Research Methods in Health Promotion
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Week 06
Lecture 29: The Exploratory Sequential Design (Contd.)

So, hello and welcome back this is lecture 29 of this course and in this lecture I will be talking on the Exploratory Sequential Design. So, we have already discussed regarding the explanatory sequential design. So, we will be covering overview of the exploratory sequential design, then choice of the exploratory sequential design, then the procedures, strengths and challenges of the exploratory sequential design. Now, this particular design is a three phase mixed matter design.

Now, here the researcher starts with the collection and analysis of qualitative data. So, in this particular design we first go for the qualitative data collection that is then followed by a development phase of translating those qualitative findings into an approach or tool which will be tested quantitatively. Now, so, you can understand why it is three phase. First you go for exploration that is why the name is exploratory you try to explore something ok.

So, you go for the qualitative data and then based on the findings of the qualitative data you can you have the development phase that is the second phase. And finally, after that development phase we have the quantitative phase ok. So, let us discuss now this means that the approach or tool will be grounded in the views of the participants because in the first phase only you are going to explore something from the participants from the audiences. So, what is happening you are trying you have in your mind that you will explore you will go for in depth understanding it can be there you know perceptions, their views, their opinions ok. So, anything so, that is why the approach or tool whatever you are you will be developing based on your qualitative findings will be grounded in the views of the participants because you have already in your hand that views what are their views, what are their opinions ok, what are their perceptions.

Now, this emphasis on exploring before the development phase is reflected in the design name I have already said that it is already reflected in the name of this particular design. So, that is why before the development phase we are exploring. Now, in many applications of this iterative design the researcher develops an instrument as an intermediate step between the phases which between the phases between the qualitative and between the quantitative phase that builds on the qualitative results because you have the qualitative findings and based on that qualitative results you will be developing an instrument or tool and is used in the subsequent quantitative data collection and you will be using that particular instrument or tool in your next phase that is in your quantitative phase. Now, alternatively researchers may design you know new variables, new measures or survey, some new experimental activities or an app

you know some app or digital tool during the development phase. So, through qualitative findings you can go for development of an instrument, any intervention tool, any app or any digital tool ok, any survey in questionnaire, survey questionnaire etcetera anything you can develop.

Now, specifically the primary intent of the exploratory design is to develop and apply a quantitative measure or survey intervention digital tool or new variables that are grounded in the qualitative data definitely because you are starting with the qualitative data. So, all the you know you are just exploring, exploring. So, all everything all the you know the findings are actually the data's are grounded. So, with that grounded data you start preparing the survey instrument or intervention tool or app or digital tool etc. So, by this we mean that the quantitative feature is based on the culture or setting of participants definitely because for a certain community you know just because you exploring in the qualitative phase.

So, through their views and perception you know their cultural beliefs, their values. So, based on that particular findings only you are developing an instrument no. So, that instrument that you know the quantitative feature is actually I mean based on the culture and setting of that participant only because based on that finding you have developed an a tool and that you will be utilizing in your quantitative phase. So, with the culture specific development of the measure or instrument the likelihood increases that it will be seen as relevant to the group being studied. Now, this is just a framework.

So, first what we are doing we are going for qualitative data collection analysis, then results connected to and built to develop these things. So, you can quantitative measure survey instrument and intervention any app website etcetera and after this development you have you know this will be tested for or applied by through quantitative through the third phase. So, in that phase you will go for the quantitative data and collection and analysis and finally, at the end you will have your interpretation of your entire study ok. You can apply a particular survey questionnaire you can apply a survey instrument in this particular phase or also if you have developed some intervention tool or an app that can be tested in this particular quantitative phase and finally, you have the interpretation. So, the exploratory sequential design is most useful when the researcher and the research problem are more qualitatively oriented and therefore, it makes sense to start with a more inductive approach ok.

