

Research Methods in Health Promotion
Dr. Arista Lahiri
Dr. B.C. Roy Multi-Speciality Medical Research Centre,
Indian Institute of Technology Kharagpur
Week 12

Lecture 56: Developing a research proposal in health promotion

Hi there, as we come to the last week of our course we shall now discuss regarding the different aspects of scientific writing in health promotion research. So, as we navigate through the different areas of scientific writing we first discuss how to prepare a research protocol in your health promotion research. We have already understood what are the different design aspects, what are the different intervention development techniques, how do we validate the different tools including the intervention tool and the survey tools like this. We also have understanding of the basic areas of health promotion research and finally, before we conclude this course we shall have an idea of how to develop a good health promotion research proposal and how to present your findings. So, let us start with our discussion of developing a research proposal in health promotion. So, in this lecture we shall cover the components of a research proposal that will be developing.

Next the research proposal versus the research grant proposal we shall be covering the aspects where we are proposing the research for funding and some considerations while writing the research proposals or grant proposals. Basically these considerations will be summarizing the considerations that you have for developing your own research proposal in a lucid way. So, let us start with the structure of a typical health promotion research proposal. Now, as you can understand that the research proposals in health promotion and they should they are more or less similar to the all the other research proposals that you usually develop in healthcare research or typical biomedical research.

First it should have a good title good means it should be brief yet self explanatory we shall discuss regarding the title in brief in the next slide. Then it should have a summary or an abstract of the proposal that outlines what you are actually going to do in the proposal only the outline is required. So, that the reader or the reviewer gets an idea of what it is to be expected in your proposal. Next is a background or an introduction typically the background of the proposed work what led you to take up this research question. It should I mean it the guidelines vary basically it depends on the guideline of the funding agency or the committee where you are proposing the research.

It may include the review of literature in the background section or the review of literature may be a separate segment as well, but you should ideally present the research question that you are going to address in your research. Then the rational or justification of your research it may be included under the background section again the guidelines vary, but here you should be very crisp and precise about why this research is actually important and you can you know

present the review of literature and the background information accordingly right. Next is the aims and objectives typically in a research proposal you have to present the aims and objectives in a in a good way for example, as detailed as possible because based on the aims and objectives you will be able to device your methodology next. And in methodology after methodology section you should provide a good outline of the ethical issues that you have in your proposal and how you are going to address the ethical issues that may arise out of the proposed research. Basically you can you have to mention the references that means, you will cite some of the works during the review during the background process and you have to put collect all the cited works and put it under the heading of references ok.

If you have a different additional materials like for say for example, you have some drafted questionnaire like this then you can put that in the appendices or the additional material section as well. So, this is basically just the structure of a health promotion research proposal these are the basic broad heads. Again the headings and sub headings will depend on the agency where you are applying with the proposal or the or the you know the for example, the ethics committee where you are applying for ethical clearance. So, it will depend on their guidelines. Whenever we are going to develop a proposal we must assume that whoever is going to read the proposal has a limited knowledge why because it helps you in developing the proposal in a lucid and a clear way ok.

So, the proposal it basically should be comprehensive and it should be organized logically. So, that is very much important the logical organization of the proposal. Clear language is required use minimal jargon because again we want our proposal to be understood by as much as many people as we can because health promotion is a multidisciplinary concept and we have people from multiple disciplines coming and collaborating. So, it should be made easy for everybody to understand. So, that everybody can provide certain inputs right.

So, that is the utility of using minimal jargon, but still you have to describe the research question the methodology and the data collection the data analysis all the technical stuff is in a great detail. But the interesting part is the reviewers of the proposals when you typically submit them to the different funding agencies or the other agencies for some other support as say for example, some administrative support or like this. The reviewers usually they have a lot of idea regarding the field where you are going to perform the study. It may so happen the particular research question that you are going to investigate is of your interest and you are the expert in that particular area, but the reviewers who will be reviewing the proposal that you are going to present they have a know fair bit of idea about the main major area of work or the domain of your work. So, it is very necessary for you to present the you know the previous evidences or the reviews of literature that actually led you to perform this activity that is the essence of presenting a good background.

So, that is essential for you when you are developing your protocol. That means, before writing the proposal itself you have to be very clear on why based on what evidence you have

chosen the research question after that you can again start writing the protocol. Now let us discuss the different aspects the structural aspects of a protocol first is the title of the research proposal as we have already discussed it should be brief it should be clear and it should precisely state the research question that you are going to address not the research question in a question format because typically the title some of the authors they consider that a title if presented in a question format it is not a good title. So, you have to present the research question in such a way that the people are able to understand what exact issue you are going to address and also it is better to mention the research design although in some instances it may not be possible to mention the research design somewhere because of limitation of word or somewhere because the mentioning of the research design does not fit the title like this, but it is better or it is a good practice to mention the research design. Now see I have given an example over here see how this matches the criteria for the title.

