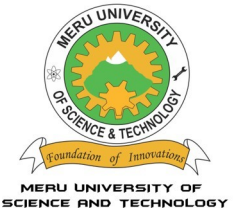




AFRICAN JOURNAL OF SCIENCE, TECHNOLOGY AND SOCIAL SCIENCES

Journal website: <https://journals.must.ac.ke>



A Publication of Meru University of Science and Technology

Review of participatory epidemiology application in human health and nutrition and future directions

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ARTICLE INFO

ABSTRACT

KEY WORDS

Epidemiology
Early Warning
Participatory Epidemiology
Participatory Research
Zoonotic Diseases

Participatory Epidemiology (PE) developed as a branch of veterinary epidemiology and has been widely used in infectious disease control and early warning in resource-limited settings. In the beginning, Participatory Epidemiology was focused on linking researcher's communication skills with participatory methods to enable participation of livestock owners and herders in identification and assessment of livestock diseases as well as in development, monitoring, and evaluation of disease control strategies. In this respect, use of participatory techniques gradually developed into Participatory Epidemiology with increased recognition by epidemiologists who have developed several tools which are being adapted in human health

and nutrition. Relative to veterinary uses and human nutrition, Participatory Epidemiology has not been used in public health in Kenya or for studies on important human diseases, such as Kala-azar. However, in recent past there have been growing interests from epidemiologists to extend testing and piloting of Participatory Epidemiology approach in arid and semi-arid settings of Kenya geared at empowering communities to identify and solve their health needs. Additionally, there is ongoing debate about ability of epidemiology to give results that can be better applied in public health practice besides its ability to identify disease risk factors. Scientific research has recommended that participatory research be applied in epidemiology to bridge this descriptive gap and action. This review describes implementation experiences and lessons learnt in the use of Participatory Epidemiology in understanding human diseases, both communicable and non-communicable as well as human nutrition, a key factor in health and wellness. Reviewed articles provide an understanding into application of PE approaches which have been limited in pastoralist areas, where zoonotic diseases are prone. This article establishes that as opposed to more conventional methods, using Participatory Epidemiology can generate precise and scientifically credible information within a relatively short period. Data generated from Participatory Epidemiology can be sustainably used to effectively find solutions to common community health problems based on local preferences for control options.

Introduction, History and Evolution

Participatory Epidemiology (PE) developed as a branch of veterinary epidemiology and has been widely used in infectious disease control and early

warning in resource-limited settings (Catley & Mariner, 2002; Allepuz *et al.*, 2017). According to Swedish International Agricultural Network Initia-

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<https://doi.org/10.58506/ajstss.v2i2.162>

AFRICAN JOURNAL OF SCIENCE, TECHNOLOGY AND SOCIAL SCIENCES ISSN :2958-0560

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tive [SIANI], (2018), Participatory Epidemiology has been influenced by Participatory Rural Appraisal (PRA), a technique that places local participation at the center of the process. This participatory approach is regarded as an emerging subject in veterinary epidemiology and has seen a surge in interest in recent years. Nevertheless, despite this expansion, there is still no accepted definition of PE. However, definition offered by Catley *et al.* [10] is preferred since it makes a clearer statement about the significance of participatory component of PE (Toribio & Rushton, 2012). Participatory Epidemiology seeks to increase knowledge of health issues and strategies for their prevention, control, and disease surveillance while giving communities a voice (Catley *et al.*, 2012; Jost *et al.*; 2007). These methodologies and approaches derived from participatory appraisal, are helpful in several situations when standard epidemiological approaches fall short of delivering necessary level of understanding of current situation required for creating an effective solution (Alders *et al.*, 2020). Participatory Epidemiology's major objective is to gather information from people among the general population. These individuals include people who do not seek consultation for their medical indications (World Health Organization [WHO], 2022).