So, you start from very specific a small thing and then you start you know inductive approach you just start having many things many findings many datas from that small particular thing. Now the researcher needs to develop a product it can be an instrument as I said intervention material or a digital tool that is substantively relevant and culturally sensitive because in that particular population that particular community you know you have explored you have in depth understanding of their values and beliefs. So, that is that particular instrument or the intervention material anything whatever you have developed in the development phase that is quite relevant and very culturally sensitive that is very important like in the tribal population.

If I want to you know just one example in the tribal population I want something related to their dietary habits just for an example I am just telling you that their dietary habits I want to know about their dietary habits. So, in that case you know that the tribals they have their own culture they have their own you know choice of food ok.

So, for just one example I can see that I do not have any you know instrument by which I can measure their dietary habits or the different you know it is not about what food they eat the different things you can put in a quantitative phase the different constructs different components you can in fact, you can also go for different health behaviour model if you want to see their intention to have you know to have the to follow dietary or proper dietary habits or if you want to see what kind of dietary habits what kind of food they consume etcetera. So, in that case you do not have anything proper in your hand. So, first what you will do you will go to that population you will start with the qualitative one. So, that is why it is quite relevant you are actually exploring things from them only. So, it is very culturally sensitive based on their cultural beliefs and values you have your instrument in your hand because it is not possible that you will apply any kind of instrument which is being applied in urban population ok.

Just for an example in an urban population or in non tribal population in that case what will happen you will miss out many important things. So, in that case this kind of exploratory sequential design is very important because you directly start with exploration you directly go with the you start with the qualitative phase. Then the researcher has the necessary time to conduct the research in three phases as we said as we discussed qualitative development and quantitative. Now the researcher is interested in the transferability and generalizability of a newly developed product definitely how much that particular developed product can be reproducible and the generalizability when you will finally, in the third phase you will do the quantitative part how much that can be generalized. Now the researcher identifies new emergent research question based on small sample qualitative results that can be best tested with a large quantitative sample.

So, in qualitative phase you go for a few samples small samples and you do exploration and then you develop then that instrument you know you it can be tested and in the large quantitative sample in your third phase. So, this design you know it starts with the collection and analysis of qualitative data to explore a phenomenon. In the next step which represents the point of integration in mixing you know in the next step we have to go for the point of integration and then the researcher identifies the results on which the quantitative few feature will be built. So, after qualitative analysis and findings you have to identify that on which results the quantitative you know instrument will be developed the feature will be built. Now the researcher undertakes a development phase by developing an instrument, identifying variables, designing intervention experimental activities or coming up with an app or website intervention to test.

Then these developments it connect the initial a qualitative phase to the subsequent quantitative strand of the study. So, you have the development phase done you have developed ok. So, because qualitative findings you utilize in your development and after your development is being done now the time has come for the quantitative part. Now in the third step the researcher implements the quantitative strand of the study to examine the salient variables using the developed instrument or intervention with the new sample of participants ok, but from the same population. Now finally, the researcher interprets in what ways and to what extent the quantitative results generalize or extend the initial qualitative findings.

So, finally, integration and interpretation ok, analysis are being done integration is being done. So, in the final interpretation part in the interpretation part as a researcher you can have that in what ways and to what extent the quantitative findings generalize or extend the initial quantitative findings which you did in the first phase. So, these are step 1 to step 4. So, in this slide first let us discuss regarding step 1 and step 2. So, design and implement the qualitative strand.

Now here you have to state the qualitative research questions and determine the qualitative approach. Then you have to obtain permissions you all know then you have to identify the qualitative sample then the protocol your protocol should be ready. So, then you will collect open ended data with protocols. Under data collection you will analyze the qualitative data using according to researcher as I discussed in the last lecture also that what kind of analysis you are going to prefer according to your objective. So, you can have a theme development and those specific to the qualitative approach to answer the qualitative research questions.

And then identify the information needed to inform the second phase ok. So, the research questions and the development of a new quantitative feature. So, after the qualitative analysis and the qualitative findings you have now you have to be clear that what you know what quantitative feature or what quantitative tool you are going to develop. And for that also your research question should be very clear that yeah these are the things which I am actually aiming based on that you will have a very clear and specific research question. Now, step 2 you can use strategies to build on the qualitative result.

