending .....patients with HIV constantly called us to complain about not getting anything." KII 1*

2.3. *Lucidity and sufficiency of IEC materials:* The available IEC materials

lacked content and the messages were written in small font, making it difficult for readers to understand them. Clarification is needed regarding the technical terms used in the advertisements, brochures, and pamphlets. IECs about the use of condoms in particular caused discomfort for many due to the language used in the materials. During the interview, a few IDI participants voiced their frustration and rage about those IEC materials. The use of printed IEC materials was seen by the community as an additional responsibility, an unneeded activity, something the community didn't need, and a problem that the individuals had overlooked. Consequently, the low utilization of IEC materials is facilitated by the community's attitude and the dearth of creative IEC materials.

*"Messages and pictures depicted are related to each other ..... especially in the IEC related to blood transfusion....I mean the picture of one child with a wound in the head" IDI 5*

2.3) *Flaw in the selection of mode of media for spreading messages:* Though IEC activities were initiated through social media, which was assumed to be the most widely used and acceptable form of media, social media received very little community support. The community's preferred media source was television, particularly celebrity advertisements, short films, and video messages by celebrities. Despite the respondents were generally in favor of the KSAC campaigns, the organization was unable to implement them because of shortage of funds. The choice of media for the dissemination of IEC messages was therefore deemed to be inappropriate and not based on the community's preference.

*"We have u tube channel.....poor subscription.....nobody wanted..... facebook pages ..... followers ..... very less ...." KII 2*

*"I think campaigns are effective..... but I didn't see such campaigns" IDI 14*

*"During 2002 or 2003 there was a Doordarshan serial called Jasoos*

*Vijay..... detective Vijay ..... Ompuri's serial on every Sunday at 9.00 pm.....actually that serial was a detective story but it gave good awareness on methods of prevention and transmission of HIV/AIDS..... I think we want this kind of program....like HIV/AIDS theme-based TV serials.....”*IDI 7, IDI 10

*“Another option is posters/leaflets/pamphlets should be placed in reception areas of health care institutions.....bus branding .....”*IDI 7

## DISCUSSION

The cornerstone of the HIV/AIDS program is information, education, and communication activities to support behavior change and to foster and maintain positive, healthy behaviors among individuals in the community. It is an essential tool to prevent the upcoming surge in HIV infections. However, the information on the utilization and adequacy of existing IEC initiatives related to prevention and transmission of HIV/AIDS is scarce in Kerala. This study provides an overview of the level of community awareness on HIV/AIDS, utilization and gaps in IEC materials already available, including posters, leaflets, and brochures published by KSACS as well as preferences among adults in the community.

Consistent with the recent NFHS-5 findings, this study found the comprehensive knowledge of HIV/AIDS among adults in the community in Kerala was less than 50%<sup>[8]</sup>. The operational definitions for the comprehensive or overall knowledge of HIV/AIDS used in both surveys were almost similar. Knowledge regarding the modes of transmission of HIV/AIDS through unsafe sexual acts and syringes and needles exhibited similar patterns with the findings by Kotech and Patel in the urban slums of Vadodara city<sup>1</sup> and by Gupta in Lucknow<sup>[18,19]</sup> Few respondents believed that the ways to prevent HIV/AIDS from being passed from mother to child were to separate the child from mother, avoid pregnancy, or stop breastfeeding.

These findings are in line with the observations published by Tegene Regassa Luba, Achmyeleh Birhanu Teshale, Chandra M. Becka, MD and Firoza Haffejee conducted in developed and developing countries<sup>[20,21,22,23]</sup>. Consequently, it is imperative to enhance the adult's understanding regarding the transmission of HIV/AIDS from mother to child.

Condom use is highly effective in preventing HIV/AIDS transmission and informational events on using condoms to protect against HIV/AIDS are widely available. However, our study found that only slightly over half of the adults were fully aware of this, with the remaining participants believing that condoms diminish sexual pleasure. This kind of myth/misperception was also observed in previous studies<sup>[24,25]</sup>. It was a popular notion that condoms reduce tactile feelings, restrict physical contact, create a physical barrier between sexual partners, and reduce heat transduction. Therefore, the state authorities should focus on condom promotion campaigns that highlight how condom use can enhance one's sexual enjoyment.

The Integrated Counseling and Testing Centres (ICTCs) (JYOTIS centers) are the key entry points that provide HIV counseling & and testing services and these centers have linkages with NGOs/CBOs and outward linkages with ART centers, outreach services, peer support services, and home-based care services. Through ICTCs, people can receive accurate information about HIV prevention as well as undergo an HIV test in a confidential and supportive setting. Counselling and information are provided to those who test negative for HIV to help them lower their risk and remain negative. Individuals who test positive for HIV receive psychosocial and emotional support as well as referrals to appropriate medical care and therapy<sup>[13]</sup>. It is quite disappointing that, more than half of the adults had never heard about the Integrated Counselling and Testing Centres (ICTC) and few of the respondents believed

that the centre would offer medications for people living with HIV/AIDS. The study findings call for the implementation of stepping up efforts to raise public awareness of ICTC through brochures, posters and advertisements in local language as well as the inclusion of information on ICTC in the school curriculum. Efforts to raise the literacy can also help with this since education eliminates absurd thoughts and provides patients and diseases with a rational perspective.

