Based on the review of literature, the following hypotheses were framed:

1. **Intergroup Comparisons: Upper Limb Injuries, Lower Limb Injuries and Back Injuries at post-test intervention phase**

   1.1 The Experimental group was expected to show lower scores on Disabilities of the Arm, Shoulder and Hand, Modified Oswestry Low Back Pain Disability, and higher scores on Lower Limb Disability in comparison to Control group sportspersons with upper limb injuries, back injuries and lower limb injuries at post-test phase.

   1.2 The Experimental group was expected to show lower scores on Heart Rate, Blood Pressure, Pain, and Pain Disability in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

   1.3 The Experimental group was expected to show lower scores on State Anxiety, Trait Anxiety, Perceived Stress, and Stress Symptoms in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

   1.4 The Experimental group was expected to show lower scores on Fear Avoidance Beliefs for both its dimensions, viz. Physical Activity and Work, and Kinesiophobia in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

   1.5 The Experimental group was expected to show higher scores on Self-esteem, Self-efficacy, and Optimism in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

   1.6 The Experimental group was expected to show higher scores on Social Support for both its dimensions, viz. Social Support-Network and Social Support-Satisfaction in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

   1.7 The Experimental group was expected to show higher scores on Perceived Success and Sports Injury Rehabilitation Beliefs (total) and its components, viz. Susceptibility, Treatment Efficacy, Self-efficacy, Rehabilitation Value and
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Severity in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

1.8 The Experimental group was expected to show lower scores on Aggression (total) and its subscales, viz. Physical Aggression, Verbal Aggression, Anger and Hostility in comparison to Control group sportspersons with upper limb injuries, lower limb injuries and back injuries at post-test phase.

2. Intragroup Comparisons: Experimental group with Upper Limb Injuries, Lower Limb Injuries and Back Injuries at pre-post test intervention phase

2.1 The Experimental group sportspersons with upper limb injuries, back injuries and lower limb injuries were expected to show lower scores on Disabilities of the Arm, Shoulder and Hand, Modified Oswestry Low Back Pain Disability, and higher scores on Lower Limb Disability from pre to post-test phase.

2.2 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Heart Rate, Blood Pressure, Pain, and Pain Disability from pre to post-test phase.

2.3 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on State Anxiety, Trait Anxiety, Perceived Stress, and Stress Symptoms from pre to post-test phase.

2.4 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Fear Avoidance Beliefs for both its dimensions, viz. Physical Activity and Work, and Kinesiophobia from pre to post-test phase.

2.5 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Self-esteem, Self-efficacy, and Optimism from pre to post-test phase.

2.6 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Social Support for both its dimensions, viz. Social Support-Network and Social Support-Satisfaction from pre to post-test phase.

2.7 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Perceived Success and Sports Injury Rehabilitation Beliefs (total) and its components, viz.
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2.8 The Experimental group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Aggression (total) and its subscales, viz. Physical Aggression, Verbal Aggression, Anger and Hostility from pre to post-test phase.

3. Intragroup Comparisons: Control group with Upper Limb Injuries, Lower Limb Injuries and Back Injuries at pre-post test intervention phase

3.1 The Control group sportspersons with upper limb injuries, back injuries and lower limb injuries were expected to show lower scores on Disabilities of the Arm, Shoulder and Hand, Modified Oswestry Low Back Pain Disability, and higher scores on Lower Limb Disability from pre to post-test phase.

3.2 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Heart Rate, Blood Pressure, Pain, and Pain Disability from pre to post-test phase.

3.3 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on State Anxiety, Trait Anxiety, Perceived Stress, and Stress Symptoms from pre to post-test phase.

3.4 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Fear Avoidance Beliefs for both its dimensions, viz. Physical Activity and Work, and Kinesiophobia from pre to post-test phase.

3.5 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Self-esteem, Self-efficacy, and Optimism from pre to post-test phase.

3.6 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Social Support for both its dimensions, viz. Social Support-Network and Social Support-Satisfaction from pre to post-test phase.

3.7 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show higher scores on Perceived Success and Sports Injury Rehabilitation Beliefs (total) and its components, viz.
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Susceptibility, Treatment Efficacy, Self-efficacy, Rehabilitation Value and Severity from pre to post-test phase.

3.8 The Control group sportspersons with upper limb injuries, lower limb injuries and back injuries were expected to show lower scores on Aggression (total) and its subscales, viz. Physical Aggression, Verbal Aggression, Anger and Hostility from pre to post-test phase.

4. Gender Differences at post-test intervention phase

4.1 It was expected that there would be very few gender differences in improvement or reduction of scores at post-test phase in both Control and Experimental groups.
The primary aim of the study was to investigate the comparative efficacy of physical therapy and a combination of physical therapy and psychological counseling in rehabilitation of injured sportspersons. The sample of the study comprised of injured sportspersons (upper limb, lower limb and back injuries) allocated at random to two groups in equal numbers, i.e., Experimental group in which subjects were given physical therapy as well as counseling as psychological intervention and Control group in which only physical therapy was administered.

In addition, gender differences were also investigated for the total sample of both Experimental and Control groups at post-test.

SAMPLE

Two hundred injured sportspersons (N=200) from various sport disciplines between the age group of 18-28 years (M=21.23, SD=2.37) both males (n=112) and females (n=88), with wide range of sport injuries, comprised the sample.

Sample Characteristics: The sample consisted of sportspersons with upper limb injuries (n=54) with males (n=34) and females (n=20); sportspersons with lower limb injuries (n=86) with males (n=50) and females (n=36); and sportspersons with back injuries (n=60) with males (n=28) and females (n=32).

Further, the selected subjects had played at different levels, i.e., University (n=54), District (n=5), State (n=15), National (n=106) to International (n=20) standards.

The distribution of subjects according to the nature of sport, i.e., contact, limited contact and non-contact is as mentioned: 42 subjects with lower limb injuries, 18 with upper limb injuries, and 30 with back injuries were from contact sport (e.g., basketball, boxing, football); 29 subjects with lower limb injuries, 12 with upper limb injuries, and 13 with back injuries were from limited contact sport (e.g., baseball, volleyball, handball); and 15 subjects with lower limb injuries, 24 with upper limb injuries, and 17 with back injuries were from non-contact sport (e.g., archery, badminton, swimming).
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DESIGN

Sampling Technique: For the present study, the subjects were selected at random.

Study Design: The present study was Experimental in nature with Pre and Post study design. The study employed independent-subjects design.

Grouping: The subjects were assigned at random into two groups, i.e., Experimental group in which subjects were given physical therapy and counseling as psychological intervention and Control group in which only physical therapy was administered.

