How to optimize health facilities and community linkage in order to enhance immunization service? The case of West Amhara Region, Ethiopia

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Abstract

Background: Health facility-community linkages are important in designing community-level interventions, appropriate immunization service provision modalities, and changing unhealthy behaviors. However, there is limited evidence on the influence of community and facility linkage on vaccination services in Ethiopia.

Aim: This study aimed to explore how the linkage between health facilitiesa and the community could be optimized in order to enhance immunization services.

Methods: A Phenomenological study design, using an explanatory approach was applied in the two districts (Shebele Berenta & South Achefer district) of the Amhara region for the month of June , 2020. Forty-six key informants were interviewed using an interview guide and data was analyzed using open code version 4.02. The data was coded, and thematic analysis was applied.

Results: The finding revealed that there were community platforms to facilitate community and health facility linkage. Respondents also perceived that the community to health facility linkage was an effective strategy for the Expanded Program on Immunization (EPI) service provision. The study revealed that perception of health care providers, health care providers attitude and practices, shortages of stock (medication and supplies), distance from main road and transportation, irregularity in the implementation of rules and regulations, lack of incentives, inadequate counseling and support, lack of awareness, shortages of human resources and lack of training support for health care workers were barriers for effective community-health facility linkage.

Conclusion: The linkage of community and facilities were not approached in the same manner within districts and facilities. Therefore, strengthening a common system for community-health facility linkage and community engagement is critical during immunization services. Establishing a strong strategy of incentivizing mechanisms is vital for the effective implementation of immunization services. An advocacy strategy to mobilize engagement among policy and decision-makers, and other key stakeholders was an important strategy for improving the program. [*Ethiop. J. Health Dev.* 2021; 35(SI-3):75-85]

Keywords: Community, Facility linkage, EPI, Amhara Region, Ethiopia

Background

Globally, the Expanded Program on Immunization (EPI) was established by the World Health Organization in 1974 to address the problem of vaccine-preventable diseases. In Ethiopia, the EPI Program was launched in 1980 to achieve 100% immunization coverage of all children under two years old by 1990 until it was changed to under one year olds in 1986 in line with the global immunization target. The program started with six antigens, and currently, Ethiopia is providing a total of 12 antigens as part of the routine immunization (RI) program. These are BCG, Measles, DPT-HepB-Hib (Pentavalent), Rotavirus, Pneumococcal conjugate vaccine (PCV), Oral/inactivated polio vaccines (bOPV & IPV), Human Papillomavirus vaccine (HPV), and TT/Td TT vaccine [1, 2].

There has been a steady increase in immunization coverage, which has also significantly decreased the incidence and fatalities associated with vaccine-preventable diseases in Ethiopia. Immunization services are provided in static service delivery sites in most health facilities, as an outreach service for communities residing beyond 5 km from the health facilities, and by mobile service strategies to people living in remote areas not covered by health facilities and outreach. Some private hospitals in Addis Ababa, Harari, and Dire Dawa have also been providing vaccination services. In general, the status of access and utilization of vaccination services are efficient. However, there are still issues with data quality and service distributions (equity) across different areas, as well as low coverage [3, 4].

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Community engagement or participation is recommended as a proven intervention to improve immunization services. Linkages with communities involve identifying and developing partnerships with community structures and groups to strengthen the community and service provider's capacity to plan, implement, and communicate immunization services effectively. It involves enhancing community ownership and active involvement in planning, implementation, and monitoring immunization services. It requires targeted advocacy, social mobilization, and behavioral change communication with the community, community leaders, and caregivers so that the community will support and demand the services[4-6].

Volunteer community health workers help to connect health care providers, clients, target populations for particular health needs, and the public to improve access and utilization of immunization services. Creating sustainable and effective linkages between the health facility and community groups can improve access to health services by developing partnerships and sharing common goals between the community and service providers to improve the communities' health during the immunization program. Health facility-community linkages are important in designing community-level activities, appropriate immunization service provision modalities, and changing unhealthy behaviors. Linking communities with health facilities is important to reduce and prevent disease in communities by facilitating early detection, prevention, and treatment[6, 7].

