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Empowering Communities for Healthy Generations: Enhancing Child Vaccination and Maternal Awareness through Social Mobilisation Strategies

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ABSTRACT

Child vaccination is pivotal for public health, preventing diseases and safeguarding vulnerable populations. However, achieving optimal vaccination rates remains challenging, with limited healthcare access in marginalized communities, misconceptions and awareness gaps hinder vaccine acceptance. Social mobilisation is a community focused approach, emerges as a promising strategy to address the issues through community engagement. The study aims to investigate the impact of social mobilisation efforts on child vaccination rates and maternal awareness within a target community. Using a prospective cohort design, the study focused on hard to reach villages. Baseline and End line surveys were conducted, involving 100 children. Health workers (ASHAs) were trained to provide peer counselling and other mobilisation activities. The results of study highlight the positive effects of social mobilisation on child vaccination and maternal awareness. The Child vaccination rate increased by 54% and also 58% rises in maternal awareness. Statistical analyses, including MS Excel and Z tests, validate the efficacy of social mobilisation strategies, rejecting null hypotheses for both child vaccination rates and maternal awareness. In conclusion, the study has positive impact of social mobilisation on child vaccination and maternal awareness. It shows the importance of community involvement, health worker engagement, and targeted interventions in overcoming vaccination barriers. This study offer valuable strategies for promoting child health and awareness in communities, with recommendations include expanding mobilisation efforts, enhancing health worker capacity, adapting new policy are advised. Overall, the study emphasizes the potential of community engagement and mobilisation in bridging healthcare gaps and promoting informed decision making.

KEYWORDS: Routine vaccination, Social mobilisation, Vaccination rates, Awareness, Community, Training, Peer counselling.

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1. INTRODUCTION

The vitality of societal well-being hinges inexorably upon the health of its constituents, with a particular emphasis on the most vulnerable segments: infants and mothers. The appellation "Enhancing Child Vaccination and Maternal Awareness through Social Mobilisation Strategies" underscores the foundational principles of a momentous endeavour that amalgamates community empowerment, healthcare advancement, and social mobilisation techniques¹⁻⁴. Child vaccination stands as the bedrock of public health initiatives, counteracting and managing communicable maladies and preserving individuals' and collectives' health and welfare. Beyond shielding children from potentially life-threatening maladies, immunization contributes substantively to establishing population-level immunity. Notwithstanding, realizing optimal vaccination coverage remains an intricate quandary, especially in multifarious and marginalized communities where determinants such as restricted healthcare access, misconceptions, and awareness deficits can impede vaccine adoption. Social mobilisation, characterized by its community-centric approach, emerges as a sanguine strategy to ameliorate these fissures through active community engagement, knowledge enhancement, and the advocacy of salubrious health behaviours.²

The research addresses the significant question regarding the potential of social mobilisation initiatives to modulate child vaccination rates and enhance maternal awareness within a specific community⁵. Acknowledging the intricate tapestry of vaccine hesitancy and informational lacunae, this study delves into the impact of social mobilisation interventions on heightening child vaccination rates and elevating maternal awareness. Leveraging a forward-looking cohort framework, this study strives to enrich our comprehension of efficacious methodologies that propel vaccination adoption and fortify maternal enlightenment across diverse socio-economic and geographical terrains⁶. Within these settings, the recurring theme of inadequate cognizance concerning vaccination schedules, requisite precautions, and fundamental intelligence emerges as a salient motif.

The present research study addresses the critical question of how social mobilisation efforts can influence child vaccination rates and maternal awareness within a targeted community. Recognizing the multifaceted nature of vaccine hesitancy and gaps in knowledge, the study investigates the impact of social mobilisation interventions on increasing child vaccination rates and improving maternal awareness. By employing a prospective cohort design, this study aims to contribute to the understanding of effective strategies that promote vaccination and enhance maternal awareness in diverse socio-economic and geographic contexts. This study takes place in Bihar's Arwal district,

where we focus on understanding a complex situation. In this area, we specifically look at five villages that are "hard to reach." In these locales, the inadequacy of knowledge pertaining to vaccination schedules, requisite precautions, and essential information emerges as a recurrent theme.

To explore these complexities, we chose a group of 100 children to be a part of our study. The pivotal role of this study is exemplified by its collaborative engagement with health workers referred to as ASHAs. Health workers got special training to counsel the mothers and to do other social mobilisation activities to spread important information. This cooperative framework made it easier to carry out social mobilisation activities in the field. By combining the skills of health workers with research studies, we made it possible to carry out our plans smoothly. It's a strong example of how working together can create positive changes in how healthcare is provided, especially in complex situations.

