Research Methods in Health Promotion

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Week 01

Lecture 03: The Health Promotion Research Process

Hello, welcome back. So, we were discussing regarding the basics of health promotion and in this lecture we will be discussing regarding the health promotion research process. So, here our focus will be more or less on the different steps that are involved in a particular health promotion research. Now as we all know there are different stages and different steps in a research in general way. So, here we will be focusing primarily from a health promotion aspect because there are certain things that a health promotion researcher should keep in mind that may differ to some extent from research in general and also from research generally in the health sector right. So, let us discuss regarding the overview of health promotion research first and then we will discuss regarding the steps right.

Now regarding overview of health promotion research as you can understand here I will be talking somewhat about the general aspects of health promotion research because in this first week we are discussing mostly about the general aspects of health promotion research. Now the first thing that I want to make you understand is that a health promotion research as you can see is an iterative process ok. The process of discovery is an iterative process that means, it goes on and on you complete one research and that leads to another research. Even in one research in itself you complete that particular research and you find certain gaps or you find certain new action areas and then again you go on with another research like this.

And the most important part that separates or you know that is specific to health promotion is that in health promotion research always keep in mind that it is not only about research per say or it is not only about developing certain things or developing some product or something like that no it is not like that. It has a public venture built into it that means, health promotion as we have already discussed in the first two lectures that it is mostly related to preventing certain illnesses certain diseases and everything. So, it is in fact, for the good of the people. So, for I mean to bring something good to this community and to bring something good to any individual it has to be engaging and it has to include the community aspect to it and as a result any health promotion research apart from the core research aspects must be a public venture and that is why the areas of health promotion research or the steps in health promotion research although similar to general research aspects, but the depth varies that we will discuss later on in this lecture. Also what we have already discussed keep this in mind what I have mentioned here in red that conclusions from health promotion research often have a direct impact on public health.

See because health promotion means prevention or preventive in certain ways. So, when you are preventing a disease or preventing certain illnesses that obviously, is having a public health impact right. For example, if you consider what we have mentioned here studies have identified the individual and social determinants that contribute to vaccine acceptance. The prime example in this case you can consider that about the COVID-19 vaccines. Now the health promotion research what many of us have conducted during the COVID-19 times were mostly focusing on why people are accepting the vaccines and why people are not accepting the vaccines, what are the facilitators for vaccine acceptance and what are the barriers.

Now when we have conducted this research it gave us certain outputs and understand is that these outputs they are mostly you know they are mostly related to this public health aspect because that ultimately changes the behavior of the people. Based on the findings of those research we could identify the barriers and at the policy level we could advocate for certain changes and that you know brings about certain public health good. So, that is the basic essence of health promotion research how it differs from the general aspects of research and also from the typical disease oriented research. Mostly always remember the topics in health promotion research and the methods in health promotion research has a public venture and a public health focus built into it. Because we were discussing in the previous lectures that it is mostly health promotion that builds the structure of public health and also the preventive medicine.

So, obviously, you have to have certain public policy, public health and public good all these aspects built into the research component of it. This as you can see shows you an iterative process ok. So, what kind of iterative process is this? So, as you can see the first three steps we will be discussing the steps one by one later on, but for this slide please understand the first three steps these are called the decision points. Why? Because here we are making certain decisions. In fact, here we are deciding on whether we should go on with the research topic and if we want to go on with the research topic what kind of research should we perform.

So, here everything is in our brain kind of because we are planning. So, the decision points are more of a planning stage. Although in this last in this you know step 4, 5, 6 you have seen it is mentioned as planning steps. Now this planning is mostly the effective one where we are actually doing it. So, the decision points the planning built into the decision points they are mostly thinking of the research how to do and what to do and in the proper planning steps these are mostly the effective ones what we are going to do exactly what are the steps that we are going to follow in certain measurements in certain techniques.