Low immunization coverage and high immunization dropouts with huge variation among regions, EPI data quality problems, and inequity in EPI are long-standing challenges in the EPI program in Ethiopia. The 2018 World Health Organization UNICEF Estimates for Immunization Coverage (WUNEIC) for penta3 and MCV1 were reported to be 72% and 61%, respectively, which are much lower than the admin reports. Based on the Ethiopian Demographic and Health Survey (EDHS) results, EPI coverage increased over the past years, for example, penta3 coverage of 29% in EDHS 2005 to 53% in EDHS 2016 and 61% Mini EDHS 2019, though coverage is always much lower than the admin reports. According to Mini-EDHS 2019, out of the 3,094,996 surviving infants, 1,210,143 were unvaccinated for penta3, and 1,281,328 were unvaccinated for Measles first dose. The significant discrepancies in EPI coverage observed between admin reports and survey findings indicate marked data quality problems [8-15].

Inequity in immunization has remained a major challenge in Ethiopia. According to the EDHS findings, coverage of all basic vaccines and any vaccination coverage has been strongly associated with better wealth status, better education of caregivers, and living in urban areas. Fifty-seven percent of children living in urban areas have received all necessary vaccinations compared with only 37% of children in rural areas. Children in the highest wealth quintile (65%) are more than twice as likely to have received all essential vaccinations as children in the lowest quintile (25%). Sixty-five percent of children whose mothers have more than secondary education had received all basic vaccinations compared with 34% of children whose mothers have no education. The coverage of all basic vaccinations is highest in Addis Ababa (83%) and lowest in Afar (20%[8-10].

Inadequate participation and community engagement during planning, implementation, and monitoring, limited social mobilization, and the use of community platforms such as women development army, social mobilization committee, and religious leaders affected immunization service delivery. Frequent session interruptions and lack of communication between community members/focal points and service providers affected immunization services in many parts of the country[7, 11]. The health policy of Ethiopia promotes community participation and empowerment [16]. The Health Extension Program and the Women Development Armies organization are instrumental in ensuring community empowerment and involvement in EPI service provision. However, community engagement is not as effective as the health facility/service provider-community linkage is not strong. Ethiopia is currently implementing the RED/REC approach with the community engagement component, but it is not proving to be effective. Community participation is inadequate in planning immunization sessions and determining vaccination sites. Community representation in health facility governance has been started recently in Ethiopia. Strengthening health services governance and management at subnational, woreda, and health facility levels is crucial for health service access and quality improvement[8-10, 12, 13]. However, there is limited evidence on the influence of community and facility linkage on vaccination service in Ethiopia, including the current study areas[5]. Therefore, this study was intended to answer the question of how the health facility and community linkage is optimized to enhance immunization service delivery in the Amhara Region

Methodology
Study setting
The study was conducted in the Amhara region's two districts(Shebele Beretta and South Achefer) for the month of June, 2020. The two districts were purposively selected for EPI performance during the data collection. Shebele Beretta district was selected from the higher performance where as the South Achefer district was selected from the lower performed district.

The Shebel Berenta woreda has one primary hospital, eight health centers, and 23 health posts that were providing preventive and curative health services to the community. In contrast, South Achefere has one primary, eight health centers, and 22 health posts. The routine immunization activities have been implemented in both woredas.

Study design
Phenomenological study design with an explanatory approach was applied to explore situations in their uniqueness as part of a particular context and the interactions. This design helped the researchers to examine the data closely both at the surface and deep level to explain the phenomenon in the data. It describes the essence of a phenomenon by exploring it from the

perspective of those who experienced it to understand the meaning participants ascribe to that phenomenon of the qualitative data collection methods.

Sample
A purposive sampling technique was applied to select study participants from all district levels to the local community members. The study participants were selected purposively from Woreda Health Office, Health Centers, Health Posts, and the community. The data was collected from immunization service providers, PHCU and woreda health office heads, Women Health Developmental Army(WHDA), and community and religious leaders. Study participants who were working at least for more than three months in a specific position were included in the study. A total of 46 key informants were interviewed using an interview guide. However, the overall sample size was determined by the level of information saturation. Information was considered saturated when the information generated started becoming redundant, and no new response was obtained from participants.

Data collection
A semistructured interview guide was developed with multiple probes to extract relevant information. Furthermore, document reviews and observation checklists were employed to verify the information. Information was collected from study participants using the interview guide and observational checklists. The data collection tool was tested in five participants of the Wogera district before executing the main data collection process. Errors or ambiguous wordings were identified and rectified based on the pilot findings. An audio recorder was used for recording the participant's information to avoid potential bias during data collection. Qualitative data was collected through key informant interviews (KII) and record reviews. Primary data (textual data) in the form of expanded field notes were prepared while conducting data collection.