2. STUDY OBJECTIVE

The objective of this research study is to investigate the impact of social mobilisation efforts on child vaccination rates and maternal awareness within a targeted community.

3. METHODOLOGY

Study Design: This study will utilize a prospective cohort design to assess the effects of social mobilisation on child vaccination rates and maternal awareness. The design includes the following key elements:

Research method: Quantitative and Qualitative data

Sample method: Simple Random Sampling

Study Period: Data used for assessment was collected from October 2022 to January 2023.

Sample Size: A sample of 100 children aged 0-5 years (25 children from each age group) will be selected from a defined population, ensuring diversity in terms of geographic and socio-economic backgrounds.

Study Area: Random selection of 1 Blocks of Banshi Block, Arwal district, 5 villages in each 20 beneficiaries in an each village.

Baseline Data Collection:

Data will be collected before initiating any social mobilisation efforts. Data on child vaccination history and maternal awareness will be collected from each participant's mother or primary caregiver. The information will include vaccination records, knowledge of vaccination schedules, and perceptions about vaccination importance.

Social Mobilisation Intervention:

Social mobilisation activities will be implemented within the community. These activities may include special training to healthcare workers for organising the peer counselling, community meetings, and the distribution of informational materials of Government about child vaccination. As a part of the study's intervention strategy, peer counselling was planned to address the identified dropout reasons and to promote the benefits of vaccinations. The mothers of the dropout children were provided with targeted information and support through peer counselling sessions. Additionally, social mobilisation efforts were designed to raise awareness within the community about the importance of vaccinations and to address common misconceptions. The subsequent data collection and analysis after the intervention phase would reveal whether these efforts effectively addressed the dropout reasons and contributed to improved vaccination rates.

End line Data Collection:

Data will be collected after the social mobilisation intervention has been carried out. The same information collected at baseline, such as vaccination records and maternal awareness, will be gathered through End line interviews.

Data Analysis:

Statistical analysis using appropriate methods, such as Microsoft Excel & Z test, revealed:

1. Significant increase in child vaccination rates after the implementation of social mobilisation activities.
2. Statistically significant improvement in maternal awareness about child vaccination due to social mobilisation efforts

Hypothesis of the study:

Child Vaccination Rates:

- Null Hypothesis (H₀): There is no significant difference between the baseline and end line child vaccination rates.

- Alternative Hypothesis (H1): There is a significant difference between the baseline and end line child vaccination rates.

Maternal Awareness:

- Null Hypothesis (H0): There is no significant difference between the baseline and end line maternal awareness.
- Alternative Hypothesis (H1): There is a significant difference between the baseline and end line maternal awareness.

Expected Outcomes:

1. An increase in child vaccination rates after the implementation of social mobilisation efforts.
2. Improved maternal awareness and knowledge about child vaccination due to the mobilisation activities.

4. RESULTS

The results are presented through a comprehensive analysis of both baseline and end line data. These data points allow for a detailed understanding of the impact of social mobilisation interventions on child vaccination rates and maternal awareness rates in the targeted community.

