



Faculty of Medicine  
University of Dhaka

## **Coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP**

**Submitted by:**

**Mohima Akter Monne**

B. Sc. in Physiotherapy

DU Roll No: 1532

Registration No: 6241

Session: 2019-20



**Bangladesh Health Professions Institute (BHPI)**

Department of Physiotherapy

CRP, Savar, Dhaka-1343,

Bangladesh

July, 2025

© 2025 Mohima Akter Monne

We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for acceptance of this dissertation entitled, "Coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP" Submitted by Mohima Akter Monne, for the partial fulfillment of the requirement for the degree of Bachelor of Science in Physiotherapy (BSc. PT).



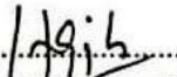
.....  
**Nadia Afrin Urme**

Lecturer  
Department of Physiotherapy  
BHPI, CRP.



.....  
**Prof. Dr. Mohammad Sohrab Hossain, PhD**

Professor of Physiotherapy, BHPI  
Executive Director, CRP.



.....  
**Mohammad Habibur Rahman**

Assistant Professor of Physiotherapy  
School of Science and Technology  
Bangladesh Open University, Gazipur-1750.



.....  
**Prof. Md. Obaidul Haque**  
Vice Principal  
BHPI, CRP.



.....  
**Dr. Shazal Kumar Das, PhD**  
Assistant Professor & Head  
Department of Physiotherapy  
BHPI, CRP.

Approved Date: 11/08/2025

## Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study, I would be bound to take written consent from the Supervisor & Department of Physiotherapy of Bangladesh Health Professions Institute (BHPI).

Name: Mohima Akter Monne

Date: 11/08/2025

**Mohima Akter Monne**

Bachelor of Science in Physiotherapy (B.Sc. in PT)

DU Roll No: 1532

Registration No: 6241

BHPI, CRP, Savar, Dhaka-1343

## Contents

<b>Topics</b>	<b>Page no.</b>
Acknowledgement	i
Acronyms	ii
List of tables	iii- iv
List of figures	v
Abstract	vi
<b>Chapter-i: Introduction</b>	<b>1-9</b>
1.1 Background	1-4
1.2 Justification	5
1.3 Research question	6
1.4 Study objectives	7
1.5 Conceptual framework	8
1.6 Operational definition	9
<b>Chapter-ii: Literature review</b>	<b>10-16</b>
<b>Chapter-iii: Methodology</b>	<b>17-23</b>
3.1 Study design	17
3.2 Study site	17
3.3 Study duration	17
3.4 Study population & sample	17
3.5 Inclusion criteria	17
3.6 Exclusion criteria	17-18
3.7 Sample size	19
3.8 Sampling technique	20

3.9 Method of data collection	20
3.10 Data collection tools	20-21
3.11 Measurement tools	21-22
3.12 Data analysis procedure	22
3.13 Ethical consideration	23
3.14 Informed consent	23
<b>Chapter-iv: Results</b>	<b>24-51</b>
<b>Chapter-v: Discussion</b>	<b>52-57</b>
Limitations	58
<b>Chapter-vi Conclusion and recommendation</b>	<b>59-60</b>
<b>References</b>	<b>61-67</b>
<b>Appendix</b>	<b>vii-xxxiii</b>

## Acknowledgement

I would like to begin by expressing my heartfelt gratitude to the Almighty Allah, whose blessings, strength and guidance have enabled me to successfully carry out and complete this research work titled “**Coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP**”.

I am deeply indebted to my honorable supervisor, **Nadia Afrin Urme**, Lecturer, BHPI, CRP, whose continuous guidance, valuable suggestions, constructive criticism and support have been instrumental in the successful completion of this study. Her keen interest in my research topic, constant encouragement and professional insight have truly inspired me throughout this journey.

It’s an honor to mention **Prof. Md. Obaidul Haque**, Vice Principal, BHPI, **Prof. Dr. Mohammad Anwar Hossain (PhD)**, Senior Consultant & Head, Department of Physiotherapy, CRP, **Dr. Shazal Kumar Das, PhD**, Assistant Professor & Head, Department of Physiotherapy, BHPI, **Fabiha Alam (Mentor)**, Assistant Professor, Department of Physiotherapy, BHPI and **Asma Islam**, Associate Professor, Department of Physiotherapy for their good advice, support and guidance to conduct this research. I would like to express acknowledgement to my respected teacher **Muhammad Millat Hossain**, Associate Professor, Department of Rehabilitation Science, BHPI, CRP for ethical permission of IRB board.

I want to extend my appreciation to my beloved husband **Anisuzzaman** for his immense support which make it easier for me. Also, my supportive friends Khadiza Akter, Umme Ammara, for serving as a constant source of inspiration and providing valuable assistance throughout my study.

Finally, I am forever grateful to my family for their unconditional love, motivation and moral support. Their belief in me gave me the strength to face challenges and stay committed to my goal.

## Acronyms

ADLs	Activity of Daily Livings
ASIA	American Spinal Injury Association
BHPI	Bangladesh Health Professions Institute
COPE	Coping Orientation to Problems Experienced
CRP	Centre for the Rehabilitation of the Paralysed
IRB	Institutional Review Board
QoL	Quality of Life
SCL-CS	Spinal Cord Lesion Coping Strategies
SCI	Spinal Cord Injury
SPSS	Statistical Package for the Social Sciences
WHO	World Health Organization

<b>List of tables</b>
-----------------------

<b>Table No</b>	<b>Table Name</b>	<b>Page No</b>
<b>1</b>	Baseline characteristics of the patients (socio-demographic)	25-26
<b>2</b>	SCL-CSQ Scale Descriptive Statistics	36
<b>3</b>	Brief-COPE Scale Descriptive Statistics	38
<b>4</b>	Association between Acceptance coping and Gender, Living Area, and Educational Qualification	39
<b>5</b>	Association between Fighting spirit and Gender, Living Area, and Educational Qualification	40
<b>6</b>	Association between Social reliance and Gender, Living Area, and Educational Qualification	41
<b>7</b>	Association between Acceptance coping and Duration of Injury, Causes of Injury, Level of Lesion, and Types of Paralysis	42
<b>8</b>	Association between Fighting spirit and Duration of Injury, Causes of Injury, Level of Lesion, and Types of Paralysis	43
<b>9</b>	Association between Social reliance and Duration of Injury, Causes of Injury, Level of Lesion, and Types of Paralysis	44
<b>10</b>	Association between Acceptance and Gender, Living Area, and Educational Qualification	46
<b>11</b>	Association between Fighting spirit and Gender, Living Area, and Educational Qualification	47
<b>12</b>	Association between Social reliance and Gender, Living Area, and Educational Qualification	48
<b>13</b>	Association between Acceptance and Duration of Injury, Causes of Injury, Level of Lesion, and Types	49

	of Paralysis	
<b>14</b>	Association between Fighting spirit and Duration of Injury, Causes of Injury, Level of Lesion, and Types of Paralysis	50
<b>15</b>	Association between Social reliance and Duration of Injury, Causes of Injury, Level of Lesion, and Types of Paralysis	51

## List of figures

<b>Figure No</b>	<b>Figure Name</b>	<b>Page No</b>
1	Distribution of participants by age group	24
2	Gender of the participants	27
3	Living area of the participants	28
4	Education profile of young adults and middle-aged participants	29
5	Duration of injury between young adults and middle-aged individuals	30
6	Causes of injury among the participants	31
7	Level of lesion of the participants	32
8	Types of paralysis of the participants	33
9	ASIA impairment scale of the participants	34
10	Comorbidity of the participants	35
11	Comparison of Brief-COPE subscale responses between age groups	37

## Abstract

**Background:** Spinal cord injury (SCI) significantly impacts physical, psychological, and social aspects of life. Coping strategies differ by age and play a critical role in psychological adjustment and rehabilitation outcomes. **Objectives:** This study aimed to explore and compare coping strategies among young adults (21–39 years) and middle-aged individuals (40–56 years) with SCI at the Centre for the Rehabilitation of the Paralyzed (CRP), Bangladesh, and examine associations with sociodemographic and clinical factors. **Methodology:** A cross-sectional design included 99 participants over three months post-injury. Coping was measured using the Spinal Cord Lesion Coping Strategies Questionnaire (SCL-CS) and Brief-COPE Inventory. Descriptive and inferential statistics analyzed coping in relation to gender, education, living area, duration and cause of injury, lesion level, and paralysis type. **Results:** Young adults showed higher levels of acceptance ( $M = 2.52$ ) than middle-aged group ( $M = 2.28$ ), while middle-aged participants scored higher in fighting spirit and social reliance. Religious coping was the most frequently reported strategy in both groups (98% in young adults, 97% in middle-aged). Coping strategies showed significant associations with sociodemographic and clinical factors. Among young adults, acceptance was associated with gender, living area, and education; fighting spirit with living area and education; and social reliance with living area. In contrast, among middle-aged, acceptance was associated with gender, fighting spirit with education, and social reliance with gender, living area, and education. Injury-related factors such as duration, cause, lesion level, and type of paralysis showed varied associations across coping domains and age groups. **Discussion:** These findings demonstrate age-related differences in coping strategies influenced by sociodemographic and clinical factors, emphasizing the importance of tailored, age-specific psychological and social interventions to improve adjustment and rehabilitation outcomes after SCI.

**Key words:** *Spinal cord injury, Coping strategies, Age differences, psychological adjustment.*

## 1.1 Background

Spinal cord injury (SCI) is a severe and often life-altering condition characterized by damage to the spinal cord, which is a crucial part of the central nervous system (Li et al., 2024). It is a complex disorder resulting from partial or complete lesion of the spinal cord that causes paralysis of the muscles and indirectly affects sensory and motor function below the level of injury. Shamshiri et al. (2021) stated in their study that a patient's entire life is impacted by a spinal cord injury (SCI), which is one of the most devastating incidents in the world. The most frequent cause of spinal cord injury (SCI) is acute trauma from motor vehicle accidents but it can also result from gradual conditions like cancers and chronic tuberculosis infections (Bennett, Das and Emmady, 2024). The classification of spinal cord injury (SCI) is determined by the level of sensory or motor impairment, the site of the injury, and whether the cause is traumatic or non-traumatic. Spinal cord injuries (SCIs) are linked to several unfavorable consequences, such as a reduced standard of living, a shorter lifespan, and a significant financial strain on the healthcare system (Safdarian et al., 2023). Also numerous physical, psychological, and social function issues are present in SCI patients, and these issues frequently result in sensory-motor abnormalities as well as intestine and bladder incontinence. All of these restrict the person's capacity to fulfill personal and professional obligations as well as routine self-care tasks (Song et al., 2010).

