

Research Methods in Health Promotion
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Week 02
Lecture 09: Ecological Models of Health Behavior

So, Hello everyone and this is the lecture 9 of this course. So, today I will be talking on Ecological models of health behaviour. Now, the thing is in week 3 we will discuss regarding the social ecological model, but before that you should have you know a basic understanding, a basic concepts of that what are the importance of the different multi-level, the importance of multi-level intervention and consideration of multiple level. So, first we will cover the background of ecological models. Now, we all know that the term ecology is derived from biological science and refers to the interrelationship between organism and the environment that we all know. Now, the thing is that ecological models as they have evolved in the behavioural sciences and public health focus on the nature of peoples transaction with the physical and socio-cultural environment. So, as I always say we are not the only person who are staying in this planet, we are surrounded by so many people, we are surrounded by so many things you know in fact, a physical environment or you know the socio-cultural environment.

So, we are surrounded by different things. Now, the environmental and the policy levels of influence distinguish ecological models from widely used behavioural models and theories that emphasize individual characteristics, skills and proximal social influences such as family and friends, but do not explicitly consider the broader community or the organizational and the policy influences on health behaviour. So, it is not about you know a single individual or at you know mostly what happened previously people you know related to health behaviour. So, the focus was on the individual level, then apart from individual level some aspects of interpersonal level like the closer ones you know the family and friends the different normative influences, but the problem was that only considering you know the individual interpersonal level is not enough.

Why not enough because we are always getting you know influenced by our social groups, the community or the community people you know the cultural context of our own society. Apart from that you know the government, the institution and the policy makers right the different guidelines, different laws and rules you know different policy makings are going on you know at government level. So, all these things actually influences a health particular health behaviour. So, that is why it is not about that of the skill, the knowledge, the attitude, the belief, values or perception of that particular individual or the proximal social influences at interpersonal level like very closer ones family and friends. It is basically it is all about the broader community that means, we have to think beyond individual and beyond interpersonal level.

We have to understand the influences of the community you know the community people, the influences of the policy makers that is also very very important. And see what I feel you have to understand these basic things very clearly then only you can have a clear and very you know specific idea related to what is all about the socio-ecological model. Now see the ecological models it can provide a framework for integrating multiple theories and serve as a meta model. This is very important to ensure that environmental and policy factors are considered in developing comprehensive approaches to studying and intervening on health behaviours. So, ecological models you know ecological level models they have very you know a very specific and very clear framework where they what they are doing the integrating multiple theories at multiple levels.

And they are you know the if well in next you know in the week 3 when I will discuss the social-ecological model then you will see that socio-ecological model is one of the most you know robust community model. So, it is also considered as a meta model. Why it is a meta model? Because you see whenever you plan you know for example, as a health promoter or as a health promotion expert you plan to implement a health promotion activity or a health promotion program. So, you know you in your mind you have you know some strategies you have that these are the interventions material, these are my objectives, these are the methods by which I am going to implement my interventions. Now the important thing is whenever you are planning this whenever you are thinking about this keep in mind that at which which level like at how many level are you planning your intervention is it only at the individual level or is it only at the individual and interpersonal level you will end up there only no.

The thing is for developing a you know comprehensive approach and for also you know if you want to do different research you know or if you see that whether a particular intervention package, how much that intervention package is effective. Now in fact, you can compare an intervention package if you just implement up to interpersonal level and inter and another intervention package which you are planning and implementing at all levels I mean till policy level. So, you will see the difference you will see that the multi level interventions are more and more effective related to any health behavior. Now healthy behaviors are thought to be maximized when environments and policies support helpful choices and individuals are motivated and educated to make those choices. So, what is the meaning of this line? It is said that any healthy behaviors it is thought to be maximized when you know the external environment and the you know the policy level issues and support your healthful choices.

