

Research Methods in Health Promotion
Dr. Sweety Suman Jha
Dr. B.C. Roy Multi-Speciality Medical Research Centre,
Indian Institute of Technology Kharagpur
Week 06
Lecture 28: The Explanatory Sequential Design

Hello everyone. So, this is our lecture 28 and in this lecture I will be talking on the Explanatory Sequential Design. So, this is the week 6 of this course and by now like the Mudimita Dohay Madam she has discussed the introduction of mixed matter research. So, other 4 lectures you know that we have on different mixed matter research designs. So, this is on the explanatory sequential design. Now, we will be covering the overview of the explanatory sequential design, the choice of the explanatory sequential design, the explanatory sequential design procedures and strengths of the explanatory and challenges in using this particular design.

So, overview of the explanatory sequential design. Now, this particular design is a mixed matter design in which the researcher begins by conducting a quantitative phase and follows up on specific results with a subsequent qualitative phase to help explain the quantitative results. So, what happens first we go for the quantitative data collection and analysis, then based on that we go for the qualitative data collection and analysis. Now, you can just I mean you can just understand from the name itself that the explanatory sequential design.

Now, what we are doing we are explaining the quantitative findings with the qualitative ok. So, this is very important. Now, it involves a two-phase data collection project in which researcher collects quantitative data in the first phase, then analyzes the result and then uses the result to plan the second that is the qualitative phase. So, first you have to conduct the quantitative part, then you have to do the analysis and based on that particular you know result you have to plan your next phase that is the qualitative phase. Now, the key idea is that the qualitative data collection builds directly on the quantitative results.

So, the qualitative phase is implemented for the purpose of explaining the initial result in more depth ok. Because see we all know that in qualitative now we keep on you know we always whenever we talk about qualitative then the very first thing which comes in our mind is in depth in details exploring. But in quantitative what happens we get certain data ok, we get certain result, but for the explanation in depth explanation for that we have to go for the qualitative one. And the name of the design as I just discussed now that explanatory it reflects that how the qualitative data help explain the quantitative result. Now, this is very important you have to remember that in this particular design the thing is that the qualitative ok, how the qualitative data is helping to explain your quantitative findings.

Now, the primary intent of this design is to use a qualitative strand to explain initial quantitative result and it can be used to explain the mechanism through qualitative data that shed light on why the quantitative results occurred. Now, this is very important know why things happened ok. So, this why part is very important you have the quantitative findings, but that is what ok. So, you have what in the case of first phase, but for the why part you have to go for the qualitative one. So, you have the quantitative findings, but finally, why such kind of quantitative findings occurred for that why part you have to go for the qualitative data.

And how they might be explained ok, how can you explain that here these quantitative finding these things happened we have these kind of evidence. So, we can explain through qualitative data collection and analysis. Now, this is just you know a framework kind of you can just see that the in the first block what I have mentioned is quantitative data collection analysis ok. Then after this what we are doing results connected to and it is explained by the qualitative data collection and analysis and finally, we have the interpretation. Now, in this week in particular in week 6 we will discuss about different mixed matter design ok, what are the strengths challenges etcetera.

Now, data analysis integration interpretation and writing the report writing of this mixed matter we will discuss all these issues in the week 11 and week 12, but in this particular week we will discuss each and every mixed matter the important mixed matter designs ok. So, now, this is clear that we are first doing quantitative data collection analysis then you know results connected to and those results get explained by the qualitative data and finally, we have an interpretation of the entire study. Now, the choice of the explanatory sequential design. So, the explanatory sequential design is most useful when the researcher and the research problem are more quantitatively oriented and thus it makes sense to start the procedures with the quantitative phase. So, you all know that our research problem it basically you know is more of quantitatively oriented.