According to WHO, “Every year, overall, around the world between 2,50,000 and 5,00,000 people suffer from SCI and its prevalence is estimated to be 40-80 cases per million population. Global estimates suggest that in 2021, approximately 15.4 million people were living with SCI.” Males experience traumatic spinal cord injury at a rate about 3.2 times higher than females, resulting in a ratio of roughly 3:1 for males to females (Lu et al., 2024). A spinal cord injury (SCI) is a serious event at any age, leading to enduring physical and psychological effects (January et al., 2015). Individuals who sustain injuries during childhood typically report more favorable outcomes compared to those who are injured in adulthood (Kelly et al., 2012). Lu et al. (2024) in their studies told that the spinal cord injury (SCI) patient demographic

shows that those aged 61 and older account for 17.54% of cases, which is less than the percentage of patients aged 21 to 40 (42.29%) and those aged 41 to 60 (25.57%).

According to Kumar, Akash and Roshan (2024) spinal cord injuries (SCI) represent a serious clinical challenge among different age group due to their complex nature and the considerable impact on patient's quality of life. A person with spinal cord injury (SCI) experiences sudden and significant disturbance in their life. Every aspect of a person's life becomes stressful as a result of this unexpected and significant disturbance (Garske and Turpin, 1998). Despite the severe impact of spinal cord injury (SCI) and its potential psychological effects, most individuals with SCIs demonstrate psychological resilience and adapt effectively to their circumstances. Research indicates that some may even recognize or experience positive changes in their lives following their injury (McMillen and Cook, 2003; Pollard and Kennedy, 2007; Chun and Lee, 2008; Griffiths and Kennedy, 2012; Kalpakjian et al., 2014).

Any behavioral or cognitive changes that people undertake to manage their health and life's challenges are referred to as coping mechanisms and depending on the person's cultural background and the nature of their stress, this approach may change (Shamshiri et al., 2021). Coping mechanisms can vary significantly between young adults and middle-aged individuals with spinal cord injuries, reflecting their differing life stages, experiences, and support systems. A person's coping mechanisms will change when they move from an independent to a dependent lifestyle (Muteti et al., 2021). Recent research suggests that stressful life events may impact coping strategies differently in young adults compared to the middle-aged persons (Brennan et al., 2012). Having effective coping mechanisms is crucial to reducing psychological distress and despondency throughout stressful life events. This has a direct positive impact on life adjustment and social reintegration after SCI (Kwah and Abdullahi, 2018). Numerous factors are linked to cope after spinal cord injury, including social support, the severity or extent of the injury, and psychological resilience, gender etc. During the acute medical care phase, the rehabilitation phase, and the return to the community, coping behaviors can also differ (Muteti et al., 2021).

After spinal cord injury (SCI), it has been suggested that certain coping strategies are associated with more positive outcomes (Elfström et al., 2005). The most common

coping techniques, according to the research, include accepting the situation, seeking understanding, positive reframing, minimization, optimism, social and self-trust, and positive thinking (Hall et al., 1999). Gaston-Johansson et al. (2013) in their studies told that cultivating these coping strategies is crucial for reducing psychological distress and feelings of hopelessness during challenging life events. Furthermore, these could support social reintegration and life adjustment after SCI (Song, 2005; Pollard and Kennedy, 2007). There are two different coping strategies: emotion-focused and problem-focused. Problem-focused coping involves ignoring the stressful situation, whereas emotion-focused coping involves quickly reducing or adjusting to stress (Schoenmakers, Van Tilburg and Fokkema, 2015). According to Wyndaele (2017) because of the difficulties in psychological and physical functioning, individuals with spinal cord injuries (SCI) often require long-term rehabilitation focused on enhancing these functions to attain greater functional independence and improve their quality of life. The primary coping mechanisms observed in individuals with spinal cord injuries include accepting the injury, maintaining a fighting spirit, and relying on social support. These strategies help individuals adapt to their new circumstances and promote resilience (Singh and Mitra, 2023).

Brennan et al. (2012) in their studies told that stressful life events may impact coping strategies differently in young adults compared to the middle-aged. The impact of aging on individuals with spinal cord injury (SCI) has not received the same level of attention as other aspects of the condition. While much research focuses on the immediate consequences of SCI, there is a significant gap in understanding how aging affects health outcomes, functional abilities, and overall quality of life for this population. Addressing this gap is crucial for developing effective support and rehabilitation strategies tailored to the unique challenges faced by young adults and middle-aged individuals with SCI (Groah et al., 2012). Researching this area is crucial for gaining a deeper understanding of the coping processes individuals with spinal cord injuries (SCI) undergo. By exploring how different age groups navigate their challenges, we can identify effective interventions that enhance their quality of life (Galvin and Godfrey, 2001). This understanding can lead to the development of targeted support programs, tailored therapies, and resources that address the unique needs of both young adults and the middle-aged individuals. Ultimately, such research can facilitate improved mental health outcomes and foster resilience, allowing

individuals with SCI to adapt more successfully to their new realities. Therefore, this study wants to know the coping strategies among young adults and middle-aged individuals with SCI.

## **1.2 Justification**

Spinal cord injuries are life-altering events that can significantly impact physical, emotional, and social well-being. Understanding how individuals cope with these challenges is essential for providing appropriate care. Young adults and middle-aged individuals experience SCI at different stages of life, potentially leading to varying coping mechanisms. Young adults may have more resilience but could face frustration due to disruptions in their career and life plans. The middle-aged individuals may experience additional health issues and loss of independence, influencing their coping strategies. Understanding these differences is critical to provide age-appropriate support. SCI affects not only the physical body but also the psychological well-being of the individual. Coping mechanisms play a significant role in the mental health outcomes of those with SCI, such as depression, anxiety, and quality of life. By identifying effective coping strategies in different age groups, this study will contribute to mental health care planning for individuals with SCI. The study will provide a foundation for developing coping enhancement programs that are tailored to the specific needs of young adults and the middle-aged individuals, thus improving their overall recovery and adaptation to post injury life. Although there is considerable research on the general impact of SCI, there is limited research focusing on the comparative coping strategies employed by young adults versus the middle-aged individuals (Elfstret et al., 2007; Anderson et al., 2008; Babamohamadi, Negarandeh and Dehghan-Nayeri, 2011; Muteti et al., 2021). Furthermore, previous studies primarily relied on total domain scores and did not offer detailed insights at the item level. This study addresses this gap by comparing item-level associations across age groups, offering a more detailed understanding of coping strategies among individuals with SCI.

### **1.3 Research question**

What are the coping strategies among young adults and middle-aged individuals with spinal cord injury?

## **1.4 Objectives**

### **1.4.1. General objective:**

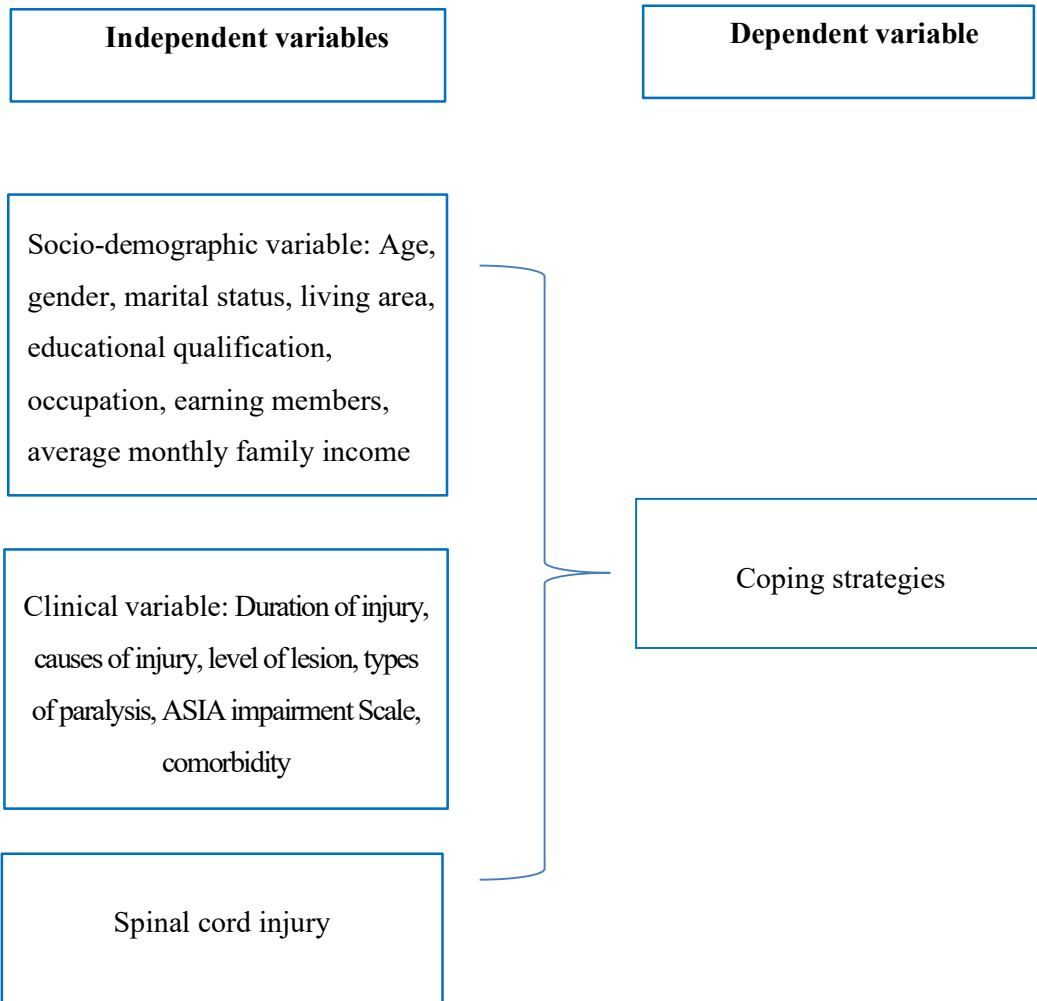
To identify coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP.

### **1.4.2. Specific objectives:**

To -

- Identify socio-demographic information of individuals young adults and middle-aged people with spinal cord injury at CRP.
- Find out the prevalence of coping in term of acceptance, fighting spirit and social reliance among young adults and middle-aged people with spinal cord injury.
- Compare the percentages of strategies used by young adults and the middle-aged individuals to deal with spinal cord injuries.
- Find out the association of coping strategies among young adults and middle-aged people with spinal cord injury with their socio-demographic characteristics (such as gender, living area and educational qualification).
- Identify the association of coping strategies among young adults and middle-aged people with injury related factors (such as duration and causes of injury, level of lesion and types of paralysis).

## 1.5 Conceptual framework



## **1.6 Operational definition**

### **1.6.1. Spinal cord injury**

Spinal cord injury (SCI) is damage to the spinal cord that disrupts the communication between the brain and the body which can lead to a loss of motor function, sensation, or autonomic control below the level of injury.

### **1.6.2. Coping strategies**

Coping strategies are techniques or methods that individuals use to manage stress, emotions, and difficult situations. They help people deal with challenges and maintain their mental well-being. The purpose of coping strategies is to reduce stress, enhance resilience, and improve emotional regulation.