In PE, participatory methods and approaches are used to improve community understanding of disease patterns in populations and encourages active participation of communities at local levels. This promotes a setting for shared learning that enhances understanding of community's animal health risks, perception of risks, and opportunities for disease surveillance, control, and timely dissemination of information to those responsible for prevention and control (Alders *et al.*, 2020; Toribio & Rushton, 2012). In the beginning, Participatory Epidemiology was focused on linking researcher's communication skills with participatory methods to enable participation of livestock owners and herders in identification and assessment of livestock diseases as well as in development, monitoring, and evaluation of disease control

strategies. This was done taking into consideration of livestock keeper's knowledge, experience, and rationales. For example, pastoralists have wealthy and detailed knowledge on major zoonotic diseases that could affect their animals. This local information is based on shared cultural knowledge based on life experience of persons. Fundamental basis of this knowledge is epidemiological observations, pathological, and clinical that provide an opportunity to categorize disease information into recognizable units defined by traditional terminologies. From an epidemiological perspective, this categorization could as well be taken as community case definitions (Catley & Mariner, 2002). Frequently we encounter situations in which modern epidemiological approaches are not satisfactory to completely understand situations and be able to find viable solutions to likely problems relating to community health. In most cases contextual information is needed to correctly interpret quantitative data. Participatory Epidemiology (PE) is a tried-and-true strategy that gets beyond many drawbacks of conventional epidemiological approaches, and it has been utilized to address a variety of issues with animal health surveillance and research (Jost *et al.*; 2007). In this respect, use of participatory techniques gradually developed into Participatory Epidemiology with increased recognition by epidemiologists who have developed several tools which are being adapted in human health and nutrition. In many African countries, Participatory Epidemiology was established and standardized from early 2000s. However, PE has been mainly restricted to zoonotic and livestock diseases, leaving insights of human disease and the intricate interactions between pastoralists, livestock, and rangelands unknown (Griffith *et al.*, 2023). The first-time Participatory Epidemiology was adapted for health research in Kenya was in 2021 where it was used to study community level assessment of the seasonality and basic causes of acute malnutrition in Isiolo and Marsabit Counties in Northern Kenya (Burns *et al.*, 2021). Participatory techniques have been applied in several different initiatives and

PE Method	Tools	Examples of Data Gathered
Informal Interviewing (Semi-structured)	Key informant interviews & Focus group discussions	Personal and group accounts of disease history and impacts Identification of important stakeholders
Ranking and Scoring	Simple ranking Pair-wise ranking Proportional piling Matrix scoring Wealth ranking	Preferred types of livestock reared. Relative livestock ownership Relative importance of livestock livelihoods
Visualization	Participatory mapping Venn diagrams Seasonal calendars Timelines	Ecosystem boundaries and natural resources Veterinary services Seasonal variations in livestock diseases Infrastructure Timeline of disease emergence and associated events
Direct observation	Transect Walks Walking surveys	Infrastructure available Local environment Local living and working conditions. Potential drivers of disease (such as water bodies, animal movements and interactions) Distance examination of animals for signs of disease
Participatory disease surveillance	The entire suite of participatory tools listed above applied to the disease of interest (usually based on syndromic diagnosis)	Ecosystem boundaries and natural resources Veterinary services Seasonal variations in livestock diseases Infrastructure Timeline of disease emergence and associated events

Table 1 The range of Participatory Epidemiology methods, tools, and data gathered across a variety of settings.

* Source: *Frontiers in Veterinary Science*, 2020

studies over the past few years. Key advantages and disadvantages of PE in animal health has been thoroughly reviewed. However, activities carried out have not yet been systematically compiled (Catley *et al.*, 2012).