Data quality management
Four teams of data collectors comprised of two interviewers and two recorders per team were recruited to collect the data. The employee had a Masters in public health science with qualitative data collection experience. Two supervisors were assigned to control the overall data collection process. The three-day training was provided prior to data collection commencing. A supervisory checklist was developed to check the quality of the data collection process.

Data analysis
The collected data was converted into text (field notes and transcripts). The audio interview recorded was firstly transcribed into Amharic language and then translated into English. Codes were developed based on the original terms used by participants. Codes were analytically developed or inductively identified in the data and affixed to sets of notes or transcripts and then transformed into categorical labels or themes. Materials were sorted by these categories, identifying similar phrases, patterns, relationships, and commonalities or disparities. furthermore, the data was examined to isolate meaningful patterns and processes. Identified patterns were considered in light of previous research and theories, and a small set of generalizations were established. The transcript and notes were analyzed using open code version 4.02; then, the data was cleaned, and saved in a plain text file. A descriptive phase was undertaken which involved the identifying of meaningful units and assigning codes that were compared and reorganized into tentative categories.

Results
Characteristics of study participants
A total of six Health Extension Workers(HEW), 12 Health developmental army (six one to five networks and six women health developmental army), 12 kebele and religious leaders, 12 health centers (six EPI focal and health center heads), and four woreda health office (two woreda heads and two EPI officers), a total of 46 participants have participated in the study. Most of the participants were Male (26) by sex and above 35 years (27) by age(Table1).

Table 1: **Characteristics of study participants, Community to facility linkage in the Amahara region, 2020**

Variables		Community	Facility	Total
Sex	Male	12	14	26
	Female	12	8	20
Age	20-30 years	2	7	9
	31-40 years	13	15	28
	41- 50	7	0	7
	Above 50 years	2	0	2
Educational status	Unabale read and write	5	0	5
	Read and write only	10	0	10
	Primary	7	0	7
	Secondary	2	0	2
	Diploma	0	15	15
	First degree	0	7	7
Number of participants form each district	Shebelberenta	12	11	23
	South Achefer	12	11	23

The study participant's responses were analyzed using thematic analysis, and four themes emerged from the data that was collected. The themes were; the availability of community to facility linkage, the process of community to facility linkage, the sustainability of community to facility linkage, and barriers of community to facility linkage.

Availability of community to facility linkage
The respondents explained that the community's availability to facility linkage was determined by the availability of community platforms, availability of guidelines and standard procedural manuals, and the availability of memorandum of understanding between the health facility and the community organization. One of the crucial factors for the availability of community to facility linkage was ensuring the availability of community platforms. Regarding the availability of community platforms, many of the study participants agreed that the main community platform that links primary health care units (PHCUs) and community, for example, immunization caregivers with health extension workers is a women health development team (WDT)- a movement of volunteer women organized based on social and/or geographical proximity. Additionally, the other important community forum that supports community health facility interface is community representatives that fulfill community scorecards for each kebele and kebele leader.

Among the participants, a 30 years old EPI focal person answered the question of whether any community platform is supporting the immunization services activity

> *"…Yes, there is a developmental team and 1 to 5 network[women health development team] …. The community asks when that date does not conduct the vaccination service. The HEW has the list of the under one eligible for the vaccination service in each kebele, and they evaluate performance monthly with the developmental team and 1 to 5 network. Besides, community representatives evaluate their performance [health facilities] quarterly through the community scorecard."*

On the contrary, few participants explained their feelings about the question and answer, that the women's health development team was not functional and used local administrators instead of the developmental health team.

> *"...Yes, there is local community leaders(Amerar) at a different level to create awareness for the community on immunization services and other activities. 1 to 5 and development team[women health development team] is not functional as the desired level…. Quarterly meets with kebele and religious leaders and evaluate the process about the catchment service coverage."* A 27-year EPI focal person said

Guidelines and job aids are fundamental to guide the engagement of community organizations through different communication modalities. Community providers' meeting minutes assisted in tracking activities and actions. Availability of guidelines, scoring tools, job aids, and meeting minutes was assessed from health facilities and woredas health offices through observation and interviews. Most participants reflected on their feelings about their facilities, that guidelines and job aids were available and were not lacking at the facility . But, during the observation, only one facility had the community mobilization/HDA related guidelines or manuals and job aids at the time of data collection out of the six observed facilities. one health center head replied that:

> *"…Yes, there is a guideline, strategy, and SOP and available at the EPI rooms of our facilities."*

The other essential things to ensure community availability to facility linkage are the availability of Memorandum of understanding (MoU) and Memorandum of agreement (MoA). Many participants declare that they did not know about the MoU and MoA and it was not functional for the immunization services. All observed facilities as well the district offices, have a MoU between community and health facilities. For instance, one facility head stated that

> "*I didn't know that [memorandum of understanding/agreement] .... I didn't think we have that [memorandum of understanding/agreement] type of agreement. I saw where I was at a training institute."* A 35 years facility head replied.