So, our main focus starts with the quantitative phase then the researcher knows the important variables and has access to quantitative instruments for measuring the constructs of primary interest. So, this is also you know a very quite understandable that as a researcher you should know that what actually you are going to do in your quantitative phase the variables you should have and what survey instrument what questionnaire you are going to use for measuring the constructs of your objective of your primary interest. Now, the researcher has the ability to return to participants for a second round of qualitative data collection. Now, this is also important it is not it is two phase we all know now it is not that you have conducted the quantitative phase and it is done. Again you have to return to those participants for your second round of phase that is for the qualitative phase.

Now, the researcher has the time to conduct the research in two phases and so, this is also important. A researcher as a researcher you should have that much of time also that in the first phase you will go for the quantitative one then in the second phase you will go for the

qualitative. The researcher has limited resources perhaps the researcher is the sole investigator in most of the case it happens and needs a design in which only one type of data is being collected and analyzed at a time. Now, what happened at a time you are collecting only one kind of data that is either quantitative or qualitative. So, that is why you know that particular maybe he is a single researcher single researcher team I mean he is a single researcher and he has to conduct the entire study and he has limited resources.

So, for that also it is you know it is always useful and better because at a time you are focusing on only one type of data collection. Now, the different procedures of explanatory sequential design. So, in the first step the researcher designs and implements a quantitative phase which includes the collection of data and also the analysis. Analysis is also important because if you do not do analysis so, you do not have findings and if you do not have findings you cannot move to the next phase that is a qualitative phase. So, first step is done in the second step the researcher connects to a second phase that is through the point of integration for mixing and identifying the specific quantitative results that call for additional explanation and using these results to guide the development of the qualitative strand.

So, see the thing is that you have a you know you have I mean according to your rationale you have some objectives that you are going to see all these things you have your objective that which you have to accomplish that these are the quantitative findings and that I want to find out and these are the qualitative. But the thing is in this particular mixed matter design when a prior even if you have your clear objectives it is not possible that you will prepare the entire qualitative strand. So, you can have some ideas you can prepare, but proper refinement is definitely required because it depends on what kind of result you are getting in your quantitative phase. So, based on that you have to prepare the you have to develop the qualitative part. Specifically the researcher develops or refines the qualitative research question as I said that you have to refine even you have everything in your hand you know even if you have everything beforehand, but after the quantitative analysis and you have the quantitative findings with you.

So, even after that you have to refine the qualitative research question then the sampling the purposeful sampling and the data collection protocol you have to develop. So, they follow from the quantitative results all these things follow from your quantitative result. result. Now, as such the qualitative phase is connected to and depends on the quantitative results. So, by now we are very clear that the qualitative phase is basically connected to and depends on the quantitative result.

Now, in the third step the researcher implements the qualitative phase by collecting and analyzing qualitative data. So, now, the time has come where you have to collect the qualitative data. So, finally, the researcher interprets to what extent again I repeat finally, the researcher interprets to what extent and in what ways the qualitative results explain and add insight into the quantitative results and what overall is learned in response to the studies purpose or goal.

Now, what happened see just for an example through quantitative data collection you have conducted a survey a quantitative survey utilization of healthcare services. Like you can even focus on a particular healthcare services like vaccination or antenatal, but as a general I am just giving you an example that utilization of healthcare services you are conducting a quantitative survey.

Now, the thing is after analysis you will see that there are certain percentage of people who are actually not utilizing the health services there are certain percentage who are utilizing. Now, you have the what component, but why there are certain percentage of people who are actually not utilizing the health services. Now, this is very important why. So, to explain those quantitative findings then you can go for the qualitative one. Like another example you know for the treatment adherence for any an uncommunicable diseases for the treatment adherence you know through quantitative survey that these number of people you know they have they have the adherence and these percentage of people have that treatment adherence, but through qualitative only you will be able to know that why component why there is no treatment adherence among the people who are suffering from some chronic disease or from non communicable diseases.

So, this is very important you go for quantitative survey and now you have the findings, but again you have to go to those participants you have to develop the qualitative protocol you have to do the sampling and then you can go for qualitative data collection. So, in that case you will be able to explain that why such things has happened such findings has come. So, that why component can be obtained through qualitative phase and then what happened very well you know at the end you will be able to understand the entire thing your main purpose of conducting this particular study will be completed now. Now, these are the step 1, step 2 and in the next slide step 3 and step 4 is being given. So, in step 1 you see the first is the design and implement the quantitative strand.