This paper reviews principal applications of Participatory Epidemiology in human and nutrition sectors highlighting implementation experiences and lessons learnt from field applications, with the aim of elimination of neglected tropical diseases like Kala-azar through surveillance and response. Reviewed articles provide an understanding into application of Participatory Epidemiology approaches underlining significance of expanding it as a practical strategy for involving communities in addressing animal and associated public health hazards, thus reducing mortality due to

preventable illnesses. It discusses unique examples of Participatory Epidemiology applications in Isiolo and Marsabit Counties in Northern Kenya, Karamoja in Uganda, and in Shinile and Liben zones of Somali region of Ethiopia, and this has majorly been informed by previous reported deaths and sporadic occurrences of Kala-azar and related illnesses within the selected communities.

Approaches, Methodologies, and Tools for Participatory Epidemiology

Rapid Rural Appraisal (RRA) was an early approach generally utilized when conducting studies in one or several communities in rural settings. Participatory Rural Appraisal (PRA) later emerged as an extended process that involved information collection and its subsequent use by communities

in action planning. Objective of PRA exercises is to encourage a learning process and knowledge generation based on community members experience to define priorities, collect, analyze, and interpret data (Alders *et al.*, 2020). Methods and outcomes of appraisal are owned by participating community members. After exercises with a community, information collected is used as a point of reference in developing plan of actions and learning frameworks. Fundamental goal of PRA is useful information generation and ensuring that information collected is readily available in communities and utilized for bringing required change and empowerment of respondents and their community (Anwar, 2012). Participatory studies, including those beyond participatory epidemiology, utilize a variety of data collection methods including and not limited to focus group discussions, individual interviews, ranking, causal flow analysis, observation, free listing, role plays, and open-ended stories. To increase chances of achieving equal access during data collection and dissemination, chosen tools for PRA should ensure gender inclusivity and reduce disparities between literate and illiterate populations (Alders *et al.*, 2020).

Effective application of Participatory Epidemiology requires correct utilization of explicit Participatory Epidemiological methods, including attention to approach and communication skills of researchers. From an epidemiological perspective, relationship between the researcher and the community determines what value and type of information will be contributed by respondents. Additionally, interaction with communities is more important than researcher's knowledge and skills of methods, especially when it comes to human disease surveillance of certain disease symptoms better known, viewed, and experienced by people themselves (Catley, 2005). An array of PE methods is available, and these methods can be grouped into three key groups: ranking and scoring methods, visualization methods, and informal interviews. The same way a clinician brings together information from a variety of sources dur-

ing diagnosis, information collected during the PE exercise is triangulated for validity. Table 1 outlines a range of Participatory Epidemiology methods, tools, and examples of data gathered in the field by tools across a variety of settings.

Vital to effective utilization of above PE methods is recognizing and commitment to: adult learning principles (Application is more effective if the researcher understands that adults have varied perceptions to issues), use of more than one tool to gather data on the same research problem to verify findings (triangulation) taking into consideration a variety of informants, use of clinical examination, laboratory diagnostic tests, and secondary data, as it is not enough to bank on PE tools only during data collection (Alders *et al.*, 2020). An overview of main uses, regions, and diseases that Participatory Epidemiology programs in the field of animal health have addressed from 1980 to 2015 conducted by Allepuz *et al.* [2] highlighted strong and weak points of these methodologies which included: important role that incorporating community observations play in disease investigation and control efforts to improve effectiveness of these efforts, and more especially in pastoral related diseases such as Kala-azar among others. It was also mentioned that, in comparison to conventional methods, PE has a greater capacity to detect emerging and re-emerging diseases and allows communities to give and receive prompt input on suggested precautionary/preventative steps. Importance of using PE in recognizing limitations of disease propagation models and serving as a significant tool for researchers and communities (in this case, veterinarians, and farmers) to validate these models and comprehend illness patterns was underlined. It was also mentioned that these technologies have capacity to examine intricate eco-health problems and their solutions. Finally, by ensuring that all stakeholders had a voice in development of such initiatives, system's trustworthiness and acceptability was strengthened. Participatory Epidemiology is a flexible tool, thus there is a risk of creating data by sitting in an office without visit-

ing communities. Other areas for improvement include possibility that time, and financial restrictions will prevent all stakeholders from participating fully in the study.

