

# Developing and Evaluating Innovative Rehabilitation Programs for Specific Populations Such as Veterans, Athletes, or Individuals with Traumatic Brain Injuries

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## Abstract

## Original Research Article

This study aims to develop and evaluate innovative rehabilitation programs that will be to the unique needs of veterans, athletes, and individuals with traumatic brain injuries. These classes of persons often require specialized care to address physical, cognitive, and psychological challenges of their present situations. Five research questions and five hypotheses were used to the study. Descriptive survey research was used. Three representative case studies were presented, each focusing on a specific population and rehabilitation program: (i) a comprehensive cognitive-behaviour intervention for veterans with combat-related traumatic brain injury (ii) a sports-specific return-to-play for athletes with persistent post-concussive symptoms; and (iii) an integrated, multidisciplinary rehabilitation program for individuals with severe traumatic brain injury. A self-structures questionnaire titled: Developing and evaluating innovative rehabilitation programs for specific populations inventory (DEIRPSPI) was used in gathering the data. The instrument was validated by the researcher's experts in Measurement and Evaluation. The reliability of the instrument was established through test re-test method. The reliability indices obtained were; PSV ( $r = 0.86$ ), DA ( $r = 0.75$ ) and MI ( $r = 0.96$ ). Pearson Product Moment Correlation (PPMC) was used to answer and test the research questions and hypotheses. The results of the analyses of the hypotheses were tested for statistical significance at .05 alpha levels. From the findings, it was found that each study details the program's development, implementation, and evaluation, highlighting the innovative aspects of the intervention and their impact on participants' physical, cognitive, and psychosocial functioning. The findings underscore the importance of specific needs of these populations and suggest promising avenues for future research and clinical practice.

**Keywords:** Traumatic Brain Injury, Rehabilitation, Veterans, Athletes, Cognitive, Behavioural Intervention, Return-To-Play Protocol, Multidisciplinary Rehabilitation.

## INTRODUCTION

The development and implementation of innovative rehabilitation programs for specific populations, such as veterans, athletes, and individuals with traumatic brain injuries, is essential to address the unique challenges and needs of these groups, while there has been considerable research on various aspects of TBI rehabilitation, there is a need to focus on specified interventions that can maximize clinical outcomes and improve the quality of life for these population (Cooper et al., 2015). This study aims to contribute to this area by presenting three case studies that demonstrate the development, implementation, and evaluation of innovative rehabilitation programs for veterans, athletes, and individuals with traumatic

brain injuries.

Traumatic brain injury, a significant public health concern, affects millions of individuals worldwide (Centers for Disaster Control and prevention, 2021). Veterans, particularly those with combat-related injuries, are at a heightened risk of traumatic Brain injuries due to exposure to blast-related events, falls, and motor vehicle accident (Department of Defense, 2020). Athletes, especially those engaged in high-contact sport, are also vulnerable to traumatic Brain Injury, with an increased risk of sustaining sports-related concussions (Arbour-Nicitopoulo, 2020). Lastly, individuals in the general population who experience traumatic brain injury may encounter difficulties in various aspects of their lives, including

physical cognitive, and psychosocial functioning (Van der Feltz-Cornelis et al., 2019).

Giving the complexities and unique needs of those populations, rehabilitation programs must be specifically designed and evaluated to ensure their effectiveness. The three case studies presented in this study focus on the following rehabilitation programs:

1. A comprehensive cognitive-behavioural intervention for veterans with combat-related traumatic brain injury (Iverson et al., 2021).
2. A sports-specific return –to-play protocol for athletes with persistent post-concussive symptoms (Johnstone et al., 2020).
3. An integrated, multidisciplinary rehabilitation program for individuals with severe traumatic brain injury (Moreau, et al., 2020).

These case studies highlight the importance of a specific rehabilitation programs to the important needs of specific populations and provide valuable insights into the development, implementation, and evaluation of innovative interventions for veterans, athletes, and individuals with traumatic brain injury.

## Literature Review:

In recent times, the importance of specific rehabilitation programs for specific populations has been increasingly recognized, particularly for veterans, athletes, and individuals with traumatic brain injuries. The following literature review highlights various case studies that demonstrate innovative approaches to rehabilitation for these groups, emphasising the needs for specialised interventions to optimise clinical outcomes.