So, here you design and pilot test a quantitative data collection instrument or a measuring instrument or app based on the qualitative result. Then you have to you know the refine the quantitative research questions or hypothesis and the mixed method question in last lecture also I discussed that finally, you have to refine ok. Because it is based on your the last phase not the previous phase. So, everything cannot be cleared before you start your first phase or you before you start your study. Because based on the qualitative findings your next phase you know your second and third phase are dependent.

So, in that case again you have to refine the quantitative research questions or hypothesis and the mixed method question why did you go for this specific mixed method technique ok. So, that particular question should be very clear the rationality of choosing this particular design should be very clear. Now determine how participants will be selected for the quantitative sample. Now, the thing is that you have to now determine that for the quantitative phase for the quantitative sample how participants you are going to select your sampling your sampling procedure should be cleared as a researcher. So, in this step 1 and step 2 we know that we are done with the qualitative and then finally, we have the qualitative analysis and we then you know based build on the qualitative result whatever findings we have we define the research questions hypothesis and the mixed methods research question everything ok.

You design and pilot the particular instrument or the intervention material or an app and then also you have to in this step you have to understand that who will be my participants ok, who will be the participants and how will be the sampling how the sampling will be done. This step 3 design and implement the quantitative strand. So, state quantitative research question hypothesis that build on the qualitative results and determine the quantitative approach ok. Then you have to obtain the permissions select a quantitative sample that will generalize or test the qualitative results and newly developed quantitative features. So, you have to select a quantitative sample that will generalize or among whom you will test that a particular instrument because already in that particular instrument you are all I mean you have developed that particular instrument or tool based on the qualitative findings.

And then ultimately you are also testing the qualitative results and the newly developed quantitative feature instrument or tool. So, collect closed ended data this is quantitative phase. So, you are collecting the closed ended data with the instrument design from the qualitative results. And then you analyze the quantitative data at the end whatever you have collected you have to analyze. So, analyze the quantitative data using descriptive statistics, inferential statistic and effect size to answer the quantitative and mixed matters research questions.

So, you have your you know research questions very clear in your hand. And finally, you go for the analysis now here again I would say that as a researcher it depends that according to your objectives and research question what kind of statistical analysis you will be choosing. And then the last step is about interpret the connected result. So, you have to summarize and interpret the qualitative result, then you have to summarize and interpret the quantitative result, then you will discuss to what extent and in what ways the quantitative result generalize or test the qualitative result that is the interpretation part. Now, as I have said in my last lecture also that in this week we will just discussed about the basic features and challenges and strengths of the different mixed matter design.

But in week 11 and week 12 we will discuss you know thoroughly how actually we will go for the analysis, the integration in details, the interpretation and also reporting the findings writing the article ok. So, that is also important. So, in this week we will just cover the basic

things ok, the characteristics of the particular mixed matter designs, strengths and challenges. So, what are the strengths of this particular design? Separate phases make the exploratory sequential design straightforward to describe, implement and report phases are different. So, definitely it becomes very straightforward to write you know to describe and it is also where it becomes very easier you know and straightforward for the readers also.

Now, although this design typically emphasizes the qualitative aspect the inclusion of a quantitative component can make the qualitative approach more acceptable to the quantitative biased audiences ok. Then this design is useful when the need for a second or quantitative phase emerges based on what is learned from the first or qualitative phase. So, you know I just gave you one example on the tribal population regarding their dietary habits and the another thing like you can just think that if you want to use some health behavior model among the school students ok. And you want to see their dietary habits their regular physical activity pattern. So, for example, you can go for theory of plan behavior you can go for integrated behavioral model, but the thing is just for an example you know the integrated behavioral model.

So, we have already discussed the different models. So, in integrated behavior model what happened that some based on the you know the different constructs we discussed now we can first go for the qualitative for the interviews for the elicitation interviews we can go for ok. So, because see it might happen and you know you will see that you do not have a particular instrument you do not have a survey instrument based on that particular model in your settings. So, in that case you have to develop your own instrument and to develop your own instrument among that particular setting among that particular population what you have to do you will go first for the qualitative part you will try to explore you will go for the in depth exploration ok. So, based on that what you will do you can develop your own instrument measuring instrument and then definitely you can go for your quantitative survey at the end.