Processes of community to facility linkage
The majority of study participants articulated that community platforms have not fully participated in the linkage process, especially with regards to the planning, monitoring of activities, transportation of vaccines to vaccination sites, "defaulter" tracing, providing health education, newborn and eligible registrations, immunization campaigns, and community mobilizations. However, the community platforms' participation and implementation of the community engagement was different across the various facilities. The participation of the community platforms was dependent on the linkage of community and facility. Similarly, the immunization performances also differed across the various facilities. This gap in performance was raised by the level of engagement of the community.

One of the community's attempts at health facility linkage is to undertake the immunization program and to participate during the planning of immunization sessions, campaigns, and arrangement of outreach site/service. Many participants replied that the community members (platform) had experienced the planning of immunization sessions, campaigns, and outreach site/service arrangements. But, the experience of the community members were depending on the level of the linkage of the community with their facility. However, there was no evidence, such as meeting minutes in their facility in all six visited facilities.

> *…the community representatives participate during the planning of immunization activities, for example, in deciding the outreach sites, target identification, and arrangement of the services. When the community representative participated in this activity, we may have better coverage of immunization"* 25 years HEWs said
> *We had participated in this year's immunization activities plan and together decided when the appropriate and comfortable date of the outreach site for all our*

Debir[village]....." 37 years Women developmental team leader said

Regarding whether community volunteers -engaged in identifying defaulters in the catchment to improve immunization service completion, many respondents repeatedly articulate that community organizations have been involved in tracing the "defaulter" of immunization services(individuals wwho skip appointments). But, the level of the participants during the defaulter tracing mechanisms also depends on the level of the community and facility linkage.

> *"We[WHDA] have participated in identifying defaulters and mobilizing caregivers to come to immunization site on the date of vaccination ..."* 40 years one to five network member leader said.

Community platforms can also be involved in the process of community mobilization for the immunization services. The majority of the participants have discussed that the community members have participated in community mobilization during the campaign and routine immunization services. A 38 year old kebele leader said that:

> *"When community mobilization is required in our kebele, we use all available organized community platforms like women's developmental army, kebele male developmental army, and kebele admin council members when the information is urgent and important for the community."*

Key informants were also asked if they were involved in transporting vaccines from health facilities to the outreach site and back to the facilities after completing the immunization session. The majority of the participants replied that the community members did not participate in the transportation of the vaccines from facilities to the outreach sites. The community members previously had transportation of the vaccines from the facility to the outreach sites.

> *Previously, we have used to pay money for vaccine transporter, and the cost covered by the Woreda health office. Currently, if the vaccination site is near to the health post, the HEWs themselves can take the vaccine. Some HPs have refrigerators. Sometimes when the outreach site is far from the health facility, the health center will be assigned extra health workers to support the transportation of vaccines.,these days the community platforms didn't have a role in transporting vaccines.* Thirty-two years HEWs said.

On the other hand, few participants explain their feelings about the question,regarding whether the community platforms have a role in the transportation of vaccines. A 25 year old health extension worker said:

> *Whether the female or male developmental army, the community platform can transport the vaccine from facilities to the immunization outreach sites. The kebele leaders assign persons to transport vaccines if required.*

Community platforms are also involved in providing health education and the dissemination of information. Most of the participants agreed with their feeling regarding the community platforms' roles that educate about the benefits of the vaccine and the side effects of the vaccine and providing vital information for the community. 32 years old women developmental army leader said that:

> *We[WDA] are the primary source of information about vaccination for caregivers. HEWs and kebele leaders also support information dissemination. We are models within our respective villages, and we have demonstrated the health extension packages, and then we have also taught our neighbors to convince its benefit.*

The community platforms are also involved during the newborn and eligible to register for the immunization services. Most of the participants agreed that they have identified and registered the newborn and all eligible children in their catchment population.

