

## **Research Methods in Health Promotion**

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### **Lecture 48: Community-Based Participatory Research in context to Health Promotion (Part III)**

In community-based participatory action research, we have been discussing various methods of collecting data. In such ways as can be done by the community, understood by the community and perhaps even analyzed by the community. So, let us have a look at some other methods which can be used for this process. Tools and techniques include maps and diagrams and we are going to dwell a few more issues of maps and diagrams which can be used for data collection tools as data collection tools for CBPAR. Now, one of the most important maps which can be used is a mobility map. Mobility maps are used or drawn to understand the mobility pattern of local people.

Where do they go? For what reason? You know migrant labourers have received a lot of attention during the COVID pandemic. Migrant patterns have also been observed in vector borne diseases. People do travel to different parts of the country for work during particular seasons and along with it the pattern of disease and the picture of prevalence, incidences, transmissions they change. So, in order to understand it a mobility map is a very useful method.

It also increases gender sensitivity and awareness through highlighting the differences in mobility patterns of men and women. It evaluates interventions like vector borne disease control by noting their links with mobility patterns and it also can help plan for interventions and projects because it will help you understand which time you will find these people, when are they amenable for intervention, when can they be approached etcetera. So, what are the steps for mobility mapping? Firstly the person, group or community whose mobility patterns need to be understood are to be defined that is of course, the first thing whom are we going to do it among, who are our participants or who which is the community with which we are going to work. Second is the purpose of the exercise is explained. One can never do something when the target group does not understand what is being done.

So, the purpose needs to be explained and a discussion is initiated on the places the members of the group will visit. A list of the places is then prepared. This is a very simple exercise as it appears, but of course, there will be lot of debate, discussions, disagreements, but it is a discussion process which has to be patiently gone through. Thirdly, community members are requested to write the name of the places on small pieces of paper in bold letters those who can write. If they cannot write they can use visual symbols.

They are encouraged to depict the places using symbols particularly if they are illiterate. Then what do we do? We draw a circle in the middle of the group in the ground or paper or of a paper or a ground we take a sheet of paper large sheet of chart paper or another paper or on the ground itself we draw a circle. This circle we say represents the village or locality in which they are now residing. Community members are then asked to locate the places they have written those pieces of paper around the central circle. They are asked to place those pieces of paper.

They are then asked to link the places with lines to the central circle. So, these lines should represent something like thicker lines meaning they frequently visit these places and thinner lines for places which they occasionally go to. They are encouraged to do this one by one. So, each member is asked to come bring his pieces of paper place it and join it to the center with lines right. Next comes they are also encouraged to represent other aspects in the form of symbols or writing.

So, brainstorming is done about the aspects which can be represented like why do they go to that particular village this particular site for work for pilgrimage for what. Distances of these places, frequency of visits do they go alone or do they go in a group or do they go with the family these sort of information also can be generated from a mobility map. Now, once the map is ready the community members are asked whether they want to change anything. At every stage their concurrence is very important. They are then asked to explain the different aspects of the map and what they understand from it ok.

So, before your own interpretation ask them to interpret it, paraphrase it, make a summary, get back to them tell them that this is what I understood is this what you want to say. The facilitator should listen carefully take necessary notes. The map with all the details are then copied on paper by the facilitator. So, you cannot carry the ground with you neither can you carry a huge piece of paper you have to translate it or transfer it into a piece of paper which you can carry with you. The diagram and other details generated is triangulated with others in the locality meaning you get it from one group you can use it in another group to say if they concur with it.

So, that is triangulation taking it from different sources and seeing whether the information tallies. This is the example of a mobility map. This is villagers of Saltarpalli village in Orissa they created a map of the 15 places they visit. How often they visit each place you can see the legend. The distance from the village, the mode of transport, do they take the bus, do they walk, do they walk with men, do they walk without men.

Purpose of visit might be for health care, might be for going to the post office, might be for going to the market and the accessibility of the place. So, here the gender differences of mobility patterns were also exposed and discussions were done around it. So, people got

further information about gender differences in mobility. Another type of diagram which we come across very commonly, but we do not think of using it very much for our own research purposes is the flow diagram. A flow diagram is also visual tool.

It is used for tracking the flow of resources, benefits or perhaps even negative effects of a program to explore the impacts. What happened after this? Basically, this is what we go about doing. After this what happened? People institutes, resources etcetera are represented diagrammatically and arrows are drawn to indicate the flow or linkages between them. Like this is the flow diagram representing the decision to spray larvicidal oils on water bodies. So, what did we do? There were several types of findings.

