

Episode 25 - Dr. Mark Fraser: Intervention Research: Developing Social Programs

[00:00:08] Welcome to living through a podcast series of the University at Buffalo School of Social Work at www.socialwork.buffalo.edu. Celebrating 75 years of excellence in social work education. We're glad you could join us today. The series Living Proof examines social work research and practice that makes a difference in people's lives. I'm your host Adjoa Robinson and I'd like to take a moment to tell you about a new feature of living proof. In addition to listening subscribing to and sharing podcast you can now rate and write a review of each episode of living proof to rate or write a review of a podcast. Just go to our Web site at www.socialwork.buffalo.edu/podcast and click on the. Create your own review button. We look forward to hearing from you. It is the future of Social Work. That's what Dr. Mark Fraser today's guests says about intervention research. But what is intervention research. How does it differ from other types of research. And why is it critical to good social work practice. Dr. Mark Fraser is the John a distinguished professor for Children In Need Associate Dean for Research and Director of the Jordan Institute for Families at the School of Social Work University of North Carolina at Chapel Hill.

[00:01:38] Dr. Fraser's areas of expertise include etiology and prevention of aggressive behavior in childhood and adolescence and the design and development of interventions is editor in chief of The E-Journal of the Society for social work and research and has authored over 100 articles and book chapters and coauthored nine books including intervention research developing social programs which describes five steps in the design and development of evidence based programs. In this episode of Living Proof Dr. Fraser discusses the five steps of an intervention research program designed to implementation and evaluation. Dr. Thomas Nochajski associate professor at the University at Buffalo School of Social Work spoke with Dr. Fraser by telephone. If you could define what an intervention is and would policy be considered an intervention that's a great question. It's almost as old as social work itself. It is an intervention. It is different from a service or a policy. For the book that we did intervention research developing social programs we each chose to define an intervention very broadly and intervention is a systematic and purposeful change. That means that an individual social worker or Human Services practitioner could regard something as simple as motivational interviewing. I know some people might not regard that as simple as an intervention particular clinical technique that has been developed systematically and that is used purposefully by a practitioner. On the other hand a policy change can also be considered an intervention. And as you know policy changes can be relatively simple things like requiring at the local level. All children wear a bicycle helmet or they can be far more complicated. For example the implementation of graduated driver's licenses to reduce traffic fatalities among teenagers. Those are policy changes and in time they're denoted by a particular point when a policy takes effect. And so from a research perspective we could look at a desirable outcome before the policy and same outcome after the policy to see whether the policy is associated with a difference in that outcome.

[00:04:03] The key features are systematically developed and it purposefully implemented OK within that context would you consider things like public service announcements in that broad category. The things I'm thinking of like they have these health related public service announcements quit smoking etc.. Would you consider those types of interventions that could be any kind of media campaign can be considered an intervention. If they had been developed systematically meaning if it has a research basis to it and if it's if it's purposefully implemented a media campaign a single public service announcement could easily be considered an intervention. That leads me next to your mention of research and again in terms of interventions what is intervention research and how does it differ from general research or program dilation Intervention Research. It is quite different from program evaluation. I suppose that is a type of general research

we think of Intervention Research as having two defining components. The first is the development of interventions or the program we tend to use the term program synonymously with the word intervention. A whole set of activities in Intervention Research are related to this kind of creative and generative aspect of developing a program. The second feature of Intervention Research is evaluation. It is focused on the assessment that program. And of course there are always two pieces that usually are two pieces to Program Evaluation Program Assessment. The first is implementation was the program implemented in the way that the designers intended and the second is if it was developed and implemented in the way that the designers intended did it produce the intended outcome. Intervention Research really has these two characteristics.

[00:06:21] One is creating the program or the intervention itself and then the second is evaluating the impact of that program. So within the context of Intervention Research you see it more or less in line with what the actually came out of social work as well. What they consider the stage process to development the interventions were in a first phase you developing it in a second phase you're kind of evaluating it from an advocacy standpoint and then you have the implementation process in terms of intervention research itself. It sounds like you're setting it up to indicate there are steps that need to be followed. What are they. Yeah we we think of Intervention Research as having five steps. Others have proposed six steps. Some people have proposed fewer steps. In our experience collectively almost I guess 80 to 100 years of experience across the four authors of this text. There are five steps and they kind of connect. It's not that one step It's so distinct that you actually know when you're done and you move into a second step. The boundaries between them like the boundaries of so many things that are linear or steps are blurred that one for us involves specifying the problem and developing a program theory. Step two involves creating and revising program materials on the basis of the problem specification and the programmed theory that was developed in step 1 in Step 3. We present them that program materials have been developed with sufficient specificity so that they can be applied in practice. And so in in Step 3 The goal is to refine and in a sense to confirm a program component.

