

## **Applied Positive Psychology**

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### **Lecture 18: Understanding and building resilience: Part 1**

I welcome you all to module 6 of the course titled Applied Positive Psychology. So module 6 is about resilience and post-traumatic growth. So we will talk about these two concepts in this module. Today is lecture number 16, which talks about understanding and building resilience. So, lecture 16 is about resilience and the different aspects associated with it. So, I have divided this lecture into two parts.

So, now I will talk about part 1 of the lecture. I'll give you a brief recap of the last lecture, which is lecture number 15 and was part of module 5. So, in the last lecture, we talked about the concept of successful aging, and we discussed various aspects associated with it. What is the meaning of successful aging? What are the criteria to decide whether somebody has entered into the successful aging category or not? We have discussed models of successful aging. We also discussed some of the classic studies in the context of successful aging, which have shaped this whole area of research. We also discussed the concept of the paradox of aging and happiness, which suggests that as people age or enter the later stages of their lives, there is a significant cognitive and physical decline, but research shows that people generally in that stage also experience more happiness and emotional well-being. So that is considered a kind of paradox of aging, and we have discussed how aging is related to happiness. We also discussed various processes involved in successful aging by discussing certain models associated with the processes of successful aging. And at the end, we discussed future directions for successful aging.

So, in today's lecture, which is lecture number 16, part 1, we'll be talking about the concept of resilience. How do we define resilience? What are the different perspectives for defining resilience? We'll also look at three waves of research, the different waves of research that happened in the context of resilience, and at the end, we'll be talking about some of the foundational studies on resilience. So this will be covered in part one of the lecture. So let's start today's lecture. So let us understand what the meaning of resilience is and how we define resilience in the literature of psychology.

Now the concept of resilience, the word resilience, basically comes from the Latin root *resiliere*, meaning to leap back or rebound. To come back to the original position, the term initially found its footing in ecology, referring to an ecosystem's capacity to recover or adapt in response to disruptions. It has since taken on a broader psychological meaning. So initially, this term was used in the context of an ecological perspective, where it was used to describe how an ecosystem recovers. Once certain disintegration happens in an ecosystem, the way that ecosystem responds to disruptions and comebacks is evident. Now, this term is obviously used in a more general psychological sense. Today, in a very general sense, resilience is described as a person's ability to bounce back from challenges or setbacks. So there are different definitions of resilience. We'll be talking about some of these things. So in a general sense, when we talk about resilience, we are talking about a person's ability to bounce back after certain significant traumas, challenges, or setbacks happen in one's life.

So when something negative happens in one's life, such as a negative event, challenge, or setback, the extent to which the person is able to bounce back and return to their previous level of functioning determines the quality of resilience. If the person is quickly able to return, that means that the person's resilience is much higher. So, that's the general idea of resilience. Let us see some of the more specific definitions that are available in the literature. So, one definition says resilience is a dynamic process encompassing positive adaptation within the context of significant adversity.

So this definition says resilience is a process; it's a dynamic process that talks about one's ability to positively adapt to situations where there is adversity involved. So whenever some adversity happens, the extent to which the person is positively adapted to those situations determines that person's resilience. So resilience is characterized by good outcomes in spite of serious threats to adaptation or development. So resilience is an indicator that describes whether the person is able to adapt positively or there are good outcomes in spite of serious threats to adaptation. So it's not easy to adapt.

So a challenging situation happens, and instead of that challenging or difficult situation, the person is able to adapt positively. So that is what reflects resilience. So in these definitions, there are two important aspects of this definition of resilience. One is that it is about exposure to significant threat or adversity. So we cannot talk about resilience in general.

Resilience is always discussed in the context of adversity, when a traumatic event or significant threat happens in one's life. Resilience is always described in those contexts. We cannot talk about resilience in a general context of life. So whenever an adversity

happens, there is a significant threat or traumatic event. So, this is one important aspect of resilience. So that has to be present. So there is an achievement of positive adaptation outcome despite these threats. So despite those threats, if a person is able to positively adapt to them, then it is called resilience. So there is a presence of disruptions in terms of traumatic events, challenges or threats, and there is a positive adaptation to such situations. These two important components determine the concept of resilience in terms of its definition. So these two are important. Now, when we talk about adversity, it is used in a general sense. It refers to negative life events. So when we talk about adversity, we're talking about negative life events that are quantitatively associated with adjustment difficulties. So any life event that is negatively toned and creates difficulties in one's life in terms of adjusting.