One was a group we found the water body has purpose for cattle or crops. Some water bodies this question was asked whether the water body has is used for cattle feeding or crops. If it is yes, we do we can apply BTI. If it is no, then is the water body small and easy to fill? If it has no purpose and if it is small, you can fill it. If it is not small, not easy to fill, then we ask the question is it easy to drain? If it is yes, just drain it.

So, filling, draining depends upon the flow diagram whether it fulfills these criteria. Then we ask whether it is a temporary pool only happens during the rainy season or is it a flowing stream? If it is just temporary, we do nothing. If it is not so, again we apply BTI. So, these are ways in which community can help create and answer flow diagrams to facilitate a decision making process and action. Now, another one which we use very commonly is the Venn or Chapatti diagram.

These can be used to show the key institutions and individuals in a community and their relationships and importance for decision making and the influence of different people or groups regarding different issues. So, commonly what is done is suppose TB patients in a community and the different facilities for healthcare which is available to them, hospitals, private, public, quacks, NGOs, dots units, these are all mapped in Venn and the closeness or their accessibility, their ease of access, the barriers to access these are all actually visually displayed through these diagrams. The circles we represent each as a circle. The circles can be placed. So, different sizes of these circles are made according to the different institutions and individuals and the relative influence.

So, some are small which means the individual or the institute or the organization in question are both limited in ability, in capacity and they are not of much importance to the participants or the beneficiaries. So, I will show you a picture very shortly. The circle can be placed closer or further away from each other depending on the closeness of the relationship between the institutions or individuals. A Venn diagram is used when a simple participatory visual method needs to be used for a number of items to be studied. When you are trying to look at the relationship with the institutions, with individuals, with diseases, with social groups etcetera.

So, multiple variables can be used. We preferably be used two together. They can be importance and perceived proximity. So, is this institute important to this TB patient? Is this hospital TB hospital considered important? Is it close enough to be accessed? These two things can be actually depicted through a Venn diagram. So, this is the example of a chapatti or a Venn diagram.

The participants identified institutions and individuals and assigned circles of different sizes based on their perceived importance. So, the larger circle meant that it was more important. Here you can find out that the suppose the MLA was more important than the self-help group. Then the Mahila Mandal was more important than the perhaps the same importance as Anganwari, but more important than the SHGs again. So, that is the relative importance.

Participants then drew double lines to indicate the closeness of their relations and accessibility. So, longer lines means lower accessibility. The college is very far away, the market is very far away. Very close is the Sarpanch, close is the self-help groups, close is the village secretary, but again the relative importance is different. So, the MP again is very far away, but again the library is very close.

So, this is how we can get in visual idea about what is close, what is far away, what is more important, what is less important. The other type of visual diagram which we use is a very common one and a very good one is a fishbone diagram. It is also known as a cause and effect diagram. It helps to visualize root causes of a problem. So, first you need to make a problem statement.

What is the problem which you are studying? A clear problem statement is drafted with consensus of the team members. Never do anything which is participatory individually. It has to be done with the group. The problem statement is written on the right side of the sheet of paper as the head of the fish, a fish has a head and a bones all through its body and a tail.

So, this is done as the head. A line is drawn with a narrow towards the head of the fish. This is the fishes backbone. We show you a picture shortly. And then let us brainstorm and find out major categories of the problem. Then these major categories are written besides the backbone, connected to the backbone, the main bones, the ribs.

There is no specific number of steps or categories necessary to describe the problem. For example, in the fishbone we I will just show you now fishbone diagram, low rates of no scarpel vasectomy. The categories identified were manpower, procedure, personal, social and

environmental. Now comes the main categories you have received. Now we further probe to find out the contributing factors.

Possible causes of this problem are again brainstormed. Each cause is attached to an appropriate rib. So, these are the smaller bones. Ideally each contributing factor fits into a single category, but sometimes you can find it in multiple categories. If there is a contributing factor that fits into more than a category, it should be placed in each category and see in the end whether it has a multiple points of view and that makes a difference.

When we check for the identified factors while listing a factor, the team should be repeatedly asked why that factor has been identified. For example, in the fishbone diagram on low rates of no scalpel vasectomy, one factor identified was lack of manpower due to untrained supporting staff. So, people ask further questions like why are the staff not trained? Answer was because training was given irregularly and infrequently. Why was the training not held regularly? One answer will provide a further question. Why not regularly? Because there was no funding.