And then you can motivate an individuals and you can you know make them aware and you can just educate them to make such choices, choices in this and any healthy behavior. In my last class I remember I told you that if I go in a school and I you know just do a awareness program on menstrual hygiene management practices. So, the thing is fine I have you know I have done a wonderful awareness program and I have included only the young adolescent girls. So, fine they know the importance of you know what is the importance of menstrual hygiene then you know how I mean the disposal of sanitary napkins where they should dispose

then you know we have to make them understand you know there are some people you know the many adolescent girls students they you know skip schools during their menstruation. So, we can educate them we can make them aware we can motivate them, but the problem is that you have involved only them you have not involved the teachers the school authorities.

Now the thing is what will happen in that school you will find that there are no separate toilet for girls, no proper hand washing facilities, no proper dustbin where they can dispose their sanitary pads. So, what happened due to all these constraints because you know no proper toilet are there then you know there are no hand washing facilities, no water facilities, no you know the disposal facilities. So, what will happen even if they are you know educated and motivated these constraints will actually prevent them to follow any proper practices any proper menstrual hygiene practices. Now same you see if you think related to multi level now it is about the individual interpersonal you know the teachers they are the one who can you know influence the students. So, at interpersonal level you have to think that you have to include the teachers if you are focusing you know on school settings only otherwise definitely you have to involve the parents also.

Then the school authorities organization or institutional level because school authority they have to decide that what infrastructure what you know the infrastructure facility will actually will help the young adolescent girls to actually follow all the menstrual hygiene safe practices. Then what will happen the school authorities they will again you know they will write to the higher level to the government level that we are you know in school we do not have a proper toilets in school we do not have the proper water facility or hand washing facility etcetera. So, the thing is the problem is it is not at only the individual level you have to think interpersonal teachers are involved you know then institutional level the school principal headmaster or the school authorities then above them definitely you know the government level. Government also has to take steps now that mandatory you know separate toilet for boys and girls in all the school then mandatory you know water facilities hand washing facilities hand washing corners should be proper then the disposal facility. So, it is not about that you will just go educate and motivate you know those adolescent girls.

So, you can have so many examples right. Now then is see what I have mentioned here education about healthful choices when environments are not supportive is believed to produce weak and short term effects on behavior definitely. I mean if you are supportive the external determinants the external environment if they are not proper if they are not supporting you then what will happen even if I make you understand that here these are the good behavior these are the bad behavior it will be very difficult for the particular you know participants to actually follow all the good behavior due to so many barriers and constraint and what happen and it is always seen and believe that it will produce a very short term effects on behavior like you know for how many days you know a young adolescent girls can struggle. If there is no toilet what they will do they do not have any option they will not go to school which is happening you know it is happening due to menstruation there are many girls who skip school who do not go to school. So, it is also affecting their education right.

Now a central proposition of ecological models is that it usually takes the combination of both individual level and environmental and policy level interventions to achieve substantial positive changes in health behaviors that are then mentioned. So, the you know the central concept or the central proposition of ecological models which we were discussing for you know last few minutes is that we have to think about the combination of both individual and environmental and policy level intervention. If we if you are really aiming to achieve some positive change and most importantly that positive change should be you know sustainable it is not about 1 or 2 days it is about it is a continuous process. Now in that case you have to understand that what is the importance of sustainability. Even if you see one thing in school it might happen that here for first few months you know toilets were proper all water facilities were there, but after one month it is seen that my god no water facilities are there now toilets are not cleaned you know there are no hand washing corners no hand washing facilities.

So, what will happen there is no sustainability then. So, the important is for achieving you know the substantial positive changes in health behavior and you know if that has to be maintained for you know long and long in future I am talking about sustainability. Then it is very important that at every step and at every time those infrastructural facility has to be there. You see now if I you know often we are talking about that you know the students the school students they are becoming very physically inactive ok. They are not involving in any kind of physical activity they are not going to play outside or they are not involving in sports.

