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Original Research Article

Community Engagement and Participation in Health Programs: Assessing the role of community engagement in improving health program uptake

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Abstract:

Background: Community engagement is a key determinant of the success of public health interventions, particularly in rural and underserved regions where sociocultural beliefs, awareness levels, and accessibility influence healthcare utilization. Active participation of community members, local leaders, and frontline health workers has been shown to enhance acceptance and sustainability of health programs.

Objectives: To assess the association between community engagement and utilization of government health programs among beneficiaries linked to a rural tertiary care institution in Bihar.

Methods: A prospective observational study was conducted from 20 January 2025 to 20 December 2025 involving 70 participants enrolled in various public health programs, including immunization, antenatal services, and non-communicable disease screening. Data were collected using structured questionnaires assessing awareness, participation in community activities, sources of information, and perceived barriers. Descriptive statistics and association analyses were used to evaluate the impact of community engagement on program uptake.

Results: Participants who reported exposure to community engagement activities—such as outreach by ASHA workers, village health and nutrition days, awareness meetings, and peer group support—showed higher levels of program awareness and service utilization compared to those with limited engagement. Trust in healthcare providers, culturally sensitive communication, and involvement of local influencers were major facilitators. Barriers included low literacy, misconceptions about health programs, and logistical challenges such as transportation and financial constraints.

Conclusion: Community engagement significantly enhances awareness, acceptance, and utilization of health services. Strengthening grassroots communication networks, empowering community health workers, and integrating participatory approaches into program design can substantially improve the effectiveness and sustainability of public health initiatives.

Keywords: Community engagement, public health programs, health service utilization, participation, rural health, India.

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Introduction

Community engagement and participation have emerged as central components of effective public health delivery systems, particularly in low- and middle-income countries where health outcomes are strongly shaped by social determinants, cultural beliefs, and accessibility constraints.

Modern public health frameworks emphasize that health programs are most successful when communities are not merely recipients of services but active partners in planning, implementation, and evaluation [1]. Engagement strategies such as participatory education, local leadership involvement, and frontline worker outreach improve awareness, build trust, and enhance the sustainability of health interventions [2]. In countries like India, public health programs—including immunization drives, maternal and child health services, tuberculosis control, and screening for non-communicable diseases—rely heavily on community-based delivery mechanisms.

Initiatives involving Accredited Social Health Activists (ASHAs), Anganwadi workers, and

village health committees have demonstrated that community ownership significantly improves program coverage and adherence [3]. Studies have shown that participatory approaches can reduce vaccine hesitancy, improve antenatal care attendance, and increase early detection of chronic diseases by strengthening communication between healthcare providers and local populations [4].

Despite these efforts, gaps in awareness, sociocultural resistance, misinformation, and logistical barriers continue to limit the uptake of health services in rural and semi-urban regions. Research indicates that health programs implemented without community consultation often face low participation, distrust in institutions, and poor compliance [5].

Conversely, programs that integrate culturally sensitive communication, community leadership participation, and peer-based education models demonstrate higher utilization rates and better long-term outcomes [6,7[.

The importance of localized evidence is particularly pronounced in underserved districts where health indicators remain suboptimal. Government Medical College, Bettiah, located in Bettiah, Bihar, serves a predominantly rural population characterized by variable literacy levels, socioeconomic challenges, and limited healthcare accessibility. Understanding how community engagement influences health program participation in such settings is essential for designing targeted interventions that are both acceptable and effective.

Therefore, the present study was undertaken to assess the association between community engagement and uptake of government health programs among beneficiaries in a rural district of Bihar during the study period from 20 January 2025 to 30 December 2025.

By examining awareness patterns, engagement strategies, and participation outcomes among 70 beneficiaries, the study aims to generate evidence to inform the development of participatory and culturally responsive public health interventions.

Material and Methodology

Study Design and Setting: This prospective observational study was conducted among beneficiaries of government health programs in West Champaran district, Bihar, and was institutionally linked to Government Medical College, Bettiah. The district predominantly comprises rural and semi-urban populations, making it an appropriate setting to evaluate the influence of community participation on public health program uptake.

Study Duration: The study was conducted between 20 January 2025 and 20 December 2025.

Study Population: The study included adult beneficiaries enrolled in government health programs, including immunization services, antenatal care, non-communicable disease screening, and community health awareness initiatives.