So whenever a traumatic event happens, it obviously creates sudden disruptions in one's life, and it is not easy to adjust to challenging situations or adversities; it creates certain difficulties in one's life. So those situations can be collectively called adversity in general, in the definition. Some researchers take a broader perspective, defining adversity as any experience of hardship. Whenever you face any experience of hardship or difficulties in life, they generally call it adversity, while others include both major life events and routine setbacks. Some other people talk about resilience only in the context of major life events, when something negatively toned happens, or even in routine daily life; when a sudden setback occurs, resilience can also be discussed in those contexts.

So adversity can be used loosely in all these contexts. So in the context of resilience, a positive adaptation means, or outcome, it is traditionally seen as maintaining mental health and avoiding mental illness despite adversity. So this is generally used in the outcome-based definition of resilience. So here, basically, when we talk about positive adaptation or outcomes, we are talking about a person who is able to maintain positive mental health and avoid mental illnesses despite these adversities happening. So that's called positive adaptation.

So, these two components are very important when we define resilience. Now, if you look at the definitions of resilience in the literature, there are diverse conceptualizations. So this basic definition is common in all the definitions, but then how this resilience is conceptualized differs from definition to definition. For example, some definitions consider resilience as a trait. Some definitions consider resilience as a process, some definitions consider resilience as an outcome, and some consider a broader conceptualization that encompasses all the ideas of trait, process, and outcome.

So if you look at literature, there will be definitions that consider resilience as a trait, or some definitions that consider it as a process, some as an outcome, and some as a

combination of all three. So we'll see some of these definitions and how they differ in their conceptualizations. So in the context of trait- and process-based definitions of resilience, a positive adaptation or outcome involves recovering or maintaining one's previous level of functioning following adversity. So when we talk about positive adaptation, which is an important component of the definition, the trait-based definition, we'll discuss some of these things. Mostly, they are saying you are able to maintain a positive adaptation in a situation only when you can bounce back to the previous level of functioning. Before the negative event happens, if you are able to go back to that stage, then you can maintain a positive adaptation.

Now let us see some of the trait-based definitions of resilience. Now, some of the definitions are listed here. One is that it's an adaptive, stress-resistant personal quality. So when we talk about traits, we are talking about a personal quality of a person, characteristics of a person. So that's the trait. Trait always comes from the personality characteristics, which are inherent within the person. So when we talk about somebody as a resilient person, from the trait-based perspective, we are saying that person is resilient by nature, by trait characteristics. So these characteristics of the trait are within that person. So in general, the person most of the time has resilient qualities. Some other definitions include the personal qualities that enable one to thrive in the face of adversity.

Other definitions include a personal trait that helps individuals cope with adversity and achieve good adjustment. So those basic two components are always present in all definitions, but when it is conceptualized as a trait, it is considered a personal quality that is inherent in the person and is relatively permanent. Thus, it is clear that the conceptualization of personal characteristics of resilience is quite narrow in scope and centrally focuses on the inherent qualities of the person. So these trait-based definitions are narrow in the sense that they only consider some personal characteristics. So if somebody is resilient, that means this person has resilient qualities within himself or herself; nothing else is considered. So, in that sense, it is a narrow conceptualization only in terms of personal characteristics. So these are called trait-based definitions of resilience. Let us look at some process-based definitions of resilience. So here, resilience is considered more of a process rather than just someone's personal qualities. So these are broader in scope and recognize that resilience derives from a number of sources, not merely from personal attributes.

The trait-based definition, resilience, is only conceptualized as a personal characteristic. So the source of a trait is personal qualities or characteristics.

In the process-based definition, the source of resilience comes from many other things apart from personal attributes. So personal attributes could be one reason why somebody is resilient or not resilient. But the source of resilience can also come from the environment,

from the task, and from many other things involved in the context of the situation. One such definition that can be called a process-based one is Resilience, which is a dynamic process encompassing positive adaptation within the context of significant adversity. So if you see the definition, other things remain the same; only in trait does it become a personal quality, while in the process base it becomes a dynamic process. So that's the difference only here. So these definitions, or any other definition that conceptualizes resilience as a process, emphasize that resilience is both a dynamic process and context-specific. So resilience can occur in context. It may not be a very general thing as far as process-based definitions are concerned. They are always discussed in context-wise or context-specific situations. So, as a dynamic process, we are saying resilience involves ongoing change. So it's a dynamic process. Depending on the interaction with the situation, resilience can change. Sometimes it becomes higher or lower depending on how you are interacting with the situation. So in that sense, it is called a dynamic process, activity, or progress. Being contextually based means that resilience is specific to particular situations. An individual may show strong resilience in one area of life but not necessarily in another. So basically what he's saying when we say it is context-specific in the process-based definition means somebody may be highly resilient in one specific context or area of life.