Do you think is it and the fault is only of those students I have seen you know many I have done you know so many qualitative interviews I have done so many exploratory study and I have seen that they are I mean the barriers are you know there are so many barriers it is not that they do not want or they do not know. They know that definitely and why is you know the students the children why not they love playing why not they will be they will involve themselves in sports and playing. But the problem is they are no proper space be it they school they are many schools you know many school students they have that we do not have any proper playground ok. Then you know apart from that they are in their own community where they are staying the residential areas. Now we do not have any nearby playground where we will go there are no space where we can go and we can play and we can have you know a physical activity.

There are some people who say that no it is too too and too far from my home it is so far that I cannot my parents you know they are also I mean they do not allow me. So, see parents they are not allowing why they are not allowing the children to go because the playground the parks are too far from their home. So, so many issues are there we cannot just think that I will make aware you know at individual level I will just make them aware I will educate them and I will motivate them what after that if you motivate somebody then the barriers still exist what they will do because they do not have any options. So, that is why the important thing is that for you know changing I mean for taking actions and also maintaining that actions we always have to think that we have to you know the multilevel interventions we have to think in

multilevel interventions way like we have to implement the interventions at all level we cannot just stop at individual level ok. Now the central tenet of ecological models is that all levels of influence are important as we you know we are discussing that all levels of influence are important definitely see interpersonal.

If my parents you know do not allow if my teachers do not encourage you know the normative influences if I see that none of my friends are willing to go and play outside. So, I will also become demotivated my friends you know they do not want they do not want to go their parents do not allow. So, you know they stay at home only and you know they are busy with their home works or academic pressure or they are busy with you know the computer games ok. So, it is important because we are surrounded by so many people and so many things. Now, thus multilevel studies of correlates or determinants should explain behaviors better than studies of one level.

So, definitely we were discussing you know the at one level if you do you know research or studies and if you think that yes yes at individual level I have implemented intervention and very good they are motivated, but the thing is you it seems they are motivated, but if you go and observe they are not following anything due to so many constraints they are not taking actions ok. Intention to you know take actions, intention to perform behavior and then performing behavior right that is important even if they have the motivation and still they are you know they have so many barriers they just cannot perform that particular behavior. So, where the fault is fault is that in that particular study we have only focused at individual level, but if you go and see the studies which have focused on multilevel level then you will try to understand that those studies you know they explain behavior much better the evidences are much more clear and better than the studies of one level or at a single level. And also you know the we know that multilevel interventions are generally more effective than single level interventions I have given you so many examples and I have explained you in many ways. Nine important strength of ecological models is that they can provide a framework for integrating other theories and models to create a comprehensive approach to study design and interventions.

Now ecological model why see in ecological models now we think that we will focus on all the levels. So, be it individual level theories or models be it the models of interpersonal health behavior or the group and community level theories or models you can you know keep all different theories and models this is very important here ok. So, they provide a framework where you can integrate other theories and important models and finally, you can have a very you know comprehensive approach to study design and to the interventions. Now instead of choosing one model to guide a study or intervention a multilevel ecological framework can lead investigators to select individual social and organizational models that can guide the development of comprehensive studies and intervention. Just now I said we have so many theories and models some of individual level there are some models of interpersonal health behavior there are some models a group or community level.

So, what you can select those you know as an investigator as a researcher you can select all the level models which can actually guide you which can help and guide you to make a very appropriate interventions to design and develop a very comprehensive studies and interventions. Now, we will discuss on 5 principles of ecological perspectives on health behavior. This is important the things are very simple, but you just have to understand very basic things are there. Now, a principle 1 there are multiple levels of influence on health behaviors. We already have discussed there are you know on health behaviors there is not a single level of influence, but we have multiple levels of influence.

So, ecological models specify that factors at multiple levels often including interpersonal, interpersonal, organizational, community and public policy levels can influence health behaviors. Although the relative influence may vary by target behavior and context this is see this will always stay you know the relative influence it can depend there what is the target behavior and the contextual factors can be there, but the thing is that at all levels you know all the levels basically they influence our health behavior. Now socio cultural factors and physical environments may apply to more than one level such as organizational and community levels ok. The physical environment like you know as I said that there are no playground ok. Socio culture you know in some families you know they do not allow the girls to go and play outside.

