

Essentials of Sports Injury Prevention & Rehabilitation

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Lecture - 36

Psychological aspects of injury & Rehabilitation - Part 02

Welcome back to this part 2 of the module on psychological aspects of injury and rehabilitation with me. I am Wing Commander Dr. Chandrasekara Guru. I am a sports medicine specialist, assistant professor in the field with the armed forces medical services. So in this particular module, we will be learning about various models, the psychological models attributed in injury prevention and rehabilitation, their factors related in injury prevention and rehabilitation, various psychological interventions with some practical considerations.

So in the previous part, we dealt about the various aspects of psychological factors in sports injury, the various psychological models that have been described in the literature, the integrated model which integrates the biological factors as well as the social factors with the key psychological attributes like the cognitive oppressor, the emotional response and the behavioral response. We also spoke about various aspects related to the psychological factors in injury prevention programs and discussed the use case scenario of application of stress injury model. We also briefly touched upon various psychological interventions that one can use in prevention of injuries. Moving ahead in this part, we will be covering the psychological aspects of the injury rehabilitation process.

So, any injury follows a course where the physical symptoms are paid attention to, and the rehabilitation happens in stages as per the stages of healing. So accordingly, they have different phases. So you have various rehabilitation phases and finally culminating in early return to sport. So with injury per se, you will have various roles of psychological factors like pain, which can increase the anxiety of the individual immediately after the trauma, maybe loss of function that itself can create a lot of psychological impact. There may be fear of losing certain training hours because of the injury, it depends on the severity and the extent of the injury.

And it can also determine the adherence of the athlete to the rehabilitation program. So these factors can directly affect the physical symptoms per se, the various rehabilitation phases and because of which it will also affect the outcome that is the early return to sports as well. That is the importance of psychological factors in rehabilitation. So we have seen this biopsychosocial model in the previous part, wherein we saw the interplay between the injury characteristics and

the socio-demographic factors in terms of determining the course of biological factors, the psychological factors as well as the social factors which in total can affect the injury rehabilitation outcome. We also saw another model which integrated these factors and amplified the psychological aspects of injury rehabilitation.

So, as per the particular integrated model, you have the personal factors and the situational factors which can result in a different way of cognitive appraisal of the situation based on the individual's beliefs and the coping resources. So based on how the individual thinks, the individual also has an emotional response in terms of how the individual feels about the situation. And this in turn also can result in a kind of response to how the individual acts or does determine the course of that outcome. So the interaction of a cognitive appraisal, the emotional response to the situation and the behavioral response to the injury can determine the recovery outcomes according to this model. So the psychological responses can be three, cognitive response, emotional response and behavioral response.

Let us kind of dwell in detail about this response to understand how they determine the course of the sports rehabilitation, and how you return to sport. So, cognitive responses are the way you interpret your injuries, how you think about the injury. The common response you would see is that low self-esteem immediately post injury. So with the injury you have a reduction in your self-esteem during the course of the rehabilitation process, the self-confidence may vary. There may be waxing and waning of self-confidence during the process.

And during the process or when the injury happens, you may even attribute it. So that is the attribution activity that can happen because of the way you believe. So you may attribute that injury to a kind of surface, you can attribute the injury to the shoe or you may attribute the injury to the lack of practice or lack of sleep, or say intake of alcohol. So this may be any kind of attribution activity depending on how you think would have led to the existing situation or sustaining the injury. And if you have good coping strategies, you will be able to accept the injury per se, and then now you start thinking positively and move forwards in terms of focusing on the various phases, adhering positively to the rehabilitation program.

So these are the coping strategies, and how it can change the course of the outcome. Coming to the emotional responses, emotional responses are how you feel. So the common negative emotional responses which can be a deterrent to the successful sports rehabilitation and return to sport are anger, confusion, there may be depression and fear as well as frustration. So certain common factors that have been studied in the literature wherein they found that these factors contribute to increase negative emotions after an injury. Like if you are a young athlete, if someone is of a type A personality, if the individual identifies more about the athletic activities and performances, with more of athletic identity, then those who have severe injuries which would result in prolonged loss of training hours or prevent them from attending or participating

in some important competitions for a long time, the severity of injuries, poor recovery process, the individual takes prolonged course to come back to sports or the recovery doesn't reach as per the planned program.

These are the situations where there may be negative emotions and display of such emotional responses. The behavioral response that you have is basically how you behave to the injury. So it depends on both the cognitive response and the emotional response. So they were partly influenced. So the extent of adherence to the rehab is the most important indicator of your behavioral response, or coping to the injury after the event has happened.