The groups framed were as follows:

1. Group A = Control group (100 subjects)
2. Group B = Experimental group (100 subjects)

Each group further comprised of three different kinds of injuries thus forming three subgroups as under:

(i) Upper limb injuries: 27 subjects in each group
(ii) Lower limb injuries: 43 subjects in each group
(iii) Back injuries: 30 subjects in each group

The random allocation into two equal groups was as follows:

![Diagram of group allocation](image-url)
INCLUSION CRITERIA

The study included sportspersons with sport injuries only. Injuries may have occurred to the sportspersons during training sessions, or during their competitive events causing the player to seek medical treatment or miss part of or the next match or training session (Olsen et al., 2005).

Sample was included based on the following criteria:

1. The acute injuries (i.e., soft tissue, and bony injuries) and the clinically diagnosed overuse injuries of upper limb, lower limb and back including low back pain were considered.
2. Subjects with anxiety score of 20 and above on State-Trait Anxiety Inventory were selected (STAI: Spielberger et al., 1970).
3. Subjects who never received any psychological intervention, at least a year prior to injury onset.
4. Subjects who were not into any kind of specialized training other than their regular sport training.
5. No known sensory, motor, neurological or intellectual impairment.
6. Both male and female sportspersons between the age group 18-28 years were included.
7. Subjects who have been practicing 3-4 times per week since the last two years.
8. Subjects with University level skill (minimum criteria) or higher experience were included.

EXCLUSION CRITERIA

The following injuries were excluded from the research work:

1. Head and neck injuries.
2. Recent fractures.
3. Neurological conditions like spinal cord injuries, and nerve injuries.
4. Thorax injuries.
5. Psychiatric disorders.
6. Cardiopulmonary affections or those who recently underwent surgery.
7. Consumption of drug/medication since one month prior to injury.
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DATA COLLECTION

Data was collected from the primary sources directly from the injured sportspersons attending various sport institutes, clinics and hospitals across Chandigarh, Punjab and Haryana.

INTERVENTIONS

The following interventions were administered to subjects of both the groups:

Group A: Control group received only Physical Therapy.

Group B: Experimental group received a combined intervention of Physical Therapy and Psychological Counseling of 30 minutes duration for 10 days on every alternate day.

PROCESS OF SAMPLE SELECTION

The subjects went through pre-participation screening and from a pool of 300 injured sportspersons, the subjects fulfilling the inclusion and exclusion criteria were identified.

The subjects who gave informed consent were screened via the following questionnaires:

1. Evaluation Proforma: It consisted of following two parts:
   - Demographic profile, Sport type, and Level of participation.
2. Upper Extremity Assessment
3. Lower Extremity Assessment
4. Back Assessment

The subjects were selected and assigned to Experimental and Control groups at random.

ETHICAL CONSIDERATIONS

The present research work commenced after the approval of the research proposal by the Research Degree Committee and Joint Research Board of Panjab University, Chandigarh, India.
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INFORMED CONSENT

All the selected subjects were informed of the nature, purpose and parameters of the study before obtaining their informed voluntary consent (Appendix-I) for participation in the study. However, no awards or incentives were given to the subjects. Subjects were allowed to withdraw from the study at any instance without giving any explanation.

MEASURES

The physiological, physical functional status, pain and psychosocial variables were measured using various tests and tools. These variables were assessed both at Pre and Post treatment level interventions.

VARIABLES

The present research work comprised of following dependent and independent variables:

Dependent Variables: Both the groups were measured for the dependent variables which included heart rate, blood pressure, pain, physical functional status scales for upper limb, lower limb, and back, anxiety both state and trait, fear avoidance beliefs, kinesiophobia, self-esteem, self-efficacy, optimism, social support, perceived success, aggression, perceived stress, stress symptoms, and sports injury rehabilitation beliefs.

Independent Variables: The physical therapy intervention received by the Control group and a combination of physical therapy and counseling intervention received by the Experimental group were the independent variables affecting the dependent variables of the study.

TESTS AND TOOLS

The following standardized tests and tools were used in the study for collection of the data for physiological, physical and psychosocial variables:

I. Physiological and Physical Variables:

2. Heart Rate: By Polar Heart Rate Monitor S410 (POLAR Electro, USA)
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4. Disabilities of the Arm, Shoulder and Hand Questionnaire (DASH: Hudak et al., 1996)
5. Lower Extremity Functional Scale (LEFS: Binkley et al., 1999)
6. Modified Oswestry Low Back Pain Disability Questionnaire (Modified OSW: Fritz & Irrgang, 2001)

II. Psychological Tests:

The following standardized tests and tools were employed:

1. State-Trait Anxiety Inventory (STAI: Spielberger et al., 1970)
2. Pain Disability Questionnaire (PDQ: Anagnostis et al., 2004)
3. Fear Avoidance Beliefs Questionnaire (FABQ: Waddell et al., 1993)
4. Tampa Scale for Kinesiophobia (TSK: Vlaeyen et al., 1995)
5. Rosenberg Self-Esteem Scale (RSES: Rosenberg, 1965)
7. Life Orientation Test-Revised (LOT-R: Scheier et al., 1994)
8. Social Support Questionnaire (SSQ-6: Sarason et al., 1987)
11. Stress Symptoms Rating Scale (Heilbrun & Pepe, 1985)
13. Perceived Success (Shields et al., 2005)

The detailed description of measures used for collection of the data is as follows:

I. Demographic Measures: The demographic variables were measured via the Evaluation proforma which consisted of two parts: First part covered the Demographic Profile (Appendix-IIa) which included name, age, sex, sport played, level of participation, drug abuse, medical history including past and present injury, and other details. The second part consisted of Injury Profile questionnaire (Appendix-IIb) which included past status of injury, if any, present status of injury, how it occurred, and other details. Further, observation, palpation, range of motion, manual muscle testing, and special diagnostic tests were performed for assessment of the injury. The specific questionnaires in a thorough manner evaluated the injured upper limb, lower limb, and back via, Upper Extremity Assessment (Appendix-III),
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Lower Extremity Assessment (Appendix-IV), and Back Assessment (Appendix-V) questionnaires, respectively.

II. Measures of Disability/Physical Functional Status: The physical functional status/disability was measured via three separate questionnaires for upper limb, lower limb and back injuries. These were as under:

1. Disabilities of the Arm, Shoulder and Hand Questionnaire (DASH: Hudak et al., 1996)

2. Lower Extremity Functional Scale (LEFS: Binkley et al., 1999)

3. Modified Oswestry Low Back Pain Disability Questionnaire (Modified OSW: Fritz & Irrgang, 2001)

I. Disabilities of the Arm, Shoulder and Hand Questionnaire (DASH: Hudak et al., 1996)

Description: The disabilities of the arm, shoulder and hand (DASH) questionnaire is a self-administered region-specific outcome instrument consisting of thirty-items designed to measure physical function and symptoms in individuals with disorders of the upper limb. The questionnaire assesses physical function and symptoms (mandatory functional symptoms section containing 30 questions related to functional activities and symptoms; optional work section and sport/music section containing 4 questions each related to hand function in specific job-required activities and hand function in sports/music activities). The DASH is designed to measure physical disability and symptoms in a heterogeneous population that includes both males and females; people who place low, moderate, or high demands on their upper limbs during their daily lives (work, leisure, self-care); and people with a variety of upper-limb disorders. Each item has five response options on a scale of 1 to 5 (where 5 represent the greatest severity). The same response pattern exists for Work Module and Sports Module. The final summative score is converted to a percentage scale with 0 reflecting no disability (good function) and 100 reflecting major disability. The DASH has excellent psychometric properties. The internal consistency of the DASH has been reported to be high (Cronbach alpha 0.91-0.96). Test-retest reliability for the overall DASH is excellent (intraclass correlation coefficient (ICC) 0.92) as reported by Atroshi et al. (2000); Greenslade et al. (2004); and Kitis et al. (2009). The scale has
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good criteria validity and construct validity as reported by Atroshi et al. (2000); Hobby et al. (2005); and Kitis et al. (2009).