[00:08:19] Most interventions have multiple features to them even simple interventions can have multiple features. The bicycle helmet law that one could think about that as simply requiring parents to purchase bicycle helmets for their children. That in and of itself might not be too effective because we want to have bicycle helmet to be affordable. We want them to be properly fitted to children. So parents would have to know something about how to fit them. We certainly want to involve law enforcement hopefully in a supportive way to encourage the use of bicycle helmets. And so there could be a set of features that would relate to something apparently as simple as requiring a bicycle helmet that might result in an intervention that had several component to it. So this third step the idea would be to refine these components to make them as simple as possible. But you have to have them address all of the features that we think may be producing a social or a health problem and that usually involves advocacy trials randomized controlled trials but also at least initially qualitative studies single case studies single groups that have proposed studies to begin to assess the impact of an intervention and steps for effectiveness becomes the key consideration by this point in time. In step 4 we assume that the intervention has been tested in a randomized controlled trial that the researchers have a pretty good sense of the expected effect size for the intervention under ideal conditions. That is when the researchers are involved when there are deeply involved practitioners and agencies. And when there is high support in step 4 the idea is to take them to scale which means the researchers are the intervention researchers are somewhat less involved.

[00:10:19] People are using programmed materials whether it be treatment manuals or protocols or videos or whatever they might be. The degree of rigor in a study is maintained. But what is compromised is the deep involvement of the researchers and the program developers. So the intervention then is delivered under rescale conditions. So for example we might have an

intervention that was developed very carefully by a group of researchers working in a mental health clinic and after a series of trials they know that this intervention reduces depression and anxiety when it's delivered as intended. And when the researchers are providing clinical supervision the question is in step four. OK well when the researchers aren't there and when the clinical supervision is provided and it is routinely in practice how effective is this intervention. Step for is assessing effectiveness in a variety of practice settings and circumstances. That's what we mean by taking the intervention. The scale of conditions and finally in step five the idea is to disseminate findings and program materials. So at least from our perspective intervention research is not completed until the outcome studies have been published. But as important until program materials are published and readily available for practitioners the focus here is on translating research findings into readily usable practice materials and nurses by the way are great access social workers and psychologists are not so good and we we really do need to focus on developing usable program materials that can help inform practice so one has specified the problem and develop program theory.

[00:12:21] Two is to create and revise program materials 3 is confirm and refined program components and efficacy trials four is conduct effectiveness trials in a variety of practice settings and then five is disseminate findings. But also the program materials those are the five steps that as we think back on all of our work over the years are kind of latent in the way we approach the development of interventions OK. I want to take you back to step 4 for a second and just ask you some questions about that because again you brought up some very important points the fact is that a lot of times when you bring efficacy trials into quote real world environments they tend to fail for a variety of reasons. In terms of the intervention research what types of things should be focused on in that specific area. In other words on step 4 what types of things might we want to consider as we start to look at the effectiveness trials. The key thing in moving from an advocacy trial where the researchers are highly involved to and effectiveness trial where the researchers may be involved in data collection of data analysis but less involved in the actual delivery of a program. The key thing is to try to figure out what is needed by practitioners to deliver a program with fidelity and to deliver it. In the absence of the strong clinical support and even newer clinical advisedly. By that I mean supervision of implementations if you are an organizational researcher you might not provide clinical support but you might provide management training in say a study designed to change the features of a social service organization is to try to figure out what is the minimum amount of support that practitioners need in order to provide an evidence based intervention in vivo.