Let's say it could be in any work-life situation; the person shows a lot of resilience, but the person may not show the same resilience in other contexts, like, let's say, personal life and so on. It is possible. So resilience is always discussed from the contextual perspective or situational perspective. So that is how the process-based definition conceptualizes. It's much broader than the trait-based definition.

So here, it makes more sense that resilience is best understood as a dynamic, interactive process that functions across different systems and levels. Resilience can come from different levels and different systems within which we all work. Hill et al. define resilience as the dynamic process by which a biopsychosocial system returns to a previous level of functioning following a perturbation or disturbance caused by stressors. So all the definitions are basically the same; here, it is only considered a dynamic process.

Where this conceptualizes a broader definition in a sense, it is saying the biopsychosocial system. So disruption can happen in the biological system, the psychological system, and the social system as well. When some disturbances happen and the person is able to return to the previous level of functioning in all these areas, then we call it resilience, and this is a process-based definition. So this process-based perspective of resilience emphasizes its interactive nature in volume interplay, as we have already seen.

Additionally, resilience exists on a continuum. Here in the process-based definition, resilience is seen as a continuum, meaning individuals can display varying degrees of

resilience in different situations rather than being merely present or absent. So here resilience is not considered a binary concept in which resilience is either present or absent. It is not conceptualized that way. It is conceptualized as a continuum in the process context where resilience exists in a continuum, meaning individuals may display high resilience or low resilience in different situations, depending on many other factors. So this is more of a continuum concept in the process-based definition.

Trait-based may be more of a binary concept in that it is either present or absent. So, this is the basic definition of resilience. So resilience is mostly, most of the definitions and the research basically talk about resilience in terms of process-based definitions because they are much broader and look into the different factors that can influence resilience. Trait-based definitions are mostly narrow in focus, and sometimes people use them for certain specific research. But process-based definitions are much more popular and much more widely used in the context of research because they provide more insights about factors associated with a person in the environment, in the context, and so on.

Now let us look into the different research waves that have occurred. When we talk about waves of research, we're talking about certain types of research that emerge, and then there's a shift that happens, and another type of research emerges, and a shift happens, and there is another type of research, a category of research that emerges. So, in that context, we're seeing the different waves of research. So let us see in the field of resilience, what the different waves of research that were evident historically are. Now, resilience research began; more proper research began in the 1970s, initially focusing on children in poverty and neglect.

Researchers observed that some children grew up and prospered despite the adversity, while others languished. So, some of the initial research on resilience started in the 1970s. The initial research was mostly focusing on the children who were born and brought up in difficult situations like poverty and neglect. So they were trying to see how these children are able to cope with such situations, and they found that actually within all this, despite all these difficulties faced by these children, some children actually grew up and prospered, and they became much stronger people, while obviously some other children languished and could not prosper. So they were trying to understand all these differences and why this happens.

Initially, these children were described as invulnerable, the children who prospered despite all the problems in their lives. They were described as invulnerable children, which means they are less influenced by their situation. Initially, the term resilience was not used. As resilience was then viewed as an all-or-nothing quality. So initially it was considered that either you have it or you don't.

In that sense, it was initially used. Either it is present or it is absent. So the word "invulnerable" was used in the initial research, some of the research. Over time, research revealed that resilience is both relative and context-specific, as we discussed in the process-based definition, which became much more popular later that led to a shift away from the term invulnerable.

So the invulnerable term was not used. Resilience became much more popular, and this term was used because the context of its use changed and became much broader. Now, let us look at the first wave of research. So initial research, what was the pattern of that research? So, that is called the first wave of research. So if you look at the first wave of resilience research, it focused on identifying the factors associated with resilience by asking what questions.

So initial research focused on understanding what factors are associated with resilience. Which factors lead to high resilience, and which factors are protective for resilience, while others make people more vulnerable, and so on? So by asking what questions, what ingredients, or what factors are responsible for resilience to occur. So those were, in the first wave of research, this kind of question mostly addressed in the resilience research, where the focus was to find factors and variables responsible for resilience. So, researchers used two main methods. One is a person-focused approach that compared resilient individuals to non-resilient ones in a similar situation.