No, no, no it is not safe you know it is not at all safe to just go and play outside. So, what is happening that you know particular girl she is actually getting deprived she is not you know because their parents her parents is not allowing her. So, what happens some cultural factors are still there in many families that no, no girls now she has become 12, 13 years I cannot just allow her to go outside and play. So, what happen you know the some socio cultural factors and the physical environment the important is that these things apply not at all not only at one level at more than one level ok. It can be at organization community levels also you know we have some influence from a community now.

What happen if you see at interpersonal level my parents is not allowing. Actually you know if you go very deeply you will see that the community the social factors are there the community they also feel you know they do not know how can you allow your girl to go and play outside. She has you know she has become big I mean she is not that young I mean now she is not she is getting younger and you know she is 13, 14 years. So, you cannot allow. Now what is happening see the factors at interpersonal level also at the community levels.

So, same at organizational or at institutional level you can see that you know the physical environments are not there or you know at organizational institutional level some you know the people who are there. So, they have their own you know some beliefs and perception. So, norms you know the norms social norms and the community norms you know the normative influences are always there in our day to day life. Now inclusion of all these levels of influence distinguishes ecological models from theories that primarily focus on one or two levels. So,

we have already discussed that when we think about including all these levels of influence it completely distinguishes the ecological models ok.

So, we have discussed other theories which only focus on one or two levels, but in ecological models we focus on all the levels. Then see next one is the environmental context of significant determinants or health behaviors. So, behaviors may be predicted more accurately from the situations people are in than from their individual characteristics. Why because I have the skill, I know, I have the attitude, I have the knowledge, but my situation is you know something that I cannot go and perform a certain behavior ok. Because situations may be different he or she is her characteristics you know that is ok, she can perform that particular behavior, but maybe you know the situations in which he or she is there is actually not actually giving her any I mean facilitating her or him to perform a particular behavior.

So, behaviors may be predicted more accurately from the situations people are in which situation a person is you know still if you go to in remote villages. So, there are some you know the cultural factors you can see the you know the family level situation is that no she is a female ok. So, her nutrition requirement you know she does not need a good quality of food, she does not need timely food. So, nutrition is you know anyway is getting very ignored in those families I am talking about the woman. Same you know the health services, the access to health services you see in a family you know if a man is suffering from some kind of you know disease or symptoms, then the service utilization you know at that moment only ok.

He go to a health center, he go to a hospital ok, but in that family if any of female ok, if a female is suffering from any disease or from any health problems, then you know women's health are often ignored. No, no it is ok, what is there to take her to hospital again you know I have to spend some money. So, these are the important issue even if you go you know health worker goes and make you know that particular female understand that these are the health problem, these are the things you should be very careful. But what happen the family situation is such that nobody will take her to the hospital, nobody will take her for any treatment. Now, inclusion of social and physical environment variables is a defining feature of ecological models we have discussed.

Now, environmental context can shape or constrain individual and interpersonal determinants of health behaviors. So, we often talk about the facilitators and barriers, there are some barriers and there also some facilitators. So, now, your environmental context that the determinants it can even facilitate I mean facilitate you or it can you know constrain you from performing any kind of behavior. Some facilitators are also there and that can you know how can I am what I am trying to say that if environmental context can facilitate you or it can also create some barrier. So, or constrain individual and also interpersonal determinants of health behaviors.

So, you know our parents if I just give an example they are also getting influenced by the society. So, what is happening a child is getting influenced by his or her parents not individual level ok. Now, in interpersonal level you see that my parents, my parents are also getting influenced by society you know there are some societal norms. So, years after years there are some cultural and societal norms which still exist. So, that is why their parents they are also thinking no you know in villages if you go and if you ask them I have seen no why what will I do by you know what she will do by going to school, she has studied her enough of education is done now I am thinking about a marriage.