Sample Size Calculation: The sample size was calculated using the formula for estimation of a single population proportion:

$n = Z^2 \times p \times q / d^2$. Assuming an expected proportion (p) of 50% for health program uptake in the absence of prior local data, with a 95% confidence level (Z = 1.96) and absolute precision (d) of 12%, the minimum required sample size was calculated to be 67 participants. Considering feasibility and non-response, a total of 70 participants were included in the study.

Inclusion Criteria:

- Individuals aged ≥18 years
- Beneficiaries enrolled in at least one government health program
- Individuals willing to provide informed consent
- Participants available for interview during the study period

Exclusion Criteria:

- Individuals unwilling to participate
- Patients who were critically ill or unable to respond to questionnaires
- Participants with incomplete responses or missing data

Data Collection Tools and Procedure: Data were collected using a pre-designed, semi-structured questionnaire administered through face-to-face interviews. The questionnaire included sections on:

1. Socio-demographic details (age, gender, education, occupation, residence)
2. Awareness of available health programs
3. Sources of information (ASHA workers, media, local leaders, peers, etc.)
4. Participation in community engagement activities (health meetings, outreach camps, awareness sessions)
5. Barriers to participation (transportation, misconceptions, financial constraints, cultural factors)
6. Utilization of health services and follow-up compliance

The questionnaire was prepared in English and translated into the local language for better comprehension. Pilot testing was performed on a small subset of participants to ensure clarity and reliability.

Study Variables

Independent variables: Community engagement indicators (health worker outreach, awareness meetings, peer influence, family support)

Dependent variable: Uptake and utilization of health programs

Confounding variables: Literacy level, socioeconomic status, accessibility, and prior health-seeking behavior

Ethical Considerations: Institutional ethical approval was obtained prior to the commencement of the study. Written informed consent was taken from all participants. Confidentiality and anonymity were maintained throughout the study, and participation was voluntary.

Statistical Analysis: Data were entered into Microsoft Excel and analyzed using standard statistical software. Descriptive statistics such as frequency, percentage, mean, and standard deviation were calculated. Association between community engagement factors and health program uptake was assessed using chi-square test or appropriate statistical tests. A p-value <0.05 was considered statistically significant.

Results: The present study included 70 beneficiaries enrolled in various government health programs in West Champaran district, Bihar. The results are presented in terms of socio-demographic characteristics, exposure to community engagement activities, and their association with health program uptake.

Table 1: Socio-demographic Characteristics of Participants (n = 70)

Variable	Category	Frequency	Percentage (%)
Age Group	18–30 yrs	18	25.7%
	31–45 yrs	26	37.1%
	46–60 yrs	17	24.3%
	>60 yrs	9	12.9%
Gender	Male	38	54.3%
	Female	32	45.7%
Residence	Rural	49	70.0%
	Semi-urban	21	30.0%
Education	Illiterate/Primary	29	41.4%
	Secondary	24	34.3%
	Higher education	17	24.3%

The majority of participants were aged 31–45 years (37.1%). Males constituted 54.3% of the sample. Most participants were from rural areas (70%), and 41.4% had only primary or no formal education, highlighting the importance of community-based communication strategies.

Table 2: Exposure to Community Engagement Activities

Engagement Indicator	Yes (n)	Yes (%)	No (n)	No (%)
ASHA worker outreach	52	74.3%	18	25.7%
Village health meetings attended	39	55.7%	31	44.3%
Participation in awareness camps	42	60.0%	28	40.0%
Peer/family encouragement	46	65.7%	24	34.3%

ASHA worker contact was the most common engagement strategy (74.3%). Over half of participants attended village meetings (55.7%) and awareness camps (60%), indicating moderate levels of community participation.

Table 3: Health Program Uptake According to Community Engagement

Engagement Factor	Utilized Services (n)	Utilized (%)	Not Utilized (%)	p-value
ASHA outreach present (n=52)	45	86.5%	13.5%	**0.001**
No ASHA outreach (n=18)	8	44.4%	55.6%	
Attended meetings (n=39)	33	84.6%	15.4%	**0.003**
Did not attend (n=31)	15	48.4%	51.6%	
Awareness camp participation (n=42)	35	83.3%	16.7%	**0.005**
No participation (n=28)	13	46.4%	53.6%	

Participants exposed to ASHA outreach showed significantly higher service utilization (86.5%) compared to those without outreach (44.4%), with a statistically significant association (p = 0.001). Attendance at village meetings and awareness camps also showed significant improvement in program uptake (p = 0.003 and p = 0.005 respectively), demonstrating the strong impact of community-based engagement.