So, the researcher can produce a new instrument or measure variable set of intervention activities digital tool or app as one of the potential products of the research process. So, these are the different advantages or strengths. Now there are also some challenges in this particular design. So, the researcher must plan for extended time to complete because this sequential approach requires considerable time to implement potentially including time for a third phase to develop a feature. So, researchers need to recognize this factor and build time into the study plan.

So, if you have you know if you have your objective that here these are the things I am going to accomplish and you are going to use this particular exploratory sequential design it will take time because first you will go for the qualitative and then developing that particular instrument you know particular tool itself will take a lot of time then again you have to apply or you can test a particular intervention tool in your third phase in the quantitative phase. So, you can understand the how much time it will take to complete a entire study. So, it is very important

as a researcher that you have to be you should be very clear that here this is my study plan this is my timeline you have to be very clear. Now the quantitative phase must be tentatively specified in advance tentatively specified definitely. So, because as I said it is not possible for you to have a very a complete you know specification in advance because based on your qualitative findings your quantitative phase will depend.

So, that is why it is difficult to specify the procedures of the quantitative phase when applying for initial IRB approval for the study. Now two different samples might need to be identified you know researcher should consider using a small purposeful sample in the first phase that is a qualitative phase and a large sample of different participants in the second phase to enhance the generalization of the quantitative result, but from the same population. Now the researcher must determine which qualitative results to use like in explanatory sequential our main how we understood that here we have to determine that which quantitative findings we are going to use, but in exploratory which qualitative findings or which qualitative results we are going to use. Now when developing a new feature after the qualitative phase the researcher needs to decide which results to use from the qualitative phase to build the quantitative feature. So, as a researcher after you have completed your qualitative collection and analysis the you should have you know you have to decide which findings which evidences you will be using to build the quantitative feature or the instrument or tool and how to use these results to generate quantitative measures or materials.

Now the researcher must be skilled why because this design it requires expanded skills on the part of the researcher because there should be proficiency in qualitative research, quantitative research, mixed matter research and instrument development. So, a particular researcher or the researcher you know the team there should be you know a clear idea among them that here what is qualitative research, what is mixed matter research, what is quantitative approaches and the instrument development itself is a important thing because in this particular design you have to develop an instrument. So, instrument development that particular skill is also required in you as a researcher in your research team, ok. So, these are definitely the challenges because see the researcher, as a researcher you have to you have to decide at which part of findings this is also challenging which part of findings you will use from the qualitative phase to build the quantitative feature what kind of feature you want in your quantitative phase. And then definitely you know how to use those results to generate how you can develop and generate materials and measure an instrument and intervention tool and as I said the researcher must be skilled in fact, the team the entire team all the team members they should have the skills ok.

It might happen that here somebody has a good skill on the qualitative part, somebody has on the quantitative and there are some you know in that particular team some member have you know the very good skill and knowledge regarding the instrument development, the survey instrument development or the intervention development or development of any app you know app or any tool or website digital apps or tools. So, this is very important the skill of the research team. Now in conclusion the exploratory sequential design is a three phase mixed

matter design in which the researcher starts with the collection and analysis of qualitative data that is then followed by a development phase of translating the qualitative findings into an approach or tool that is tested quantitatively. So, we all know that qualitative then the based on the findings we have to go for the development of the instrument development phase then you know ultimately you have to go into the quantitative phase either you will be applying and you will be testing that particular instrument or material which you have developed. Basically the primary intent of the exploratory design is to develop and apply a quantitative measure survey intervention digital tool or new variables that are grounded in the qualitative data because it is grounded you are just starting from you know very you are starting from the very minimal and basic things.

So, many new things will come up. So, that is why you know different evidences and data's are actually grounded. These are the learning resources. So, you must go through this textbook that is designing and conducting mixed-method research by Creswell. Thank you.