Implementation Experiences and Lessons Learnt from the Application of Participatory Epidemiology

The following selected case studies provide an insight into unique application of Participatory Epidemiology in East Africa in assessment of human health, food, and nutrition security. Although, in the region, there has been limited application of participatory approaches and methods in human health and nutrition sectors. Grey literature is available on application of Participatory Epidemiology in human health with limited documentation (Catley, 2023). The first case study outlines the first-time Participatory Epidemiology was adapted for health research in Kenya in 2021 where it was used to study the community level assessment of seasonality and basic causes of acute malnutrition in Isiolo and Marsabit Counties in Northern Kenya. The second study from Karamoja Uganda provides an overview of application of Participatory Epidemiology to assess knowledge of women based on seasonality and causes of acute malnutrition. The third case study was participatory research for pastoralist health and nutrition conducted in Shinile and Liben zones of Somali region in Ethiopia on important causes of child malnutrition, links between child nutritional status and milk supply and priority interventions to address malnutrition in their communities.

These rare experiences validate use of Participatory Epidemiology to address health challenges facing communities effectively and sustainably, emphasizing importance of integration of local knowledge and experiences. The studies show how application of Participatory Epidemiology approach empowers communities to identify and solve their health needs thus influencing positive sustainable changes, curbing spread, reducing transmission, and mortality due to various diseases

which may often break up within communities. A good example is the just ended COVID-19 pandemic, recent reported cases of unknown deadly illness with Kala-azar like symptoms in Isiolo and Marsabit Counties as well as various other cases and disease occurrences in such communities. The COVID-19 pandemic highlighted importance of having an effective surveillance system in place to identify and control disease outbreaks (Wittwer *et al.*, 2023). Finally, this overview accentuates on mutual benefits of Participatory Epidemiology between researchers and study populations bridging gaps between description of research problem and action which has been lacking in research.

Kenya: Using Participatory Epidemiology to Investigate the Causes and Seasonality of Acute Malnutrition in Marsabit and Isiolo Counties, Northern Kenya

Arid and Semi-Arid (ASAL) Counties are among the least developed Counties in Kenya; the population, predominantly pastoralists, face a complex, changing environment with country's highest levels of poverty, food insecurity and gender inequality, all of which have implications for nutritional status (Young, 2020). Despite significant investment by implementing partners, these Counties sustain high rates of acute malnutrition and thus weakened immune system especially amongst under-fives and elderly, thus increased risk to certain infectious diseases. The Counties regularly experience prevalence rates of acute malnutrition that exceed emergency threshold levels, even when there are no obvious climate shocks. From 2009 to 2016, they were at or above IPC Phase 3+ between 5 and 15 times, triggering humanitarian responses that addressed acute malnutrition in short term, but did very little to address underlying causes. This systemic failure to address persistent acute malnutrition is in part due to lack of evidence and poor understanding of drivers of acute malnutrition in these drylands (Young, 2020).

To better understand causes and seasonality of acute malnutrition in Isiolo and Marsabit Counties

in Northern Kenya, Participatory Epidemiology approach was piloted between February 2021 and April 2021 in Chari and Cherab Wards in Isiolo County and Loyangalani and North Horr Wards in Marsabit County. Community level analysis sought to understand how communities describe malnutrition in children and mothers with regards to available diets of healthy and malnourished children, seasonality of malnutrition and related factors, how communities explain and rank causes of malnutrition in children and mothers, what are the variations in diets of healthy and malnourished children in connection with specific food types and seasonal availability of food types, what are community participants' suggestions and priorities for improving nutrition, and reasoning behind their views. Such approach is essential if employed to investigate various causes of certain human diseases towards achievement of SDG 3 on health and wellbeing for all. Examples of parameters that would lead to positive policy guiding information would include but not limited to questions like: When or what are the seasons when certain symptoms such as enlargement of the spleen for cases of Kala-azar are reported, what could be major disease causes from community's perspective, what are community's prioritization of disease causes, what traditional, cultural, spiritual beliefs either prevent or cause more spread thus increased harm from such a disease, what levels of knowledge, attitude, and practices exist in the community towards prevention and control measures of the disease and challenges affecting surveillance and control of diseases in communities.