Now in this study the the title was evaluation of a community health promotion program in a socioeconomically deprived city district in the Netherlands using mixed methods and guided by action research. See do you consider this as brief and clear? Yeah this is more or less brief and clear because this much is needed to describe what is actually what the authors are actually doing and this is also clear it clearly states what the study is about it evaluates the community health promotion program where it is mentioned and through which design it is also mentioned. So, the research question is typically mentioned what they want to study evaluation of a community health promotion program in a socio economic economically deprived city district. So, that is the research question they want to evaluate whether the health promotion program was effective or not and they have also mentioned the research design. So, this is typically considered a good title for a research proposal.

Next comes the abstract or summary although it comes in front or just after the title, but typically we prepare the abstract or the summary for a research proposal after we have developed the whole of the research proposal. Because in the abstract or in the summary we summarize the objectives of the proposed research the methods that we will be using the target population and also the relevance of the research. So, it is best if we first prepared the whole proposal and then we can have a understanding a good understanding of what really highlights the major areas of a research proposal and those highlighted points needs to be presented in the summary. And typically the summary makes the reviewer understand why actually you are going to do the research. And after the summary section you move on to the major segment or the main portions of your research proposal that is the background or the introduction part.

Here what happens here you present the background of the proposal first the background of the proposal in the background section you provide the context of the proposed research. So, that means, here you need to present with the context based on what or in what situation in what circumstances your research will be conducted. What are the previous evidences like this you have to you have to prepare the ground for your research. Next you describe the previous research the problems associated with the collecting data analyzing them or the measurements that they have used in the previous research you have to present them all, but be sure to be

precise and brief. Why all this presentation is needed because this will guide you on the why the different the measurement techniques that you will be choosing your researcher appropriate for your research question.

So, that means, that will be guided from the previous research and that is necessary to be presented as the background of your proposal it also forms the part of the context of your research ok. And you may also include a theoretical framework because see theoretical frameworks are you know are of essence when we are proposing a health promotion research. See the concepts or the constructs that we are going to utilize in our study you need to mention them in the background because if mostly the people who are going to read your proposal they may not be knowing the details of the theoretical models or the behavior models that you may be utilizing in your proposal. So, these technical details you have to present in the background section and with a brief justification of why the particular theoretical model you have chosen that is also important right. Next in the in the in the ending part of the background section you need to present your research question because based on the context you arrive at your research question.

See it is the research question that you have to present in the background not the objectives or the aims ok. So, you have to be very much clear about it. Next in the background section you need to develop one paragraph or one subheading like the statement of need or rational or justification. Depending on the guideline of your research proposal this whole segment can be a different subheading altogether as well. Here what you need to do here you need to present certain information or the burden of the problem that you are going to address.

See typically when we are studying any health related illnesses for example, any tropical diseases for example, say we are studying malaria we can present a burden of how many people are getting infected with the disease, what is the prevalence of malaria, what is the incidence like this. So, that sets the premises of why your research is basically necessary that justifies your research. What happens with the health promotion research is since the health promotion research mostly concerns with the different behavioral aspects that go on to address certain social issues that directly or indirectly has an influence on health. So, in that situation you have to provide data on those behavioral aspects why actually you need to change the behavior and also you have to provide data on the ultimate health outcome that you are targeting. Say for example, we are doing a study on certain protective behaviors that will prevent individuals from sustaining HPV cervical HPV infection ok.

Now we are doing a study on the behavioral issues our intervention is focusing on certain behavior change. We have presented the theoretical framework in the background. Now in justification section we need to provide data on the burden of HPV because that is the major health illness that we are studying that is the focus of ultimately the intervention will help in reducing the burden of this infection. So, we need to present the burden of HPV cervical HPV infection say among the adolescent females or among the adult females perhaps. Also we need

to present the burden or the prevalence of certain preventive or protective behaviors that we are going to study.

For example, using condom or barrier method of contraception that may be a protective behavior for this HPV prevention and in fact, that is a protective behavior. So, we can present certain information or data on how many people actually practice this thing ok. So, see here the data on behavior we are presenting the data on behavior in terms of a practice if we can get it. Also from other studies we have reported the different behavioral parameters or different behavioral practices. We typically have to present it in such a way that justifies our research question and it justifies that the problem is worth investigating that is the main essence of presenting the information in the statement of need that yes it is worth investigating.