And after these two steps 7 to 9 these are the action points. Now these are the areas that are you know very much specific to health promotion and these are the areas where health promotion research contributes more to the society. Because see if you can read it in action points the first part is the step 7 that is the first part is the implement the study protocol. That means, here we are actually doing the study whatever we have conceived whatever we have

prepared we are actually doing the study because health promotion study or a health promotion research obviously, focuses on prevention of a disease. So, whenever we are prevent whenever we are inter I mean implementing a particular health promotion intervention it is going to benefit the people.

So, the first action point is again going to help the people. Then from the implementation of the total research protocol we get certain data we clean and analyze the data and we get answer to the research question that we originally started with. Now these two steps they gave you certain recommendations and they gave you give you certain way forward. And as you can understand since our original objective is benefit of the human beings and prevention of the diseases. So, the way forwards are obviously, something good for the benefit of the community as well.

So, action points these three steps are the ones where health promotion research distinctly stands apart from the research steps in general right. So, here we have outlined the nine steps just remember this one the first three steps identifying a priority population then formulation of the research question. Then determining whether the research is going to be observational or experimental these three steps they are the decision points in our research. Next three steps that is select a parsimonious research design then determine what variables will be measured and how obviously, and then selecting the sampling method for this particular study or any particular research that we have undertaken. These three are the basic planning steps these are called the kind of effective planning.

And lastly what we have already discussed are the three action points for any health promotion research process. Now, we will be discussing regarding the different steps involved in the health promotion research process. As you can understand these are the nine steps in health promotion research please remember these nine steps in health promotion research because if this will help you in devising and also you know writing the protocols for health promotion research. They are more or less same for you know when you are going to develop or you are going to actually implement a particular health promotion these steps will ultimately help you. So, the step one the step one is basically defining the research population.

Now how do we define the research population as you can understand research population is defined in almost all these studies where actually we are doing any kind of a study with a population. In health promotion research as well we have to define the particular research population and we have to find the target population on whom we are going to do the study. There are certain terminologies involved like internal validity, external validity on whom the results are going to be valid on whom can we implement actually. We will come to those terms and come to those steps one by one later on, but remember in health promotion first we have to identify the research population and the next question will be why do we have to identify the research population first why not go on with the research question. Because in health promotion obviously, your research question is a priority and the health promotion obviously,

preventing certain diseases or illness it is a priority, but see if you can I mean if you can think about it the problems or the diseases or the illnesses they start with people they start with the population.

So, first if we can identify these are the people who are at risk or these are the people who needs the attention of research and or R and D. So, then we can develop the research questions from there on. For example, if you consider that you want to do a study to mitigate the vaccine hesitancy regarding COVID-19 vaccines for example, if this is going to be our study then first thing what we have to understand is already when we are deciding on this research question because this is our research question that we are going to develop certain intervention that will mitigate the vaccine hesitancy regarding the COVID-19 vaccine. We have already thought about the population what did we think about we thought that vaccine hesitancy is there among the general public. So, here the population is not limited or narrowed down here the population is basically you know it is the whole of the population our target audience or the target population is the society in mass right.

So, this is how we think about the research population. Now please understand that when we are deciding on the research population since we are discussing about the disease, disabilities or illness and the methods of prevention or in fact, in social and economic things the population the idea regarding population where we actually want to do the study it comes from the basic idea of epidemiology the basic idea of distribution of those diseases and one very important component of the distribution is the distribution among the population. So, from there on we can identify the research population. Now since we have identified research population in step 1, in step 2 we will be defining the research goal and specifying the exact research question. You can identify or you can remember this step as deciding on the research question properly because here as we have already mentioned the research question is whether that intervention is going to work on the vaccine hesitancy among these people or not.