### **1.6.3. Paraplegia**

Partial or complete damage to the spinal cord, typically at the thoracic and lumbar level resulting in loss or impairment of motor and sensory function in the lower half of the body.

### **1.6.4. Tetraplegia**

Injury or damage at the cervical region of the spinal cord leading to partial or complete loss of motor and sensory function in all four limbs meaning both arms and both legs.

Spinal cord injury (SCI) is a traumatic event that results in disturbances to normal sensory, motor or autonomic function and ultimately impacts a patient's physical, psychological and social well-being (Singh et al., 2014). A spinal cord injury (SCI) is defined as "the occurrence of an acute, traumatic lesion of neural elements in the spinal canal, resulting in temporary or permanent sensory deficit, motor deficit or bladder or bowel dysfunction" (Barclay et al., 2011). According to WHO every year, overall, around the world between 2,50,000 and 5,00,000 people suffer from SCI (Mason et al., 2024). Globally, the prevalence of SCI ranges between 15 and 40 people per million people. According to the National Spinal Cord Injury Association, as many as 450,000 people in the United States are living with a spinal cord injury (SCI); every year, an estimated 11,000 spinal cord injuries occur in the United States (Moghimian et al., 2015). Nas et al. (2015) stated in their study that among worldwide incidence of spinal cord injury, males are most common than females, children also included. According to studies, Males are more impacted than females (4.3:1), with 53 percent of injuries happening in the cervical spine, 22 percent in the thoracic spine, and 25 percent in the lumbar spine. In the United States, the annual incidence of traumatic SCI is 40 cases per million or 1200 new cases each year (Rabadi et al., 2013). According to WHO estimate, males are most at risk in young adulthood between 20-29 years and older age greater than 70 years. On the other hand, females are most at risk in adolescence between 15-19 years and older age greater than 60 years.

Spinal cord injury can result from traumatic or non-traumatic events leading to fracture or dislocation of spinal column resulting in damage to the spinal cord (Hamid et al., 2018). Yılmaz and Kaptanoğlu (2015) shows that the incidence of traumatic SCI was reported as 12.7 in a million in a study conducted in Turkey in 1992. The major traumatic causes include a vehicular or diving accident, falls, gun-shot injuries, disc prolapse, sudden hyperextension injury with infections, and vascular events generally making up the non-traumatic causes (Hamid et al., 2018). Stover et al. (1987) reported from the national database in USA of more than 10,000 cases that the

commonest cause of SCI was motor vehicle crashes (47.7%) followed by falls (20.8%), acts of violence, gun-shot wounds and stabbings (14.6%) and sporting related activities (14.2%). On the other hand, the most common causes of non-traumatic spinal cord injuries are spinal vascular diseases (25%), tumors (25%), inflammatory diseases (20%) and spinal stenosis (19%) (Yılmaz and Kaptanoğlu, 2015). Most traumatic SCI studies showed a bimodal age distribution. The first peak was found in young adults between 15 and 29 years and a second peak in older adults (mostly  $\geq 65$  years). Motor vehicle accidents and falls were the most prevalent causes of injury accounting for nearly equal percentages. In contrast, another age pattern in non-traumatic SCI reflected steadily increasing incidence with advancing age (Van den Berg et al., 2010). The average age at injury was 40 years, with commonest injury being incomplete tetraplegia at 30%, followed by 25.6% for complete paraplegia, 20.4% complete tetraplegia, and 18.5% incomplete paraplegia (Hamid et al., 2018).

Spinal Cord Injury (SCI) is a significant cause of disability in Bangladesh, particularly affecting individuals aged 18-35 years (Rahman et al., 2023). Uddin et al. (2023) conducted a national-level study on spinal cord injury (SCI) in Bangladesh between 2018 and 2022, as part of the International SCI Community Survey. The findings revealed a mean participant age of 38.3 years and a male-to-female ratio of 2.5:1, indicating a marked male predominance. Traumatic SCIs were more common, primarily resulting from falls from height (42.1%) and road traffic accidents (27%). Among non-traumatic cases, degenerative myelopathy emerged as the leading cause (41.1%). Rahman et al. (2017) stated in their study that in Bangladesh Out of 2184 respondents, 51.9% (n=1136) had the diagnosis of traumatic paraplegia and 42.6% (n=932) had traumatic tetraplegia whereas non-traumatic paraplegia, non-traumatic tetraplegia was the other diagnosis having the distribution of 4.12% and 1.14%. According to Razzak, Helal and Nuri (2011) the average life expectancy of patients with SCI in Bangladesh is 5.36 years. Overall, 56.4 % of persons admitted with SCI died within 5 years after their injury, whereas 43.6 % lived for 5 years or longer.

Patients with SCI involuntarily place a heavy burden on the health care system, not only in the phase of acute care, but also in the first years following injury (Wyndaele and Wyndaele, 2006). SCI-related cost in the USA was estimated \$9.7 million per year (Berkowitz, 1998). The consequences of sustaining a spinal cord injury (SCI) can

be overwhelming and can impact many areas of one's life. Impairments in bowel and bladder function, mobility, and autonomic functions, along with secondary conditions such as pressure ulcers and pain, are just some of the consequences that can directly impact one's health (McKinley et al., 1999). Notably, SCI respondents reported a higher prevalence of several co-morbidities than the general population including high blood pressure (49 versus 26%, respectively) and high cholesterol (47 versus 30%), and diabetes (19 versus 7%). Obesity was also a significant problem for individuals with SCI with 25% reporting obesity. It is possible that hypertension might have been over reported in those with SCI due to the presence of autonomic dysreflexia in this method of self-report (Hamid et al., 2018). Life expectancy of patients with SCI continues to increase. The median survival time of patients sustaining an SCI between the age of 25 and 34 years has been predicted to be 38 years post injury, with 43% surviving for at least 40 years. These figures suggest an increase in life expectancy of about 5 years over previous research (1983) on the same cohort (McCollet al., 1997).

One of the important health aspects of patients with SCI is their psychological dimension (Shamshiri et al., 2021). Elevated levels of anxiety have been reported in 23–35% of the SCI population and elevated levels of depression in 35–38% (Kennedy et al., 2003). Suicide rates are 4-5 times higher in people with SCI. Other psychological problems associated with SCI include substance abuse, divorce, anger, damaged self-image, and behavior disorders (Shamshiri et al., 2021). In addition to the emotional distress experienced, problems with adjustment can affect other areas of functioning (Chevalier, Kennedy and Sherlock, 2009). Problems with adjustment are linked to self-neglect which can in turn impact on the physical well-being and increase the likelihood of the onset of secondary complication (Biggs, Brough, and Drummond, 2017). Difficulties have also been linked to substance abuse which may contribute to further health problems (Pollard and Kennedy, 2007).

Due to the challenges in psychological and physical functioning, people with SCI may often undergo a long-term rehabilitation aimed at improving their foregoing functions so as to achieve possible functional independence and quality of life (Wyndaele, 2017). However, SCI is a life-shattering event; such patients may be confronted with emotional and psychological challenges on how to overcome to terms with their injuries or disability. Consequently, there could be needs for them to develop certain

coping behaviors or strategies, which are means of solving the problems or challenges confronting them due to the SCI (Folkman et al., 1986). Developing these coping strategies is essential for having less psychological distress and hopelessness during a stressful life event (Gaston-Johansson et al., 2013).

Folkman et al. (1986) stated in their study that coping is a person's constantly changing cognitive and behavioral efforts to manage the stress. Stephenson and DeLongis (2020) also demonstrated that coping is a dynamic process that can involve the use of various coping strategies at different phases of a stressor. It plays an important role in achieving to adaptation (Song & Nam, 2010). According to Shamshiri et al. (2021), adaptation mechanisms are a series of acquired strategies that can help patients to cope with life and health-related problems. These may help with life adjustment and social reintegration following SCI (Song, 2005 and Pollard and Kennedy, 2007). Although total adaptation is not achievable unless and until people living with SCI and their families are fully re-integrated into society (Babamohamadi, Negarandeh and Dehghan Nayeri, 2011). The number and nature of factors that underlie coping are widely debated within the field of psychology including classifications in behavioral (e.g., approach or avoidant) and functional (e.g., adaptive or maladaptive) terms (Holen et al., 2012). This diversity in the structure of coping is likely a result of differences between samples, the identified stressor, and how coping was defined and measured in each study (Spirito, 1996).

Coping responses are frequently categorized in terms of their focus or function such as problem focused, emotion focused and relationship focused (O'Brien & DeLongis, 1996). Problem focused coping describes direct efforts to solve the problem at hand, whereas emotion focused coping involves attempts to lessen the emotional distress associated with a stressful situation (Lazarus & Folkman, 1984). Relationship focused coping describes a third coping function and includes efforts to manage and maintain important social relationships during periods of stress (O'Brien et al., 2009).

When it comes to coping with a spinal cord injury (SCI), the challenges individuals face can be shaped by both barriers that hinder their ability to adapt, and facilitators that enhance their capacity to cope. These elements can have a profound impact on both physical and psychological well-being. According to Babamohamadi,

Negarandeh and Dehghan Nayeri (2011) the barriers are lack of knowledge, lack of facilities and inaccessibility of surroundings, lack of financial resources, lack of employment opportunities and lack of societal acceptance or support. On the other hand, the facilitators that enhance their capacity to cope are self-confidence and high morale, religious beliefs, supportive networks and positive thinking and optimism.

Key components of effective coping strategies for enhancing psychological adjustment in spinal cord injury rehabilitation include acceptance, fighting spirit, social reliance, and the use of cognitive-behavioral interventions, which promote positive appraisals and adaptive coping mechanisms tailored to individual needs (Chevalier, Kennedy and Sherlock, 2009). Age influences these coping styles and their effectiveness, interacting with factors such as self-efficacy, social support, and health status (Livneh & Martz, 2014). This framework guides the examination of age-specific coping mechanisms and their impact on adaptation to SCI. Acceptance is one of the core aspects of coping with SCI, and it represents the process by which individuals come to terms with their new reality. Initially, many may go through a range of emotional reactions such as denial, anger, or depression. However, as time passes, they begin to accept that their injury is part of their life, and they focus on adapting to their circumstances. According to Wright (1983) the acceptance factor is a measure of a coping strategy that may lead to disability acceptance. Elfström et al. (2007) stated in their study that acceptance coping indicates that a person changes life priorities by subordinating physical limitations relative to other values and also by containing disability effects. Individuals with SCI who exhibit fighting spirit demonstrate resilience by seeking ways to adapt and regain independence, often maintaining a sense of hope and purpose. Social reliance refers to how a person with SCI perceives and navigates their relationships, sense of belonging, and social identity.

Together, acceptance, social reliance, and a fighting spirit form a powerful combination for coping with SCI. These components are interrelated and work together, helping individuals with SCI navigate the complex emotional, psychological, and practical aspects of their injury while maintaining a sense of purpose and belonging. Joshi, Sharma, and Khanna (2014) found that fighting spirit was positively associated with community integration, whereas high social reliance

was linked to reduced participation and autonomy.