So, the child marriage, the teenage pregnancy these are the problems. What is happening the parents are also getting by influenced by the societal norms, their influences on behaviors interact across levels. So, the interaction of influences means that variables work together. Now, education to be physically active may work better when policies support active living through you know the counseling then some examples you know insurance discount you know some if I say that yeah these are the policies we know now the different policies. In my next lecture I will discuss it more when I will talk about the different you know the incentives monetary, non-monetary then you will understand it more for engaging regular activity and sidewalks on all street.

So, if you perform some behavior you will get all these things you know there are some government you know recently if you see there are so many schemes and schemes at government level that if you know if your daughter she if she completes class 12 till class 12 and if you if she get married at 18 years or after 18 years then some kind of you know incentives will be given to those parents. So, these things exist now because ecological models specify multiple levels of influence and they are likely to be multiple variables at each level. It may be difficult to discuss which of the possible interactions are most important yeah this is a bit difficult here you have to be very in measuring you know while measuring you have to be very clear and you have to be very specific and very you know scientifically you have to be very sound because at what level and what interactions are occurring and you know which of the possible I mean which interaction are most important. Now this is very necessary that you have to know and it is actually difficult because we are talking about different levels now at which level the influences are more I mean the bad influences or the good influences and individual is getting influenced by at what level at interpersonal level more or at the policy level.

So, this is very important. Now ecological models should be very behavior specific ecological models appear most useful for guiding research and intervention when they are tailored to specific health behaviors. Now this is almost important that you have to be very specific and clear that for this particular behavior what kind of interventions are you going to develop and implement at what level. So, before that you have to be clear about what health behavior you are going to focus. Now often environmental and policy variables are behavior specific. Now the need to identify environmental and policy variables that are specific to each behavior is a

challenge in the development and use of ecological models because lessons learned with one behavior may not translate to an apparently similar behavior.

I mean policy for a particular behavior you know you cannot generalize that policy to many behaviors a particular policies for the particular behavior for another behavior we cannot just you know put that policy. So, for different behaviors there are different policy level issues and so, policy variables that is why I mentioned that policy variables are behavior specific. Then multilevel interventions should be most effective in changing behaviors we all know that the superiority of multilevel interventions of over single level interventions follows from the principle that they are important influences at all levels of influence. Now there are many examples of interventions that targeted only individuals and as I said it has a very small you know very minimal and very short term effects. Motivation interventions designed to change beliefs and behavioral skills are likely to work better when policies and environments support the targeted behavior change.

So, as I said if you want to you know just go and change somebody's motivation skill or beliefs it is also important that you have changed their behavioral skills you have changed their beliefs you have changed, but it you know these beliefs and these skills will work better when the supporting environment the external determinants also supports that particular targeted behavior. Individually oriented interventions can be intensive and have large effects on a few people who choose to participate in the programs. Those changes tend to be temporary as I said unless those people are already present in supportive and or are affected by health promoting policies. At individual level you can go and you can see as I said you know just before few minutes I said that here in my one study I saw they will motivated I have you know raised the motivational level, but if you go and conduct a multilevel study then you will find that know the policies and environmental factors were very important. So, that temporary behavior you know if you want to maintain the maintenance of the you know the actions maintenance of health behavior change and the sustainability can only happen if the particular people you know they are in supportive environment and also they are in supporting you know very supportive health promoting policies exist in the country.

So, these are the five principles which we have discussed. So, conclusion: ecological models as they have evolved in the behavioral sciences and public health it focus on the natures of people transactions with their physical and socio cultural environments. Now central proposition of ecological model is that we have just now discussed that it usually takes a combination of both individual level and the environmental and policy level interventions. So, that to achieve a substantial positive changes in health behaviors that are then maintained for the sustainability. So, these are the learning resources both the text books are simply fantastic go through both the textbooks. Thank you.