So, this is an important aspect in terms of the behavioral response during the sports rehabilitation program per se. So certain factors like self-motivation, tough mindset, and if the individual has very high tolerance to pain. So these factors pave the way for a better rehabilitation and early return to sport. Obviously, the social support factors like having an effective rehab program, very good approachable clinical environment, convenient schedule to come and perform the rehab programs, these all also influence the better outcome of the program per se. So various strategies also have been attributed to this behavioral response like strategies in terms of mental self-talk, imagery, goal setting have also been found to improve the behavioral response of the athlete during the rehabilitation process.

Let's see a case scenario. This is a case scenario which we discussed in the previous part as well. Let's continue with the case scenario. Ankita is a gymnast from Delhi. She used to get anxious before the competition as an athlete.

So you have some traits of competitive anxiety. Recently, she had experienced a bitter breakup in a romantic relationship, some life stress event. She is competing in a national qualifier against fierce competitors or opponents. And the competition is conducted at Chennai where she has never been before. And this time, to her disappointment, her father who used to be an ardent supporter couldn't turn up because of some official commitment.

So she's deeply worried, and she thinks that she's worried about the magnitude and the importance of this particular match that she is going to compete in. And she was feeling kind of stressed out completely because of which she had even disturbed sleep the previous night. During the performance of her vault event, she became very nervous and she in fact had landed on her outer aspect of the leg and injured the left ankle. So she was diagnosed with a grade two ankle sprain of the left leg. So she reported for rehabilitation of her injury to a sports rehab center.

She was angry and she was attributing the injury to the recent lack of adequate practice. And she thought that her sports career had come to an end. In spite of you prescribing a very good

exercise rehab program, she felt she's not improving at all, and she started missing the sessions. So analyze the case according to the model that we have studied till now, and how will you manage this case. So from the initial prelude of the case, we know that the individual is a young athlete, female. She used to get anxious before competition, so more of a competitive anxiety. She recently had a life stress event in terms of breakup in a romantic relationship. And the social factor is that she is now competing in a new place. She has never been there before. So obviously she doesn't have good audience support. Her father couldn't be there who used to be always a kind of pillar of support. She is not here for this event, so lack of social support. She responded to the stressful situation by thinking in terms of fear or kind of anxiety, wherein she resulted in sleep disturbances the previous night. Because of the anxiety she had, she felt more of an increased sympathetic drive and she sustained an injury. So what about the injury? The injury is a moderate injury, and it requires, it says grade 2, so it requires a few weeks of rehab.

So obviously she is going to be out of training for some time. So the factors that we would consider here for a successful rehabilitation are the environment. So the rehab center environment should be really good. Cognitive appraisal, how you are analyzing the cognitive appraisal, how the individual is thinking about the consequence of the injury. So after the injury she thought that this particular injury had happened or probably because of the lack of practice due to no life stress event.

So, because of the life stress event she couldn't practice more frequently, which she attributed to the occurrence of injury and missing the most important qualifier match. So because of which she starts to kind of overthink and get into a loop where she feels that her sports career has come to an end. And because of the cognitive appraisal and the emotional response, she felt that the injury is not improving despite her very good injury rehab program that had been given. So the emotional response here is anger. Angry, why was she angry? Because she couldn't do it properly and she has felt angry about a present situation where she is nursing an injury and away from the training as such.

So because of this emotional response, and the cognitive appraisal that she had, that sports career has come to an end, she's lost interest and she started missing the sessions. So the adherence has come down in this particular case. So in addition to this, the other factors that are contributing are the lack of social support. So what as a treating clinician or a therapist or a coach or a trainer, if you identify such a case, the approach would be here in this case would be kind of addressing the lack of social support. So there is clear-cut evidence which says that those athletes who enjoy good social support perform better and come back early to sports.

So, lack of social support can be addressed by explaining the injury condition and the expected return to sports timeline to the coach and the father. Advise them to deal with the athlete, motivate her during this stressful period where they can be real good support for her injury

rehabilitation and early return to sport. Create a good environment. Environment in case of this particular situation would be engaging in free discussion with respect to the type of program that you have set, kind of discussing the improvement that she is able to do after every rehab session.

So that would kind of motivate her. Another aspect is counseling. It's important that an individual needs to be counseled properly and explain the probable duration by which she would come back to sport, and the importance of it and her importance and contribution in terms of adhering to the program to avoid any reinjury to the same injured region. Also, it is important to also set small achievable and measurable goals for the rehab program so that with achieving such small goals, you can kind of motivate and reward the athlete during the rehab program. So this would also enable the individual to adhere to the program and look forward to achieving the next goal. The other coping strategies that you can implement here are simple relaxation techniques, advise her to do some breathing exercises to focus on a breath, focus on those conditions that are within her control and not rely much on those external factors.