Assessing the extent of misconceptions regarding HIV transmission, the majority of respondents were aware that the virus was not spread through kissing, hugging or mosquito bites. However, among those with inadequate education, there was a statistically significant difference that was larger for the uneducated than for the educated. Our study results are similar to other research studies that claimed illiterate respondents had more misconceptions than other respondents<sup>[26,27]</sup>. Still, it is concerning that several people thought that sharing a deep kiss would spread HIV/AIDS. Our results support research that has shown incorrect beliefs about the spread of HIV/AIDS through sharing utensils, mosquito bites, and casual contact with infected individuals<sup>[28,14,29,30]</sup>. The present study supports assertions that the behavioral change paradigm, which has been supported in HIV education initiatives, falls short in capturing the impact of false beliefs about how HIV is transmitted<sup>[31,32]</sup>. Eradicating misconceptions would necessitate redirecting efforts towards improving clinical knowledge of the modes of HIV transmission among adults, as well as all other segments of the population, as misconceptions are a result of the interaction of personal, interpersonal, societal, and cultural factors. There is a common notion that HIV-infected persons can be easily recognized by physical appearance<sup>[30,28]</sup>. The qualitative study done by Agu et al found that significant weight loss or being slim, abdominal swelling, change in hair color, long fingernails, small

head size and paralysis are the symptoms of HIV/AIDS.<sup>s</sup> His finding was supported in this study which showed that more than a quarter of the adults believed they could tell if their partner was HIV positive just by looking at their symptoms. The presence of stigma and discrimination inevitably leads to significant physical, psychological, and economic side effects and it permeates and disintegrates social structure<sup>[33,34]</sup>. In our study about 53 percent of the adults had a stigma towards HIV/AIDS<sup>[35]</sup>

Similar to previous studies, more than 60% of the adults believed that there is no cure for HIV/AIDS<sup>[36,30]</sup>. Previous research, conducted even in high-income countries, revealed that some people were unaware of antiretroviral medications, which lower the viral load and enhance the quality of life for HIV-positive patients and some believed that there were no treatments for HIV/AIDS. According to the study's overall findings, adults' understanding of HIV/AIDS is restricted by enduring myths regarding the disease's signs, causes, and prevention strategies, as well as a lack of thorough and unbiased information. These incorrect assumptions may make people more susceptible to HIV infection.

According to this study, people in the community had very little exposure to informational and educational materials (IECs) about HIV/AIDS. This could be due to the poor distribution mechanism of IECs and adults' demotivation to read the materials, which could account for their poor comprehensive knowledge. This study found that adults frequently utilized posters and television, both of which were cited as reliable sources of information. This suggests that television shows and posters connected to HIV/AIDS are more likely to be seen by Kerala's adult population. This result was consistent with the previous study conducted in Harare<sup>[15]</sup>

According to health promotion science, printed IEC materials such as posters and flip charts were important for providing health information regardless of educational status, but people with poor education

preferred pictures and higher education preferred written messages such as leaflets and brochures most of the time. We also found that the majority of the respondents used posters. This study recommended the implementation of an immediate mechanism to improve the utilization and availability of IEC materials through interdepartmental collaboration. Previous studies have already shown how crucial it is to incorporate an array of individuals, facilities, organizations, and departments from different disciplines to increase the availability of IEC materials. There is a dire need to provide an orientation on the significance of IEC materials in behavior change. This study finding shows that the small font size and lack of aesthetic appeal in the available IEC materials were the main reasons for the poor utilization of IEC materials and most of the participants were more likely to use television as the IEC source. This finding was in line with the study conducted in the Jimma zone [37] and this finding was contradicted by health promotion science. Different articles and books indicate that using printed IEC materials is important to generate interest in using IEC materials. We found that there is a lack of support from the government side in branding, releasing ads, IEC material distribution, and utilization and poor interdepartmental collaboration. Therefore, orientation trainings, sensitization workshops to the officials in the health department and line departments on significance of IEC materials are very essential. Also, KSACS urgently requires support from NACCO in terms of funds and human resources for the smooth implementation of IEC activities across state.

This study has many strengths. It includes this is the first study to assess the utilization of IEC materials on HIV / AIDS at the state level, the study was conducted among the general population in the community which would help to generalize the findings across the state and this study opted for mixed method approach which helped to get more

clarity on the facilitators and barriers in the availability and utilization of IEC materials in the community.

## CONCLUSION

Majority of the adults had not seen any IEC materials related to HIV/AIDS during the last six months. The absence of departmental support and sustainable distribution mechanism were the main reasons cited. Among those who saw the IEC materials reported that the available IEC materials lacked persuasiveness, focus, clarity, precision, and aesthetics. Overall the knowledge regarding HIV/AIDS was found to be poor especially knowledge regarding the transmission of HIV/AIDS from pregnant mothers to and about testing centers. Television was the most preferred source of information. No IEC materials were published for visually impaired persons. Bivariate analysis showed statistical significant associations between place of residence and overall knowledge of HIV/AIDS.

## Recommendations

- Revise the existing IEC materials by reducing text, using large fonts and more pictures to help the beneficiaries understand messages easily.
- Develop guidelines on BCC strategy and provide BCC training for all staff and community leaders/volunteers.
- Undertake more discussions with demonstrations through small group exercise, role play and sharing best practices/stories and evidences from life.
- Use less text and more pictures in reading materials for the beneficiaries with poor education to understand easily
- Make video films and screen them in bus stands, theatres, malls and outpatient waiting counters etc (at least in Government facilities).
- Develop TV promotional and drama/role play as new materials to address other
- stake holders and community at large.
- Policy change for BCC strategies) development and dissemination) through

- inter departmental coordination.
- Introduce quarterly BCC plans and monitor the implementation progress on a regular basis
- Develop tools to monitor the BCC activities
- Evaluation of BCC activities on regular basis (every year in survey mode)
- Identify champions from the community (representatives from all communities) and bring them as resource persons
- Assign responsibility for one person from each department to ensure the distribution of IEC materials in the community.
- Develop a system for the distribution of IEC materials through primary / family health centres
- Improve inter-personal communication with stakeholders

#### **Declaration by Authors**

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