Considering veterans with combat- related traumatic brain injuries as case study one; A study by Cooper et al., (2015) emphasised the importance of cognitive rehabilitation and behavioural health interventions for military service members and veterans with persistent post-concussive symptoms. The researchers conducted a systematic review of the literature, revealing the benefits of targeted rehabilitation strategies for this population (.Cooper et al., (2015).

Considering athletes with sports-related concussions as second case study; in a systematic review by van der Feltz-Cornelis et al. (2019), the effectiveness of sport-related concussion rehab for post-concussion symptoms in athletes is examined. The findings underscore the importance of specific rehabilitation programs for athletes, considering their importance needs and the specific demands for their sport.

Then individuals with severe traumatic brain injuries as the third case study; Moreau et al., (2020) explored rehabilitation strategies for military service members and veterans who have experience amputation due to traumatic injuries. Their work highlights the necessity of multidisciplinary approaches to rehabilitation, addressing both physical and psychological aspects of recovery.

These case studies in summary, emphasise the importance for innovative and specialised rehabilitation programs for specific populations, including veterans, athletes, and individuals with traumatic brain injuries. As demonstrated by the study, specific interventions that consider the unique challenges and needs of these groups can lead to improved clinical outcomes and enhance quality of life of these populations.

Based on these case studies, a comprehensive rehabilitation program for veterans, athletes, and individuals with traumatic brain injuries should incorporate the following key elements:

1. **Individualised assessment and goal setting:** a thorough evaluation of each individual's physical, cognitive, and psychological functioning should inform personalised rehabilitation goal and strategies (Cooper et al, 2015).
2. **Multidisciplinary approach:** Rehabilitation programs should involve a team of professionals with diverse expertise, including physical therapists, occupational therapists, psychologist, and neurologists, among others (Van der Feltz-Cornelis et al., 2019).
3. **Integration of cognitive and behavioural interventions:** Addressing cognitive deficits and psychological aspects of recovery is important for optimising outcomes, particularly for individuals with traumatic brain injuries of combat-related injuries (Moreau et al., 2020).
4. **Sports-specific considerations:** For athletes, rehabilitation programs should consider the unique demands of their sport and incorporate specific interventions to facilitate safe return-to-play (Van der Feltz-Cornelis et al., 2019).
5. **Continuous monitoring and evaluation:** Regular assessments of progress and outcomes should inform adjustments to the needed (Cooper et al, 2015).

## Statement of the Problem:

The complexity and diversity of traumatic brain injuries present significant challenges in designing effective rehabilitation programs for specific populations such as veterans, athletes, and individuals with traumatic brain injuries.

Each of these groups has unique needs, experiences, and environmental factors that must be considered when developing specific interventions to optimise recovery and enhance quality of life.

Veterans, particularly those with combat-related traumatic brain injuries, often experience a combination of physical, cognitive, and psychological impairments that require a comprehensive and multidisciplinary approach to rehabilitation (Cooper et al., 2015). Additionally, athletes with sports-related concussions need specialised care to address their injury profile and ensure safe return-to-play (Van Felz-Cornelis et al., 2019).

Individuals with severe traumatic brain injuries resulting from various causes also face numerous challenges during the rehabilitation process, including physical and cognitive deficits, emotional distress, and social integration issues (Moreau et al., 2020). The development of innovative and effective rehabilitation programs for these specific populations is critical to promote recovery and improve overall well-being.

Current study highlights the importance of specific rehabilitation programs that consider the importance needs and contexts of veterans, athletes, and individuals with traumatic brain injuries, this includes integrating cognitive and behavioural interventions, adopting multidisciplinary approaches, and considering sport-specific factors for athletes (Cooper et al., 2015); van der Feltz-Cornelis et al., 2019; Moreau et al., 2020).

Considering these populations, to address the challenges and optimise rehabilitation outcomes, it is essential to develop and evaluate innovative, targeted interventions for these specific population. By understanding their unique needs and leveraging the latest study, clinicians can design and implement specific rehabilitation programs that promote recovery, enhance quality of life, and facilitate successful reintegration into daily activities and sports.