Also if you have certain innovation in your study for example, you are proposing a new health promotion intervention a new health promotion strategy altogether which is not there in the existing programs or in the existing strategies. Then you have to categorically mention that this is your innovation or this is innovation that the study will be testing. What happens is if you clearly propose the innovation then the study becomes clearer to the reviewers and also for funding it gets an extra edge because you are doing something new and you are expecting the new item or the new health promotion intervention to benefit the community. Like this you have to mention it very clearly on whom you are going to do it and why this is an innovation. If at all you have an innovation if you have something of a replication study then you have to mention why the replication of that particular intervention in this in your selected population is necessary again that will depend on the burden statement that you have presented typically here.

Next comes the question of hypothesis you can typically generate certain hypothesis I have given you an example that children who engage in a 15 minute exercise program at the beginning of each school day will be more attentive in a class. So, this is typically an hypothesis here we are proposing that if you do a particular activity then then you you will gain something or then you will have some efforts. So, typically null hypothesis means there will be no change or the or in this scenario they will not be attentive in the class and this is kind of an alternative hypothesis alternative to the null that there will be some change that means, they will be attentive in the class. Why hypothesis is required because as we move on to formulate our objectives and aims we need to break down the research questions in in the different hypothesis. So, that we can understand what exactly are we going to perform or implement during our during the research.

Next comes the aims and objectives. So, now in the background segment we have developed why the research is necessary, why this particular topic is worth investigating, what are your research questions and what are you proposing, what are your hypothesis like your intervention is going to give benefit in terms of what or what benefit you are proposing like this you have developed a hypothesis as well. You devote an entire section to aims and objectives of your

research. As we have mentioned that this may be a separate section or included at the end of the introduction this depends again on the typical guidelines of the agencies where you are going to present your research proposal, but usually for a research proposal the aims and objectives they are presented as a separate section. Now, it helps the reader or the reviewer to identify what are the what are the questions or what are the things that you want to address and the objectives they should be measurable and attainable what we typically call as a smart objective.

That means, it should be specific, it should be measurable, it should be achievable, relevant and time bound. Specific means it should address the specific question that you have for a particular objective it should not be vague that you do not make clearly understand what is the research question that this particular objective is going to understand. Say for example, if I am going to do a study regarding the acceptance of immunization among the mothers in a particular rural area then my objective should clearly state that you are going to estimate the or to understand the acceptance of child immunization among the mothers. Say if you mention like this acceptance of child immunization in a rural field area you omit the term mothers among mothers like this what happens here is it is not specific because it does not clearly mention among whom you are going to study because the acceptance of immunization among the mothers may be quite different among what is actually among the fathers or the grandmothers like this right. So, here you have to be very much specific on what you actually want to study it should be measurable because you should be whatever you are proposing to understand in your objective you should be able to measure it.

For example, when we are able to measure a particular concept it becomes a construct. So, it is better that in the objective you start by mentioning the particular construct that will be utilizing ok. It should be achievable like it should not be something like we are embarking on a voice to the sun like this it should be very much achievable within the timeline that the funding agency or the or the supporting agency will allot you and also it should be relevant. Now relevance means it should be in line with the burden statement that you have provided and also it should provide answer to the research question that you have raised in the background section. These are the techniques of preparing a good objective for your health promotion research.

Next comes is the most important segment of a research design or of a research proposal that is the method section or the methodology section. We have different subsections under methodology the first one is the study design. What happens with study design is here we describe the methods that will be used to achieve the stated objectives. We discuss the different design aspects or the research designs in the earlier weeks. We know that the designs may be in observational design, it may be an interventional design typically we are more interested with the interventional designs in the health promotion when we are finally, going to infer something or we are focused mostly on the analytical or causal part whenever we are trying to understand the burden of the situation we go for the observational design.

So, in that way you have to design your methodology right. Now you have to understand or and you have to find out whether the quantitative techniques are important like the quantitative method methodology that we discussed that we mentioned the observational studies like cross sectional, the cohort design or the experimental designs like the randomized studies. These are certain quantitative techniques whether they are necessary or the or the qualitative methods like for example, sequential methods or exploratory methods or explanatory design whichever suits the need of your study that you have to typically mention over here. And it is also necessary to mention why the particular research design that you are going to implement is suitable in your enquiry ok. That is what we have mentioned clearly justify why it is needed.