So, we have the population now we have the question that we have to test the intervention whether this is going to work or not. So, see this is narrow and precisely defined goals and questions we prefer them because if our goals and research questions they are broad enough then the problem is since we have limited resources and we can really process limited number of complexities the outcome for any research it will not be worth it or it will be you know it will be incomplete. So, we prefer to have narrow and precisely defined research question. For example, vaccine hesitancy for COVID-19 what would have been a broader extent of research question here? If we had conducted a study regarding vaccine hesitancy regarding all the vaccines why it would have been a broader and a vague research question because not all the vaccines are having the same degree of hesitancy or the outcome of this research the barriers or you know the facilitators whatever we get from this research they may not be applicable to all the other vaccines because COVID-19 vaccine is a different kind of a vaccine and its purpose is certainly different from all the vaccines that we already have in NIS. So, that is why since we have now narrowed down the scope will be working with COVID-19 vaccine only.

This gives us ample opportunity to explore I mean in a better way and dig deeper so that the recommendations can ultimately benefit the people right. How do we understand these research questions? The first and the foremost important step in understanding the research question is to go through the literature. The published literature will help you understand where actually we can do the research because the population will give you an idea regarding the different research areas or the broad areas of research, but exactly what is going to be your research question that particular specific question you can identify by studying literature published on that broad area and this literature review all the mentioned regarding the recent and relevant empirical literature, but remember even if you go through different grey literatures or even you go through the media reports you can also identify this specific research questions ok. It is all about understanding what is already there existing and what you can add to that pool of evidence. So, the research goal it is a general statement and that conveys the purpose of the planned study.

So, since this is a general the goal part since this is a general statement. So, you have to whenever you are framing that general statement you have to keep in mind that it should be understandable to the lay audience ok. Now from this research goal we arrive at this research question. The research goal is applicable for the lay audience and it may be put forward in certain way that it conveys the plan of a study and in a lucid manner, but the research question has to be specific what we have mentioned over in the beginning of the slide it has to be narrow and precisely defined that must be the research question that should be specific and that should be precise and from there on we can have certain specific objectives right. If you can please go back to this to this one here see in step 2 we have mentioned formulate research questions for a single goal.

Now relate this with what I have mentioned in this slide. Research goal is a general statement and from there on we have to build this research question which will be precise and which will be very much specific and from this research question to measure the outcome of the researcher to measure it we will be providing a specific objective a specific objective may be 1 or 2 in number that completely captures the research question. I have given you an example of research question over here for example, what is the impact on adolescent tobacco use of an intervention. Similarly we were and trying to understand the impact of a new health promotion intervention on mitigating the vaccine hesitancy regarding COVID-19 vaccines. So, that way next what we are going to do is determine whether the research should be observational experimental.

Now I will be discussing regarding the observational experimental studies later on when we dig deeper into the research designs proper, but for your understanding observational designs means where we are actually not implementing any intervention or not where we are not manipulating the variables that we are observing. For example, if we are doing a study on the on the hesitancy pattern or regarding the COVID-19 vaccines here are observed variables may be the simply the hesitancy pattern, but see in this study we are not doing anything to change

that pattern we are just observing what is there in the community or among the individuals that have responded to your question. This is an observational study and in experimental study as with the drug trials or the other interventions we are basically trying to change that particular behavior. The research question that we have mentioned previously the health promotion intervention to mitigate the barriers. Now we know about the barriers here the intervention is changing that barrier this is an example of an experiment and this is an example of an experimental design.

So, here in step 3 since we have now the research question with us we have to understand what kind of study we are going to do. If we are testing certain kind of interventions or a new technique or a new strategy which nobody has tried tested before or at least not on that particular population we have to you know we have to go for the experimental studies. But if our question is just to understand the pattern what is there in the population we can go on with the observational studies. But remember before going into experimental studies we usually tend to do more and more observational studies to you know to get the feel of what is actually going on in the community and what kind of intervention or what kind of strategy is going to work there. This is the basic essence the difference between the community based designs and only the individual designs.

Because here all we what I intend to mean is we must focus on what is going on and surrounding the individual the influencers the social changes the economics everything right. Now, the next step what we are doing we are selecting a research design that provides a rigorous test of the research question. See from step 4 we have actually stepped into the planning proper planning phase of the research because now we have decided what we are going to do now we are actually planning on how to do them. Now this diagram shows you how the resource requirements are going up ok. See for doing a simple qualitative research you require very less resources for example, you will be reading one needing one IDI guide and as a qualitative expert you can go to the field and you can take consent of the participating individuals and just record the interview and takes a field notes and then analyze.