Figure 1 showcases an example of a PE method at use in Loiyangalani (Marsabit County) - a monthly calendar. To illustrate the relationships between the months and the indicators, counters (stones) were distributed throughout calendar "cells". The diagrams depicting local months are positioned on the left side of the photograph and diagrams describing different indicators are positioned along the bottom of the photograph. The study established that as opposed to more con-



Figure 1: Illustrative Example of a PE Method - Monthly Calendar. * Copyright: Burns, 2021

ventional methods, using Participatory Epidemiology can generate a great deal of precise and scientifically credible information within a relatively short period of study (Burns *et al.*, 2021).

Key lessons learnt from the experience of the application of Participatory Epidemiology methods include:

- i) Participatory Epidemiology (PE) methods applied produced technically plausible and reliable information on the locally perceived causes and seasonality of malnutrition.
- ii) The PE approaches gathered information from the community perceptions enabling clear justifications.
- iii) The PE technique was useful in providing more clarity on complex associations.
- iv) Relative to quantitative surveys, PE exercise was inexpensive, quick, and flexible.
- v) Participatory Epidemiology methods were conducted relatively quickly and cost effectively and still maintained an acceptable levels of accuracy.
- vi) Analysis of the PE data was very simple with very little data manipulation. The ease of PE data analysis enabled the researchers to share results timely.
- vii) Immediate validity of the data collected was achieved because triangulation happened in the field during the application of the methods.

Interestingly, this PE technique illustration emphasizes more on local analysis of collected infor-

mation as opposed to remote analysis conducted solely by researchers. It shows that, Participatory Epidemiology ensures the participation and consultation of all the stakeholders in the community in making decisions that affect their wellbeing. The identification of community priorities for addressing malnutrition, describes the ability of PE in utilizing the community as a useful tool in data analysis. Through the community's participation as the study's primary stakeholders, Participatory Epidemiology potential to build trust in the community was highlighted with members believing that the data generated from the exercise will be used to protect their own health and wellbeing. The pilot's most important lesson is that, when PE is conducted effectively, it goes a long way in building and maintaining trust of the affected communities leading to implementation of more sustainable disease surveillance, prevention, and control strategies (Burns *et al.*, 2021).

Karamoja, Uganda - Using Participatory Epidemiology to Investigate Women's Knowledge on the Seasonality and Causes of Acute Malnutrition.

Karamoja is a remote semi-arid region in North-east Uganda mainly inhabited by pastoralist and agro-pastoralist communities. For many years, the region has been considered politically and economically marginalized with low human development indicators compared to other parts of Uganda (Catley *et al.*, 2021). The region has persistent high levels of acute malnutrition reported mainly in children aged 6 months to 5 years despite the large-scale programmes by development partners. Major issues about health and malnutrition in this region of Uganda are long-standing. Even with the importance of seasonality in pastoralist settings, the seasonal variation of malnutrition had not been explained in Karamoja up to 2018 due to operational challenges and lack of resources to conduct nutritional surveys. The biannual surveys conducted in the region provided point prevalence estimates of acute malnutrition which cannot clearly depict seasonal variation in global

acute malnutrition (GAM) which has important implications for nutrition programming (Catley *et al.*, 2021).

Given the limited documentation of the seasonality of acute malnutrition, health and wellbeing and related livelihood activities in Karamoja, a Participatory Epidemiology study was conducted to better understand the seasonality from views shared by women agro-pastoralists. The study also aimed to understand knowledge of women and their prioritization of causes of acute malnutrition in children and mothers. The study also sought to assess veterinary experiences of PE application to understand if they could be adapted for use in studies on human health and nutrition.