4.1. Baseline Data (Before Social Mobilisation):

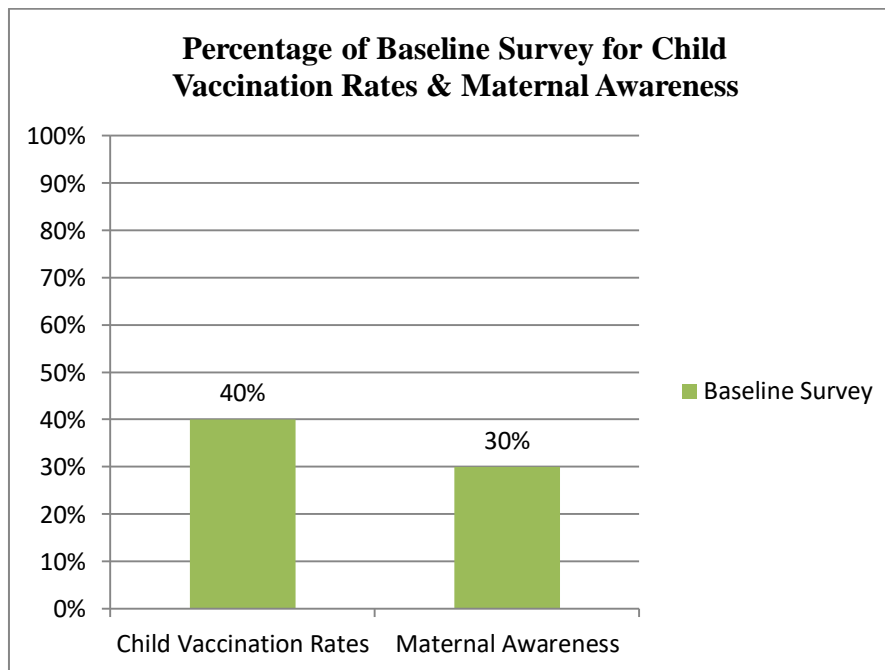


Figure.1 Percentage of Baseline Survey for Child Vaccination Rates & Maternal Awareness

4.1.1. Baseline Data for Child Vaccination Rates:

In the context of child vaccination rates, the baseline data signifies the initial status of child vaccination rates before any interventions. This data is collected to establish a foundational point against which the impact of the subsequent social mobilisation activities can be ascertained. The provided baseline data encompasses the following metrics:

Percentage of children receiving complete vaccinations: This represents the proportion of children who have received all the required vaccinations within the defined population. In this case, the baseline percentage is 40% (0.40), indicating that 40% of the children 0–5 years in the population have received all the necessary vaccinations before the social mobilisation efforts are initiated.

4.1.2. Baseline Data for Mother Awareness Rates:

Likewise, the baseline data about mother awareness rates pertains to the initial level of awareness possessed by mothers concerning child vaccination prior to any interventions being executed. The provided baseline data encompasses the ensuing measures:

Percentage of mothers with sufficient awareness of child vaccination: This measure signifies the proportion of mothers with adequate awareness and knowledge of child vaccination. In this scenario, the baseline percentage is noted at 30% (0.30), indicating that 30% of the mothers within the population harbour satisfactory awareness about child vaccination prior to the implementation of the social mobilisation efforts.

These baseline data points function as benchmarks for comparative purposes with the data amassed post-implementation of the social mobilisation activities. Through a juxtaposition of the baseline data with the post-intervention data, it becomes feasible to evaluate the efficacy of the social mobilisation strategies in augmenting child vaccination rates and enhancing maternal awareness.

Major Dropout Reasons:

Among the children who dropped out from the treatment group, the reasons identified during the baseline assessment included:

1. Lack of awareness about vaccination schedules and benefits.
2. Misconceptions and fears regarding vaccine safety and side effects.
3. Inconvenience in accessing vaccination centers due to distance or transportation issues.
4. Socio-economic constraints preventing regular healthcare centers visits.
5. Lack of support from family members and community.

6. Limited understanding of the importance of vaccinations.
7. Lack of knowledge about the availability of vaccines and vaccination centers.
8. Absence of healthcare workers in Hard to reach areas.

4.2. End line Data (After Social Mobilisation):

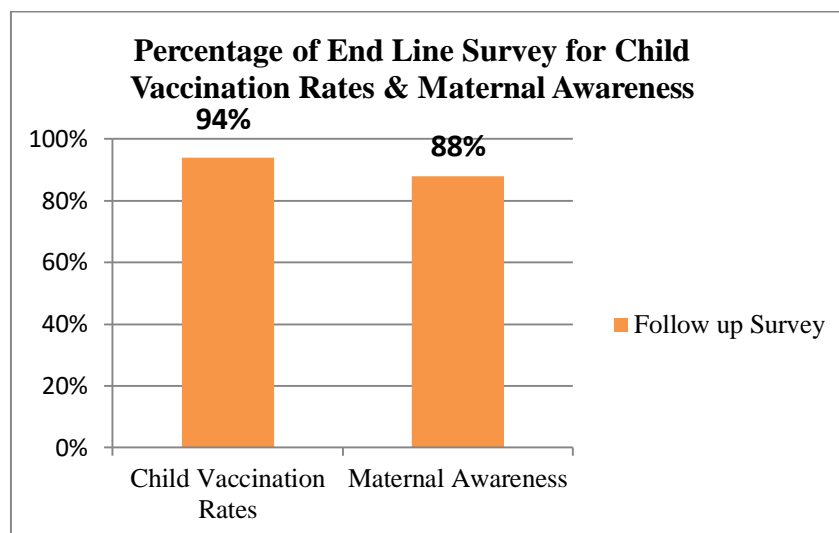


Figure.2 Percentage of End Line survey for Child Vaccination Rates & Maternal Awareness