So if required, you may also advise consultation with a sport psychologist in this particular case. So the various psychological interventions that have been carried out during rehabilitation processes are imagery, relaxation techniques, goal settings, positive self-talk, and biofeedback techniques. So what do you mean by biofeedback technique? The rest of the things we have discussed and also see a bit in detail in the subsequent slides. Biofeedback technique is a technique by which you also use the physiological objective parameters to modify the emotional and the behavioral response of the individual. So you can use, you can give a situation, simulate a situation, also at the same time use respiratory rate to kind of objectively enable the individual to perform the particular action.

Or you can also use heart rate, you can also use the brain waves that are the EEG waves. So these are widely used in biofeedback techniques. So let us see about imagery. Imagery is a process or a method, a psychological intervention method wherein you help the athlete to prepare for various scenarios. So you ask the individual to imagine and thereby you ensure that they will not get distracted, or they will not get taken aback because of the unexpected sequence of events that may happen.

So you make the individual more responsive to an event, imagining the particular situation. So this also gives an idea as a trainer or as a coach to you of how the individual responds to a particular situation as well. So accordingly, the intervention can be tailored and you guide basically the mental images in a way so that multiple senses are stimulated and vividly remembered. So in case of cognitive anxiety you generally use a calming mental imagery. So the steps that you generally follow is to ask the performer to imagine being in a relaxing environment.

The relaxing environment can be a warm beach with the sound of the waves coming to the

shore. It can be like imagining a scene where the individual is lying with closed eyes on a green field on a pleasant day. Then the practitioner advocates the image, actually it is personally believed, will provide a sense of calmness. So you tend to know that these are the certain aspects that will calm the sensations and mental relaxation. So by practicing this the individual slowly relaxes to a particular situation.

The various relaxation techniques are useful and they are useful in terms of reducing anxiety. It can be both cognitive as well as somatic anxiety. The commonly employed one on ground, the field of sports is progressive muscle relaxation and a breath control for somatic anxiety. Basically in these techniques you are trying to relax the physiological response that has happened. Especially in breath control you are also including mindfulness and the attention to the things that are under your control.

So you are kind of trying to prevent unnecessary thoughts interfering with your action and so that's how it can also be used for cognitive anxiety as well. Basically you empower the individual to gain control over the situation. In case of breath control, there are various methods available. It's an easiest and effective method commonly used in sports. Wherein you have smooth and deep breathing is found to have increasing the calmness and feeling of control over the situation.

So various levels are prescribed to practice. A simple method is that in the initial level you ask the individual to close, focus on the breath, take a deep breath of inhalation towards the end of the initial where you feel the expansion of your rib cage and the diaphragm moving down and thereafter do an exhalation slowly, double the time of whatever time you have taken for inhalation. So this is one of the easier breath control techniques that one can follow for relaxing. The other important aspect is goal setting. Goal setting I would say is very important in terms of addressing the issues of psychological aspects in sports injury rehabilitation.

So if you have a goal set into different milestones or smaller ones, this helps in directing your entire effort towards a particular aim. Since the goal is set, you try to be persistent in your effort even if you fail. During the process, you also tend to learn and develop yourself when you have a proper goal. However, setting the goal with certain characteristics is very important to have a direct effort. So this can be easily remembered using the acronym SMART INSPIRED.

The goal that you set should be specific. It cannot be a generic goal. It should be very specific. It should be measurable so that next time again you know that you have achieved this. And it again as I said achieved it, it should be attainable. So the goal should be set in a way that they are small and attainable as well.

They should be relevant to the main aim that you are going so that each goal that you set over a period of time can lead on to the ultimate aim that you have. And it should have a time factor

into it. So if you have a goal, it should have a certain time factor and within the time factor, you should try to work your way towards achieving that particular goal.

So that's about the SMART. Let's see about the INSPIRED. They say that it should be internalized. The individual should have that intrinsic motivation when you set that goal. It cannot be an external goal. It should be more of an intrinsically driven goal and it should also help you to learn and upgrade your skill so that you also have the process of learning during the process of achieving the goal.

The goal should be sizable. It should be planned and it should be in your control. The goal which you set, it should be entirely dependent on you and you should not consider the other external factors which would determine the goal. So if you have, I would say, a simple, example, rather than setting a goal that I will win that gold medal, instead of that, if you set a goal that I will learn and perfect that particular motor skill. So when you try to keep in terms of motor skill, it is under your control where you can practice and own up that particular skill and become more perfect. Whereas getting a gold medal is not completely in your control.