## Research Question

1. To what extent does effective multidisciplinary approaches for rehabilitating veterans is related to their needs?
2. To what extent does design and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery?
3. To what extent does innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain

injuries related is related to integration into rehabilitation programs?

4. To what extent does unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs?
5. To what extent do specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries?

## Hypotheses

1. There is no significant relationship between the most effective multidisciplinary approaches for rehabilitating veterans with combat-related traumatic brain injuries, considering their unique physical, cognitive, and psychological needs.
2. There is no significant relationship between the design and evaluate sport-specific rehabilitation programs for athletes and sports-related concussion to ensure a safe return-to-play and optimal recovery.
3. There is no significant relationship between the innovative interventions to improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries, and how these interventions integrated into existing rehabilitation programs.
4. There is no significant relationship between the unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries which accounted in the development and evaluation of a specific rehabilitation programs.
5. There is no significant relationship between specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries.

## Research Question One

To what extent does effective multidisciplinary approaches for rehabilitating veterans is related to their needs?

## Hypothesis One

There is no significant relationship between effective multidisciplinary approaches for rehabilitating veterans to their needs.

**Table 1.1:** PPMC Analysis on the Relationship between Effective Multidisciplinary Approaches for Rehabilitating Veterans to their needs.

Variables	Parameters			Decision
		Multidisciplinary approach for rehabilitation	Veteran Needs	
Multidisciplinary approach for rehabilitation	Pearson Correlation	1	.789**	Significant
	Sig. (2-tailed)		.000	
	N	450	450	
Veteran	Pearson Correlation	.789**	1	
	Sig. (2-tailed)	.000		
	N	450	450	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In answering research question one, Table 1.1 shows the extent to which Multidisciplinary approach for rehabilitation relates to Veteran Needs. The result revealed that the extent to which multidisciplinary approach for rehabilitation relate to veteran was positive and high ( $r = .79$ ). The implication of this result was that the more multidisciplinary approach for rehabilitation the veteran needs and vice versa.

In testing null hypothesis one, Table 4.1 show the significant level of the relationship between multidisciplinary approach for rehabilitation and veteran needs. The result revealed that there is a positively high and significant relationship between multidisciplinary approach for rehabilitation and veteran needs ( $r_{(450)} = .79$ ,  $p = .000 < .05$ ), leading to the rejection of null hypothesis one at the 0.05 significance level. The result was that there was a significant relationship between multidisciplinary

approach for rehabilitation and veteran needs.

### Research Question Two

To what extent does design and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery?

### Hypothesis Two

There is no significant Relationship between design and evaluate sport-specific Rehabilitation programs for athletes and safe return-to-play and optimal recovery among athletes.

**Table 1.2:** PPMC Analysis on the Relationship between design and evaluate sport-specific Rehabilitation programs for athletes and safe return-to-play and optimal recovery among athletes.

Variables	Parameters			Decision
		Rehabilitation programs for athletes	safe return-to-play and optimal recovery	
Rehabilitation programs for athletes	Pearson Correlation	1	.561**	Significant
	Sig. (2-tailed)		.000	
	N	450	450	
safe return-to-play and optimal recovery	Pearson Correlation	.561**	1	
	Sig. (2-tailed)	.000		
	N	450	450	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 1.2 showed the relationship between design and evaluate sport-specific Rehabilitation programs for athletes and safe return-to-play and optimal recovery among athletes as  $r = .56$ . The result of the study showed that there was a positive but moderate relationship between designs and evaluate sport-specific Rehabilitation programs for athletes and safe return-to-play and optimal recovery for athletes. This result revealed that as scores from design and evaluate sport-specific Rehabilitation programs for athlete increases, scores from safe return-to-play and optimal recovery also increases moderately among athletes and vice versa.

Furthermore, Table 1.2 also showed that the relationship between design and evaluate sport-specific Rehabilitation programs for athletes and safe return-to-play and optimal recovery among athletes was significant at 0.05 level of significance ( $r_{(450)} = .56, p = .000 < .05$ ) hence, the rejection of the null hypothesis. The result was that there was a significant relationship between design and evaluate sport-specific

Rehabilitation programs for athletes and safe return-to-play and optimal recovery among athletes.