So, cross sectional surveys or trend studies or whatever basically of the surveys that we are going to do you require some more people because then your sample size is increased you have to go to reach to more and more number of people that you alone cannot do. So, your requirement for manpower is there your requirement for certain funds are there your requirement for other resources for example, the questionnaires or electronic resources can be there. In this way the requirements go up the highest requirement is for the truly experimental studies the randomized control trials or whatever we call the gold standard study designs for them this the requirement of resource is highest. So, now since we understand this hierarchy of resource requirement in this stage what we need to do we need to follow the principle of parsimony. What is the principle of parsimony in deciding on this research designs? We need this line parsimony implies that the need what is the need in this situation investigating the research question since we have a research question our need is to investigate the research question that need is met by a tool what is that tool that tool is not a particular questionnaire

or question paper here the tool implies the research design as a whole what will be the research design for example, the experimental research design or observational research design.

So, that is that is the essence that is the essence of parsimony that this tool it will meet the need and it will do the job in a good way why in a good way because resources are limited the design that we choose it will determine the amount of resource that will be utilizing transfer of question. So, the resource that will be utilizing it should be optimum it should not be less than what is required and it should not be more than what is actually justified right. So, that is the principle of parsimony. In step 5 we are determining the variables that must be measured these are the areas when we are basically going deeper into the metallurgy since we have defined the research question and also decided on the research design and we have really followed the principle of parsimony we must understand that now we have to understand those variables that will be tested because the intervention is going to change the variables. So, here we must have certain variables that are going to be changed or the dependent variables there will be certain variables that they themselves will not be directly getting changed by the intervention or they may not change at all over time those are the inter independent variables.

Now these independent variables often sometimes can even you know have an effect on the dependent variables. And one interesting thing is when we will go into analyzing these variables or analyzing these designs we will be understanding this that the intervention from a data set point of view the intervention itself is a variable we give the intervention to certain group and we do not give the intervention to certain groups. Now in that case the intervention will be considered as a variable because the status of intervention it varies. Varies means it is given to certain it is not given to certain ok. So, that is that we will be discussing later on in this course as well, but for your understanding you must keep in mind that intervention can also be a variable.

So, in this step the essential thing is we must accumulate all the variables that may be there and from that list we have to pick and choose which variables are going to suit my need ok. Because later on there will be no scope to go back and select a new lot of variables. Now you may say that if that is the situation then we will be taking all the variables that may be there surrounding the research question, but see again the problem is you will be blocked by the principle of parsimony. Because the principle of parsimony says you should not utilize the extra resources other than what is actually required and you should not also utilize the less resources. If you have to measure all the variables that may be there and you are not sure whether all those variables are actually going to help you in building this effect or mapping this effect.

So, in that case you are misutilizing the resources to measure variables that are in fact, not going to help you right. So, that is why you have to be very cautious when selecting the variables and the review of literature component here it comes in handy because you can see what other researchers have done and you based on that you can select certain variables. In

the step 6 we have to select the sampling procedure. Why sampling procedure is needed? Because the sampling procedure it enables us to understand the external validity of the research ok. That means, whatever result you are getting from your study you can extrapolate it or that result is valid for a larger group of people of similar nature.

That is why sampling you know with the probability sampling particularly they are they are very much utilized because you select a lot of people only a group of people and you can then reflect the result of your study on that sample of people onto that larger population. But remember whenever we are doing certain research not always that sampling is required I mean the sampling following the sampling procedures. There may be certain situations like one thing is called the sample size that means, the number of people we are studying sample size may be required in all of these studies that we are going to do in information research. But in all those studies you may not need to follow this standard sampling procedures of probability sampling. You may just go on and pick and choose in certain situations we do it very conveniently or as per our research objective.