According to Dorsett et al. (2017), coping with spinal cord injury (SCI) is influenced by hope, which is connected to positive strategies like planning, acceptance, and fighting spirit, and less connected to negative ones like giving up or depending too much on others. Because hope tends to remain stable over time, building or strengthening hope through support or therapy may help people with SCI cope better and feel more satisfied with their lives. Compas et al. (2012) classified coping in youth with chronic illness into three types: active coping (acting on the stressor), accommodative coping (adapting to the stressor), and passive coping (avoiding or denying the stressor). Regarding clinical implications, adolescents with SCI who largely use patterns of coping dominated by ineffective and avoidant strategies may be at greater risk for maladjustment, whereas those who use patterns of coping composed of cognitive (and to some extent, active) strategies may experience more positive psychosocial health. Therefore, to support adolescents with SCI both during rehabilitation and after, clinicians should consider assessing patterns of coping in these youth, as opposed to looking at individual strategy use (Russell et al., 2015). On the other hand, middle-aged spinal cord injury patients commonly use coping strategies such as seeking help from religious beliefs, maintaining hope, and striving for independence through self-care efforts. These strategies help them adapt to their new circumstances and improve their quality of life (Babamohamadi, Negarandeh, and Dehghan-Nayeri, 2011).

There are some factors that are associated with coping mechanism following spinal cord injury such as gender, age, treatment approach etc. Gender was a significant factor in the use of a coping strategy with men proving to adjust better in comparison to women. This is because of the societal roles expected of women which are more demanding as compared to men (Muteti et al., 2021). Women with long-term spinal cord injury often cope through emotional support, religion, and acceptance. Hope and self-efficacy appear to influence these strategies, with many women demonstrating resilience despite their challenges (Byra and Gabryś, 2023). On the other hand, Participants who were receiving rehabilitation services from the Rehabilitation Centres were more likely to have positive coping strategies as compared to those who were admitted in a general hospital. This may be so because professionals at

rehabilitation centres are likely to be more specialized or experienced in handling long term conditions like spinal cord injuries (Muteti et al., 2021). While both young adults and middle-aged individuals with SCI adopt a variety of coping strategies, the nature of these strategies differs significantly due to age-related factors. Young adults are more likely to engage in active coping, seeking social support, and focusing on rehabilitation and physical therapy. In contrast, middle-aged individuals often emphasize acceptance, reliance on caregivers, and emotional regulation, such as spirituality and life satisfaction. While some studies suggest younger individuals employ more active coping and social support seeking, middle-aged adults may demonstrate different patterns influenced by life stage and psychosocial resources (Molton et al., 2008). Barone and Waters (2012) found that individuals who are less educated, less psychologically hardy, and more recently injured are more likely to adopt escape-avoidance coping strategies, whereas the use of effective coping techniques such as social support, problem-solving, and positive reappraisal enhances adaptation and overall quality of life.

Coping with Spinal Cord Injury (SCI) involves managing both the physical and psychological challenges that arise from such a debilitating condition. There are various scales used to assess coping strategies among individuals with SCI. These tools are essential for understanding how patients adapt to their injuries, which can ultimately help inform clinical interventions and rehabilitation programs. Most of the researchers have been used Spinal Cord Lesions-related Coping Strategies Questionnaire (SCL CSQ) to assess the coping strategies adopted by the spinal cord lesion survivors (Elfstrom et al., 2005). Several studies have also utilized the Ways of Coping Questionnaire (WCQ) in SCL which views coping strategies as conscious efforts to manage stressful situations. While some WCQ studies have found associations between coping strategies and various aspects of adjustment (Buckelew et al., 1990 and Frank et al., 1987). Muteti et al. (2021) used the Brief COPE Inventory and Spinal Cord Lesions related Coping Strategies Questionnaire to determine the coping strategies used by SCI patients adjust their condition. On the other hand, Van Lankveld, Van Diemen, and Van Nes, (2011) on their studies used several scales to measure coping such as The Coping Inventory for Stressful Situations (CISS); The assimilative-accommodative Coping Scale (TAACS). Among them different scales to assess coping mechanism following SCI, in this study the

Brief COPE Inventory and Spinal Cord Lesions related Coping Strategies Questionnaire were used by the researcher.

### **3.1 Study design**

A cross-sectional descriptive study was conducted using structured questionnaires and interviews with individuals who have spinal cord injury (SCI) to gather data on coping strategies and other relevant variables from both young adults and middle-aged groups.

### **3.2 Study site**

Data was collected from the Spinal cord injury Unit of Physiotherapy department, Centre for the Rehabilitation of the Paralysed (CRP), Savar, Dhaka.

### **3.3 Study duration**

The study was conducted from 1<sup>st</sup> June 2024 to 31<sup>st</sup> May 2025, from initial recruitment through to the final dissemination of results.

### **3.4 Study population and sample**

In this study the study population was all the SCI patients of CRP and the samples were those who had a history of spinal cord injury for more than 3 months.

### **3.5 Inclusion Criteria**

- Traumatic and non-traumatic both complete and incomplete SCI patients.
- Young adults (21-39 years) and middle-aged (40-56) (Chung et al., 2006)
- Both male & female SCI patients.
- History of spinal cord injury more than 3 months (Saffari et al., 2015).
- Able to give consent and follow instructions.

### **3.6 Exclusion Criteria**

- Patients with diagnosed psychiatric problems (Saurí et al., 2014)
- Patients with cognitive impairment.
- Patients with concomitant brain injury.
- Patients with difficulties communicating (Saffari et al., 2015).

### 3.7 Sample Size

The number of observations or participants involved in a study or experiment is referred to as the sample size. In order to offer a statistical representation, it reflects the people, things, or data points selected from a greater number of people. The accuracy of the results and the capacity to generalize findings to a larger population are greatly impacted by the sample size, which makes it significant to determine in research projects. When the sample frame is finite, the equation of finite population correction in case of cross-sectional study is:

$$\begin{aligned}
 n &= \frac{z^2 pq}{d^2} \\
 &= \frac{(1.96)^2 \times 0.28 \times 0.72}{(0.05)^2} \\
 &= \frac{0.77}{(0.05)^2} \\
 &= 310
 \end{aligned}$$

Here,

n = Sample size

z = linked to 95% confidence interval (use 1.96)

p = expected prevalence, 28% (Fazel et al., 2018)

q = 1- p (expected non-prevalence)

$$= (1-0.28)$$

$$= 0.72$$

d = margin of error at 5% (standard value of 0.05)

The actual sample size was, n= 310.

Due to time limitation and opportunity, the study was conducted with 93 patients who attended at SCI unit of Physiotherapy department in CRP.

### **3.8 Sampling technique**

In this study the researcher selected the purposive sampling technique to draw out the sample from the population. The main goal of purposive sampling is to focus on particular characteristics of a population which will best enable the researcher to answer his or her research questions.

### **3.9 Method of data collection**

To gather information from the participants, the face-to-face interview technique was used. This method gave the participants the opportunity to freely reply and provided concepts that were presented. At the same time, this technique ensured that the researcher would gather all the information needed. Before data was collected through the use of a questionnaire, participants were informed of the study's goals, procedures, and methods. They had the chance to ask questions, and if they were satisfied, they were then asked to sign the written consent form. The researcher completed the Spinal Cord Lesion Coping Strategies Questionnaire and Brief COPE Scale along with the socio-demographic data and injury related information.

### **3.10 Data collection tools**

The study required a consent form and questionnaire which includes three sections: 1) Socio-demographic 2) Injury related and 3) Coping strategies related questionnaire (SCL CSQ and Brief COPE) as well as other materials such as a pen, pencil, eraser, clip board, white paper and note book.

#### **Questionnaire Description:**

**Socio-demographic Information:** Included age, sex, educational level, living area, marital status, previous occupation.

**Injury related Information:** Collect data about duration of injury, either cause of injury traumatic or non-traumatic, level of lesion, types of paralysis, ASIA impairment Scale and comorbidity.

**Spinal Cord Lesion Coping Strategies Questionnaire:** Assess coping efforts after a sudden onset SCI. The SCL-CSQ is made up of 3 domains: Acceptance of Injury,

Social Reliance, and Fighting Spirit. The scale was originally developed for the SCI population.

**Brief COPE Scale:** The Brief-COPE is a 28 item self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event.

The primary outcome measurement of the study involves assessing various coping styles among young adults and the middle-aged individuals with spinal cord injury (SCI). This will be achieved using the Spinal Cord Lesion Coping Strategies Questionnaire, which evaluates coping styles such as acceptance, social reliance, and fighting spirit. Additionally, the Brief COPE Scale will be used to measure coping mechanisms, including problem-focused, emotion-focused, and avoidance strategies. The secondary outcome measurement will include demographic variables such as age, sex, educational level, living area, marital status, and previous occupation. Furthermore, injury-related data will be collected, including the duration and cause of injury, the level of lesion, types of paralysis, the ASIA impairment scale, and any comorbidities present.

### **3.11 Measurement tools**

#### **Spinal Cord Lesion Coping Strategies Questionnaire:**

The Spinal Cord Lesion Related Coping Strategies Questionnaire (SCL-CSQ) is specifically designed to assess the coping strategies employed by individuals with spinal cord injuries. The SCL-CSQ aims to identify the different strategies individuals use to cope with the physical, emotional, and social challenges that arise from their spinal cord lesion. According on the Swedish SCL sample, (SCL CSQ) satisfies the fundamental requirements of validity and reliability in psychometrics (Elfstrom et al., 2002). SCL CSQ is made up of three coping scales: acceptance (i.e., adjustment of life values), social reliance (i.e., the tendency to associate physical dependence with negative psychological and social dependency), and fighting spirit (i.e., attempts to lessen the effects of the lesion). These three factors consist of several items, such as acceptance (four items), fighting spirit (five items), and social reliance (three items). Responses are coded from 1 to 4 and items are assessed using a four-step Likert scale (strongly disagree, disagree, agree, and strongly agree). The theoretical range of scores is 1–4, representing the mean of the ratings. Higher scores reflect a greater

utilization of the specified strategy. Understanding coping strategies among different age group allows healthcare providers to tailor interventions that enhance effective coping and reduce maladaptive strategies.

### **Brief COPE Scale:**

The Brief COPE scale is a self-report questionnaire consisting of 28 items and 14 subscales (two items per scale) that evaluate various coping mechanisms which correspond to a Likert scale ranging from 1 to 4 (Here 1 for I haven't been doing this at all; 2 for I've been doing this a little bit; 3 for I've been doing this a medium amount and 4 for I've been doing this a lot). The subscales are self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion and self-blame. These subscales are categorized into three groups by Carver (1997): problem-focused strategies, emotion-focused strategies and dysfunctional coping strategies. Acceptance, emotional social support, humor, positive reframing, and religion as emotion-focused strategies. In contrast, active coping, instrumental support, and planning are categorized as problem-focused strategies. And behavioral disengagement, denial, self-distraction, self-blaming, and substance use and venting are considered as dysfunctional coping strategies.