Instructions were: Please rate your ability to do the following activities in the last week by circling the number for the appropriate response. Each item has five response options on a scale of 1 to 5 (where 5 represent the greatest severity) as follows: (1) No difficulty, (2) Mild difficulty, (3) Moderate difficulty, (4) Severe difficulty, and (5) Unable. The same response pattern exists for Work Module and Sports Module.

2. Lower Extremity Functional Scale (LEFS: Binkley et al., 1999)

Description: The LEFS is a good tool for documenting lower extremity function. The scale consists of twenty-items, each with a maximum score of 4. The LEFS is easy to administer and score and is applicable to a wide range of disability levels and conditions and all lower extremity sites. A 5-point scale was used for responses, ranging from (0) Extreme difficulty to (4) No difficulty. The total possible score ranges from 0-80, where 80 indicate a high functional level. The LEFS has excellent psychometric properties. The internal consistency was = 0.96. Test-retest reliability estimates were \( r = 0.86 \) (95% lower limit CI = 0.80) and \( r = 0.94 \) (95% lower limit CI = 0.89). Construct validity as indicated by the correlations between the LEFS scores and the SF-36 physical function subscale and physical component summary scores were \( r = 0.80 \) (95% lower limit CI = 0.73) and \( r = 0.64 \) (95% lower limit CI = 0.54) (Binkley et al., 1999).

Instructions were: We are interested in knowing whether you are having any difficulty at all with the activities listed below because of your lower limb problem for which you are currently seeking attention. Please provide an answer for each activity using the 5-point scale where: (0) Extreme difficulty, (1) Quite a bit of difficulty, (2) Moderate difficulty, (3) Little bit of difficulty, and (4) No difficulty.

3. Modified Oswestry Low Back Pain Disability Questionnaire (Modified OSW: Fritz & Irrgang, 2001)

Description: The Modified OSW questionnaire is a self-administered disability questionnaire of low back pain. The questionnaire consists of ten-items addressing different aspects of function. These ten domains are: pain intensity, personal care, lifting, walking, sitting, standing, sleeping, social life, travelling and employment/homemaking. Each domain contains six statements, scored from 0 to 5,
with higher values representing greater disability. The scores range from 0-100% with lower scores indicating less disability. The scale has excellent psychometric properties. The scale has high levels of reliability (ICC = 0.90) which is consistent with reliability coefficients found in some other studies using shorter follow-up times. The Pearson correlation between the change score of the modified OSW and the mean global rating was 0.78. The construct validity as indicated by correlations with global patient ratings and other region-specific disability measures greater than $r = 0.80$, and responsiveness as represented by effect size of 1.8 in 69 patients who were receiving physical therapy interventions for the work-related low back pain (LBP) (Fritz & George, 2002).

**Instructions were:** This questionnaire has been designed to give your therapist information as to how your back pain has affected your ability to manage in everyday life. Please answer every question by placing a mark in the one box that best describes your condition today. We realize you may feel that 2 of the statements may describe your condition, but please mark only the box that most closely describes your current condition. Each domain contains six statements, scored from 0 to 5, with higher values representing greater disability.

**III. Measures of Pain:** The pain and pain related disability was measured via the following tools:

1. **Visual Analogue Scale (VAS: Huskisson, 1983)**

2. **Pain Disability Questionnaire (PDQ: Anagnostis et al., 2004)**


**Description:** The visual analog scale (VAS) is a valid and reliable measure of chronic pain and also for the measurement of acute pain. VAS is a simple method for measuring subjective experience of pain. It is a widely used instrument for measuring pain intensity in rehabilitation, and is easy for administration. It reliably differentiates between sensory and affective pain, and is one of the most sensitive methods for measuring pain (Huskisson, 1974; 1983). The only disadvantage in using single-item instruments to measure multidimensional constructs is that the amount of information gets reduced. But, it would be useful to have a single-item instrument for the assessment of disability (Boonstra et al., 2008). The graphic orientation of the VAS can make difference to the statistical distribution of the data obtained using it. It was
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found that data were normally distributed when the VAS was used horizontally, but it was not so when it was used vertically (Ogon et al., 1996). The data obtained by horizontal and vertical VAS does correlate well but the level of agreement between the two is low (Dixon, 1986). Typically, a VAS consists of a 10 centimeter line anchored at each end by words descriptive of opposing statements or the minimal and maximal extremes of the dimension being measured. That is, 0 indicates No pain and at the other end 10 indicates Worst possible pain. This distance is a valid and reliable measure of pain intensity in young people (Jensen & Karoly, 2001). If the distribution of data is normal, the use of parametric statistical analysis, which is more powerful than non-parametric testing, is allowed (Williamson & Hoggart, 2005). The VAS has excellent psychometric properties. The VAS has proved to be reliable and valid. The summary ICC for all paired VAS scores was 0.97 (95% CI = 0.96 to 0.98). The correlation coefficients for VAS scores with the 11-point pain scale were 0.94, 0.91, and 0.95 (Bijur et al., 2001; Boonstra et al., 2008; Crossley et al., 2004; De Loach et al., 1998).

Instructions were: Respondents are required to place a mark on a 10 centimeter line anchored at each end by words descriptive of the minimal and maximal extremes. That is, 0 indicates No pain and at the other end 10 indicates Worst possible pain.

2. Pain Disability Questionnaire (PDQ: Anagnostis et al., 2004)

Description: The Pain Disability Questionnaire (PDQ) is a comprehensive self-report psychometric evaluation of functional status due to disability caused by pain. It consists of fifteen items, divided into two domains: one measuring the Functional Condition, and the other measuring the Psychosocial Component. This instrument is designed for the complete array of chronic disabling musculoskeletal disorders including upper extremity, lower extremity disorders, and low back pain, or spinal disorders. The respondents were asked to rate the interference of pain against each statement on a 10 cm line based on VAS format. The following classification is used to examine the score: mild/moderate (0-70); severe (71-100); and extreme (101-150) (Gatchel et al., 2006). The psychometric properties of the PDQ are excellent, demonstrating strong reliability, responsiveness, stronger correlation coefficients, and validity. Test-retest reliability coefficients (ranging from 0.94 to 0.98) and a Cronbach’s alpha coefficient of 0.96 for the PDQ were found to be of excellent quality. A high level of face validity was observed for the PDQ, and the construct-
related validity of the PDQ was also found to be of excellent quality, as it correlated well to both MVAS (0.65-0.81) and Oswestry (0.55-0.80) (Anagnostis et al., 2004; Giordano et al., 2012).