Then the motto is to keep the design simple and clear it should not be complicated that ultimately the reviewer or the reader loses track of it and it should not be complicated in such a way that it is not clear how the objectives are actually being met by the study design. Here I presented one example that means, the how the objectives really determine the different study designs. Basically what I have mentioned here is different types of objectives can lead to different study designs. For example, you get to choose when you need to perform the surveys or the interviews or the focus groups that means, the quantitative techniques or the qualitative techniques that we were discussing that depends on the objective. If suppose we want to explore certain perceptions or we want to explore certain beliefs in depth then it is better to go for the qualitative techniques like the in depth interviews or the 1 is to 1 techniques that we discussed during the different intervention delivery methods like this.

So, that depends on what objective we typically have. Next is the concept of sample selection. So, sample means on whom we are basically going to conduct the health promotion research. Typically the sample I mean in the sample selection part we need to mention the characteristics of the research participants whom we are targeting this is particularly considered as the eligibility criteria for the research. We have to ensure that the participants we are choosing are representative that means, we have to mention the sampling technique how we are selecting the participants whether we are doing a random sampling or we are selecting purposefully like this.

It is better always to ensure the representativeness although in certain qualitative enquiries you may not be able to ensure the representativeness or even these external validity of your sample, but still in the quantitative techniques the representativeness is absolutely essential. You have to calculate the samples is how many individuals you have to select in this section. Now that is what we have mentioned in terms of the number of individuals groups or communities that is required depending on whether you are going for a community design or a cluster design or typically an individual design in the experimental studies you have to calculate the samples is accordingly. And most interestingly you have to mention the inclusion and exclusion criteria because now based on the eligibility criteria we know whom to target who are our study population we know whether the based on the sampling technique how the study population are representative of the larger population and we also know how many people to study. Now the inclusion and exclusion criteria helps you to pin point or narrow

down the scope of selecting the participants because now you are precisely choosing those who will just fit the objectives of your study.

So, eligibility criteria the inclusion criteria comes after the eligibility criteria and the exclusion criteria comes even after the inclusion criteria right. So, that is how you choose your sample. Next is the issue of measurements. So, the measurements means how exactly the data that you are going to collect and what the volume of the data whatever you are we are you are collecting it is fitting the research question that is the data measurement ok. Now here in this section we describe the different tools or the measures that we will be using also that means, we have to represent the different reliability and validity aspect of these tools and these measurement techniques.

See I have given certain examples the measurement can take different forms like it can be in terms of scales and indexes we can utilize different like art scales we can use certain complex indexes these are called the structured measurements because you have a particular structure and you know how to how to score them or how to interpret them. So, that is where it is called typically a structured very loosely I am trying to under make you understand. So, the structured measurements you have to typically mention the reliability parameters of those measurements and you can have also certain personal accounts observations or storytelling or certain depictions illustrations may be. So, these are less or least structured in nature. Now the they are also measurements because in qualitative research you get these measurements which are not typically structured, but still you are able to extract different themes and domains from them.

So, in that since situation you have to you have to mention regarding the validity of the qualitative process that you are going to conduct. So, as a whole in the in the method methodology section you have to clearly define the reliability and validity aspects and if your objective is evaluation of certain health promotion programs are like this usually in our typical intervention studies we evaluate the effectiveness of the of the intervention that we are proposing. There clearly we have to set a cutoff when we are going to call the program to be successful and when we are going to call the program to be not successful. So, for evaluation the criteria must be set and it should be described in this segment. Next comes the question of data collection now we have measured whatever we are going to collect data collection deals with how exactly we are going to collect all the information for the measurements.

Here we need to describe the SOPs the standard procedures that we are going to follow for the data collection and the measurements. But see in the data collection phases we have we often encounter a few common pitfalls we tend to often embark on too many information collection that is usually not effective of or in line with the objective or in some instances we restrict ourselves to a few information collection which does not really satisfy the objectives again. So, we have to make an arrangement so that we are able to collect all the data that is required for the objectives to be satisfied and that is why prepare yourself for data collection

when you are planning the objectives and whenever you are you are measure you are planning your measurement tools. So, that should be you know pre designed and you should be you should be trained a priory. Next comes the question of data analysis here what happens is here also you can mention the validation aspect of the key measures like what we have mentioned in the measurement section you can mention the validity and reliability parameters of your study tools.

If you have not mentioned over there you can mention the validity and reliability aspects in the data analysis segment as well. Here you need to mention how actually you are going to perform the analysis typically for the quantitative data and for qualitative data you have to mention how you are going to extract the information from the qualitative information that you are going to get and how you are going to what technique you are going to follow to prepare the themes and domains and etcetera. It is a good practice to mention the software's that you are going to use and be certain to not I mean often what we do is we overdo the analysis we do extra analysis which is often of no use. So, be certain to not perform those extra analysis do only mention only those part which actually you are going to implement and which are going to satisfy the objectives. A very important consideration for the health promotion research again is the concept of timeline.