### **3.12 Data analysis Procedure**

Following the end of data collection, each response was carefully verified to identify any errors or unclear data. Then data was entered and analyzed using Statistical Package for Social Science (SPSS) software Version 25. Microsoft Excel 22 worksheet was used to create the most of the graphs and charts. The variables were labeled in a list and the researcher established a computer based data definition record file that consist of a list of variables in order. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. To determine the association between the variables Chi-Square analysis was used.

### **3.13. Ethical consideration:**

Protocol presentation was firstly submitted to the Institutional Review Board (IRB) of BHPI and initial permission was taken from the Head of the Department of Physiotherapy, CRP. When proposal was accepted by the IRB the researcher complied with both the World Health Organization (WHO) and the Bangladesh Medical Research Council's (BMRC) guidelines. Before data was collected, permission was obtained from the heads of the physiotherapy departments at BHPI and from the In-Charge of SCI Unit, CRP by ensuring the safety of participants. The participant, who was interested to participate in the study a consent form and an information sheet were provided to each participant which clearly described the aims and objectives of the study. The participants received full assurance that the privacy of their information would be maintained. The researcher explained that the study may not have directly benefited the subjects but similar cases in the future may benefit from it. The participants were free to discontinue their involvement in the study at any time and the participants might ask any questions they had about the study to the researcher.

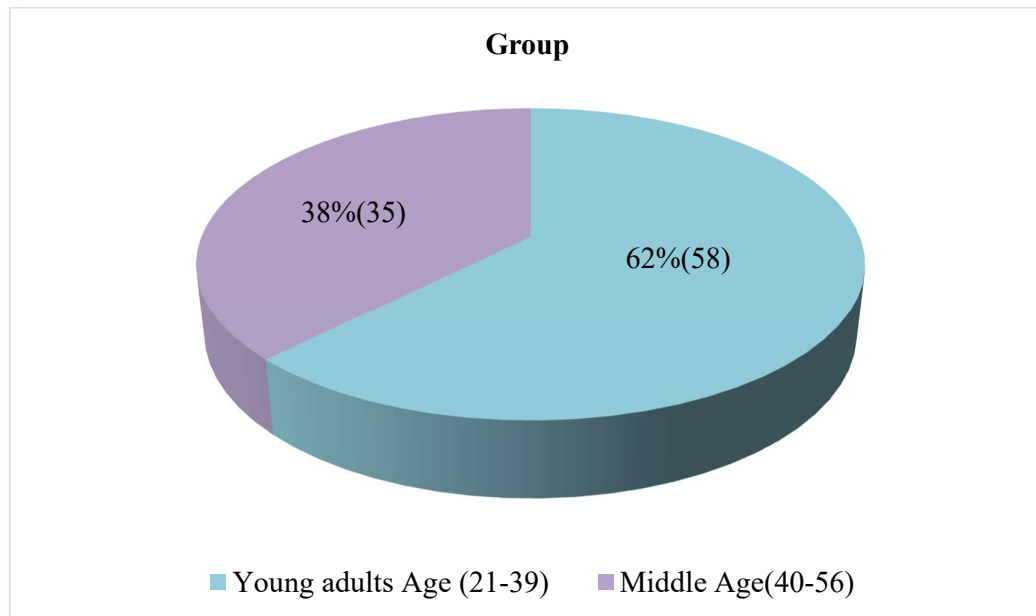
### **3.14 Informed consent**

Informed consent form creating for any research is crucial to ensure that participants understand the study and agree to take part willingly. To this research purpose every participant provided written consent before the questionnaire could be completed. Along with explaining the purpose and objectives of the study, the researcher also discussed his or her own role to the participants. The participants were informed that the confidentiality of their personal data would be maintained. The participants were reassured by the researchers that there would be no harm in participating in the study. The participants' right to withdraw consent and stop participating at any point which did not affect their ability to receive care at the CRP spinal cord injury (SCI) facility in the present or the future. Written consent was obtained from each participant before they could begin answering the questionnaire. The researcher received a written consent form every participant including signature.

Data collected from 93 individuals with spinal cord injuries, categorized into two age groups: young adults (ages 21–39 years) and middle-aged adults (ages 40–56 years). The majority of participants belonged to the young adult group, comprising 62% (n = 58), while the middle-aged group accounted for 38% (n = 35). The findings were analyzed based on socio-demographic factors, injury characteristics, and coping strategies within these two age groups.

#### 4.1 Sociodemographic information:

##### 4.1.1 Age distribution of participants



**Figure 1:** Distribution of participants by age

#### 4.1.2 Baseline Characteristics

**Table- 1: Baseline characteristics of the patients (socio-demographic)**

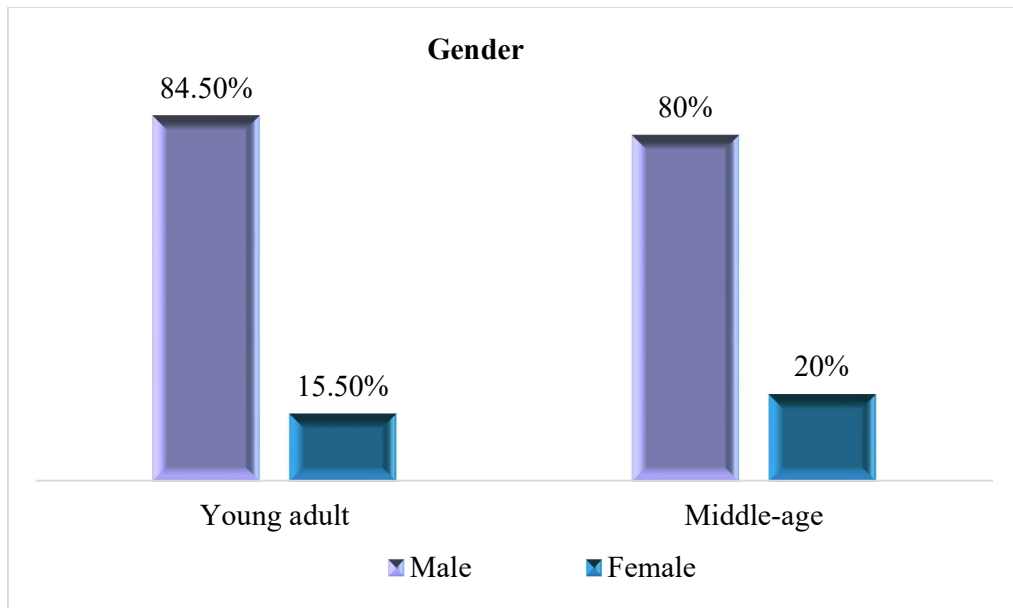
<b>Demographic Variables</b>	<b>Young Adults% (n)</b>	<b>Middle-Aged% (n)</b>
<b>Marital Status</b>		
Married	65.5% (38)	100% (35)
Unmarried	34.5% (20)	0% (0)
<b>Occupation (Before Injury)</b>		
Garments Worker	3.4% (2)	5.7% (2)
Service Holder	10.3% (6)	11.4% (4)
Day Labor	27.6% (16)	28.6% (10)
Businessman	5.2% (3)	11.4% (4)
Driver	1.7% (1)	2.9% (1)
Farmer	6.9% (4)	17.1% (6)
Student	25.9% (15)	0% (0)
Housewife	12.1% (7)	20% (7)
Unemployed	1.7% (1)	0% (0)
Others	5.2% (3)	2.9% (1)
<b>Earning Members</b>		
Own	53.4% (31)	65.7% (23)
Father	31% (18)	0% (0)

<b>Demographic Variables</b>	<b>Young Adults% (n)</b>	<b>Middle-Aged% (n)</b>
Husband	13.8% (8)	20% (7)
Others	1.7% (1)	14.3% (5)
<b>Average Monthly Family Income</b>		
<15,000 BDT	51.7% (30)	62.9% (22)
>15,000 BDT	48.3% (28)	37.1% (13)

The demographic comparison between the young adult and middle-aged groups highlights distinct differences across several variables. In terms of marital status, the young adult group showed a higher proportion of unmarried individuals 34.5%, while the middle-aged group consisted entirely of married participants 100%. The occupation distribution also differed, with young adults predominantly employed as day laborers 27.6% and students 25.9% while the middle-aged group had a higher concentration of farmers 17.1% and day laborers 28.6%. Other occupations among young adults included service holders 10.3%, businessmen 5.2%, and housewives 12.1%, while the middle-aged group had fewer individuals in these roles. Regarding earning members, a majority of young adults 53.4% were the primary earners in their households, with a significant proportion relying on their fathers 31% or husbands 13.8% for financial support. In contrast, the middle-aged group had a larger proportion of primary earners 65.7%, with a notable percentage also relying on their husbands 20% and other sources 14.3%. The average monthly family income showed that the young adult group had a more balanced income distribution, with 51.7% earning less than 15,000 BDT and 48.3% earning more. In the middle-aged group, however, a higher percentage 62.9% reported an income of less than 15,000 BDT, with 37.1% earning above this threshold.

### 4.1.3. Gender of the participants

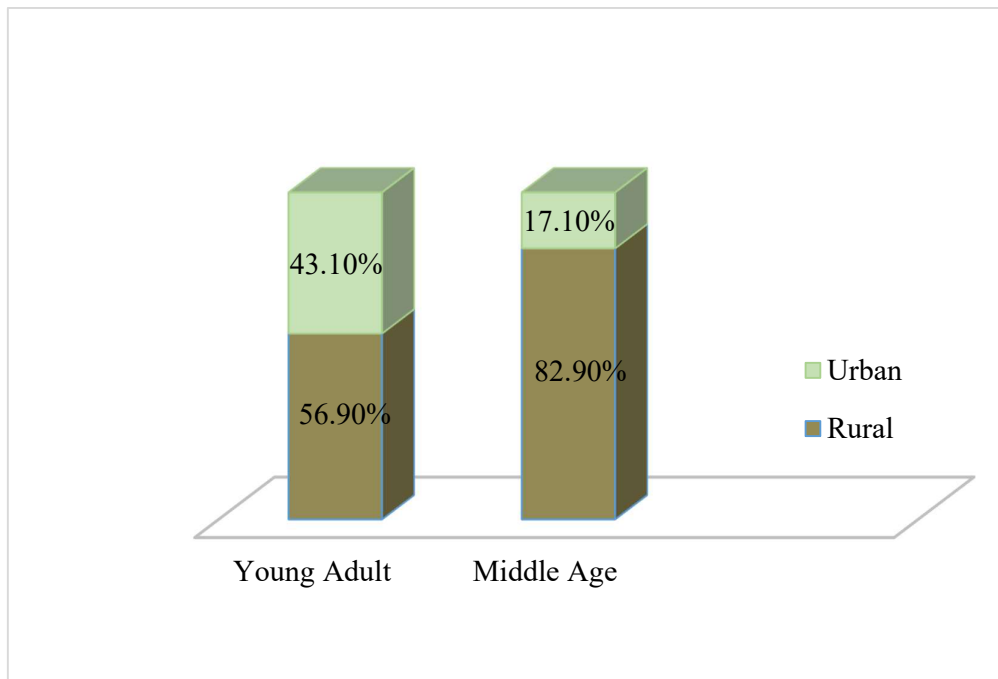
There were more male participants than female ones in both age categories. In the young adult group, male were 84.5% (n=49) and female were 15.5% (n=9). Similarly, in the middle-aged group, males comprised 80% (n=28) of the participants, while females made up 20% (n=7).