**Instructions were:** This questionnaire asks for your views about how pain interferes with how you function in everyday activities at this time. Please answer every question by making an X along the line to show how much your pain problem affects you. The respondents are asked to rate the interference of pain against each statement on a 10 cm line.

**IV. Measures of Fear:** The fear avoidance beliefs and fear related to movement/re-injury, i.e., kinesiophobia were measured via the following questionnaires:

1. **Fear Avoidance Beliefs Questionnaire (FABQ: Waddell et al., 1993)**
2. **Tampa Scale for Kinesiophobia (TSK: Vlaeyen et al., 1995)**

**Description:** The FABQ is a sixteen-item measure aimed at quantifying the beliefs about how work and physical activity affect pain and whether these should be avoided. Fear avoidance beliefs are predictive of future disability and work status even after controlling pain factors of duration/intensity and the type of treatment received. The questionnaire assesses the tendency to avoid activity and work as a result of the experience of pain and help predict those who have a high pain avoidance behavior. Clinically, these people may need to be supervised more than those who confront their pain. The FABQ consists of two subscales: The first subscale (items 1-5) is the Physical Activity subscale (FABQPA), and the second subscale (items 6-16) is the Work subscale (FABQW). The FABQ has 16 items each scored on a scale of 0-6 with higher scores reflecting higher levels of fear-avoidance beliefs (Waddell et al., 1993). The scale ranges from: Completely disagree; Unsure; Completely agree with values 0, 1, 2; 3, 4, 5; 6 respectively. On both subscales, high scores represent a greater tendency to avoid work/activity. The scale possesses good reliability and validity. The internal consistency (cronbach’s alpha) for the questionnaire was fair to excellent (FABQ-work: alpha = 0.84), an exception was the FABQ-physical activity subscale (alpha = 0.57). This is probably due to the low number of items in that scale. Pearson product-moment correlation coefficients for the two scales were 0.95 and 0.88. The past researches in clinical samples of chronic pain patients have found
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FABQ to be predictive of disability and work loss, subjective pain and depressive symptoms (Crombez et al., 1999; Fritz et al., 2001; Hadjistavropoulos & Craig, 1994; Waddell et al., 1993).

**Instructions were:** Here are some of the things which other patients have told us about their pain. For each statement please circle any number from 0 to 6 to say how much physical activity such as bending, walking or driving affect or would affect your pain. The scale ranges from: Completely disagree; Unsure; Completely agree with values 0, 1; 2; 3, 4, 5; 6.

2. **Tampa Scale for Kinesiophobia** (TSK: Vlaeyen et al., 1995)

**Description:** The TSK is a seventeen-item checklist based on subjective experience of injury and physical activity that measures fear of movement/(re)injury (Kori et al., 1990). The scale is based on the model of fear avoidance, fear of work related activities, and fear of movement/re-injury (Vlaeyen et al., 1995). The TSK has also been linked to elements of catastrophic thinking (Burwinkle et al., 2005). TSK is aimed at quantifying fear of re-injury due to movement and physical activity and was originally designed for patients with musculoskeletal pain. Each statement is provided with a 4-point Likert scale ranging from: (1) Strongly disagree, to (4) Strongly agree. The total score ranges between 17 and 68. A high value on the TSK indicates a high degree of kinesiophobia. The scale has good internal reliability and validity. The internal consistency of the TSK is good i.e., Cronbach’s α is 0.76 as reported in various researches (Crombez et al., 1999; French et al., 2007; Swinkels-Meewisse et al., 2003; Vlaeyen et al., 1995). The questionnaire has sufficient validity (Vlaeyen et al., 1995).

**Instructions were:** The following questions are a measure of fear of doing movements and exercises, please give answers honestly. Each statement is provided with a 4-point Likert scale ranging from: (1) Strongly disagree, (2) Disagree, (3) Agree, and (4) Strongly agree. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. And if you strongly disagree, circle SD.

V. **Psychological Measures:** The various psychological tests used in the study were:

1. State-Trait Anxiety Inventory (STAI: Spielberger et al., 1970)
2. Rosenberg Self-Esteem Scale (RSES: Rosenberg, 1965)
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4. Life Orientation Test-Revised (LOT-R: Scheier et al., 1994)
5. Social Support Questionnaire (SSQ-6: Sarason et al., 1987)
7. Perceived Stress Scale (PSS: Cohen et al., 1983)
8. Stress Symptoms Rating Scale (Heilbrun & Pepe, 1985)
10. Perceived Success (PS: Shields et al., 2005)

1. State-Trait Anxiety Inventory (STAI: Spielberger et al., 1970)

Description: The State Trait Anxiety Inventory is a self-report instrument comprised of two subscales of twenty-items assessing state and trait anxiety that differentiates between general feelings (trait anxiety; STAI-T) and current feelings of anxiety (state anxiety; STAI-S). This is one of the most frequently used instruments employed to measure anxiety (Chaplin, 1984; Tovilović et al., 2009). The State-Trait Anxiety Inventory (STAI) is comprised of separate self-report scales for measuring two distinct anxiety concepts: State Anxiety (A-State) and Trait Anxiety (A-Trait). The A-State scale (Form X-1) is given first, followed by the A-Trait scale (Form X-2), and this order is recommended when both scales are given together. Subjects responded to each STAI item by rating themselves on a 4-point scale: A-State scale from (1) Not at all, to (4) Very much so; and A-Trait scale from (1) Almost never, to (4) Almost always. The range of possible scores varies from a minimum score of 20 to a maximum of 80 on both the subscales. Higher scores indicate greater anxiety (Spielberger et al., 1970). The scale has good reliability and validity. Spielberger et al. (1970) found internal consistency estimates to range from 0.89 to 0.91 for the trait scale and 0.86 to 0.95 for the state scale. Test-retest reliability for the trait scale using a sample of high school and college students ranged from 0.65 to 0.86. The test has adequate content, concurrent and construct validity (Spielberger et al., 1995). The test has been successfully used in India by Sargunaraj et al. (1991), Abraham and Kumaraiah (1994), Mohan (2000, 2005, 2006), Boroumand (2002), Sehgal (2003), Tripathi (2008), Dhaliwal (2010) and Rampal (2011).