> *We have been involved in immunization service and support the HEWs by registering newborn children under our catchment and by mobilizing the children who were getting the service prior. Moreover, we have discussed with the HEWs during the identification and registration of the eligible children.* 22 years of women developmental arm said

The respondents were asked if they participated in the monitoring and evaluation of immunization services. Most of the participants agreed that the community platforms have been involved in the monitoring and evaluating the EIP programs. However, no evidence existed to prove their participation in the meeting minutes or any records when the health facility report was checked from the six visited facilities.

> *"The community representatives from their respective villages have participated during the performance review and e monitoring and evaluation activities, n of ."* 25 years HEWs said

Sustainability of community to facility linkage
To be sustainable, the community to health facility linkage, the following criteria were identified through the guidelines of the community engagement. These were the incentive mechanisms, supportive supervision, regular monitoring evaluation system, continuous training opportunities, accountability, and replacement of those who are not working actively, enhancing solidarity with each other, and strengthening community health facility interface. But, the community engagement mechanisms' level of sustainability was not practically implemented across all the health facilities and districts.

Health facilities were asked if they have any experience or mechanism of recognizing well-performing volunteer community groups during periodic review and monitoring. Hence this is an indication of the sustainability of community to facility linkage. Only a few participants have agreed that health facilities have

conducted a periodic review of performance with the community platforms. The observational result attested that only one health facility out of 6 had the practice.

> *We have prepared three types of green, yellow, and red cards that help the client express their feelings about the service they have been given in the facility. The clients were oriented on the color of the card representation. This helps to score the service "green" indicates good service; Yellow indicates medium to use, and red indicates a problem in the service delivery. But, practically, most of our facilities didn't apply these golden opportunities.* A 32 years woreda health office head said.

Providing continuous non-financial incentives for community platforms enhances the community platforms sustainability. The majority of the participants articulate that a continuous and robust incentive to the community platforms and the health workers was the means through which the sustainability of the community to health facility linkage was incorporated. But, practically, the facilities didn't deliver any incentive mechanisms for the best performer community platforms. We have assured that none of the facilities had any incentive mechanisms for their community platforms during the observation of the reports and documentation. A 25 years health center head said that:

> *To enhance the sustainability community to facility linkage, there should be incentives for the community members and health care to increase the performance and organizational culture level. But, there are no incentive mechanisms for the community health workers and health extension workers in practice. Even our district also didn't have any incentive mechanisms that motivate our performance. I think the problem is the attention given to the program.*

The WDA was asked whether they support each other in the form of different solidarity activities like Ekube(monthly saving common/equal share of money) and generating for social capital activities as part of maintaining good relations and sustainability of their work. The study participants articulated that the Women's developmental army members were participating in the form of Ekube and generating and supporting the community in different activities. A 38 years of WHDA said that:

> *Previously, all women's health developmental armies used to save 50 birrs per month and then use it to buy important material like a bed, uniform cultural cloth, etc. The saving also served to meet regularly and share experiences and any social-cultural issues. Sometimes, we have also supported the poor peoples by our saving money. The saving and regular meeting is interrupted due to less attention to the kebele administrators and health works. I think that[Ekube or solidarity activities] were an exciting and essential thing, but the government also didn't want that thing[Ekube or solidarity activities] because*

> *they[government] didn't follow this activity [Ekube or solidarity activities].*

Ensuring the accountability mechanisms of each activity performed for the community is the sustainability of the program. Most study participants shared their feelings, that the current community platforms do not have any accountability mechanisms. A 25 years health center head said that:

> *we didn't pay money for the community health workers; they are volunteers; thus, we didn't apply any community platforms' accountability mechanisms. We have regularly followed the health extension worker to support community engagement and deliver the service.*

Strong support of the government and health facilities also enhances sustainability. The majority of the study participants agreed that strong support from government and health facilities for the community platforms is vital for sustainable community engagement. But, in practice, the government support of the program for community engagement was insufficient . A 32 years health center head said that:

> *Concerning the government's support, I think a little or we can say no strong government support for the community. Most of the thing is just paperwork and in oral. In practice, the government didn't support the community platforms at the grass-root level; instead only monitors and controls each program's outcome without the support of the budget. That leads to the low success of the programs.*

Strong communication and community health facility interface were an important means of sustainability of the community engagement. Most of the participants felt that community representatives and health facilities had regular community interference platforms.