So, what what task you have to conduct you have to state the quantitative research question without research question we cannot move a further step and determine the quantitative approach how actually you are going to do what instrument I mean what survey questionnaire you are going to use permission definitely you need permission. Then the sample you have to identify the quantitative sample then you have to collect data the close ended data with the particular instrument then after collecting you go for the analysis analyze the quantitative data using descriptive statistics inferential and effect sizes to answer the quantitative research question and facilitate the selection of participants for the second phase. Now, this depend on the particular researcher what kind of statistical analysis he or she will do. Then in the second step we have to use strategies to connect from the quantitative result or from the quantitative findings. Now, you can determine which results will be explained it depends on the researcher his or her objectives.

So, here are such as some examples are given significant results or the non significant result the outliers the group differences then you will be using this quantitative result to refine the qualitative and mixed methods question. So, you have to you have something in your mind I am not saying that you do not have any thing that what actually you are going to find it out in the qualitative phase, but the important is as I said it is all I mean the second phase is entirely dependent on the first phase. So, again you are refining the qualitative you know research questions and also mixed methods question why because this is a mixed method study it is not about that you are just conducting either quantitative or qualitative. You could have you know you could have gone for either quantitative or qualitative what is your rational what is your rational of using the mixed method. So, that also has to be very clear when we will integrate now the integration part is very important which I will discuss in later lectures in week 11.

So, that mixed matter research question is also very important and that has to be clear because if it is not clear your entire study will not be good and while integration only you will be able to understand the importance of the research question that why did I go for the mixed matter study for this particular topic for my objectives. Then determine which participants will be selected for the qualitative sample definitely here you know the issues of ethical issues will also come then who will actually give you consent ok. So, you have to determine with purposive sampling that which participants will be selected and according to the person who will give you consent. Then you will design qualitative data collection protocol you can go for a different data collection methods which comes on the qualitative research design it depends on your objective on your feasibility ok. So, in that case you can develop a protocol the qualitative data collection protocol.

Then in step 3 we design and implement the qualitative strand now we have developed the qualitative protocol and we know that among which you know which participants we are actually going to carry out the data collection for the qualitative phase. So, now, it is about the design and implement the qualitative strand. So, what you will do your qualitative research questions are clear now you have to state the qualitative research questions clearly that follow from the quantitative results and determine the qualitative approach as always you have to obtain permission then purposefully select the qualitative sample that can help explain the quantitative results. Then you go on to collect data that is open ended data with protocols informed by the quantitative results. So, everything whatever you have developed was completely you know dependent on your quantitative result and findings.

Then analyze the qualitative data now you have collected your qualitative data you also have to do the analysis. So, analyze the qualitative data you using procedures of theme development and those specific to the qualitative approach to answer the qualitative and mixed matter research questions. So, it depends on the researcher that how according to his or her rationality according to his or her objectives he or she will do the qualitative data analysis. Now, at the end in the step 4 you have to interpret the connected results. So, now, you have the summary I mean you will summarize and interpret the quantitative result then you will summarize and

interpret the qualitative results and finally, discuss to what extent and in what ways the qualitative results help to explain the quantitative results.

So, this is the final thing in final interpretation phase you have to mention very clearly in your study and in your article that at what extent and in what ways the your qualitative findings or qualitative result it help to explain your quantitative findings of your particular study. Now, we will discuss on the strengths and challenges of this particular design. So, strengths see the many advantages of the explanatory design make it the most straightforward of the mixed matter design. So, what are the advantages? So, we will go one by one. Now, this design appeals to quantitative researchers because it often begins with a strong quantitative orientation.