So, the person-focused approach to research was basically making comparisons between individuals who are highly resilient and individuals who are non-resilient in comparable situations, and they were trying to see what made one group resilient and the other non-resilient. The other category of research was a variable-focused approach or research that examined the relationship between individual and environmental characteristics that supported resilience outcomes despite adversity. So other research was variable focus research where they were trying to understand the relationship between individuals and the environment. So how is this interaction happening and what environmental characteristics were supporting resilient outcomes? What kind of environment supports resilient individuals? So what kind of individual and environmental interaction is leading to resilient outcomes despite all these difficulties faced by individuals? So focus was one variable: the identification of variables. In the personal focus approach, the focus was more on identifying who is resilient, who is non-resilient, and then making comparisons.

So this kind of research was evident or more prominent in the first wave of research. So this wave of research highlighted protective and promotive factors. What protects individuals in terms of facilitating resilience, which is linked to resilience, spanning

characteristics of the children? What kind of characteristics of those children who were studied initially led to high resilience, such as temperament, positive emotions, family, community, and broader societal context? What factors were necessary that led to resilient individuals, and so on? Overall, this study created a comprehensive list of factors associated with resilience after exposure to adversity. So this study's initial wave of research actually helped us to understand factors associated with resilience and that was the major focus of the first wave of research. Some of these things we will look into are some of the specific research that we will discuss in the upcoming slides. So, that was the first wave of research.

The second wave of research continued from the first wave, and the second wave of resilience research focused on understanding how the protective factors identified in the first wave associated with resilient outcomes identified in the first wave could be developed and strengthened. Now in the first wave, the research identified the factors that are related to or promote resilience. The second wave of research focused on how to develop those factors. Since these are important factors—facilitative factors and promoting factors for resilience—which were identified in the first wave, the second wave was trying to understand how to promote them. Since these are important, how can we strengthen them? So that was mostly the focus of the second wave of research.

So researchers began to explore how to develop questions. How can we facilitate it? The process is one that fosters resilience and protects individuals from risk and adversity. So this phase also aimed to clarify how the previously identified factors contribute to and interact in ways that result in resilience. So that was the main focus of the second wave: how to strengthen and develop the factors identified in the first wave of research. So it is found that these resilient promoting factors operate effectively across both high and low-risk environments, pointing to an inherent system that supports continuous development even amid challenges and adversities. So the second wave of research indicated that many of these resilience-promoting factors, identified in the first wave, are effective in a variety of situations, including high-risk and low-risk environments, which shows that these factors can protect you whether your situation is difficult or even not so difficult. In different situations, they can promote your resilience. So during this wave of research, several models were also developed in terms of how to strengthen those factors and what the factors involved are.

I'll just discuss a few models. One is called the two-step model. Proposed by Flach in 1988, it introduced a two-step model describing resilience as a process governed by the law of disruption and reintegration. This model says resilience can actually be conceptualized based on these two concepts. One is disruption and then reintegration. So once some negative event happens in one's life, a disruption occurs, and everything falls apart.

When something bad happens in one's life or a negative event occurs. At the psychological level and at the social level, many changes occur that can be considered a disruption, leading to trauma or stressful experiences. Then people reintegrate. Slowly, they collect themselves, come back together, and then start functioning. So resilience is about disruption: it happens, and then how do you reintegrate after that? So, this model talks about these two concepts. According to this model, stress and adversity cause disruption. Negative events in life cause disruption in one's life, which individuals then manage through a process of reintegration. Then when they manage those disruptions, that is called reintegration. So that's called the two-step model.

Then comes the resiliency model. This resiliency model is an extension of the two-step model on the Flach model. Building on that, Richardson and colleagues proposed a resiliency model, which elaborates on the law of disruption and integration proposed by Flach in his earlier model. So Richardson Resiliency Theory is considered a meta-theory as it integrates elements from multiple theories to provide a comprehensive framework for understanding resilience. The resiliency model is much more elaborative; it is much more of a meta-theory that integrates elements from diverse other theories to give a comprehensive framework for understanding resilience. So it frames resilience as a process rather than a fixed state.

So this model is based on the process-based definition of resilience. It considers that resilience comes from diverse factors, not just individual characteristics. It underscores the potential for growth through adversity and the varied pathways people can take to face life's challenges. And what are the different possibilities that happen after facing difficulties and life challenges? So this theory talks about certain components. It's based on the idea that individuals are continuously influenced by factors within the person, internal strength, and external factors. So there's a continuous interaction between personal characteristics, traits, and environmental factors.