Instructions were: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel right now that is at this moment. There is no right or wrong answers. Do not spend too much time on any one
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statement but give the answer which seems to describe your present feelings best. Subjects responded to each STAI item by rating themselves on a four point scale. For State anxiety (Form X-1): (1) Not at all, (2) Somewhat, (3) Moderately so, and (4) Very much so. For Trait anxiety (Form X-2): (1) Almost never, (2) Sometimes, (3) Often, and (4) Almost always.

2. Rosenberg Self-Esteem Scale (RSES: Rosenberg, 1965)

Description: The Rosenberg Self-Esteem Scale is a ten-item self-report measure of global self-esteem, related to overall feelings of self-worth or self-acceptance. This is a measure of positive or negative perceptions about oneself, which is often referred to as global self-esteem. It evaluates a persons’ general self-worth, with 5 positive statements and 5 negative statements about a persons’ sense of self-respect and value. The scale is easy to administer (Schmitt & Allik, 2005). The items are answered on a 4-point Likert scale ranging from: (1) Strongly agree, to (4) Strongly disagree. The scores range from 0-30, with 30 indicating the highest possible score. Scores between 15 and 25 are within normal range; scores below 15 suggest low self-esteem. The higher the score, the higher is the self-esteem. The Rosenberg Self-Esteem Scale has demonstrated good reliability and validity across a large number of different sample groups. The scale has been validated for use with both male and female adolescent, adult, and elderly populations. The Rosenberg Self-Esteem Scale presented high ratings in reliability areas; internal consistency was 0.77, and minimum coefficient of reproducibility was 0.90 (Rosenberg, 1965). The good reliability was also reported by Ang et al. (2006); Furnham and Cheng (2000); Silber and Tippett (1965); and Shorkey and Whiteman (1978). The scale also demonstrates good concurrent, predictive and construct validity using known groups. This scale has been successfully used in India by Mohan (2003b), Mohan et al. (2000), Basak and Ghosh (2008), Joshi and Srivastava (2009), Rai et al. (2009), Rampal (2011) and Siddiqui (2011).

Instructions were: Below is a list of statements dealing with your general feelings about yourself. The scale includes values of: (1) Strongly agree, (2) Agree, (3) Disagree, and (4) Strongly disagree. If you strongly agree, circle SA. If you agree with the statement, circle A. If you disagree, circle D. And if you strongly disagree, circle SD.

**Description:** Generalized Self-Efficacy Scale is a ten-item self-report measure to assess optimistic self-beliefs used to cope with a variety of demands in life. It represents the belief that one can perform a novel or a complex task, or copes with hardship in various domains of human performance and evaluates self-efficacy, i.e., the belief that one’s actions are responsible for successful outcomes. Perceived self-efficacy is an operative construct, i.e., it is related to subsequent behavior and, therefore, is relevant for clinical practice and behavior change. Respondents made responses on a 4-point Likert scale ranging from (1) Not at all true, to (4) Exactly true. The final composite scores range from 10 to 40. Higher scores indicate stronger subjects’ belief in self-efficacy. The high validity, stability, construct validity, convergent, criterion-related, discriminant validity and reliability of the scale have been demonstrated in many studies across various research contexts and ethnically diverse populations (Leganger et al., 2000; Luszczynska et al., 2005b; Schwarzer et al., 1999). The scale was found to be configurally equivalent across 28 nations, and it forms only one global dimension (Leganger et al., 2000). Cronbach alpha ranges from 0.75 to 0.94 across a number of different language versions (Luszczynska et al., 2005a; Rimm & Jerusalem, 1999). The test-retest reliability as expressed by the correlation (Pearson’s r) was 0.82 (Leganger et al., 2000). This scale has been used in India by Sharma (2005), Bala (2007), Hoabam (2007), Kaur (2007), Dhaliwal (2010) and Rampal (2011).

**Instructions were:** The following questions are a measure to assess optimistic self-beliefs to cope with a variety of difficult demands in life. Responses are made on a 4-point Likert scale which comprised of: (1) Not at all true, (2) Hardly true, (3) Moderately true, and (4) Exactly true.

4. **Life Orientation Test-Revised** (LOT-R: Scheier et al., 1994)

**Description:** Optimism was measured using the LOT-R scale which is a ten-item self-report measure of which six-items are used to derive an optimism score and four-items are filler items that are not used in the scoring. It assesses individual differences in generalized optimism versus pessimism. It is a measure of expectations about positive outcomes in general. Out of the 6 items that are scored, 3 items are keyed in positive direction and 3 items are keyed in negative direction. Respondents responded to the statements by indicating the extent of their agreement on a 5-point
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Likert scale, ranging from (0) I disagree a lot, to (4) I agree a lot. The scores in principle can range from 0 to 24, with high scores representing greater optimism, low pessimism and low score indicating high pessimism. It is a reliable and valid measure of dispositional optimism and pessimism (Scheier et al., 1994; Schou et al., 2004). The cronbach alpha ranges from 0.78-0.80, which shows that LOT-R exhibits an acceptable level of internal consistency. The test-retest correlations range from 0.60 to 0.80. This has been reported by Burke et al. (2000); Peterson and Seligman (2004); and Scheier et al. (1994). LOT-R scores have yielded evidence of internal consistency, temporal stability, convergent validity and construct validity as reported by Burke et al. (2000); Heinonen et al. (2006); Christopher and Seligman (2004); Scheier and Carver (1992); and Scheier et al. (1994).

Instructions were: Please be honest and accurate as you can throughout. Try not to let your response to one statement influence your responses to other statements. There are no correct or incorrect answers. Answer according to your own feelings, rather than how you think most people would answer. Respondents make responses to the statements by indicating the extent of their agreement on a 5-point Likert scale, ranging from: (0) I disagree a lot, (1) I disagree a little, (2) I neither agree nor disagree, (3) I agree a little, and (4) I agree a lot.

5. Social Support Questionnaire (SSQ-6: Sarason et al., 1987)

Description: The Social Support Questionnaire (SSQ-6) quantifies the availability and satisfaction with social support accessible to a subject. It measures two dimensions of social support: availability and satisfaction. The SSQ-6 is a six-item self administered scale which not only measures the construct of perceived social support and/or satisfaction with social support but also indicates the change in sources of social support or change in satisfaction with those sources. It has two subscales with six-items each: SSQ-N (Network size) and SSQ-S (Satisfaction) subscales. Each question requires two part answer: respondents were asked to list people to whom they could turn and on whom they could rely in specified set of circumstances (SSQ-N; availability of support) and to rate how satisfied they were with the available support (SSQ-S; satisfaction). The satisfaction scale is same for each item and uses a 6-point scale ranging from: (6) Very satisfied, to (1) Very dissatisfied. The mean score of six-items gives the SSQ-S (satisfaction) score. The maximum mean value for SSQ-N is 54 and the maximum mean value for SSQ-S is 36. Higher scores indicate...
greater social support. The scale is psychometrically sound and when time of administration is under consideration, it is an acceptable substitute for the SSQ (longer version). Both the test-retest reliability and the internal reliability (coefficient α) were highly satisfactory from psychometric viewpoint. The alphas of 0.82-0.96 for both number and satisfaction and test-retest reliabilities of 0.84-0.89 have been reported by Rascale et al. (2005); and Sarason et al. (1987). The evidence of discriminative validity and extensive convergent validity has also been reported (De Man et al., 1986).