So, those who are more you know oriented or there are some people you know for them the quantitative researcher is more appealing then in that case it often is very easy going kind of mixed matter design for them. So, it often begins with a strong quantitative orientation. Now, the next is its structure makes it straightforward to implement because the researcher conducts the two phases that is the quantitative and then the qualitative separately and collects only one type of data at a time as we discussed in our last slide. Now, this means single researchers can find this to be a manageable design to conduct because he has to do you know a data collection of quantitative at a time and again for the qualitative phase the data collection is being done and analysis is being done at a time. So, it is they find it is more easy to manage basically.

Then the final report can be written with a quantitative section followed by a qualitative section we all know making it straightforward to write and providing a clear delineation for the readers. So, what happens? We write the quantitative section then the qualitative and it becomes very straightforward and very understandable. So, it is very clear for the readers. Now, this design lends itself to emergent approaches in which the second phase can be designed based on what is learned from the initial quantitative phase. Now, there are some challenges also although this particular design is straightforward.

So, researcher choosing this approach still need to anticipate some challenges which are specific to this particular design. So, the challenges are extended time needed for completion means this design requires a lengthy amount of time for implementing the two phases no doubt at a time you are conducting only one phase, but ultimately for the entire study you know it requires a lengthy amount of time you are doing the first phase again you are developing the second phase again you are doing data collection for the second phase then you are doing analysis then final integration interpretation everything. So, and participants must be accessible over an extended period this is also important to among participants you have conducted quantitative phase you also have to go back again to them for the qualitative phase. Now, the qualitative phase cannot be a fully specified in advance as just now I discussed you can have some few things you can put you can have some idea, but it cannot be fully specified in advance it cannot be fully specified beforehand. So, it can be difficult to secure you know

institutional review board approval for studies using this design because the researcher cannot specify with precision that the participants to be selected for the second phase or what questions will be asked in the second or follow up qualitative phase until the initial quantitative findings are obtained.

So, in that case you know in you have to make the members you know understand that first I will have to go for the quantitative and based on the findings then only I can be totally clear I will be very clear that here these are the issues I am going to involve in my qualitative phase. Then next challenge is quantitative results to follow upon must be identified. So, you know the researcher must decide which quantitative results need to be further explained which of the quality quantitative findings actually you have to explain through qualitative data collection analysis in your second phase. Although this cannot be determined precisely until after the quantitative phase is complete. So, we all know without the quantitative phase is complete and the findings are done it is not possible completely.

Options such as selecting significant results and strong predictors some you know the researcher they consider initially only that here the significant results or the strong predictors will be considered as the studies being planned. So, beforehand there are some researcher who will at least plan few things that here I am going to explain these findings in my qualitative phase. The need to specify who can best provide the explanation. Now, the researcher must decide who to sample in the second phase and what criteria to use for participant selection. Now, this depends on your objectives and also on the quantitative findings.

So, it seems that you are so much dependent on the quantitative findings that it is very difficult to completely establish everything beforehand. So, you have to wait till your findings are there then only you can develop for your next phase. So, this also requires time that is why this particular study design it takes you know this is quite a bit lengthy design. So, then conclusion the explanatory sequential design is a mixed meta design in which the researcher begins by conducting a quantitative phase and follows up on specific results with a subsequent qualitative phase to help explain the quantitative result. So, you all know that we will go for the quantitative phase at first also I have given you few examples.

Now, see as a researcher you can have your own research areas, but the important thing is you have to be very rational and your objective should be clear that whether my you know objectives, what is my research question for that particular research question is this particular design is I mean will be effective or not I mean is this particular design is rational or not because you can have your own aims and objectives you know for your study. So, you have to be very rational in choosing which type of mixed meta design actually you are going I mean you are planning to conduct. Now, the primary intent of this design is to use a qualitative strand to explain initial quantitative results. Now, the many advantages of the explanatory design it make it the most straightforward of the mixed meta design. So, we also have gone through different advantages different strains of this particular design and it makes it more

straightforward one of the very straightforward design among the different mixed method techniques.

And these are the learning resources though first one is you know by Creswell. So, go through this textbook very well and other two textbooks also you should go. So, go through all these learning resources. Thank you