It is also dependent on the situation. It depends on the sporting equipment. It depends on the opponent on that particular day. It depends on various other factors. So the goal that you set should be more of things that are under your control.

It should be reviewed regularly. So if you know that this particular goal, you have missed a particular goal or you missed it by means of time or you missed it by means of some other measurable parameter, then you should be able to review it. Probably you have set a very high or a difficult goal. That is why you are not able to achieve it. Or probably you have set multiple goals during the same period.

That's why you are not able to reach that particular goal. So the goal should be reviewed regularly if you are not able to achieve that particular goal. It should be energizing. Whenever you think about achieving the goal, it should invigorate your internal mindset and you will have that energizing feeling when you are working towards that particular goal. And an important aspect is all the effort that you direct towards achieving the goal has to be documented. So if you have a documented planned way of addressing these goals, you will be able to achieve it better.

So in a simple way, the goals should be smaller, measurable, time bound. You should be able to review it regularly and the goal should be more process oriented rather than outcome oriented. So some practical considerations are, with the psychological aspects, there are issues in terms of incorporating this in the sports rehab as well as injury prevention. So that's because it's not very popular among the sports practitioners. The associated social stigma of going to get counseling or consultation to a psychologist itself prevents certain individual to go and ask for help.

It's difficult even for experienced practitioners to identify the kinds of responses that we discussed. It was easier said than done. So we discussed about the cognitive appraisal factors, the emotional responses, the behavioral responses. But then it sometimes becomes difficult even for experienced practitioners to identify the response and make the corrective actions. So that again comes with more experience, exposures, and more expertise.

And obviously, because it is not being so popular, the reluctance is there to incorporate it as a part of the schedule. So you would see most of the time the athletes take out time from their own time to kind of get these psychological interventions done. So that is again an issue with respect to the psychological aspects in sports injury. So when we consider the preventive sessions, the sessions are advised that it should be carried out as an educational session in masses and to be part of the macrocycle personnel. So if you are a trainer, certain kinds of psychological interventions can be given by you only, but then it has to be incorporated as a session of the entire training program.

And you can address it as a common thing for a group of athletes. It is not necessary that you have an individual kind of session with the one-to-one session with the athlete. In case of various psychological interventions that you use to prevent injury. Whereas when you come to rehabilitation sessions, the session is entirely based on the expertise and the psychological responses of the individual. So it is more of an individualized response that is required.

And most of it is not a one time process. So we discussed that we started this particular part with saying that rehabilitation follows different phases based on the stages of healing. So it is a prolonged period. So during this period, entire period, the psychological intervention should be at various continuum. It should be a continuous approach to this particular individuals. And these sessions again, similar to the preventive program should be included in the rehabilitation program itself.

So that the individual feels that it is also part of the rehab program and the stigma towards that is reduced. And also an important aspect is we saw that behavior in terms of rehab and adherence determines the outcome to a large extent. So, it is important to assess this rehab and adherence with more of a standardized and objective measure so that you can come to a meaningful conclusion during the rehab program, and accordingly it will aid you in terms of intervening at the right time. So to summarize this particular part on psychological aspects in injury rehabilitation, we saw about the psychological model and various factors that play a major role in kind of rehabilitation program. The various responses as cognitive responses, the emotional response and the behavior response that individual displayed during the period of sports rehabilitation.

We also discussed various psychological interventions that one needs to be aware of and to kind

of experiment it based on the individual need during the process of sports rehabilitation and early return to sport. So few of the important psychological interventions that you should kind of know about in detail are mental imagery techniques, relaxation techniques and the various aspects of goal setting. I am sure that this will be covered in detail in the other course on sports psychology by the faculty. So the takeaway point from this module of psychological aspects in injury rehabilitation and prevention are that different models have been ascribed for both injury prevention and rehabilitation. The stress injury model by Brewer brings out comprehensively the stress response, the potential sports situation and the social factors which the psychological factors that are included in various models and one should be made aware or be aware of these factors which can determine the outcome are personality related factors, cognitive appraisal, how the individual thinks, emotional response, how the individual feels about a situation and the behavior, how an individual responds or acts based on this cognitive and emotional inputs.

And with respect to the injury rehabilitation continuum, you always have to measure the adherence. There should be proper goal settings in terms of SMART goals, and social support play a major role in successful return to sport. The psychological strategies, coping strategies and you know empowering the athlete definitely helps in preventing the injury by modulating the stress response and the useful techniques like relaxation techniques, the breathing control, mental imagery have to definitely be incorporated as part of the psychological sessions in the training program. For those of you who are interested in further in-depth learning, I would suggest the following resources. Thank you.