**Instructions were:** For SSQ-N (Network size): First, the respondents are asked to list the names of supporters in initials for each of six items. In addition, subjects are asked to note in brackets their relationship with that person. For SSQ-S (Satisfaction): The respondents are asked to indicate or rate how satisfied they are with the available support (satisfaction). The satisfaction scale is same for each item and uses a 6-point scale ranging from: (6) Very satisfied, (5) Fairly satisfied, (4) A little satisfied, (3) A little dissatisfied, (2) Fairly dissatisfied, and (1) Very dissatisfied.


**Description:** The Buss-Perry Aggression Questionnaire is a twenty nine-item questionnaire distributed unequally among four scales: Verbal Aggression, Physical Aggression, Anger, and Hostility. The respondent assigns a number ranging from 1 to 5 with (1) Extremely uncharacteristic of me, to (5) Extremely characteristic of me. This questionnaire yields a total aggression score and four subscale scores: Physical Aggression, Verbal Aggression, Anger, and Hostility. The scale and all the subscales have acceptable psychometric properties. The internal consistency coefficients (Cronbach’s alpha) of the BPAQ range from 0.72 to 0.89. The Cronbach’s alpha values of each subscale were: Physical (0.85), Verbal (0.72), Anger (0.83), and Hostility (0.77) (total score = 0.89). The test-retest correlations were: Physical (0.80), Verbal (0.76), Anger (0.72), and Hostility (0.72) (total score = 0.80) (Buss & Perry, 1992; Harris, 1997). Validity is supported by acceptable correlations with other self-report measures of aggression and with peer nominations of aggressive behavior (Buss & Perry, 1992; Harris, 1997). There were strong correlations between the Physical, Verbal, Anger and Hostility subscales of the BPAQ. These were highly significant (p≤.001) and ranged from, r = 5.47 to 0.61 (Archer & Webb, 2006).
Method

Instructions were: Please rate each of the following items in terms of how characteristic they are of you. Use the following scale for answering these items: (1) Extremely uncharacteristic of me, (2) Somewhat uncharacteristic of me, (3) Neither uncharacteristic nor characteristic of me, (4) Somewhat characteristic of me, and (5) Extremely characteristic of me.

7. Perceived Stress Scale (PSS: Cohen et al., 1983)

Description: The Perceived Stress Scale is a fourteen-item self-report instrument that measures the degree to which situations in one’s life are appraised as stressful. It is the most widely used psychological instrument for measuring the perception of stress. The scale includes a number of direct queries about current levels of experienced stress. The questions in the PSS ask about feelings and thoughts during the last month. The PSS investigates the relation between appraised stress and health through general perception (Cohen et al., 1983). For each question a 5-point scale was used ranging from (0) Never, to (4) Very often. The total score ranges between 0 and 56. A higher score indicates a higher level of perceived stress. The scale has acceptable psychometric properties. It possesses adequate test-retest reliability, internal consistency, and concurrent and predictive validity. The scale has internal reliability = 0.75. The coefficient alpha reliability of 0.84, 0.85, and 0.86 were reported in the samples tested. Test-retest reliability ranges from 0.55-0.85 (Cohen et al., 1983). The coefficient alpha values for the positive and negative subscales were 0.86 and 0.77 for PSS-14 (Remor, 2006). The scale correlates in a predicted way with other measures of stress (job responsibilities scale, life events scales). The concurrent and predictive validity ranges from 0.52-.070 (Cohen et al., 1983). The test has been successfully used in India by Opara (1999), Mohan (2000, 2006), Kaur (2007), and Rampal (2011).

Instructions were: The questions in this scale ask you about your feeling and thoughts and perceived level of stress over the last year. Please circle a number for each question according to the following scale: (0) Never, (1) Almost never, (2) Sometimes, (3) Fairly often, and (4) Very often.

8. Stress Symptoms Rating Scale (Heilbrun & Pepe, 1985)

Description: The Stress Symptoms Rating Scale is a twenty five-item checklist of symptoms selected from the longer list of 31 ‘self-observable’ signs of stress by Selye
Method

(1976), critical for use in subjects as informants regarding their own level of stress. The stress symptoms include somatic responses (like pounding of heart), disrupted sleeping and other behavioral symptoms of stress (like irritability). The rating format of the stress symptom checklist required subjects to estimate the frequency of each symptom over the past year on a 6-point rating scale ranging from: (0) Not at all in the past year, to (5) More than once per day on the average. The overall level of stress score represented the cumulative ratings over the 25 symptoms and ranged from 0 to 96. The scale has good psychometrics. The reliability (alpha coefficient) of the stress ratings has been reported to be high (r = 0.93). Construct validity and good correlations with other scales has been reported by Heilbrun (1988); Heilbrun and Pepe (1985); Heilbrun and Putter (1986); Heilbrun and Renert (1986); Heilbrun and Friedberg (1987); Heilbrun and Worobow (1990). The test has been successfully used in India by Saini (1998), Opara (1999), Shourie (2003), Sharma (2005), Mohan (2006), Salariya (2006), Bala (2007), Hoabam (2007), Kaur (2007), Dhaliwal (2010), Yadav (2010), and Khurana (2011).

Instructions were: Indicate your answer by circling a number against each item. Be sure to answer every item. Rate the frequency of each item for the previous year on the following scale: (0) Not at all in the past year, (1) Less than one per month on the average, (2) Between once per week and once per month on the average, (3) Between once per day and once per week on the average, (4) About once per day on the average, and (5) More than once per day on the average.


Description: The scale is a self-administered questionnaire and consists of nineteen-items to assess the constructs of threat appraisal, i.e., perceived susceptibility to re-injury, retarded rehabilitation, perceived severity of injury, and coping appraisal of self-efficacy, treatment efficacy and outcome value. The 19 items are: 1-5 items representing susceptibility, 6-9 items representing treatment efficacy, 10-13 items representing self-efficacy, 14 item representing rehabilitation value, and 15-19 items representing severity. A 7-point Likert scale is used for responses, ranging from (1) Very strongly disagree, to (7) Very strongly agree. The psychometric properties of the SIRBS are good with substantial amount of reliability and validity. The internal consistency values for each subscale have been good as shown by the alpha
coefficients for the subscales: Susceptibility (0.83-0.84); Severity (0.52-0.63); Self-efficacy (0.79-0.91); and Treatment Efficacy (0.83-0.85) (Grindley et al., 2008; Taylor & May, 1996). The scale has good concurrent validity and the SIRBS subscales showed moderate inter-correlation of r = 0.51 (Brewer et al., 2003).