### Research Question Three

To what extent does innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries is related to integration into rehabilitation programs?

### Hypothesis Three

There is no significant relationship between innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe traumatic brain injuries.

**Table 4.3:** PPMC Analysis on the Relationship between innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe traumatic brain injuries.

Variables	Parameters	Innovative interventions	Individuals with severe traumatic brain injuries	Decision
Innovative interventions	Pearson Correlation	1	.882**	Significant
	Sig. (2-tailed)		.000	
	N	450	450	
Individuals with severe traumatic brain injuries	Pearson Correlation	.882**	1	Significant
	Sig. (2-tailed)	.000		
	N	450	450	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

In answering research question three, Table 1.3 shows the extent to which innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe traumatic brain injuries .The result revealed that the extent to which innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe traumatic brain injuries was very high and positive ( $r =$

.88). The implication of the result was that as scores in Innovative interventions level increases very highly, scores Individuals with severe traumatic brain injuries was also increasing very highly and vice versa.

The result concerning the null hypothesis three, as shown on Table 1.3 showed that there was a significant relationship between innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe

traumatic brain injuries ( $r_{(450)} = .88, p < 0.05$ ), leading to the rejection of null hypothesis three at the .05 significance level. This means that there was a significant relationship between innovative interventions which improve the physical, cognitive, and emotional outcomes and related integration into rehabilitation programs among individuals with severe traumatic brain injuries.

#### Research Question Four

To what extent does unique experiences, needs, and

environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.

#### Hypothesis Four

There is no significant relationship between unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.

**Table 1.4:** PPMC Analysis on the Relationship between unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.

Variables	Parameters	Unique experiences, needs, and environmental factors	veterans, athletes, and individuals with traumatic brain injuries specific rehabilitation programs	Decision
Unique experiences, needs, and environmental factors	Pearson Correlation	1	.756**	Significant
	Sig. (2-tailed)		.000	
	N	450	450	
veterans, athletes, and individuals with traumatic brain injuries specific rehabilitation programs	Pearson Correlation	.756**	1	
	Sig. (2-tailed)	.000		
	N	450	450	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 1.4 shows the extent to which unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs. The result revealed that the extent to which unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs was positive and high ( $r = .76$ ). This means that as scores on Unique experiences, needs, and environmental factors increase highly, that of veterans, athletes, and individuals with traumatic brain injuries specific rehabilitation programs correspondingly increase highly and vice versa.

In addition, Table 1.4 also shows the test result concerning the corresponding null hypothesis and the test result revealed that there was a significant relationship between unique

experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs ( $r_{(450)} = .76, p < 0.05$ ). Hence, the stated null hypothesis was thereby rejected at 0.05 significance level. This means that there was a significant relationship between unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.

#### Research Question Five

To what extent do specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries?

## Hypothesis Five

There is no significant relationship between specific rehabilitation programs improve clinical outcomes, quality of

life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries.

**Table 1.5:** PPMC Analysis on the Relationship between specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries.

Variables	Parameters	Specific rehabilitation programs	veterans, athletes, and individuals with traumatic brain injuries integration	Decision
Specific rehabilitation programs	Pearson Correlation	1	.710**	Significant
	Sig. (2-tailed)		.000	
	N	450	450	
Veterans, athletes, and individuals with traumatic brain injuries integration	Pearson Correlation	.710**	1	
	Sig. (2-tailed)	.000		
	N	450	450	

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The results on Table 1.5 for research question five, shows the extent to which specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries.

The result revealed that the extent to which specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries can be described as positive and high ( $r = .71$ ). The implication of this result was that as specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities increase highly in score that of sports for veterans, athletes, and individuals with traumatic brain injuries correspondingly increase also highly. On statistical testing of the null hypothesis, Table 1.5 also shows that Specific rehabilitation programs significantly relate statistically ( $r_{(450)} = .71$ ,  $p < 0.05$ ) thus the rejection of the null hypothesis. The result was that there was significant relationship between specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries.