One very common example for this kind of use of this kind of sampling is what we do in the qualitative research. So, while sampling is very much important must understand that the probabilities sampling part is useful in providing certain external validity component to the research, but it is not always that the sampling is required. But you must have a good number of sample size handy because ultimately if you are going to analyze the data in a quantitative way then the tests they will require sufficient amount of power otherwise your inferences will not be valid. In step 7 what we are going to do we will be implementing the research plan.

So, step 7, 8 and 9 they are the action points. So, here we are actually doing the action. Now understand this while external validity is dependent on the sampling whom we are choosing the concept of internal validity means the consistency in implementing whatever tool or technique or intervention that we are going to give. The consistency is the crux of internal validity. Now when we are implementing the research plan please remember that whatever we have mentioned in the protocol we should follow that research plan word by word. What happens if somebody or a research staff you know make certain changes that may not be authorized to that intervention process it is called a drift.

So, we should not allow any drift from the protocol, but there may be certain situations where the protocol allows certain changes certain adaptive designs are there, but the protocol allows changes in itself. In that case it will not be considered as a drift because that change is not unauthorized that is now authorized ok. So, implementing research plan if we can implement the same thing over and over again without any deviation we should consider high degree of internal validity and for that consistency is our is our main motto. In step 8 we will be analyzing the data what we have already gathered through implementation of the research. Now we have to then clean the data that means, we have to find out the logical inconsistencies.

For example, there may be certain inconsistent that logically you can understand there might have been certain error which are not systematic in nature because if you indulge in systematic errors that will lead you to biases and there are situations where even data cleaning can lead you to biases, but data cleaning is still an inevitable process before we go on to final analysis part. So, what do we do in data cleaning? We look for logical inconsistencies and we correct them in terms of the available logic ok. Here also as you can see parsimony is important why? Here since you have a lot of data and you have a lot of variable to analyze you must be very much cautious as to which variables and how they are being analyzed. Since the statistical methods are going to be very much rigorous it is not recommended that you do whatever test you have in your battery and you just implement it on all the variables and then you select from the results whichever suits your cause.

No, this is not the proper way. Here also you have to resort back to the protocol that you have already written and from there on you have to select the tests and you have to select the variables that is how parsimony will help you in analyzing the data. Then the next question will be how to disseminate the findings? Now after analyzing now you have the results with you now you have to disseminate the findings. Remember whatever study you are going to do be it observational be it experimental first thing is to ensure that the study is rigorous enough because if the study is rigorous enough you will have this internal validity and to some extent the external validity if at all applicable taken care of and that is easier to disseminate and easier for technical people to understand. Also the information that you will be providing to the general public the what we call the lay summary of your research that will also be more attractive to the people and more informative because if you have done the research in a rigorous way you will be providing more accurate and more true information to the people and you will benefiting the people. So in the results section you have to mention the findings that actually answer to the research question that you have originally started with and then again you have to compare what you have found with what is already existing.

You have done a degree of a certain extent of review of literature and then now you have to compare what you have found and what is there existing in the literature or what somebody else is proposing to do. You have to compare your findings with all of that. Please remember that it is important to understand the negative results. Negative results does not mean only the statistically non significant ones. Negative results means it is something opposite to what you have expected because sometimes these results as well apart from whatever gaps you have found out in your study they can lead you to certain additional questions.

That is very much essential in health promotion research this additional question and that is how it you know goes back the loop it relates to the step one again. So, we have discussed regarding the overview of health promotion research process how health promotion research is slightly different from research in general and we have discussed regarding the principle of parsimony how principle of parsimony is very much utilized in health promotion research and also during the analysis phase. We have discussed the nine steps. Please remember the nine steps we have discussed the decision points, we have discussed the planning steps and also the

action points in the research cycle and we have also focused on the fact that the research whatever you are going to do should give rise to certain other questions that you can carry on researching right. That is what the last point says at the end the finding should answer the research question under investigation and also raise the additional questions for further research.

So, this is all for this particular lecture these are the resources I strongly suggest you to go through this particular book for this lecture. Thank you.