You should present the timeline of your research typically in the form of a Gantt chart where you mentioned in which month which kind of activity you are going to present and it should be in line with the objectives or the milestones that you are going to have for your study. As we have initially discussed that in the ethics in research section you have to mention the different ethical issues that you may encounter and how you are going to address them. Also if you have the proposal already approved by any ethics committee you can mention it over here and also what type of informed consent or how you are going to take the informed consent these information are necessary in the ethics segment of your research proposal. Finally, you will be providing the reference for your study these are the different referencing techniques and the format of reference it depends on the agency where you are actually submitting your proposal. In the appendices section as we initially discussed to present all the additional information that you have this different study tools the participant information sheet and consent from typically needed for the ethics related issues and also if you have any other approval from or support letter from any other agencies or any individuals you have to present them in the appendices segment of your health promotion research proposal.

Now finally, we arrive at the question of what really is a research grant proposal and how it differs from a typical research proposal. Till this point what we have discussed are the technical aspects of a research proposal and in a research grant proposal what we do we usually you know provide the budgetary aspects of the research proposal that we have and we ask for funding for conducting the research that is why it is called a research grant proposal you get grants from the funding agencies ok. So, the essential part over here is the budget component. Necessary thing is in a research grant proposal after all the information that you have given you have to provide the budget a detailed budget usually with the justification. Now, a budget

is basically an account of expenditures proposed on the different activities that you are going to perform for to satisfy your objectives and that is why whenever you are preparing a grant proposal it is better to divide the objectives into smaller work packages.

So, that each work packages will have one milestone and against and a few milestones or one or two milestones can satisfy a certain objective and based on those milestones you can propose your budget. That means, to complete milestone 1 you need this much money to complete milestone 2 you need this much amount of money like this. So, it is a good practice because the funding agency and the reviewers will be able to understand how your expenditures will move along the years. And for research grant proposals whatever we have discussed previously the technical guidelines or the technical parts you have to again go through the funding guidelines or the points that they want you to address the headings that they are provided you, your proposal should be reframed or restructured in terms of their guideline. For a research grant proposal to be successful it is very important that your research team is developed in an in an interdisciplinary and a complementary way because this is essentially this is an essential item for health promotion research as a health promotion research is a multidisciplinary action.

So, as we have mentioned we can have experts from different disciplines to form an effective team with the practitioners of health promotion and also you need to have one typical expert from biostatistics or with the necessary analytical skills. So, if your research is typically quantitative in nature an expert from the domain of biostatistics or statistics is will is a good fit to your team. If it is a qualitative kind of a study you can consider someone with good qualitative analytical skill or who is an expert in qualitative research and you need to form your team in such a way so that the funding agency or the grant provider they understand that all the essential expertise that is needed to implement the proposal and to achieve the objectives that is there with your team. Also mention if you are collaborating with somebody who may not be part of your core research team, but will provide an external support. So, these are the things that you need to mention under the research team section and again I repeat this is very important for you know presenting the research for funding.

Lastly these are the different guidelines for preparing a research proposal a typical guideline this is the SPIRIT 2013 guideline this is typically for the interventional studies or the clinical trials that they have developed and also the this particular design can be utilized for health promotion intervention as well. Already we have discussed the different points, but these are this is SPIRIT is kind of a checklist for you to understand whether all the points that you need to present in your research proposal are covered or not. Also there are certain modifications for it like for patient reported outcomes here it will be beneficiary reported outcome in your health promotion research often SPIRIT pro will be a good fit for you if you are undertaking health promotion research. The SPENT format extension and elaboration on N 1 1 trials and different AI this is related to the artificial intelligence like this. You will have more information regarding the SPIRIT modifications like this changes made due to COVID 19 or any external situation where you have to adaptively change your proposal there are different guidelines.

I suggest you visit this link for more information on writing as the research proposals. So, in conclusion in order to I mean in your research proposal in order to get or in order to secure funding it should connect with the interest and priorities of the funding agencies it should be concise comprehensive and simple it should be clear and structured. Most important you should highlight the important points it should avoid the technical jargons because it should be avoiding technical jargons makes the proposal lucid and it should be put forward in a very simple way focusing on what are the objectives what are your research questions what innovation you are proposing in your research and by innovation you should also highlight what new contribution your research will make to the field of the study. It is essential absolutely to convey the competence of your research team by including the members from different areas of expertise. So, these are the references and that we have utilized in this discussion.

Thank you very much for your patient hearing, looking forward to meet you in the next lecture. Goodbye.