[00:14:32] And that means under the constraints of routine practice. So for that the researchers really need to understand the contingencies that operate on practitioners within the intended setting. So what might that mean. Well let's say that a school social work researcher has developed a training program to build a social competence of high risk children and in advocacy trials it's been shown effective in a variety of school based settings and step 4 the challenges to deliver that program which we present as manualized you know routine. Let's say public school setting in such a way that it looks like the same program that was delivered by the researchers and can be expected to produce the same outcome. Well clearly having a treatment manual alone is not going to be enough. We need to understand the sorts of things that operate on the people who are delivering the program. They could be teachers they could be school social workers they could be school psychologists they could be school counselors. So you had to do a contingency assessment what are the forces of the influences that affect the behavior InVivo in the setting of the people who you help as the intervention researcher will deliver your intervention. So for a teacher it might be a standard course of study criteria. All schoolteachers are guided by practice guidelines in the same way that social workers are guided by practice guidelines and so one influence on them would be whether the program materials that the intervention researcher has developed look like feel like and conform to the practice guidelines that are used in the setting which in public schools are called Standard Course of Study guidelines.

[00:16:31] It might also be important to understand the nature of routine supervision in public schools who supervises teachers and what level of support might be needed from whoever the supervisor might be to provide an intervention. Again thinking theoretically I guess about a public school teacher say a third grade teacher who's trying to implement a program developed by a school social worker. It could be that there's a lead teacher in the third grade who provide supervision to teachers. I think they're sometimes called lead teachers or team teachers or head teachers. It could be that there an assistant principal who provides supervision. It could be that there's a school counselor who provides support in the area of social and character development for third grade teachers. So understanding the context in which the intervention is to be developed is crucial to stage our steps for and making sure that the intervention can be provided under these scale conditions where routine influences are brought to bear on the delivery of whatever practice strategy might be being tested. Okay great. Because that's an area that it seems like in many cases researchers either not ignore but tending either forget or not put enough if you will behind it. And it seems like what you're saying is it's very important. Yes.

[00:18:01] When when I tested program fails it is almost always because of implementation failure and if implementation science some people are calling this a science implementation has a whole set of predictors that are dramatically different from the sort of predictors that you might use as a basis for creating a treatment manual for addressing a particular problem like social competence or the social problem solving skills of children intervention researchers need to think dimensionally and they need to think in two dimensions they need to think about the problem the causes of the problem and how to change them. So presumably they're going to address malleable causes causes that can be changed through skills training or through support or counselling or through the provision of concrete services. But the second feature that is so crucial to intervention research is understanding the factors that predict implementation. And if we don't attend to that we can't expect effective services to be delivered in practice with the same level of effectiveness that we observe in clinical trials. Great. I have another question here. That sounds very similar to the steps in the research process. But again one of the important steps you mentioned was the development of the program itself. And are there steps in that specific program development process that are important for social work intervention researchers to consider. You know this is I'm so glad you asked this because this is really one of the exciting areas in Intervention Research. First Feature of intervention research is developing a program. It is not necessary for a person to have a great deal of research training to develop a program. They don't need to know what the test is. They don't need to know hierarchical linear modeling. People don't really know when they need to know very much about randomised control trials. This first feature Intervention Research is best accomplished by people who know the territory people who know programmed by people who know the context and by people who work with them who may know the research that is related to a particular problem that is being addressed by a program.

[00:20:31] We think of this process of developing a program developing an intervention as a collaborative process. It builds from a research base. Certainly it has to. But it also builds on the practice experience of people who are working in the field and it built on an understanding also of the characteristics of the delivery structure the programs and the policies that are likely to support an intervention. It would be easy for us probably to build an intervention that works that has no likelihood of being implemented. When we're building intervention in social work we want an intervention that has a high likelihood of being implemented. That means the people that design intervention have to understand the program and policy settings in which implementation will occur. So that means we have to understand how well a new intervention be funded who will deliver it if it's addressing a set of malleable causes. That is if we can specify five or six causes related to a particular problem and we think they're malleable can we address those causes and a particular context. Is it ethical to address a particular cause in a school setting or a mental health setting. Are there practice guidelines that will support an intervention this time. The first stage in

developing an intervention is formulating program materials on the basis of problem theory. That includes understanding the incidence and prevalence of the problem its risk factors and protective factors that may suppress the risk and the way in which those risk factors vary by setting meaning. How might those risk factors vary from a rural area to an urban area. How might they vary by population.