> *In each vaccine site, we will provide a clear discussion about immunization and other health issues on the 45th day of vaccination. When we are rounding house to house, we also notify the vaccination date. We have four vaccine sites under our health post.* 28 HEW said

> *we discuss activities and raise awareness on immunization and other activities. Additionally, we monitor our tasks and our roles and responsibilities. We meet every month, sometimes interrupted due to different cases, currently stopped due to COVID 19.* A 37 year WHDA said.

Barriers of community to facility linkage
Most of the participants revealed limited knowledge of immunization services, poor community perception towards health/EPI services, health care providers, inadequate health care providers attitude and practice, shortages of stock (medication and supplies, distance from facility to their home, and availability of transportation as barriers to facility linkage. Additionally, insufficient implementation of rules and regulations, lack of incentive, inadequate counseling

and support, Lack of education and awareness, shortages of human resources for services and support, and lack of training support were the community's barriers to facility linkages.

Another barrier of community to health facility linkage is knowledge on health/EPI services provided, including the importance and availability of services. Most of the participants have agreed that their feeling of the community's barriers to facility linkage was community knowledge on EPI service.

> *One of the significant barriers in our catchment area for the ineffective community to facility linkage is inadequate community knowledge on the benefits of the EPI services.* 35 years HEWs

Community perception towards health on the EPI service is the barrier of community to facility linkage. Most participants stated that the perception towards health services provided, including the importance and availability of services, fear of side effects, rumors, waiting time, preference, motivation and willingness to use, and support for the immunization service, were the community barriers to facility linkage. A 27 years EPI focal person said that:

> *In our cases, community perception barriers to facility linkage were like community perception towards health services, including the benefits and services available, side effects, rumors, waiting time, choice of the service, motivation, and willingness to utilize the EPI service.*

The community's perception towards health care providers is also a barrier to the community-to-facility linkage. Most of the study participants mentioned that community perception towards health care providers such as friendliness, communication, counseling, and responsiveness was a barrier to the community's linkage. A 35 years EPI focal person said that:

> *The community's perception towards the providers such as friendship, communication, counseling, and responsiveness were the barriers to community facility linkage to be practical or ineffective.*

The community capacity was also one of the barriers of community to facility linkage. Most of the respondents replied that the limited knowledge and skills on how to support their community health services and lack of training for the community were the barriers of community to facility linkage. 32 years woreda health office head said that:

> *Regarding the provider side, lack of or limited knowledge and skills on how to support community health services and lack of training were the community barriers to facility linkage. Sometimes this problem can be solved through regular follow-up and mentorship activities.*

The other barriers to the community to facility linkage was also the non-existence of supportive supervison and incentive systems. The majority of the participants agreed that the lack of EPI supportive systems like the structure, SOPs, technical and material support, monitoring, incentives, etc. was also a barrier of the community to facility linage.

> *Regarding the system-related issues, the limited Community-Health facility linkage of the EPI supportive system (structure, SOPs, technical/material support, monitoring, incentives, etc.) was the community's barrier to facility linkages.* 30 years woreda health office head said

The health professional's knowledge, attitude, and practices are also barriers to the community to facility linkage. Most of the study participants also agreed that the health workers' knowledge, attitude, motivation, and skill towards community health of the EPI services were the community's barriers to facility linkage. 32 years HEWs said that

> *In our cases, among the community's barriers to facility linkage, the health providers' knowledge, attitude, feeling, and skill towards the community services were one of them. Most health care providers have a problem with this problem.*

Lack of necessary medication, supplies, vaccines, and essential materials was also a barrier for the community to facility linkage. Most of the respondents agreed that the availability of essential medication and supplies supposed to be present at health facilities and were barriers to the community to facility linkages. A 30-year health center head said that

> *Regarding the supply, one of the crucial barriers to the community to facility linkage is the availability of essential drugs and materials that are supposed to be present at health facilities. In our cases, interruption of essential drugs, vaccines, syringes, and other vital materials was the problem that has been raised in the program.*

The distance to health facilities and outreach sites are also barriers for the community to facility linkage. Most of the study respondents agreed that the distance of kebele or villages far from health facilities to provide outreach services were the barriers to the community to facility linkages. A 23-year HEWs said that;

> *Most of our communities are far from the health center and health posts. Those communities near our facilities were frequently served from the service and those far from the institution. They didn't come to the service in a timely basis, and the distance to the facility is the barrier to the EPI services.*