Now the key component of this model is obviously, as it is based on the earlier model, that there are two important factors, which they maintain here. One is a disruption. When an individual faces challenges or adverse events, it disrupts their usual functioning and stability. So the person's functioning is disturbed. If something bad happens in one's life, let's say the death of a loved one, it causes a lot of disruptions in our lives. In terms of our functioning, we are not able to function properly for some time or a few days. Our stability changes, and we become unstable in a sense, emotionally disturbed, and so on. So that's called disruption. This disruption can be due to various forms of stress, whether they are minor daily challenges or more significant life-altering events. This disruption can happen when something very major occurs, such as the death of a loved one, or it can also happen in daily life situations when sudden challenges appear.

So once disruption happens, we, as human beings, try to reintegrate, collect ourselves, and function again. So the next stage is called reintegration, in which, following disruptions, individuals engage in a process called reintegration, where they adapt, learn, and adjust to restore balance. So, in the reintegration process, we restore our balance. Now this is about the previous two-step model. But this model, the resiliency model, expands this reintegration process and elaborates more on it.

So they say, this indicates that when reintegration happens, there are many possibilities that can occur for an individual. When we reintegrate, it is not the same for everybody. So there can be various types of reintegration that happen. So, that is the addition of this model. First, there can be resilient reintegration. That means the individual adapts positively, grows stronger, and gains new skills and insight. So when disruption happens, some people can reintegrate under this category called resilient reintegration. If such reintegration happens, it means the person will adapt positively; they will adapt to it very positively, and not only will they adapt, but they will become stronger and gain new skills and insights. So whenever negative event happens, which is very similar to post-traumatic growth that we discussed. When reintegration happens, we kind of discuss post-traumatic growth in the coming lectures; it talks about how we not only adapt during the resilient reintegration, but we also grow out of it.

We acquire new skills as we develop after facing that. The second type of possibility is called homeostatic reintegration. In this case, the person returns to his or her previous baseline level of functioning without significant growth. So here the person just, after the disruption, they bounce back to their previous level of functioning. So they have not grown out of it; no new skills were developed; they only became the previous version of themselves, whatever they were before the event.

So they will come back to the normal functioning of whatever functioning level they had. So that's called homeostatic reintegration. The third possibility is called reintegration with loss. Here, the response leads to a negative coping mechanism, potentially worsening the individual's well-being.

Here, the person is not able to reintegrate properly, so they are not able to cope with the situation. Or if they are coping, they are coping with the situation negatively. So these are not effective coping mechanisms. So it can worsen the situations of the individuals. So their well-being may decrease. Recovering from loss means that people give up some motivation, hope, or drive because of the demands of life.

So, what happens? There is some loss happening here. The person reintegrates, but after the reintegration, something has been lost from the person. What is that loss? Loss could be the loss of motivation in something. There may be a loss of hope or maybe a loss of

drive to do something. So after some negative event, the person becomes a little bit passive in that sense, and even though the person has reintegrated, the reintegration is not proper in that sense because there is always some sense of loss. The person loses their motivation to do something, or they lose hope, and so on, because of certain negative events in their life.

So those will be called reintegration with loss, and the fourth possibility is called dysfunctional reintegration. Here, the individual struggles to cope, resulting in harmful behaviors or mental health challenges. Dysfunctional reintegration occurs when people resort to substances, destructive behaviors, or other means to deal with life problems. Here it is as if the person is actually not able to reintegrate. So there is a dysfunctional reintegration occurring. In order to reintegrate, the person resorts to some negative behaviors or negative coping strategies, such as taking substances and engaging in destructive behaviors, as a result of those negative events in their life. So they are not able to reintegrate, and they actually become dysfunctional here. So with loss, it means the person will lose even because they are not able to integrate properly, but reintegration is happening with sudden loss. However, loss in terms of motivation and hope in life may occur, and in terms of dysfunctional reintegration, the person actually becomes dysfunctional as they start engaging in harmful behaviors, which may lead to mental health challenges, and so on.

So, these are the four possibilities of reintegration in this model, which is shown diagrammatically here. So, this is how they have shown it. So, what is happening here? So, some adversity of life events happens. So, there is an impact. Obviously, there will be some protective factors that may reduce those impacts if people have protective factors. Then there is also bio-psychological or spiritual homeostasis that people have. So whenever an impact of an event happens, there may be so many layers to it that filter that impact. One is whether there is environmental protection in terms of some support system and so on. Then within the individual, there are some bio-psycho-spiritual processes, whatever you have. They're also different for different individuals, which may either protect or make people more vulnerable.