Examples and utility of Participatory Epidemiology methods applied in the study include:

- i) Initial ethnographic approach was utilized to understand language used by women especially agro-pastoralists to describe malnutrition and associated issues. This was done through focus group discussions conducted by facilitators with experience with informal interviewing techniques.
- ii) Semi-standardization of two Participatory Epidemiology methods, causal diagrams and monthly calendars was informed by the secondary literature and local language drawn from the first ethnographic stage.
- iii) Using monthly calendar as a visualization method showed patterns of selected indicators. This PE method is ideal in situations of low literacy because it uses pictures or local objects to depict indicators and months.
- iv) Participatory Epidemiology methods ensures involvement of all informants and are useful complement to conventional quantitative surveys that use limited community participation.
- v) Additional questions asked by facilitators to probe scoring were quite helpful to better understand women's perceptions behind the scoring.
- vi) Proportional piling was used as a rapid method for quantifying responses in addition to

use of questions.

- vii) Kendall's coefficient of concordance (W) was used in SPSS software to assess reproducibility of monthly calendar method across the different participant groups.
- viii) Findings validity was confirmed by cross-checking findings against other information sources which included key informant interviews and review of literature.
- ix) Participatory Epidemiology methods were conducted by facilitators who ideally were fluent in the local language and repeated among different groups of participants.
- x) Participatory Epidemiology facilitators were trained on PE immediately before fieldwork and supported by facilitators experienced in using participatory methods.
- xi) Participatory Epidemiology methods are reliable in remote and under-developed settings and can generate reliable and valid information in a participatory way.
- xii) Participatory Epidemiology approaches are far quicker, less expensive, and more ethically than quantitative longitudinal studies.

This example of PE application confirmed that PE approach can be utilized to describe and explain complex and complicated food production and social factors that lead to acute malnutrition. This includes factors difficult to capture with traditional nutritional surveys (Alders *et al.*, 2020). For understanding seasonality and causes of acute malnutrition in remote and underdeveloped agro-pastoral setting, use of adapted PE methodologies was demonstrated as a legitimate and dependable strategy. Ultimately, PE could supplement conventional research techniques and strategies, such quantitative research and nutrition causal analysis, and it could be effective in designing programs aimed at reducing malnutrition (Catley *et al.*, 2023).

Ethiopia – Participatory Research for the Pastoralist Health and Nutrition Initiative

Children of African pastoralists are gaining recognition as the most nutritionally susceptible children globally. According to World Health Organization (WHO), levels of global acute malnutrition (GAM) in young children are often observed to surge above 15% in the Somali Region of Ethiopia; level considered as a nutritional emergency. However, cow's milk, one of the world's most nutritionally complete foods, plays a crucial role in these children' diets from findings of research studies conducted in the region (Sadler & Catley, 2009). Although there are many studies and early warnings literature that emphasizes the importance of livestock and animal products for dietary intake and income for pastoralists, there is little description of the food consumption and distribution of animal products such as milk, or the use of such products among vulnerable people groups in the region (Sadler & Catley, 2009).

The approach used in this study specifically examines relationship between animal products and young child feeding using local views and perspectives. The aim of this study conducted in Shinile and Liben zones of Somalia region was to ask women pastoralists and men, what they think about major causes of child malnutrition, relationship between child nutrition space and milk supply and the "best way" to address malnutrition in their communities. Participatory Epidemiology methods such as matrix scoring, seasonal calendars, and sequencing produced detailed information about child nutrition, reasons for food choices used for both seasonal trends and relationships. Table 2 details the summary of participatory methods used in the study to assess the role and value of animal milk in diets of pastoralists children.