Why was there no funding? Because applications were not sent in time. Why were the applications were not sent in time? Because staff were unaware of where to apply. So, this is the process. Five why's we say because at least ask five why's one after the other. This is the minimum manageable number of questions to find out a suitable root cause.

Then we go in for further deeper causes. Actually you can have multiple, just like some fish have many bones, some problems have smaller ribs as well. Each of the branches can be considered as a mini-rib and you can again ask five why's for each factor. And finally, the root causes. So, if you find some things which are coming repeatedly across categories, then probably they are the ones which are the root causes.

So, this is the fishbone diagram. We were talking of the non-scalpel vasectomy which is given down below and the actual fishbone diagram draft outline which is given above. The problem is the head that is the effect. The causes are along its backbone and the ribs and the tail lies in the end. But fishbones are wonderful ways of eliciting this visual impressions and visual data and can be used very easily by the community and by others also, mid-level workers as well.

We can also use a problem tree. This is also a participatory tool of mapping out the main problems along with their causes and effects. We have been talking about this that each problem has causes and each problem also has effects. Any problem has three parts. Like a tree it has a trunk, root and branches.

The trunk is the main problem. Branches are the causes and the branches are the effects. And if you can find this out through participation of the community, it gives a wonderful impression to the community and can act upon it very easily. So, this is a problem tree. The main core problem is low use of maternal actually these are the health devices, services, products like maternal health related services and products like ANC, iron folic acid tablets, institutional delivery etcetera. The direct causes some of the direct causes which came out were lack of importance placed on ANC, low risk perception for delivery, myths related to IFA consumption, female doctor preference all these came from the community brainstorming.

Then some other direct causes were low knowledge of pregnancy and delivery danger signs and lack of awareness of the services. Now effects were that and so there were some indirect causes as well like poor delivery preparedness, cost for institutional deliveries, weak counseling by frontline workers and the underlying causes of these were non supportive gender and socio cultural norms which ultimately led to the effect of high maternal morbidity and mortality. So, you see this is a very simple way of depicting all the direct causes, the indirect causes, the underlying causes and the effects easily understood, easily seen can be easily acted upon by the community itself. So, this is another example of a problem tree. A problem tree drawn with a group of mothers who agree that malnutrition is a major health problem for their children.

So, this is the problem children are malnourished. So, first the problem is written on the top of blackboard or a sheet of paper children are malnourished, if you the group is not literate you can again use pictures that signify malnutrition. The group is then told that the problem is like a tree and the causes of the problem are like roots reaching in the ground. Next the group is asked why they think that children do not have enough to eat and after some discussion the responses are placed in the form of a problem tree. They give you the causes. Now each of the causes is chosen one by one and the group is asked why they think this is happening.

So, these whys go on just like a fish bone we keep asking whys. So, children are malnourished because people said why why why not enough food, we do not have the right kind of food, mothers do not give children breast milk. And when they said why is there not enough food they said we do not have enough money, the soil is poor. So, the agricultural yield is not enough. Why do you do not have enough money they said we could generate income in new ways, old ways do not work anymore.

Why is there poor soil they said we could use more organic fertilizers. When asked why do you do not have the right type of food again they said the agriculture is failing, the crop production is failing, animals are malnourished because of disease and drought. And then mothers do not give enough breast milk why they said because of the advertisement of bottle feeding and artificial milk and effect was that they said we could promote breastfeeding. So, these are the possible solutions which they gave in the end. So, you see these are very simple

methods, but again even sophisticated research perhaps would have given us this only in a way which the community would not be able to understand.

So, this is how the community can generate its own responses, find out ways in which they can take action and suggest strategies and action points. So, there are wide variety of data collection tools and techniques which we can use in participatory research. As in every issue every method which we have discussed the choice of these tools techniques whatever we use depends upon what we want to know the research question. Maps and diagrams they are simple, but these tools can elicit very good data. They are the data which the community can provide, they can be prepared by the community, they can be finalized by the community, they provide good feedback to the community about the situation, they help the community to understand what the problem is, they help the community to prioritize the issue on which action should be taken or can be taken depending upon the resources and the assets of the community.

And they also help the community to take action, monitor, evaluate after implementation of those action points which they themselves have decided. And finally, they can go on iterative cycles of doing it again and again till they achieve their desired objectives. So, CBPAR can utilize some of these tools to collect data for research. These are the references which have been used. Thank you very much.