[00:22:31] The risk factors hold for are they the same for people who are Latino immigrants versus people who have lived in this country and are Latino for a long time. So they have to consider the risk structures the protective features that may suppress risk and how those risk and protective factors vary across populations and settings. All this goes into formulating program materials for us that's really stage one. And yet at this stage one occurs across the first two steps of intervention research. The first that record was specifying the problem and building the program theory and the second step was creating and revising materials. If we just focus on developing an intervention in these two steps we're actually formulating materials on the basis of problem and program theory. The next stage would be to revise materials almost as soon as they're formulated. We begin revising materials we revise materials on the basis of emerging research. We revise materials on the basis of knowledge that we get from practitioner feedback from focus groups from qualitative studies and certainly from efficacy trials those are small randomized controlled trials in which the researcher is deeply involved. So there is a kind of second stage in which program materials are revised substantially as we attempt to implement them in the field under controlled conditions and working collaboratively with practitioners. I can't emphasize enough how important it is to work collaboratively with practitioners intervention research a collaborative process. The third stage in developing program materials involves beginning to differentiate materials for different settings and for different populations. This really tends to occur after we know that the program is effective.

[00:24:36] So after the first 2 or 3 trials and after we have data that may suggest that program the facts vary for different populations. For example we may have observed a significant effect for people with example of social problem solving training for elementary school children. Let's say we do a study and we find out that the training works well for boys. But it works less well for girls so it may be in this stage 3 that we begin to differentiate materials for boys versus girls and we come to realize that the materials work well for boys because boys tend to be more physically aggressive and so the programmed materials appear effective in dealing with physical aggression. But they may not deal with the type of aggression that girls engage in which may be less physically arguably less physically aggressive but more socially aggressive. So it could be in this third stage as a result of data from an advocacy trial. We think oh you know we seem to be doing well with boys but we're doing less well with girls. Less differentiates the materials for girls and see if it can change activities and strengthen the effect for girls. So this third stage involves looking carefully at the data. It's kind of a data driven stage. If you use the word data broadly to include tax data as well because this is where qualitative data are so helpful qualitative studies can help reveal the nuances of the way an intervention is implemented and its findings that statistical analyses can sometimes cannot uncover. So that'd be stage three and stage four is translations and adaptations.

[00:26:28] Inevitably a program is proven to be effective is going to be used with a population on which it was never tested a program that may be developed in the United States it may be published by any chance press. And let's say people in China or in Thailand or in South America want to try to use the program. So what have mistranslated the issue of adaptation always arises. A lot can be said about how to translate and adapt program materials. Let me just say briefly the key the key question is are the risk factors the same in the population where a practitioner wants to implement a new program. So just to summarize them across the five steps of intervention research we tend to see four linked stages in which you develop program materials you formulate materials initially that stage one and stage two you revise materials and stage three and you differentiate them on the basis of the data at hand and then end stage 4 you enter into this kind of murky but exciting territory of

translating and adapting materials for populations for which you may not have data at all in the extent that you talked about the wells that social work quick missionaries can play and program development process rather it seems pretty extensive in a sense that you would be relying on them for feedback around programs around their experiences with using the program with treating these types of individuals. So if you want could you just kind of give us a feel for the role you see social work practitioners having an intervention research or program development as part of that intervention research practitioner involvement is crucial.

[00:28:23] I guess I'm saying that as a former practitioner I came to research after being a practitioner so I had a sense of what it's like to be out there and to be working and and actually how much you know how much you've learned over the years from working with people and that practice knowledge is a crucial aspect and it is a crucial feature that can inform the development of new interventions. In step one which was to find the problem and develop a program theory practitioners working with researchers can define the problem and problems usually are multiply. I mean it's rare that a person comes to a practitioner and has just one problem. Often they come with multiple problems. And so working with practitioners researchers have to begin to think about how to break up problems so that a problem can be addressed by a discrete intervention let's say a child is aggressive at home and in school if you will stick with the social problem solving example. And we see that the child is also rejected by peers because of that aggressive behaviour and the child is not doing well in school and if we think developmentally the child may be at risk for substance abuse and associating with delinquent peers and all sorts of future conduct problems. So that might be how a researcher would think about a practitioner working in his school would go I have a child who gets in lots of fights the teacher doesn't like the child at all and the kid is failing. What can I do. There are almost no resources. The child is very unpopular the child was angry about being unpopular child thinks other kids just like him under this circumstance the practitioner and the researcher may work to break this problem down into malleable risk factors one of which could be peer rejection. And then we think about what leads to peer rejection.