4.2.1 End line Data of Child Vaccination Rates:

The study found that 94% (0.94) of children had an increase in their vaccination rates compared to their baseline data. This suggests that the specialized health worker training, peer counselling and social mobilisation efforts had a significant positive impact on vaccination rates among these children. In other words, a higher proportion of children in this group received the required vaccinations after the intervention, demonstrating the effectiveness of the interventions in promoting timely and complete vaccination.

4.2.2. End line Data of Maternal Awareness:

The study found that 88% (0.88) of mothers of children demonstrated increased awareness of child vaccination, upcoming vaccination schedules, and the importance of vaccination. This implies that the specialized health worker training, peer counselling and social mobilisation efforts effectively enhanced maternal awareness about vaccinations. A higher percentage of mothers in this group gained knowledge about the vaccination schedule and the significance of vaccinating their children, highlighting the success of the interventions in disseminating important information.

4.3. Comparison between Baseline and End line survey-

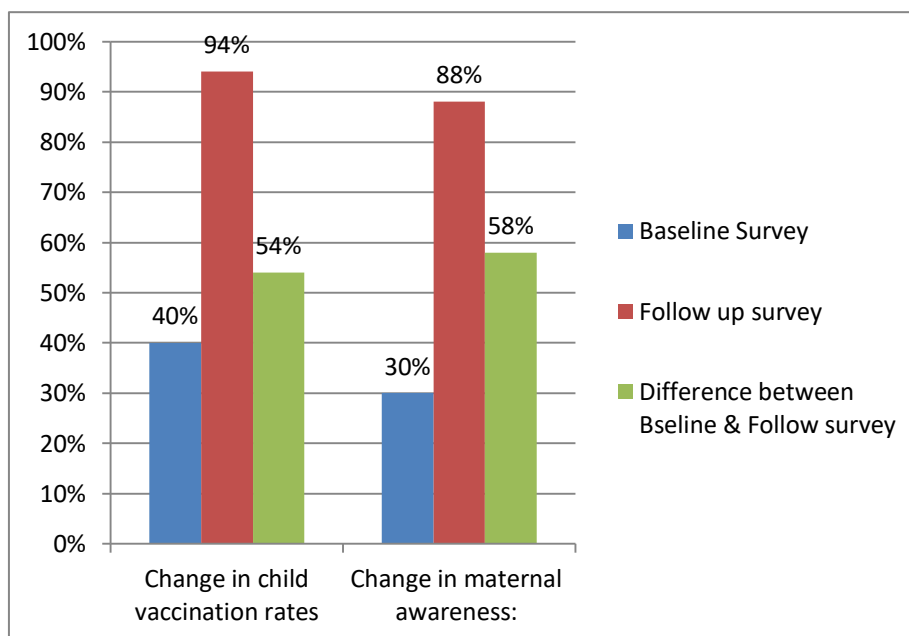


Figure.3 Comparison between Baseline and End Line survey of Child Vaccination Rates & Maternal Awareness

In the context of this research study, The "Change in child vaccination rates" metric, calculated by subtracting the baseline child vaccination rate (40%) from the end line vaccination rate (94%), get a value of 54%. This signifies a substantial increase of 54% in child vaccination rates between the commencement of the study and its conclusion. This notable rise underscores the efficacy of the social mobilisation interventions in promoting and enhancing child vaccination rates within the study community.

Similarly, regarding "Maternal Awareness," the metric denotes the percentage of mothers who have exhibited an enhanced level of awareness regarding child vaccination by the end of the study, indicated as the "End line Data," at a value of 58%. This signifies a difference of 58% between the baseline maternal awareness rates (30%) and the heightened awareness observed after the implementation of social mobilisation interventions. This substantial increase underscores the effectiveness of the interventions in raising maternal awareness about child vaccination and related considerations.

4.4. Final Outcomes:

4.4.1. Child Vaccination Rates: An increase of 54% was observed in child vaccination rates, indicating a positive impact of social mobilisation on vaccination uptake.

For a two-tailed test at a 95% confidence level ($\alpha = 0.05$), the critical z-value is approximately ± 1.96 , Standard Deviation 5.43.