**Figure-2:** Gender of the participants

#### 4.1.4 Living area of the participants

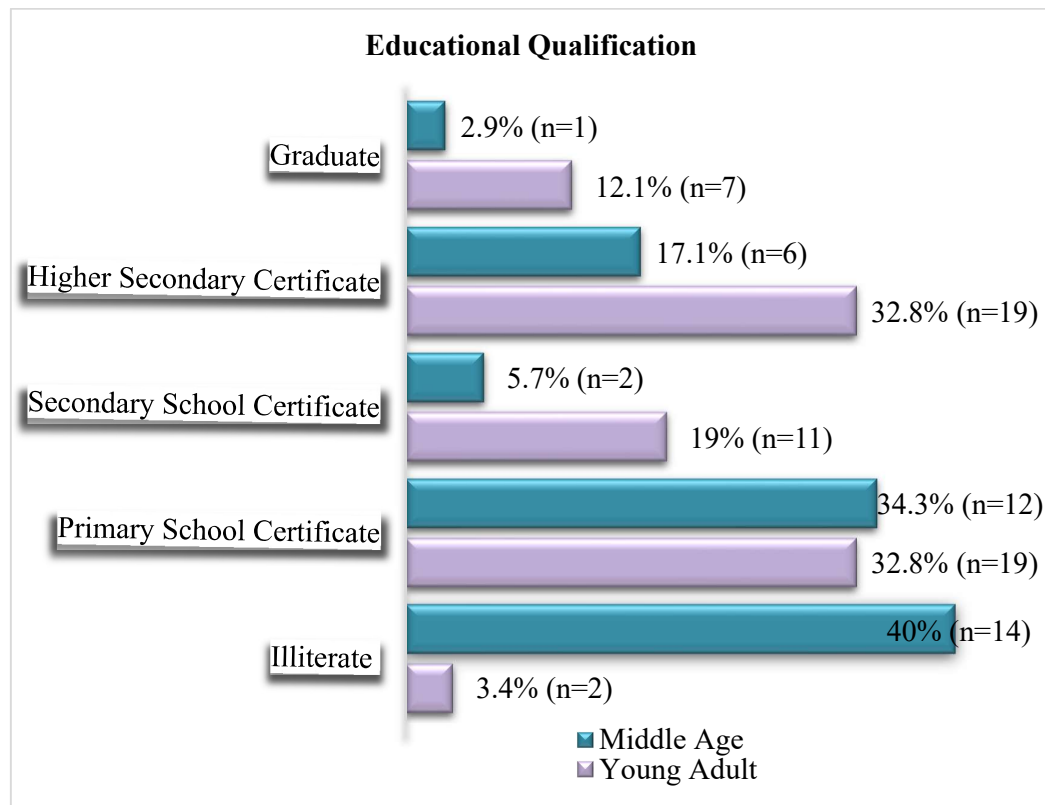
Among young adults, 56.90% (n=33) reside in rural areas, while 43.10% (n=25) are from urban areas. In comparison, 82.90% (n=29) of middle-aged individuals lives in rural areas, and only 17.10% (n=6) reside in urban areas. The data indicate that rural residency is more common in both age groups, particularly among the middle-aged population.



**Figure-3:** Living area of the participants

#### 4.1.5 Educational backgrounds of the participants

The educational distribution of the participants showed clear differences between the young adult and middle-aged groups. In the young adult group, 3.4% were illiterate, while a large portion, 32.8% had a Primary School Certificate. Additionally, 19% had completed a Secondary School Certificate, 32.8% had a Higher Secondary Certificate, and 12.1% were graduates. In contrast, the middle-aged group had a higher illiteracy rate, with 40% being illiterate. Among those with formal education, 34.3% held a Primary School Certificate, 5.7% had a Secondary School Certificate, 17.1% had a Higher Secondary Certificate, and only 2.9% were graduates.

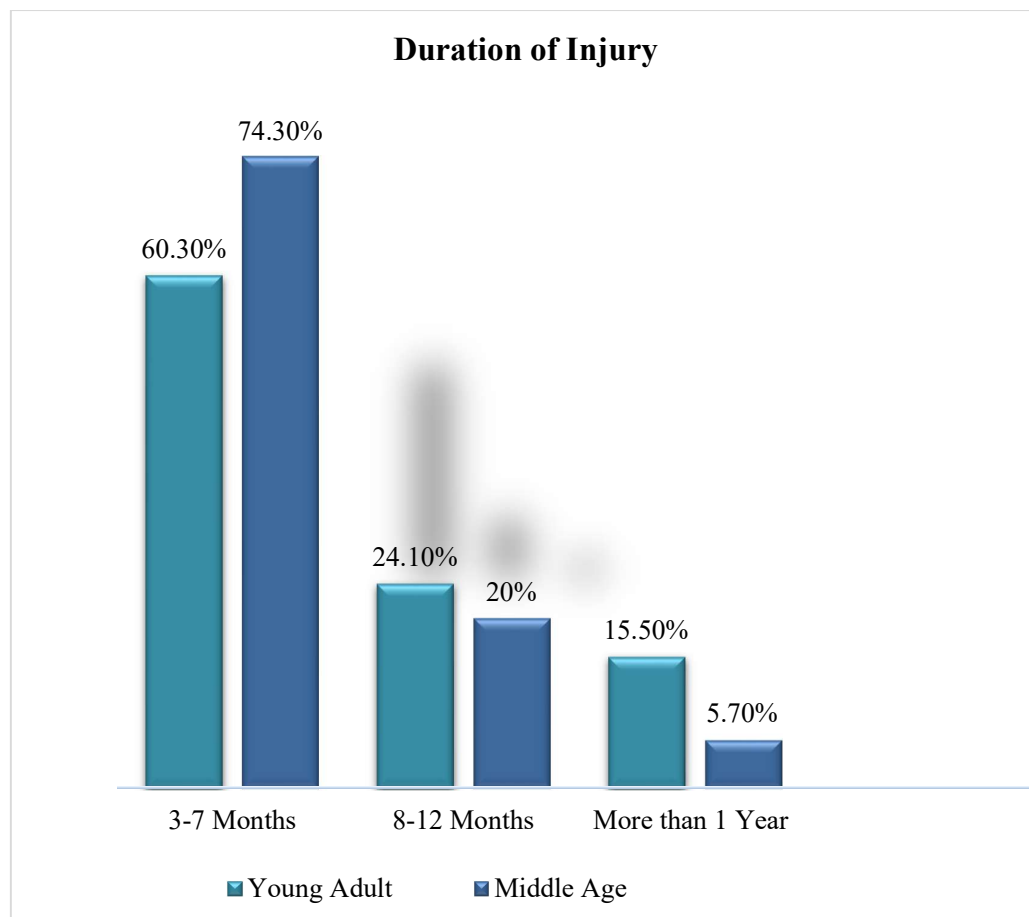


**Figure-4:** Education profile of young adults and middle-aged participants

## 4.2 Injury Related information:

### 4.2.1 Duration of injury

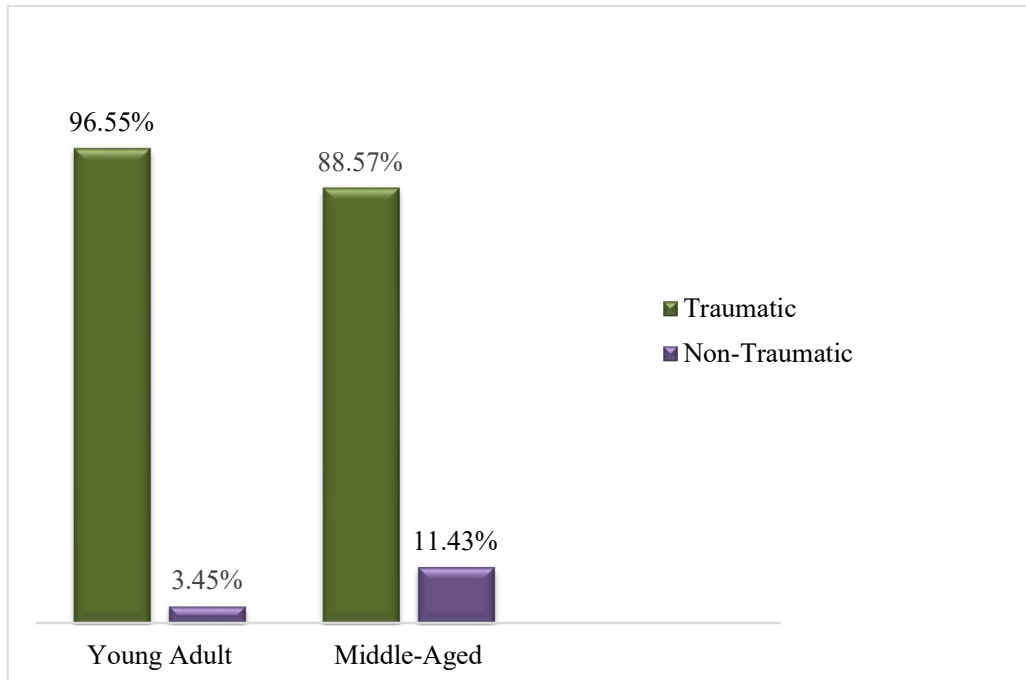
In both age groups, injuries lasting three to seven months were the most prevalent, affecting 60.30% (n=35) of young adults and 74.30% (n=26) of middle-aged individuals. The second most common injury duration, between eight and twelve months, was reported by 24.10% (n=14) of young adults and 20% (n=14) of middle-aged individuals. Only 15.50% (n=9) of young adults and 5.70% (n=2) of middle-aged individuals experienced injuries lasting longer than a year.