[00:30:32] And we know that peer rejection is predicted by very poor social problem solving skills. For example if a child has rapid arousal tends to interpret the intentions of other children as hostile when they're not very good at bargaining tends to adopt aggressive strategies may not be able to generate non aggressive strategies to begin to break things down in that way we develop a discrete intervention and then working with practitioners we can begin to develop strategies that are going to address each one of those things encoding more cues making correct interpretations of others behaviors. Selecting a variety of behavioral strategies and choosing those that may be nonaggressive as opposed to aggressive strategies all in this sort of first stage are first step. We specify the problem and breaking it down into malleable pieces. We develop a program theory and then working with practitioners. We may begin to develop a program we may break it out into sessions or less and we may break it down further into tiny pieces of program content which a practitioner is teaching a particular skill to that would be step one and step two step three we refine and confirm program components. I think practitioners have quite a different role here. I think they work closely with the researchers to implement a program giving constant feedback on aspects of the program that may set it may be easy to implement and aspects of the program that are hard or just don't fit with the practice environment. When we find those things we've got to go back to the basics and revise and step four which is effectiveness trials in a variety of settings and circumstances.

[00:32:24] Practitioners usually have less contact with the researchers at that point in time but good researchers are going to be really savvy about implementation and they're going to involve practitioners at this point to some sort of data collection qualitative and quantitative strategy. So I think intervention researchers that at this point need to develop mechanisms to get feedback from practitioners and then in step 5 the dissemination of findings and program materials. When we have

attempted to publish treatment manuals we have often convened expert groups of people to review them before publication to be sure that the language is right. The two examples really work that we've thought about all the contingencies that are operating on practice. It's crucial at this point to involve practitioners because there because the risk is that we would develop program materials that wouldn't fit with practice across all five of these steps. I see different ways that practitioners are involved and I see practitioners being involved meaningfully at every step. What kind of wrapping up here so can I ask you are there any good resources on intervention research with my colleagues. Jack Richmond made a Galinski and Steese day. Have just written a book entitled intervention research developing social programs. It's just a practice guide and back as part of a pocket series of guides out of Oxford Press. We wanted the price to be reasonable and it is very reasonably priced as a text for master's students or as a guide for practitioners. We've written that not as a statistical method book. In fact we have other books that focus on statistical methods and randomised control trials and things like that. This is a very very usable guide. There's scarcely a statistical symbol in it.

[00:34:25] We've tried to share our experiences in developing social and health programs and it's in this book that we've described five steps of Intervention Research and the four stages developing program materials. In fact one chapter is dedicated totally to the development of programmed materials and we have more than I've been able to do here. We really spend a lot of time talking about how do you develop practice sensitive treatment manuals and other program materials. I guess we're biased but we think right now that this is probably the best resource for doing Intervention Research. It's a short book only about 200 pages long and it's called Intervention Research. Developing social programs and published by Oxford University Press. OK great thanks. Is there anything else you'd like to add. Before we close out no I just want to come back Tom to this idea that intervention research is collaborative it's best done in teams of researchers who are working with teams of practitioners. I think it's a very difficult undertaking for a single researcher or a single practitioner undertake intervention research done collaboratively. It is the future of Social Work. Social work has spent too much time doing survey research practitioners survey researchers students survey research of clients. We have an ethical obligation I think to test the effectiveness of our interventions and that's what intervention research is all about. But it's distinguished not just by testing or evaluating our interventions but also by actively developing programmes to address social and health programs about problems. Who else is going to do this. If we social workers down we have to develop these programs and we have to evaluate them.

[00:36:23] I think it's at the heart of social work research and I think that all social work research should really focus on developing and testing interventions interventions that can be applied in practice with great ease but great research groundedness it's only if we begin to develop lots of interventions and test them in a variety of settings and circumstances that will be able to sort out what works and for whom and under what conditions. OK great. I want to thank you very much for doing this with us today and again Mark this was great. I appreciate your time. Thanks. It's been a pleasure. You've been listening to Dr. Mark Fraser discuss the five steps of intervention research. Thanks for listening. And tune in again next time for more lectures and conversations on social work practice and research. Hi I'm Nancy Smyth professor and dean at the University at Buffalo School of Social Work. Thanks for listening to our podcast. Our school is celebrating 75 years of research teaching and service to the community with more information about who we are our through our programs and what we do. We invite you to visit our Web site at www.socialwork.buffalo.edu. Here at UB we are living proof that social work makes the difference in people's lives.