## DISCUSSION OF FINDINGS

The study investigated the development and evaluation of innovative rehabilitation programs for veterans, athletes, and individuals with traumatic brain injuries. The analyzed data in this study were discussed and interpreted based on results from the research questions and hypotheses.

### 1.1 Multidisciplinary approaches for Rehabilitating Veterans is Related to their Needs

The result in Table 1.1 revealed that the extent to which multidisciplinary approaches for rehabilitating veterans is related to their needs was positive and high. Furthermore, the result of hypothesis one indicated that there was significant relationship between multidisciplinary approaches for rehabilitating veterans is related to their needs. The implication of this finding is that multidisciplinary approaches for rehabilitating veterans could be a factor affecting the related to their needs of veterans.

The present finding is in line with the finding of Cooper et al. (2015). That there is a significant relationship between multidisciplinary approaches for rehabilitating veterans is related to their needs. The finding of this current

study is also in accord with the finding of Bunner et al. (2015) that there is a significant positive relationship between multidisciplinary approaches for rehabilitating veterans is related to their needs. The specific rehabilitation program for veterans demonstrated improvements in cognitive functioning, psychological well-being, and overall quality of life. These findings agreed with the emphasis on multidisciplinary approaches and the integration of cognitive and behavioral interventions for veterans (Cooper et al., 2015).

This finding is not surprising because a multidisciplinary approach for rehabilitating veterans aggravated their needs.

### **1.2 Design and Evaluate sport-specific Rehabilitation Programs for Athletes Related to their Safe Return-to-play and Optimal Recovery**

The result in Table 1.2 shows that the extent to which design and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery was positive but moderate. The result of hypothesis two indicated that there was a significant relationship between designs and evaluates sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery. The foregoing findings revealed that the design and evaluate sport-specific rehabilitation programs for athletes correlation with Safe return-to-play and optimal recovery. The finding of this current study is also in accord with the finding of Hoogendoorn (2019) that there is a significant relationship between design and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery. Similarly, the finding of this present study is connected with the finding of Bakker et al. (2019) that there was a significant relationship between designs and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play and optimal recovery.

The sport-specific rehabilitation program led to reduced post-concussion symptoms and a higher rate of safe return-to-play. These results support the importance of considering the demands of sports and individuals athletes needs when designing rehabilitation programs (Van der Feltz-Cornelis et al., 2019)

This present finding is not surprising because design and evaluate sport-specific rehabilitation programs for athletes related to their safe return-to-play leads optimal recovery.

### **1.3 Innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries is related to integration into rehabilitation programs**

The result in Table 4.3 shows that the extent to which innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries is related to integration into rehabilitation programs. The result of hypothesis three indicated that there

was a significant relationship between innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries is related to integration into rehabilitation programs. This suggests that innovative interventions which improve the physical, cognitive, and emotional outcomes for individuals with severe traumatic brain injuries may have a greater influence on the integration into rehabilitation programs of individuals with severer traumatic brain injuries.

The innovative interventions targeting physical, cognitive, and emotional aspects of recovery resulted in improved functional outcomes and enhanced quality of life for individuals with severer traumatic brain injuries. This highlights the value of incorporating novel approaches and addressing the complex challenges faces by individuals with severe trauma brain injuries (Moreau et al., 2020)

The finding of the present study is in agreement with the finding of Bonk et al. (2020) that there is a significant relationship between the innovative interventions targeting physical, cognitive, and emotional aspects of recovery resulted in improved functional outcomes and enhanced quality of life for individuals with severer traumatic brain. Finally, the finding of this present study is connected with the finding of Huijgen et al. (2019) that there was a strong link between the innovative interventions targeting physical, cognitive, and emotional aspects of recovery resulted in improved functional outcomes and enhanced quality of life for individuals with severer traumatic brain injuries. The present finding is not surprising because innovative interventions maybe have negatively improving functional outcomes and enhanced quality of life of individuals with severer traumatic brain injuries.

### **1.4 Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.**

The result in Table 1.4 shows that the extent to which Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs was positive and high. While the result of the tested hypothesis four indicated that there was a significant relationship between Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs.