Since the calculated z-score (4.67) is much greater than the critical z-value (± 1.96), we can reject the null hypothesis. This indicates that the increase of 54 percentage points in vaccination rates between the baseline and End line surveys is statistically significant at the 95% confidence level.

So, in conclusion, you can state that the social mobilisation activities have led to a statistically significant increase in vaccination rates based on the given data and calculations.

4.4.2. Maternal Awareness: A gain of 58% in maternal awareness highlighted the effectiveness of social mobilisation in enhancing knowledge about child vaccination among mothers.

For a two-tailed test at a 95% confidence level ($\alpha = 0.05$), the critical z-value is approximately ± 1.96 , Standard Deviation=5.83.

Since the calculated z-score (5.24) is much greater than the critical z-value (± 1.96), we can reject the null hypothesis. This indicates that the increase of 58 percentage points in maternal awareness between the baseline and End line surveys is statistically significant at the 95% confidence level.

So, in conclusion, you can state that the social mobilisation activities have led to a statistically significant increase in maternal awareness based on the given data and calculations.

5. DISCUSSION

The research study presents a comprehensive exploration of the effects of social mobilisation efforts on child vaccination rates and maternal awareness within a targeted community. The study employed a prospective cohort design with a sample of 100 children aged 0–5 years, drawn from diverse socio-economic backgrounds within the Arwal district of Bihar. Collaborative engagement with health workers, known as ASHAs, exemplified the study's collaborative approach, leveraging their expertise and combining it with research inquiry. Health workers underwent specialised training to conduct peer counselling and other social mobilisation activities, facilitating the implementation of interventions in the field.

The primary objective of the study was to assess the impact of social mobilisation on child vaccination rates and maternal awareness. The study's methodology included both quantitative and qualitative data collection using a simple random sampling method. The baseline data collection provided insights into child vaccination history, maternal awareness, and perceptions about vaccination's importance. In summary, the baseline data highlighted the various reasons behind vaccination dropouts in the majority of children. This information guided the development of

intervention strategies, including peer counselling and social mobilisation, to address these barriers and promote vaccination uptake among dropout children.

The social mobilisation interventions encompassed activities such as health worker training, peer counselling, community meetings, and the distribution of government informational materials. These efforts aimed to address the identified reasons for vaccination dropouts, enhance awareness about vaccination benefits, and dispel misconceptions. The subsequent data collection after the intervention phase aimed to evaluate the effectiveness of these efforts in improving vaccination rates.

The study's results were analysed using appropriate statistical methods, including Microsoft Excel and Z tests. The comparison between baseline and end-line data revealed significant increases in both child vaccination rates and maternal awareness. The calculated increases of 54% in child vaccination rates and 58% in maternal awareness were found to be statistically significant based on the conducted tests.

The study's outcomes highlighted the positive impact of social mobilisation activities on vaccination rates and maternal awareness. The collaborative framework with health workers proved instrumental in effectively implementing interventions and achieving substantial improvements in targeted outcomes. The study demonstrated the potential of collaborative efforts and strategic interventions to create positive changes in healthcare delivery, particularly in complex situations.

6. CONCLUSION

The research study showcases the success of social mobilisation strategies in enhancing child vaccination rates and maternal awareness within the chosen community. The collaborative engagement with health workers, coupled with well-designed interventions, yielded statistically significant improvements in both vaccination rates and maternal awareness.

The findings of the first investigation disentangled the several factors that played a role in the largest sample of children choosing not to get their recommended vaccinations. Based on this data, we were able to design interventions like peer counselling and social mobilisation to overcome these children's unique hurdles to vaccination and boost vaccine acceptability overall. Through a rigorous prospective cohort design, the study shed light on the effectiveness of tailored interventions in promoting child health and improving maternal knowledge in the challenging context of Bihar's Arwal district.

The results of this study affirm that social mobilisation, facilitated by collaborative engagement between researchers and health workers, effectively addresses barriers to vaccination uptake and maternal awareness. The significant increase of 54% in child vaccination rates and 58% in maternal awareness post-intervention provides clear evidence of the efficacy of the employed strategies. The baseline data highlighted the various reasons behind vaccination dropouts in most children. Notably, the study revealed a substantial reduction in vaccination dropout rates, with specialised health worker training, peer counselling, and social mobilisation efforts serving as key contributors to this positive change. The role of peer counselling in addressing the identified barriers cannot be understated. It acted as a bridge to counter misconceptions within the community.