Then, obviously, if the impact is not covered by them, the disruption happens. The disruptions, once they happen, slowly cause the person to try to reintegrate because there is a tendency to want to adapt. We cannot remain in that state. So that reintegration can happen.

Now, this reintegration may be of four types, as we have already discussed. One is a dysfunctional reintegration. Here it is the worst form of reintegration. The person becomes highly dysfunctional in this case. In the process of reintegration, they become

dysfunctional. Then comes reintegration with loss.

Here, the person is also trying to reintegrate but with a certain sense of loss of motivation, hope, and so on. Then, in this homeostasis zone, the person reintegrates in a homeostatic sense. The person becomes the same person they were before the event. So they will go back to their previous version of themselves in terms of functioning. Here, the last one is resilient; reintegration is above the homeostasis.

A person not only moves back to the previous level, but they also grow out of it. So some new additional skills and positive qualities develop within the person when they face these difficult situations in life. Like the person may become much more psychologically strong. And while facing these difficulties, their psychological strength was probably less earlier. Now, while facing these difficulties in their life, they might become much stronger. So that will be called as a resilient reintegration. So that's the model.

Now the third wave of resilience research actually focuses on understanding how resilience can be intentionally developed, especially in cases where it is not naturally occurring. So obviously, the third wave and the second wave also focused on developing those factors. The third wave mostly focused on how we can intentionally develop those factors, primarily in terms of interventions. When resilience may not occur automatically, you have to develop it intentionally. So they are focusing on this approach. So this shift did not imply that earlier research of resilience processes or protective factors was complete. So there were, obviously, the other researchers that were there in the first wave and second wave; they were also continuing, but this is a new trend that also emerged in the third wave. So, this third wave aimed to translate findings from the first two waves into practical prevention and intervention strategies. So the focus was on developing specific intervention strategies so that, at both the individual and collective levels, we can enhance resilience among people, especially those who are at high risk.

The research began using interventions to promote positive adaptation in individuals identified as being at high risk for adverse outcomes. So that was one of the major focuses in the third wave. Initially, these interventions were largely theory-driven, later evolving to include randomized controlled trials for greater effectiveness. So all kinds of interventions were studied; some were theory-driven, and some were more randomized control trials, and so on. During this period, researchers considered questions such as whether exposure to risk or adversity was necessary for building resilience, the best timing for interventions, and so on.

So they were also focusing on when the intervention was most effective, at what stages of adversities, and so on. So a lot of focus was given to intervention strategies. Researchers like Rutter and others found that the development of resilience often benefits from

controlled exposure to adversity, suggesting that some level of risk may be necessary. So the interventions show what factors led to more effective intervention. Some of the findings indicate that the benefits of resilience or the strategies were much higher when people were exposed in a controlled way rather than through sudden exposure to very difficult situations. Additionally, the research indicated that the timing of resilience intervention is crucial, with developmental transitions, such as moving to a new school or entering adolescence, often being optimum moments to intervene, especially when certain stages of life involve transitions, like moving to a new school.

So, things will change; it will become much more difficult during the time when resilient interventions are given, as they are found to be more effective because the necessity of such interventions is much more prominent in those transition phases. Some other researchers, like O'Dougherty-Wright and colleagues observed that considering the timing of these strategies could enhance and extend the positive effects of the intervention. Though timing depends on the specific goals of the intervention in nature. So the timing of those interventions was also found to be very important in terms of the extent to which these are effective and whether the positive outcomes are expected or not.

The current wave of research, which is called the fourth wave of research on resilience, has continued to evolve from the last few waves progressing into what is now known as the fourth and current wave of resilient research. This idea implies that all insights from the first three waves have been fully obtained; it's not that we have fully addressed all the research questions of the first, second, or third waves. All this research is also continuing; then a new trend emerges, and that is what we're talking about. Instead, it reflects ongoing research driven by both necessity and shifts that are necessary to address the new findings and so on. With enhanced research methods and technologies. This advancement includes improved techniques for measuring genes and brain functions, the development of new animal models for studying behaviors, and the introduction of innovative statistical methods. All this development has happened, and that has led to more refined and higher-order research. Maybe, you know, research on the biological factors in resilience and so on is also coming up in the fourth wave. So Mustan and other people also argued that the fourth wave of resilience research has the potential to offer a deeper understanding across multiple levels.

Now most of the present research, or the fourth wave research, focuses on how resilience is influenced by multiple factors at multiple levels. And they try to integrate all these things. So Mustan emphasized that this researcher is one of the prominent researchers in resilience; he emphasized that this wave should not only build upon but also integrate research and theories that were developed in all three waves.