The study used recognized participatory methods such as ranking, seasonal calendars and matrix scoring. These PE methods have been utilized in pastoral areas and adapted by several early warning systems for many years. The methods produced simple information that was understood

Method	Use	Sample Size
Matrix Scoring	To compare different foods fed to young children using community defined value indicators.	2 groups of informants in Liben zone and 3 groups in Shinile (4-12 people per group)
Seasonal Calendars	To determine variation, by season and by 'normal' versus 'drought' year, in rainfall and in dietary intake of milk by species and other foods given to young children.	3 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Consumption Calendar	Linking relative changes in intake of animal milk by young children with absolute measures.	2 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Simple Ranking	To determine how communities perceived the importance of factors such as causes of malnutrition.	3 groups of informants in Liben zone and 4 groups in Shinile (4-12 people per group)
Focus Group Discussion (FGD)	Used with all other methods to cross check information and clarify responses.	4 groups of informants in each area (4-6 people per group)

Table 2: A summary of participatory methods used in the study to assess role and value of animal milk in diets of pastoralists children . * Source: Sadler & Catley, 2009.

by many stakeholders, enabling in-depth discussions on the major causes of child malnutrition. According to the research, Somali pastoralists, particularly women, are a valuable source of information on child nutrition. They are aware of the nutritional value of foods like livestock milk and try to prioritize consumption of these foods by young children despite living in a harsh environment and having little access to formal education. The PE approach produced very detailed results and information on infant and young child feeding practices, reasons for chosen foods, seasonal trends, and relationships of these factors on child malnutrition. To capture some of this information, particularly in terms of preferences, behaviors, attitudes, and understanding of causal relationships, qualitative methods were the only viable option. It would be extremely difficult to understand these factors using only quantitative approaches (Sadler & Catley, 2009).

Conclusions and Future Directions

Participatory Rural Appraisal (PRA), a technique that places local participation at the center of the process, has had an influence on Participatory Epi-

demiology. As noted in this article, Participatory Epidemiology emphasizes the mutual benefits of participatory methods between academic researchers, public health professionals, and the populations being studied to make effective use of data insights for timely response plans, which can eventually result in better health outcomes. This review highlights literature available on this topic seeking to depict how participatory approaches are applied in epidemiology and what distinguishes them from non-participatory research. The review has observed that veterinary epidemiology and social sciences can collaborate to improve disease control by enhancing comprehension of contextualized information that impacts disease control decision-making and enhancing disease preventive and control strategies by incorporating indigenous perspectives through participatory approaches.

It's important to keep in mind that Participatory Epidemiology doesn't have any fixed tools and can produce new, more comprehensive, and more widely relevant information that can be more easily applied to effect positive change in

people's health. Social sciences are rarely incorporated into epidemiology; thus, they continue to be on the peripheral of managing disease outbreaks. Social scientists have shown that statistics do not always accurately capture the realities of local communities. Consequently, effective local participation is necessary for well-tailored and sustainable community sensitive approaches to early disease detection, on time prevention and control solutions, hence curbing undue effects due to disease transmission in communities. It is increasingly clear that socio-cultural, economic, and political factors must be considered for effective disease prevention. This engagement can be done through Participatory Epidemiology. Despite this, participatory approaches are used less compared to conventional research methods. Participatory Epidemiology (PE) has been mainly directed to zoonotic and diseases affecting livestock and not utilized to explore perceptions of human disease. This paper emphasizes principles of Participatory Epidemiology and that it is vital to actively involve different communities in “defining and prioritizing problems and in developing solutions to them”, as defined by Catley *et al.* The review highlights how Participatory Epidemiology (PE) provides a useful instrument for use in understanding how the community views status of a disease and its epidemiology to improve control strategies and encourage community involvement in centralized service delivery initiatives. It is assumed that, when Participatory Epidemiology (PE) is conducted effectively, it goes a long way in building and maintaining trust of affected communities leading to implementation of more sustainable disease surveillance, prevention, and control strategies.

Conflicts of Interest

The authors report no conflict of interest.

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