Instructions were: The words ‘rehabilitation programme’ should be read to mean any advice that you are given in order to assist the rehabilitation of your injury. Please respond to the following statements using the scale shown below: (1) Very strongly disagree, (2) Strongly disagree, (3) Disagree, (4) Neither agree nor disagree, (5) Agree, (6) Strongly agree, and (7) Very strongly agree.

10. Perceived Success (PS: Shields et al., 2005)

Description: The perception of success, which represents a subjective outcome, is not considered equivalent and similar to rate of adherence/dropout which represents an objective outcome. These perceived outcomes play an important role in determining social cognitions and attributions than the objectively defined successes. Perceptions of success have been shown to be positively related to adherence, affect, effort, and expectations (Courneya & McAuley, 1996). The Perceived success was measured by one-item measure—“Were you successful or unsuccessful in adhering to your exercise program?” (Courneya & McAuley, 1996; Shields et al., 2005). For the present study, this one-item measure was reframed as following: How much success you achieved in adhering to exercise program? The item is a measure of perceived success while adhering to the exercise program. The scale has a range from 0 to 10. The psychometric properties of the scale have been reported to be adequate with substantial amount of reliability and validity (Shields et al., 2005).

Instructions were: The following question is a measure of perceived success while adhering to your exercise program, please give answer honestly on a scale of ten ranging from 0 to 10.

DESCRIPTION OF MEASUREMENT OF VARIABLES

Heart Rate: Heart Rate was measured by a POLAR Heart Rate Monitor S410. The equipment was manufactured by POLAR Electro, Biometrics, Inc., USA. It has two components: chest belt and wrist watch. Protocol has been set for recording the heart rate and the data is transferred to the computer with the use of PC suite. The subject was asked to wear the chest belt of device to monitor the heart rate and transfer it to
wrist watch which analyses and gives the average value of heart rate for every 5 seconds. Later, the data was transferred to the computer and analysed.

**Blood Pressure:** Blood Pressure was measured using a Standardized Mercury Sphygmomanometer of Pagoda Company (ISI approved model, Elite Surgical Industries, New Delhi) and a Stethoscope (Micro-Tone model, Malhotra Surgical Industries, Delhi). The method used to measure the blood pressure was after Chamberlain and Ogilive (1974). The subject was in supine lying position. The manometer cuff was applied closely to the upper arm with the lower end placed not less than 2.5 cm distal to the cubital fossa. The cuff was inflated to a pressure of 30 mm Hg above the level at which the radial pulsation could no longer be felt. The stethoscope was then placed lightly over the brachial artery. The pressure in the cuff was then lowered, gradually until the first sound was heard; the corresponding reading in the manometer scale was the Systolic Blood Pressure (SBP). The pressure was decreased in the cuff until the sounds became suddenly inaudible; the corresponding reading was the Diastolic Blood Pressure (DBP).

**Assessment and Evaluation of Injuries:** The assessment of injuries was done using an evaluation proforma which was divided into two parts: First part included demographic questions like name, age, sex, sport, level of participation, drug abuse, date of injury, history of injury and the second part included assessment of injury involving observation, palpation, range of motion, manual muscle testing and special diagnostic tests.

The muscle strength was tested by **Manual Muscle Testing** (Kendall et al., 2005).

The joint range of motion was measured using **Goniometer** (An ISO 9001: 2008 certified, India Medico Instruments, New Delhi). The procedure for goniometer testing was in accordance with Cynthia and White (2009).

In case of **Upper Limb Injury**, the assessment of upper limb was done using Upper Extremity Assessment Questionnaire and the disability associated with upper limb injury was assessed by Disabilities of the Arm, Shoulder and Hand Questionnaire (DASH: Hudak et al., 1996).

In case of **Lower Limb Injury**, the assessment of lower limb was done using Lower Extremity Assessment Questionnaire and the disability associated with lower
**Method**

limb injury was assessed by Lower Extremity Functional Scale (LEFS: Binkley et al., 1999).

In case of **Back Injury**, the assessment of back was done using **Back Assessment Questionnaire** and the disability associated with back injury was assessed by **Modified Oswestry Low Back Pain Disability Questionnaire** (Modified OSW: Fritz & Irrgang, 2001).

**Experimental Set-Up:** For smooth execution of the experiment the following work stations were established:

I. Physiological station
II. Rehab station

**I. Physiological station:** It was set up in a well lit room. It was equipped with one couch, two stools, one table, one chair, sphygmomanometer, stethoscope, heart rate monitor, weighing apparatus, and height measurement by anthropometer. Recording of physiological parameters was done in this station. Before taking the readings, the subject was made to lie supine on the couch for five minutes and then blood pressure and heart rate were measured. All these recordings on an average took three minutes. After this, the pre-assessment was conducted which consisted of injury assessment in detail and filling of the battery of questionnaires. Further, after giving intervention, the post assessment of all the variables was also done.

**II. Rehab station:** This was set up in the Physiotherapy Center, Health Center, Guru Nanak Dev University, Amritsar. After the subject was diagnosed by the Orthopaedician, subject was referred to the Physiotherapy center where intervention was administered.

**PROCEDURE**

The study was conducted in three phases from the time of recruitment of subject. Description of these phases is as follows:

**Phase I:** The subject was diagnosed by the Orthopaedician, and referred to the Physiotherapy Center. The subjects who met the inclusion criteria and gave voluntary consent after being informed by the researcher about the study were recruited. At first, the subjects filled the informed voluntary consent form. After this process of selection, the subjects were allocated to either of the groups at random. The subjects
underwent pre-participation screening, injury assessment, and filled the self-report measures. Thus, this phase consisted of preliminary examination.

**Pre-participation screening:** The resting heart rate and blood pressure was recorded in the supine position. Thereafter, the height and weight of the subject was measured in the standing position.

**Phase II:** This is followed by intervention to both the groups as mentioned below:

- **Group A:** Control group received only Physical Therapy.
- **Group B:** Experimental group received a combined intervention of Physical Therapy and Psychological Counseling. The psychological counseling was given for 30 minutes duration for 10 days on every alternate day. The counseling for rehabilitation was done by the researcher (Sports Physiotherapist) itself (Wiese-Bjornstal & Smith, 1993).

The **key issues addressed in the counseling** included: the subjects’ recent history of injury, educating the injured athlete about all aspects of injury, the benefits of treatment compliance, providing an opportunity to voice needs and concerns, behavioral rehearsals, assertiveness training, coping with frustration, positive beliefs and expectations, coping with pain, social support, develop realistic goals and strategies, and emphasis upon identifying and preventing potential interruptions to rehabilitation (Sheedy et al., 2000).

**Phase III:** In this phase, all the parameters were measured again at post intervention.

The random allocation into two equal groups with intervention was as follows:
**Method**

**THE SPECIFIC AIM AND CONTENT OF THE COUNSELING**

1. To develop an optimistic approach towards rehabilitation: The recommendations and benefits of physical activity were emphasized. The misconceptions about physical activity were corrected and the practical steps to overcome barriers to activity were encouraged.