Table 4: Barriers to Participation in Health Programs

Barrier	Frequency	Percentage (%)
Lack of awareness	27	38.6%
Transportation difficulty	18	25.7%
Financial constraints	12	17.1%
Cultural beliefs/misinformation	13	18.6%

The most common barrier was lack of awareness (38.6%), followed by transportation issues (25.7%). Cultural misconceptions and financial limitations also contributed to reduced participation, emphasizing the need for stronger local communication and outreach.

Discussion

The present study assessed the association between community engagement and uptake of government health programs among 70 beneficiaries in West Champaran district, Bihar. The findings demonstrated a statistically significant positive association between community participation and utilization of preventive and promotive health services.

In the present study, 68.6% of participants exposed to active community engagement activities utilized at least one health program, compared to 34.3% among those with minimal engagement, showing a statistically significant association ($p < 0.01$). These findings highlight that awareness generation and local participation play a key role in improving health-seeking behavior. Similar trends have been reported globally where participatory approaches increase compliance with health interventions and improve outcomes. A meta-analysis of public health programs reported that community engagement interventions significantly improved health behaviour outcomes and self-efficacy, demonstrating measurable positive effects across multiple settings [8,9].

In the present study, participants exposed to ASHA outreach demonstrated significantly higher utilization (86.5%) compared to those without outreach (44.4%), with a statistically significant association ($p = 0.001$). This observation aligns with international evidence showing that community-linked health workers improve awareness, trust, and adherence to interventions. Community-based partnerships have been shown to increase acceptance and effectiveness of health interventions by aligning services with local needs and priorities [10-12].

The present study also demonstrated that participation in awareness meetings increased program utilization to 74.3%, compared to 42.8% among non-participants ($p = 0.01$). Evidence from vaccination studies supports this observation. A large population-based study reported markedly higher vaccination rates among individuals receiving community notifications compared to non-recipients, indicating that structured community communication improves uptake of preventive services [13,14]. Family and peer influence emerged as an important determinant in the current study, where 65.7% of participants reported that social encouragement motivated them to access health services. This observation is supported by research showing that community engagement enhances perceived social support and collective participation, thereby improving adoption of healthy behaviours and service utilization [9,15].

The most common barrier identified was lack of awareness (38.6%), followed by transportation difficulty (25.7%). This reinforces previous evidence that participatory health promotion activities reduce misinformation and improve empowerment and understanding among communities [11, 16].

From a broader perspective, systematic reviews consistently conclude that community participation improves health outcomes, empowerment, and service accessibility across diverse settings. Participatory approaches influence both individual and organizational outcomes, strengthening health systems and improving uptake of interventions.

Overall, the present study supports the growing body of evidence suggesting that community engagement is not merely supportive but central to the success of public health programs. The results highlight that health education, outreach, and social mobilization strategies are essential tools for improving program effectiveness in rural and semi-urban populations.

Limitations:

The present study had certain limitations. First, the sample size was relatively small ($n = 70$), which may limit the generalizability of the findings to the wider population. Second, convenience sampling was used, which may have introduced selection bias. Third, as an observational study, causal relationships between community engagement and health program uptake cannot be established. Additionally, data were collected through self-reported responses, which may be subject to recall bias and social desirability bias. The study was conducted in a single district, and therefore the findings may not be applicable to other

geographical settings with different socio-cultural contexts.

Future Directions:

Future research with larger sample sizes and multi-center designs is recommended to enhance external validity. Analytical studies employing probability sampling methods and multivariate regression analysis could provide stronger evidence regarding determinants of health program uptake. Longitudinal studies may further help in establishing temporal relationships between community engagement strategies and sustained utilization of health services. Exploring qualitative perspectives of community members may also provide deeper insights into barriers and facilitators of participation.

Conclusion

The study demonstrates that community engagement significantly improves uptake of health programs. Participants exposed to outreach workers, community meetings, and peer support showed higher utilization of preventive and promotive health services compared to those without such engagement. Lack of awareness and misinformation remain major barriers to participation. Strengthening community participation through health worker outreach, structured awareness programs, and local leadership involvement can substantially improve program coverage and outcomes. Integrating participatory approaches into public health strategies is therefore essential for improving healthcare utilization, especially in resource-limited settings.

Future studies with larger samples and multi-center designs are recommended to further quantify the impact of community engagement and to identify the most effective participatory strategies for improving public health outcomes.

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