Irregularity of rules and regulations is also a barrier to the community to facility linkage. Most of the participants also agreed that the non-adherence and inadequate implementation of rules and regulations were barriers to the community to facilities linkage. Moreover, from region to region, zone to zone, and district to district, the implementation and standardization of rules and regulations were different. These were also the barriers to the community to facilities linkage. A 32 years woreda health office said that:

The implementation of rules and regulations was differently applied from region to region, zone to zone, and district to district. For instance, the payment of health works for the duty program is different from facility to facility and region to region. Additionally, the perdium payment for the outreach site program of the immunization in some regions may have a payment and, in our case, a free service. This practice also demotivates the workers, especially the community to facility linkage, to become week and nonfunctional.

Lack of incentives is also a barrier to the community to facility linkage. The majority of the respondents agreed that the health workers and community health needs to be prioritized and incentivized during the EPI service. Lack of incentives was a barrier to the community to facility linkage. A 34 years health center head said that:

the lack of incentive for the health workers, HEWs, and the women's developmental army. The incentive is the best way to motivate people and increase the performance of activities. In our cases, we will try by ourselves, and we have got a better performance. But, it is not enough and didn't support the program and the higher bodies.

Inadequate communication and counseling of clients are also barriers to the community to facility linkage. Most of the study participants replied that inadequate communication and counseling of clients or patients due to workload, lack of skill or motivation, and lack of IEC/BCC materials were the community's barriers to facility linkage. During an observation, the IEC/BCC materials were not properly utilized by the health facility and were not distributed amongst the patients. A 35 years health center head said that:

There is a lack of proper communication of patients in our facilities due to different reasons, and the Lack of IEC/BCC materials were the barriers to be an effective community to facility linkage. Even if the IEC/BCC materials are available on the shelf or facility, the health care providers didn't utilize the material due to the organizational culture of the communication and counseling skills to their patients/clients.

Capacity building of health care providers is also a barrier to community facility linkage. Most of the respondents agreed that a lack of capacity building for health care providers like basic immunization for EPI focal and IRT for HEWs were barriers to the community to facilities linkage. A 44 years Woreda health office EPI officer said that:

Capacity building is significant for all health care activities. As we know, health is dynamic that needs to continue training and updates. So, continuous training and capacity building is required for health care providers immunization for EPI focal persons and IRT for HEWs.

Discussion

The findings revealed that community to health facility linkage was an effective strategy for the EPI service provision if properly handled and managed. Those facilities who experienced effective implementation strategies of community platforms have improved performances than their counterparts. This is due to the use of the community platform for the implementation of immunization services. This is a similar finding and concept with different EPI programs [6, 14-16]. These implementation gaps have impacts on the immunization services coverage and providing quality services. Linkages to community resources and support are important to help immunization services and their caregivers access the services and support they need across the continuum of care. Moreover, the linkage is essential to identify the EPI defaulters and to create community awareness about the program's benefits.

The study found that the availability of community platforms and guidelines, on how to engage with the community, capacity development of community volunteers, and stipulating clear roles and tasks were important components for the optimum linkage between community and health facility. But, the findings indicated that among the necessary requirements of community to facility linkages there were only community platforms available. At the same time, the standard guidelines, strategy, MOU, MAU, and SOP were not generalizable. This was against the guideline of the program[6]. This might be due to less attention to the purpose of the guidelines and procedures. Moreover, most of the health facilities and woreda health office heads also didn't know the application of these important guidelines.

The study also indicated that community platforms had participated during the planning, monitoring, and follow-up activities, a process indicating health facility community linkage. Furthermore, the results indicated that the involvement of the community in some of the activities, including transportation of the vaccine and vaccine carrier, "defaulter" tracing, providing health education, newborn and eligible registrations, immunization campaigns, and community mobilizations was fundamental ensuring adequate linkage. However, the study highlighted that all these components were not practiced in all of the assessed health facilities. This finding is also supported by different studies on different programs[17, 18]. This is due to the variation of implementers, including various health care providers, leaders, and organizational cultures. Inadequate community health facility linkage can hinder community participation in immunization and service delivery. It may lead to low immunization coverage and poor quality services, since engaging community platforms on planning, implementation, and monitoring, and sustaining community platforms' functionality were the elements of effective community-health facility linkage.