. The results suggest that veterans, athletes, and individuals with traumatic brain injuries are more likely to benefit from development and evaluation of a specific rehabilitation programs.



The finding of the present study is in agreement with the finding of Hildenbrand et al. (2017) that there was a significant relationship between Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs. The finding of this current study is also in accord with the finding of Cooper (2020) that there was a strong positive relationship between Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs. Also, the finding of this present study is connected with the finding of Kegel et al. (2020) that there was a strong significant relationship between lack of Unique experiences, needs, and environmental factors of veterans, athletes, and individuals with traumatic brain injuries is related to the development and evaluation of a specific rehabilitation programs. The present finding is not surprising because **Unique experiences, needs, and** environmental factors of veterans, athletes, and individuals with traumatic brain injuries is capable of causing negative development and evaluation of a specific rehabilitation programs.

1.5 Specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain.

Table 1.5 shows that the extent to which specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities is related to sports for veterans, athletes, and individuals with traumatic brain injuries was positive and high. While the result of the tested hypothesis five indicated that there was a significant relationship between specific rehabilitation programs improve clinical outcomes, quality of life, and reintegration into daily and activities among veterans, athletes, and individuals with traumatic brain. The implication of the result is that the more veterans, athletes, and individuals with traumatic brain are unable to rehabilitate effectively, the higher their rehabilitation instability.

The finding of the present study is in agreement with the finding of VandeCreek et al. (2020) that most of the respondents agreed to the statement that lack of effective specific rehabilitation programs are the bane to rehabilitation stability. The finding of this current study is also in accord with the finding of Powers (2020) that specific rehabilitation programs gap was major causes of lack of improve clinical outcomes, quality of life, and reintegration into daily and activities among veterans, athletes, and individuals with traumatic brain. Again, the finding of this present study is connected with the finding of Moreau et al. (2020) that constructive specific rehabilitation programs improve clinical

outcomes, quality of life, and reintegration into daily and activities mediated the relationship between veterans, athletes, and individuals with traumatic brain.

From all these population, veterans, athletes, and individuals with traumatic brain, the specific rehabilitation programs demonstrated the benefits of individualized assessment, goals setting, and multidisciplinary approaches. This emphasizes the importance of addressing the important needs and contexts of veterans, athletes, and individuals with traumatic brain injuries in rehabilitation programs,

While the findings of this study are promising, there are several areas for future research. More studies are needed to assess the long-term impact of specific rehabilitation programs, and further studies should explore the effectiveness of specific interventions within these programs. Furthermore, research should investigate strategies for optimizing the implementation of specific rehabilitation programs in various clinical settings and addressing important barriers to access and adherence.

## CONCLUSION

The development and evaluation of innovative rehabilitation programs for veterans, athletes, and individuals with traumatic brain injury have the potential to improve clinical outcomes, enhance quality of life, and promote successful reintegration into daily activities and sports. Continued studies and refinement of these specific programs will contribute to advancements in the field of rehabilitation and better serve the needs of these populations. The development and evaluation of these programs require a comprehensive understanding of the physical, cognitive, and psychological challenges faces by these specific populations and the integration evidence-based interventions.

The studies by Cooper et al. (2015), van der Feltz-Cornelis et al., (2019), and Moreau et. (2020) emphasize the importance of multidisciplinary approaches, individualized assessments, goal setting, and integration of innovative interventions in rehabilitation programs for veterans, athletes, and individuals with trauma brain injuries. These specific programs demonstrate improved clinical outcomes, enhanced recovery, and better overall well-being for these populations.

Moving forward, continued research and collaboration among multidisciplinary teams, researchers, and individuals with lived experience are essential to further refine and advance specified rehabilitation programs. Emphasis should be placed on wide studies, addressing implementation barriers, and exploring alternative models of care to ensure the accessibility and long-term success of these programs.

In conclusion, the development and evaluation of innovative rehabilitation programs for veterans, athletes, and individuals with trauma brain injury represent a promising avenue for improving the lives of these specific populations. By addressing

their important needs and challenges, specific to rehabilitation programs can significantly enhance recovery, promote well-

being, and support successful reintegration into daily life and sport.

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