**Figure 5:** Duration of injury between young adults and middle-aged individual

#### 4.2.2 Causes of Injury

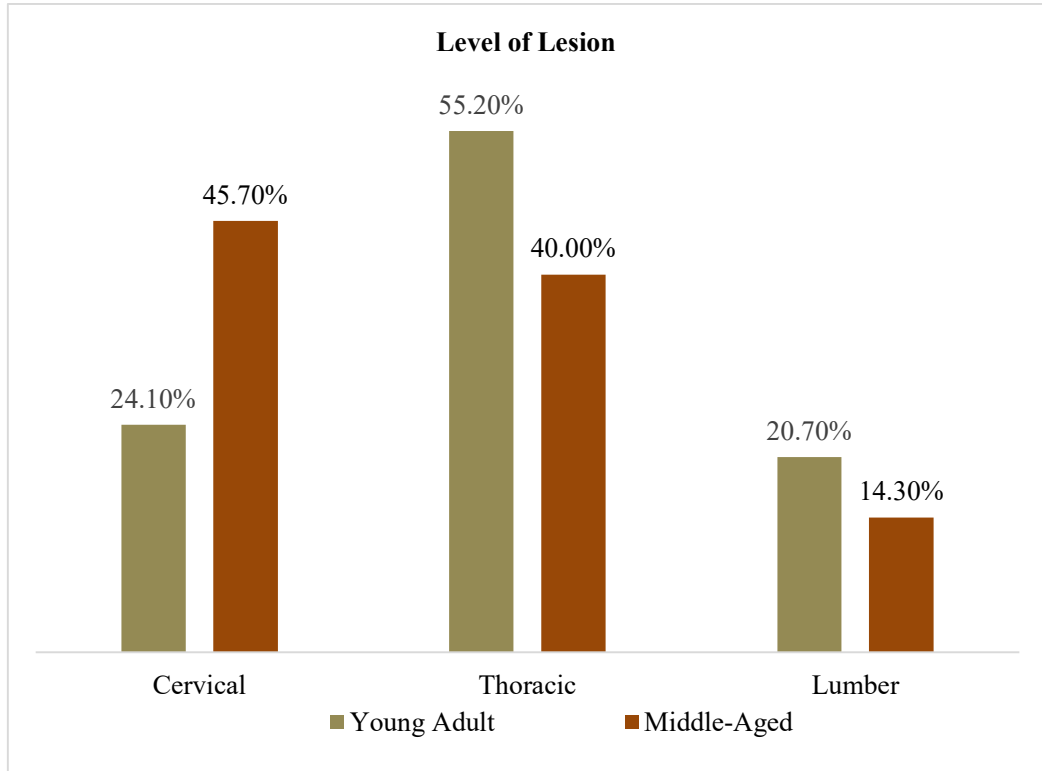
Although there were variations in the distribution, traumatic injuries were the main cause of injury for both the young adult and middle-aged groups. Only 3.4% (n=2) of the injuries in the young adult's group were non-traumatic, whereas 96.6% (n=56) of the injuries were traumatic. On the other hand, 11.4% (n=4) of injuries among middle-aged people were non-traumatic, whereas 88.6% (n=31) were traumatic.



**Figure -6:** Causes of Injury among the participants

### 4.2.3 Level of lesion

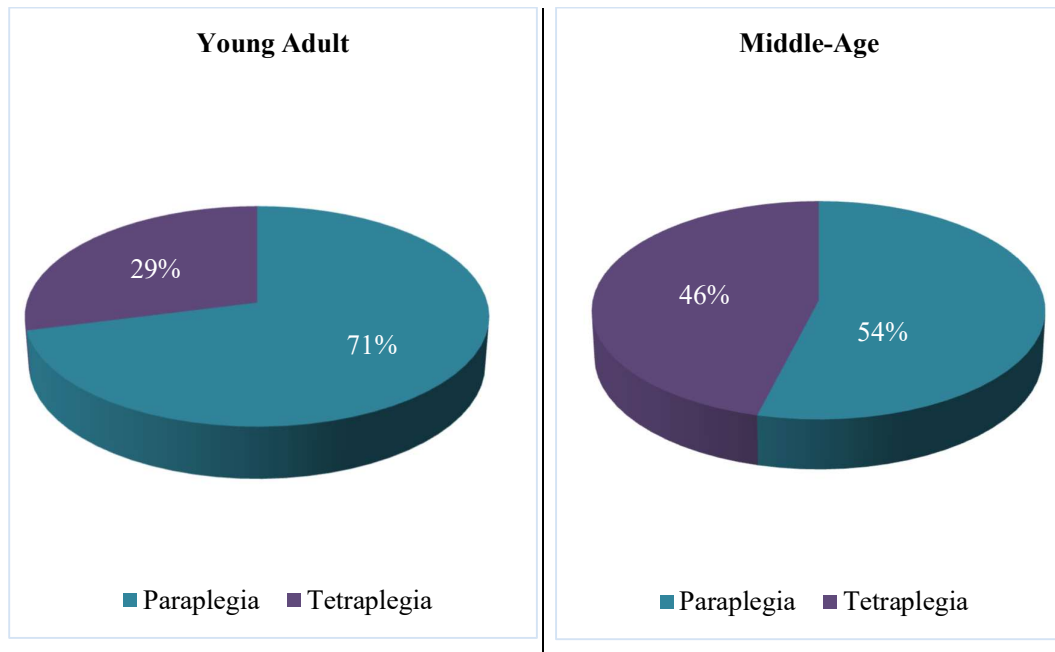
Between the two group, young adult group, thoracic lesions were the most common, making up 55.2% (n=32), followed by cervical lesions at 24.1% (n=14) and lumbar lesions at 20.7% (n=12). In contrast, for the middle-age group, cervical lesions became more prevalent, comprising 45.7% (n=16) of the cases, while thoracic lesions decreased to 40.0% (14), and lumbar lesions were the least common at 14.3% (5).



**Figure-7:** Level of lesion of the participants

#### 4.2.4 Type of paralysis

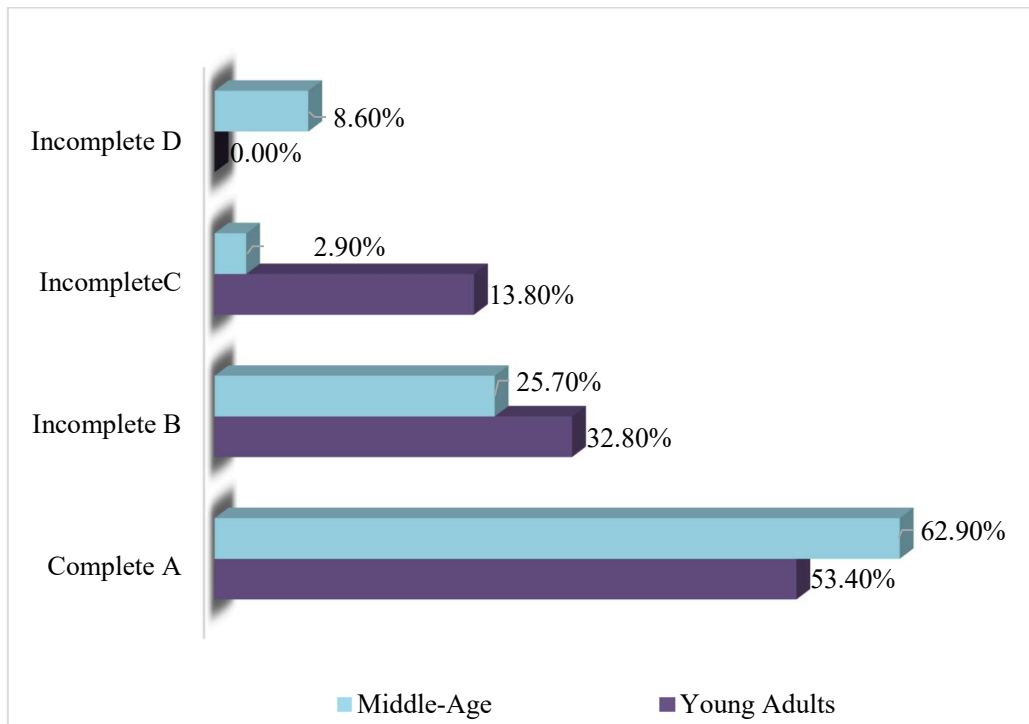
In the young adult group, paraplegia is the most common type, comprising 71% of cases, while tetraplegia accounts for 29%. In contrast, the middle-age group shows a more balanced distribution, with paraplegia affecting 54% of individuals and tetraplegia affecting 46%. This suggests that in younger adults, paraplegia is more prevalent, while in middle-aged individuals, tetraplegia becomes nearly as common as paraplegia.



**Figure-8:** Types of Paralysis of the participants

#### 4.2.5 ASIA impairment scale

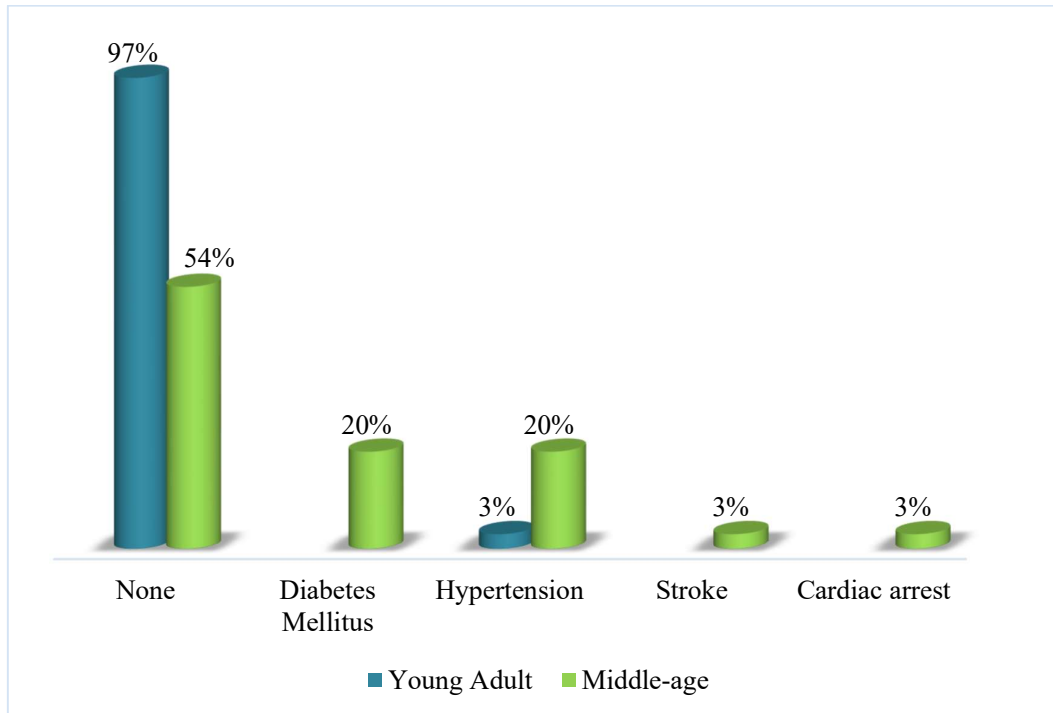
In the young adult group, the most common impairment is complete A, which affects 53.4% of individuals, followed by incomplete B at 32.8%, and incomplete C at 13.8%. In the middle-age group, complete A is still the most common, it is more prevalent at 62.9%, while incomplete B is less common at 25.7%. Additionally, the middle-aged group has a small percentage of incomplete D (8.6%) and incomplete C (2.9%), which are not seen in the younger group.