A key aspect of this way is recognizing resilience as a multidimensional phenomenon. So that's one of the main things. Now resilience is looked at as a multidimensional phenomenon. We have to look at different factors in different settings. So it is now understood that resilience operates across various systems and involves interactions between all these systems. So we cannot understand resilience just based on a person. An example of how resilience is understood as a multidimensional phenomenon is that, in the case of a child, resilience is influenced by multiple levels such as the child himself or herself, the factors present, factors in the family, factors in the school, and factors in the community.

So this is an example where resilience is understood through multidimensional factors. Meso-level systems like schools and sports clubs can be further expanded to include other relevant organizations and groups specific to the child, whatever influences the child. Certain levels, such as the individual, can be further dissected; for instance, examining the contribution of genes versus the environment to resilience. All these diverse factors can be examined in order to holistically understand the influence of factors at the multi-dimensional level and how all this contributes to resilience. At the multi-dimensional level, research may also focus on the interaction between all these interconnected systems and so on.

The thing is, with each wave, the research is becoming more complex in terms of taking factors from different systems. Our researcher also noted that much of the recent research in the fourth wave of resilience studies has concentrated on biological and neuroscientific underpinnings. A lot of this modern research or today's research also focuses on biological and neuroscientific factors for resilience, how to understand resilience from brain factors, and other neurological and biological factors. Examples of this research include investigations into gene-environment interactions, the theory of differential susceptibility, interventional designs to regulate maladaptive systems in individuals, and integrative models of resilience, and so on. So these are some examples of the kind of research that is going on in today's wave of research.

So this topic, while not exhaustive, highlights resilience as increasingly understood from both an interactive and dynamic process. Some researchers also suggest that future research should focus on the dynamic process involved in successful adaptation to adversity. They advocate for the use of prospective longitudinal studies and other methods to better understand this. So these are some of the foundational waves of research, the patterns of research, and the content of research we have discussed. Now let us look at some of the classic studies that were conducted, a few studies in the context of resilience, which will give us a brief sense of the important findings that we can understand from resilience research.

One of the important classic research studies was a longitudinal study on high-risk children by Warner and Smith in 1992. They began this study in 1955, actually, following a multiracial group of children in a community over a 30-year period. So, it was a longitudinal study. They were looking at a group of children over a 30-year period, focusing on those considered high risk due to significant environmental challenges. Now these children were facing a lot of difficult environmental challenges, and they were trying to identify the factors for resilience. Out of approximately 700 children, this research can be considered to have actually started in the first wave of research. Out of approximately 700 children they were studying, around 200 were classified as high risk. Due to factors such as perinatal stress, poverty, daily instability, and severe parental mental health issues. Out of the 700 children, 200 were in a high-risk environment where they were raised, which was full of challenges and difficulties such as daily instability, severe parental mental health issues, and poverty, among others. Werner found that 72 out of these 200 high-risk children actually demonstrated resilience and were thriving despite these adversities. 72 children out of these 200 were actually thriving, despite all these problems in their lives. And they are showing all the qualities of resilience. In terms of successfully coping with these situations, they found that these resilient children showed certain qualities, such as greater social responsibility, increased adaptability, flexibility in adapting to situations, and much more tolerance. They were very achievement-oriented; they were trying to focus on what to achieve in their lives. They also had effective communication skills, and they had very positive self-esteem. They have a very positive attitude about themselves, so their self-esteem is positive. These are some of the factors they found: children who actually thrive and show resilience despite all these difficulties. Additionally, Werner highlighted the importance of a supportive caregiving environment, both within the family and the broader community, as well as the kind of support systems that also play a very important role as key contributors to the children's ability to overcome their adversity. So, apart from their characteristics, there were certain factors in the family and the environment that were also protective factors.

The next research study was Michael Rutter's resilience study. The British psychiatrist Michael Rutter conducted an influential epidemiological study in the late 70s and 80s, focusing on resilience among youth in inner-city London and on the Isle of Wight. So they were focusing on, again, a group of youth in London, and they were studying this particular group of young individuals. So his research revealed that approximately one-quarter of the children he was studying were resilient despite experiencing multiple risk factors. He also found among this group of children that about one quarter of them were showing the highly resilient quality despite facing multiple challenges and risk factors in their environment.

So Rutter identified several qualities that appear to support resilience in these children.

These qualities include an easy temperament in terms of mood and emotional experiences. Being female, they found that females were showing more resilience compared to males. A positive school's climate is what kind of school they are going to.