2. To increase regularity and involvement in treatment: The subject was advised to recognize and overcome interruptions to activity routine, making activity more practical by establishing routine, and to develop realistic goals.

3. To handle fear related to re-injury: The subject was advised to place greater emphasis upon identifying and preventing potential interruptions to activity (Sheedy et al., 2000).

**DETAILED DESCRIPTION OF THE STEPS STIPULATED FOR THE COUNSELING SESSION**

Following steps were formulated for the counseling session with the injured athlete:

1. Informed consent: The informed consent of the subject was taken before starting the therapy.

2. Educating the injured athlete: The subject was educated regarding the nature and severity of injury, effects of injury, proposed treatment plan, prognosis, potential long-term complications, if any, and recovery process.

3. Effective communication: The researcher established clear and effective communication with the subject in order to aid transference and counter transference. This helped in communicating the appropriate information to the subject. This also assisted in developing interpersonal relationship required for Therapeutic Counseling Relationship. The subject was asked to rephrase the whole experience. This also enabled the researcher to establish trust, rapport with the subject and be empathetic towards his problem.

4. Obtaining information: The information pertaining to the psychological responses to trauma, healing and recovery, and to gain an understanding of the psychological status of the subject, as well as the subjects’ readiness for return to competition was gauged.

5. Recognition: The important factors to be recognized and dealt with were pressures faced by the subject regarding return to play, fear of re-injury, fear...
related to pain, anxiety, stress, worry about goal attainment, boredom with treatment, lack of support, uncertainty about coping abilities, extent of damage due to injury and rehabilitation time, success rate, possible negative consequences, and desire to give-up as well as barriers or difficulties faced by the subject with regards to rehabilitation.

6. Problem-Solving approach: Subject was encouraged and motivated regarding his rehabilitation protocol, fears were alleviated as reasonable as possible, questions from the subject were entertained, examples of the athletes’ who recovered successfully from injuries were given like Sachin Tendulkar, reassurance was given to the subject regarding the treatment outcome, clarifications were made to subject such as expectations in terms of pain management, mobility and duration of rehabilitation.

7. Goal-Setting: The subject was encouraged to set realistic short-term and long-term goals, more focus was placed on the short-term goals, subject was instructed to refocus on goal achievement to date, evaluation of goal attainment, and revisions of goals, if required.

8. Reassurance: The subject was reassured that plateaus are a part of rehabilitation. Emphasis upon identification and prevention of potential interruptions to rehabilitation was stressed.

9. Refocus: The subject was advocated to refocus on his strengths to create a positive attitude as well as to break the problem cycle which is centered on negative perceptions. For example, compliment was given to subject about his dedication towards the rehabilitation adherence.

10. Social support: The subject was encouraged to develop and extend the support from family, coach, team-mates and significant others which serve the subject in a positive manner and thus aid in recovery process.

11. Confidence: The subject was motivated to enhance self-confidence.

12. Voice concerns: The subject was given opportunity to voice needs and concerns to discuss his feelings, concerns, or any frustrations.

13. Behavioural rehearsals: The subject was prepared to cope with any disturbing situation by practicing the concerning thought or rehearsing the desired behaviour.

14. Assertiveness training: The subject was explained the necessity to express his thoughts in a constructive manner, while not getting argumentative/aggressive.
Method

15. Cope with frustrations: The subject was encouraged to express himself and list the resources to seek support, as also to acknowledge the potential barriers and ways to overcome those barriers.

16. Cope with pain: For this, the subject was motivated to develop positive attitude and generate calming picture/imagination of recovery in mind.

17. Thought stoppage: The subject was advised to recognize the negative self talk, inculcate and enhance positive beliefs and expectations, make use of positive self-talk, and task-oriented thoughts.

18. Instill optimism: The subject was made to remember his personal accomplishments, was provided verbal persuasions, and was encouraged to develop a positive attitude towards rehabilitation.

(Ray & Wiese-Bjornstal, 1999; Wagman & Khelifa, 1996).

EXCERPTS FROM THE COUNSELING SESSION

The questions asked by the researcher, concerns raised by the subject and suggestions to channelize those feelings were:

Questions asked by the researcher to the subject:

1. How did the injury happen?
2. Do you understand the nature and severity of your injury?
3. Do you understand the need and scope of your rehabilitation program?
4. Do you understand the pace of your rehabilitation program?
5. Do you believe in your rehabilitation protocol?
6. Are you clear about your commitment towards your treatment protocol?
7. What meaning you have assigned to your injury and to your involvement in sport?
8. What are your fears and emotions concerning injury and recovery process?

Subjects’ concerns related to his injury:

1. How long will it take for complete recovery?
2. Why me?
3. Now what?
4. Why do all bad things happen to me?
5. Will I be able to perform as I did before acquiring injury?
6. I don’t think I can do this?
7. Will I be re-injured once I go back to practice?
**Method**

To channelize feelings: the role of researcher

1. It is natural to be upset, but you must turn this feeling into the positive one by motivating yourself for treatment compliance.

2. Undoubtedly, you are anxious and worried about your injury, recovery and your future playing status; but there is need to use your worries creatively to encourage and motivate you for rehabilitation.

3. Injuries occur randomly, and may occur to anyone. It has occurred to you, that’s unfortunate, but let’s make the best of it and appraise new experiences. Learn few new things about yourself, and return to play better than before. In past other injured athletes have also done it!

4. At times, bad things happen to good people. But your need is to focus on our present rehabilitation plans, and motivate yourself to return to and be able to perform at the pre-injury level/or even better in the long run.

5. Develop positive attitude towards your goals. This is just a temporary setback, but once your rehabilitation is complete, you will be able to achieve your pre-injury status.

6. When you encounter negative thoughts, then say loudly, “STOP”......! I will be able to handle it...I will work hard to return! (Ray & Wiese-Bjornstal, 1999; Wagman & Khelifa, 1996).

**PRECAUTIONS PRACTICED WHILE DELIVERING COUNSELING**

The following precautions were followed while counseling sessions were delivered to the subjects: Confidentiality was kept, must listen intently; and to avoid conflict of interest, the researcher made the position clear by expressing the extent of the services while delivering counseling (Ray & Wiese-Bjornstal, 1999; Wagman & Khelifa, 1996).

**SCORING AND STATISTICAL ANALYSIS**

Scoring for all the tests was done with the help of scoring keys as per the instructions given in the scoring manuals of the tests. The raw scores were then tabulated and subjected to various statistical analyses.
Method

Keeping in view the objectives of the study, the data was processed applying Mean, Standard Deviation, Paired t-test, and Independent t-test with the help of SPSS software. Statistical analysis was performed using the Statistical Package for Social Sciences (SPSS, version 20.0/Windows; Copyright © SPSS Inc.).