The study findings pointed out that there are no actions that strengthen sustainable community health facility linkage. This finding is also supported by different studies of the different programs[19, 20]. Among the

community's mechanisms to facility linkage are the incentive mechanisms, regular supportive supervision, monitoring, evaluation systems, continuous training opportunities, ensuring accountability and replacement of inactive volunteer community members, and strengthening solidarity among volunteer community health workers and community health facility interfaces are crucial. However, most of the above-mentioned activities were not implemented effectively. This might be due to decreased emphasis on the program and a lack of budgets to motivate and incentivize the community platform.

The finding also identified that limited community knowledge on EPI service, poor community perception of EPI service, poor community perception of health care providers, inadequate health care providers attitude and practice, and a shortage of stock in relation to medicationand supplies were also considered barriers. Additionally, long-distance and transportation, irregularity of rules and regulations, lack of incentives, inadequate counseling and support, lack of education and awareness, shortages of human resources for services and support, and lack of training support were the community's barriers to facility linkages. This finding was also supported by a similar study in different programs[21-24]. This might be due to the existing community engagement, which mostly focuses on communication activities that do not actively involve communities in the planning, monitoring, and evaluation activities.

The study also revealed that the linkage of community to facilities they serve is uneven across and within districts and facilities. A good practice is not necessarily expanded, and evidence-based options are not uniformly adopted. Community participation should be considered an integral part of primary healthcare strategies and the health system for the EPI program. Community engagement programs are often fraught with challenges including poor planning; unclear roles; inadequate education; limited career pathways; lack of certification hindering the recognition of competencies and job mobility; multiple competing factors with little coordination, leading to fragmented, disease-specific training; donor-driven management and funding; tenuous linkages with and accountability to the health system; poor coordination, supervision, quality control, and support; and underrecognition of WHDA contribution[25, 26]. These challenges can contribute to wasted human capital and financial resources and missed opportunities to provide vital health services to communities.

Limitation of study
The study explored health office heads, health workers, and the community in implementing EPI activities. However, as a limitation individual, personnel insight might introduce social desirability bias. To reduce the social desirability, we had to clarify the purpose of conducting surveys to obtain information based on respondents providing honest answers. Moreover, this research utilized an observational report that may not reflect the facilities' whole practice; instead, it reflects only data collection periods.

Conclusion
The finding revealed that community platforms and their integration into health systems and the communities were uneven across and within districts and facilities. Limited community knowledge on EPI services, poor community perception of EPI services, poor community perception to health care providers, inadequate health care providers attitudes and practices, shortages of stock in relation to medication and supplies, long-distance and transportation, irregularity of rules and regulation, lack of incentive, inadequate counseling and support, lack of education and awareness, shortages of human resources for services and support, and lack of training support were the barries to the community to facility linkages. Therefore, a system for EPI community-health facility linkage needs to be established and the community needs to be fully engaged in the following aspects, the process of health service planning, service delivery, monitoring review and evaluation, and capacity building; conduct community dialogue on the services available at each level for example at the community, HP, HC and primary hospital level and expectation from the community; strengthen monitoring and evaluation mechanism with defined indicators and targets; provide financial and non-financial incentives for community volunteers such as DSA for cost incurring activities, outreach service, further training/education opportunities, awards, recognition etc; financial, material and technical support for Community-Health Facility linkage programs; and develop an advocacy strategy to mobilize engagement of and support for integrated services among policymakers, program managers, service providers, clients, and other key stakeholders were the proposed strategies for the improvement of the program.

Abbreviations
CHW: Community Health Workers; EPI: Expanded Program on Immunization; HDA: Health Developmental Army; HEW: Health Extention Worker; HPV: Human Papilloma Virus; IRT: Integrated Refreshment Training; RIP: Routine Immunization Program; WHDA: Women Health Developmental army; WHO: World Health Organization

Declarations
Ethical approval and consent to participation
This study was conducted in accordance with the Declaration of Helsinki. The study protocol was approved by the Institutional Review Board of the University of Gondar and received ethical clearance. Besides, the Amhara Region Health Bureau provided written support for the data collection. Participants were consented before proceeding with the interview. Data were collected anonymously by taking only the participant's age, sex, position, experience, and academic career.

Moreover, the analysis was done by codes, and results were reported without any personal identifiers. The researchers were honest to present the findings as obtained without making prior assumptions. Subject involvement was minimized as much as possible during data collection and write-up.

Availability of data and materials
Data will be available upon reasonable request from the corresponding author.

Competing interests
The authors declare that they have no competing interest

Author Contributions
All authors made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; agreed to submit to the current Journal; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

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