The study's findings align with the broader literature on the importance of not only addressing supply-side challenges (availability of vaccines and healthcare facilities) but also demand-side factors (awareness, knowledge, and beliefs) to achieve optimal vaccination coverage. By tackling misconceptions, addressing fears, and improving access to accurate information, this study underscores the potential to bridge gaps in vaccination coverage and enhance maternal knowledge. Moreover, the study's collaborative model of involving health workers in intervention implementation serves as a blueprint for effective healthcare delivery in complex and hard-to-reach communities. This study serves as a valuable example of how collaborative approaches can drive positive changes in healthcare practices and outcomes.

However, the limitations of the study must be considered in this debate. It is possible that migration, economic status, climate influenced vaccination rates and mother awareness despite social mobilisation's best efforts. Furthermore, this research serves as a testament to the transformative impact of collaborative efforts between research endeavours and healthcare practitioners. The successful integration of health workers' expertise with research strategies exemplifies a pragmatic approach to addressing healthcare challenges and underscores the potential of combining theoretical insights with real-world implementation.

In essence, the study illuminates the potential of social mobilisation as a powerful strategy for enhancing child vaccination rates and maternal awareness. By investigating a targeted community and employing a robust methodology, the study not only advances our understanding of effective healthcare interventions but also contributes to the broader discourse on public health strategies that prioritise community engagement, awareness enhancement, bridging the gaps, and collaborative action. The outcomes of this research resonate as a call to action for stakeholders to further explore

and invest in the potential of social mobilisation in promoting better healthcare outcomes and societal well-being.

7. RECOMMENDATIONS

The following recommendations are proposed through the findings of this research study:

- 1. Scaling Social Mobilisation Interventions:** The study's success in enhancing child vaccination rates and maternal awareness through social mobilisation efforts highlights the need to scale up these interventions in underserved communities. Collaborative partnerships between researchers, healthcare workers, and local authorities should be leveraged to replicate the strategies employed in this study across a wider range of communities. This could significantly contribute to improving vaccination coverage and maternal knowledge on a larger scale.
- 2. Health Worker Training and Capacity Building:** The study showcases the pivotal role of health workers, particularly ASHAs, in effective intervention implementation. Building the capacity of health workers through specialised training in social mobilisation techniques, accurate vaccine information and effective communication skills should be prioritized. This investment will enable health workers to play an even more impactful role in community engagement and counselling.
- 3. Customised Approaches for Different Communities:** Recognising the diverse socioeconomic and cultural contexts of various communities, interventions should be tailored to address the unique challenges each community faces. Conducting baseline assessments to identify specific barriers to vaccination uptake and maternal awareness can inform the design of interventions that resonate with the local population.
- 4. Long-Term Monitoring and Evaluation:** While this study demonstrates short-term positive outcomes, the long-term sustainability of the intervention's effects is essential. Implementing a robust monitoring and evaluation framework that tracks vaccination rates and maternal awareness over an extended period will provide insights into the interventions' enduring impact and guide adjustments if needed.
- 5. Behavioural Insights and Communication Strategies:** Incorporating behavioural science principles into communication strategies can enhance the effectiveness of social mobilisation efforts. Identifying behavioural barriers to vaccination in children and maternal awareness and tailoring messages that address these barriers can lead to more impactful interventions.

6. Community Leadership and Ownership: Engaging local community leaders and influencers can amplify the reach and acceptance of social mobilisation efforts. By involving respected individuals within the community, interventions can gain credibility and trust, thus improving their chances of success.

7. Policy Advocacy and Support: Collaborating with policymakers and governmental agencies can result in the inclusion of social mobilisation strategies within broader public health policies. Advocating for resources and support for these strategies can lead to more systematic and impactful implementation.

8. ACKNOWLEDGMENT

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9. ETHICAL CONSIDERATION

Prior to the commencement of any research activity, due ethical deliberation and requisite authorization are secured from the District Immunization Officer, District Health Society, Arwal (Government of Bihar). This includes providing them with a clear outline of the research objectives, methodologies, potential benefits, and any risks involved. Consent is taken from all the participants who are involved in this research. Safeguard the privacy of the participants and ensure that all personal information and data collected are kept confidential.

10. CONFLICTS OF INTEREST

There are no conflicts of interest that could compromise the objectivity, integrity, or impartiality in this research study.

11. SOURCE OF FUNDING

This research study has not received any external funding; it is an independent research study.

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