Self-mastery is a sense of control over one's life. The sense of self-mastery was also a very important predictor. Self-efficacy, confidence in one's own ability, planning skills, and a close, supportive relationship with an adult were all contributing factors in enhancing resilience. Another study was conducted by Norman Garmezy of the Minnesota Risk Research Project. Norman Garmezy and his colleagues, including Masten and Tellegen, conducted the Minnesota Risk Research Project from 1984 to 1991, which explored the impact of growing up with schizophrenic parents from 1971 to 1982. So again, it was a longitudinal study, and they were looking at the children who had parents with schizophrenia or mental disorders, and they were trying to focus on how these children of schizophrenic parents cope with potential risks, particularly examining dysfunction in the intentional and information processing systems. Since this is a highly challenging environment for these children, when a parent has a serious psychological disorder, they are looking at how these children cope with this situation. Garmeze found that most of these children did not develop any maladaptive behaviors or problems. Instead, they grew up to be competent, warm, and functional individuals. They found that most of these children were actually not becoming, no, they were not. They did not grow up to become maladaptive adults or problematic adults. In fact, most of them actually grew up to be competent, warm, and functional individuals despite these challenges posed by their parents' behavior and so on. He identified several criteria for resilience. So if they fulfill these criteria, they can be called as resilient, and most of them actually fulfilled them. These criteria were effectiveness in work, play, and love; high expectations for oneself; a positive outlook; strong self-esteem; an internal locus of control; self-discipline; good problem-solving skills; critical thinking abilities; a sense of humor; and so on. And they found that a lot of these children can actually be considered resilient individuals. The triad of resilience, Garmese's model of resilience, is also called the triad of resiliency, which includes three components from this model he found. One is obviously the personal disposition: what kind of personal characteristics you have.

Inherent traits that help individuals navigate challenges contribute to one's resilience. Second is a supportive family environment. A nurturing home environment that provides emotional and practical support. So they also found that the home environment plays a very important role; although in this research context their parents were having a psychological disorder, beyond that, the extent to which there is an environmental support system that supports them is also important. The external support system is also important, as the social and community support structures outside the family play a very important role in how it supports. So for resilience, these three important factors are personal disposition, a

supportive family environment, and an external support system beyond family.

All three of these factors actually contribute to another research study by Peter Benson, Search Institute Study on Developmental Assets. Under the direction of Peter Benson, the Search Institute conducted large-scale surveys between 1990 and 1995, surveying over 350,000 6th to 12th grade children or students across about 600 communities. So it was a very large-scale survey done on 6th to 12th grade students. Across 600 communities from 1990 to 1995. The goal was to identify the developmental assets that contribute to youth thriving in life. What factors contribute to their flourishing or thriving in life? Initially, the institute identified 30 key assets, which were later expanded to 40 after further research. So that research led to the creation of a list of factors that can be considered assets for development. We won't talk about all these factors, but they include factors like external and internal youth assets. The developmental assets identified were grouped into two categories: external and internal assets. Some assets were related to the external environment, and some assets were related to the internal personality factors. Here are some examples. External assets include support, positive relationships with family and adults; all these things are very important. Empowerment is the ability to value oneself and feel empowered in a situation. Boundaries and expectations involve knowing what is expected and having clear boundaries. Constructive use of time involves engaging in productive and positive activities.

These were some of the external factors that contributed to resilience. Some of the internal assets included educational commitment, motivation, and drive for success. Positive values, caring, honesty, responsibility and integrity, social competencies, skills for effective communication and interpersonal relationships, positive identity, self-esteem, sense of purpose, and internal control. These are all factors they found that were related to resiliency or the development of resilience. So in another comprehensive review of literature, people like Barnard also concluded that a significant portion of high-risk children, at least 50% of them, and often closer to 70%, grow up to become successful adults. So it's not that many times that this difficult situation actually makes people resilient.

So they found that about 50 to 70% of such high-risk children actually grow up to become successful adults. Not only meeting social indicators of success but also developing into confident, competent, and caring individuals. Thus, adversity sometimes propels people to become resilient. This finding highlights the powerful role that developmental assets play in fostering resilience and positive outcomes. So, if those are some of the assets that we discussed from the findings, if they are present, they facilitate resilience in a much better way.

And those people who actually experience high resilience, a lot of these factors are present in their lives. So, these are some of the things about resilience. So in this lecture, we defined resilience and tried to see some of the waves of research and patterns of research that emerge historically, and then we looked at some of the classic studies. With this, I will stop here. Thank you.