**Figure-9:** ASIA impairment scale of the participants

#### 4.2.6 Comorbidity

The majority of young adults, 97%, had no comorbidities, and only 3% had hypertension. However, the middle-aged group exhibited a greater range of comorbidities. Twenty percent of the population suffered from both hypertension and diabetes mellitus, while 3% suffered from cardiac arrest or stroke. Additionally, 54.3% of middle-aged individuals reported having no comorbidities.



**Figure-10: Comorbidity of the participants**

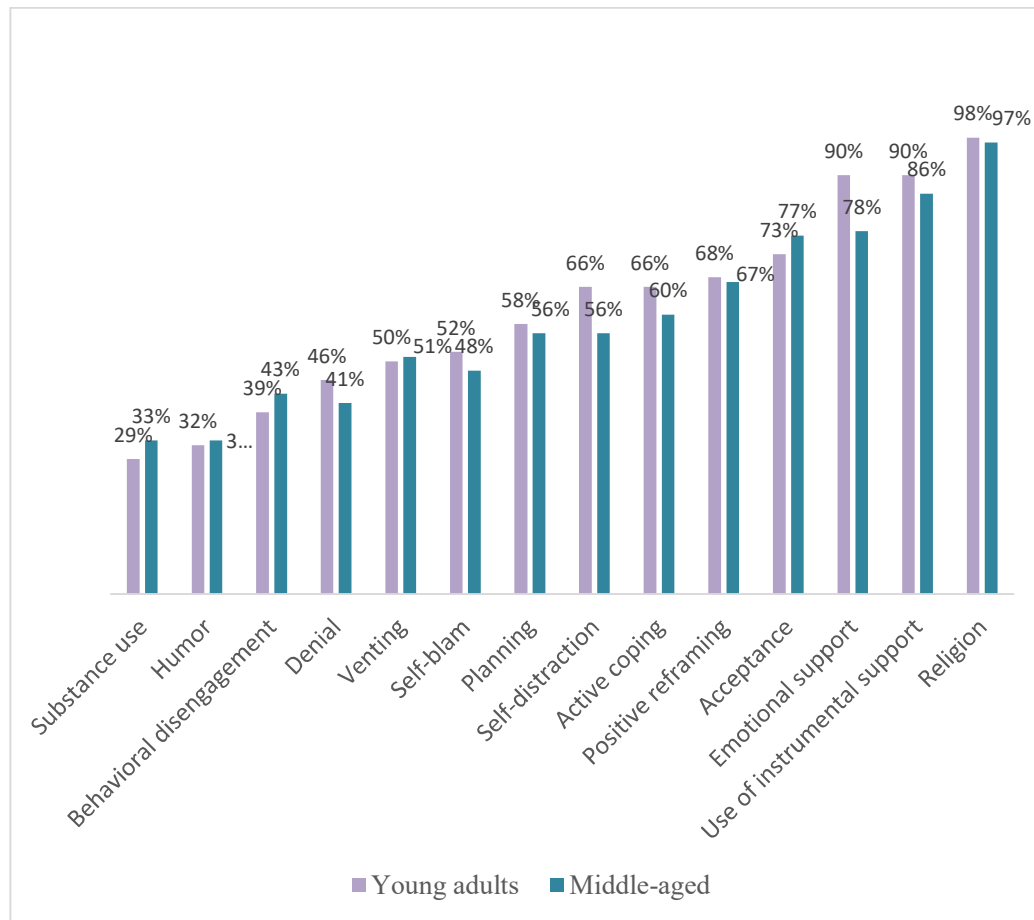
### 4.3 SCL-CSQ coping domains

**Table-2: SCL-CSQ scale descriptive statistics**

<b>Coping domains</b>	<b>Young Adult</b>		<b>Middle-Age</b>	
	<b>Mean</b>	<b>Std. deviation</b>	<b>Mean</b>	<b>Std. deviation</b>
<b>Acceptance</b>	2.52	± 0.715	2.28	± 0.565
<b>Fighting spirit</b>	1.47	± 0.456	1.92	± 0.373
<b>Social reliance</b>	1.90	± 0.448	2.02	± 0.557

Spinal Cord Lesion Coping Strategies Questionnaire (SCL- CSQ) scale has three domains that are acceptance, fighting spirit and social reliance. Above table-2 shows that the mean±SD of acceptance, fighting spirit and social reliance of young adult and middle-age group. The results show that young adults use acceptance more than middle-aged individuals. However, middle-aged individuals show a higher level of fighting spirit compared to young adults. They also rely slightly more on social support than young adults. This suggests that young adults tend to cope by accepting their situation, while middle-aged individuals are more likely to fight their condition and seek help from others.

#### 4.4 Brief-COPE subscales analysis



**Figure 11.** Comparison of Brief-COPE subscale responses between young adults and middle-aged participants.

This figure compares the frequency of use (in percentages) of 14 different coping strategies by young adults and middle-aged individuals, based on responses to the Brief-COPE questionnaire. Both groups used religion the most (98% young adults, 97% middle-aged), followed by emotional support and instrumental support. Young adults reported higher use of emotional support (90%) compared to middle-aged individuals (78%). On the other hand, middle-aged individuals used acceptance (77%) and venting (51%) more than young adults. Young adults tend to use emotional support, instrumental support, positive reframing, active coping, self-distraction, planning, self-blame and denial more than middle-aged adults. Less common strategies for both groups included humor, behavioral disengagement, and substance use, with substance use being the lowest (29% young adults, 33% middle-aged).

#### 4.5. Coping domain of Brief-COPE:

**Table-3: Brife-COPE scale descriptive statistics:**

Coping domains	Young Adult		Middle-Age	
	Mean	Std. deviation	Mean	Std. deviation
Problem-focused	22.67	±3.446	21.46	±4.217
Emotion-focused	31.69	±3.347	31	±3.789
Avoidant	14.47	±3.599	13.83	±3.312

Table 3 presents the means and standard deviations of coping strategy scores measured by the Brief-COPE scale for young adult and middle-aged groups. The young adult group reported a higher mean score for problem-focused coping ( $M = 22.67$ ,  $SD = 3.45$ ) compared to the middle-aged group ( $M = 21.46$ ,  $SD = 4.22$ ). Emotion-focused coping scores were similar across both groups, with young adults scoring ( $M = 31.69$ ,  $SD = 3.35$ ) and middle-aged participants scoring ( $M = 31.00$ ,  $SD = 3.79$ ). Avoidant coping strategies yielded comparable means between young adults ( $M = 14.47$ ,  $SD = 3.60$ ) and middle-aged adults ( $M = 13.83$ ,  $SD = 3.31$ ). These results indicate that both groups utilized emotion-focused coping strategies most frequently, followed by problem-focused and avoidant coping.

## 4.6 Association Between Coping Domains and Sociodemographic Characteristics

### Young Adults

**Table 4: Association between Acceptance coping along with Gender, Living Area and Educational Qualification:**

Acceptance	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I have been able to see my lesion in relation to other things in life	3.433	<b>.011*</b>	2.262	.356	7.541	<b>.047*</b>
I think I have accepted my lesion	2.932	.054*	1.574	.247	15.489	.057
My lesion has made me learn to appreciate new things in life I did not think about before	1.043	.157	4.149	<b>.001*</b>	7.549	.388
What I have lost physically, I have gained in so many other ways	1.149	.396	1.273	.407	9.577	<b>.047*</b>

The Chi-square ( $\chi^2$ ) was used to examine the relationship between acceptance-related statements and demographic factors such as gender, living area, and education. The statement "I have been able to see my lesion in relation to other things in life" showed significant associations with gender ( $p = .011$ ) and education ( $p = .047$ ), suggesting these factors influence how individuals view their condition in a broader context. The statement "I think I have accepted my lesion" showed a near-significant result with gender ( $p = .054$ ) and education ( $p = .057$ ), indicating a possible link. The statement "My lesion has made me learn to appreciate new things in life I did not think about before" was significantly

associated only with living area ( $p = .001$ ), showing that environment may influence the development of a positive outlook. Lastly, "What I have lost physically, I have gained in so many other ways" showed a significant association with education ( $p = .047$ ), suggesting that educational level may impact the ability to find meaning and personal growth despite physical loss.

**Table 5: Association between Fighting spirit along with Gender, Living Area and Educational Qualification:**

Fighting spirit	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I try to make the best of life despite the lesion	.537	.468	3.247	.074	9.114	<b>.030*</b>
I refuse to let the lesion rule my life	.478	.114	1.458	.460	4.555	<b>.000*</b>
I always try to manage on my own as much as possible.	1.970	.164	5.612	<b>.024*</b>	10.071	.224
It is important for me to set goals that I can fight to achieve.	2.251	.137	.200	.177	8.515	.190
I always try to look out for new ways to make life easier.	4.525	.072	1.787	.397	5.702	.449

The Chi-square ( $\chi^2$ ) analysis was conducted to examine the association between fighting spirit and demographic factors such as gender, living area, and education. The statement "I try to make the best of life despite the lesion" showed a significant association with education ( $p = .030$ ), suggesting that individuals with different educational levels may

vary in their ability to stay positive. The statement "I refuse to let the lesion rule my life" was significantly associated with education ( $p = .000$ ), indicating a strong link between education and maintaining control over one's life. The statement "I always try to manage on my own as much as possible" showed a significant association with living area ( $p = .024$ ), suggesting that independence may be influenced by the type of area a person lives in. Other statements, such as "It is important for me to set goals that I can fight to achieve" and "I always try to look out for new ways to make life easier", did not show significant associations with any demographic factors.

**Table 6: Association between Social reliance along with Gender, Living Area and Educational Qualification:**

Social reliance	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
My lesion has taught me that we are all dependent upon others.	4.950	.277	7.806	<b>.006*</b>	15.524	.121
I would feel completely helpless without support from others.	1.871	.176	3.664	.126	12.914	.099
You have to believe that other people are able to help you.	6.825	.052	5.649	.260	8.409	.175

The Chi-square ( $\chi^2$ ) analysis explored the relationship between social reliance items and sociodemographic variables. A significant association was found between living area and the item "My lesion has taught me that we are all dependent upon others" ( $p = .006$ ), indicating that living environment may influence this perception. A marginal association was observed between gender and the belief "You have to believe that other people are able to help you" ( $p = .052$ ). No other associations were statistically significant.

### Middle Age

**Table 7: Association between Acceptance coping along with Gender, Living Area and Educational Qualification:**

Acceptance	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I have been able to see my lesion in relation to other things in life	3.006	.229	.972	.457	7.937	.101
I think I have accepted my lesion	2.763	.108	.475	.051*	9.128	.055
My lesion has made me learn to appreciate new things in life I did not think about before	2.014	<b>.000*</b>	1.559	.417	9.271	.237
What I have lost physically, I have gained in so many other ways	3.281	.402	5.431	.216	8.167	.262

The table presents the Chi-square ( $\chi^2$ ) results examining the relationship between various aspects of acceptance of a lesion and three sociodemographic variables: gender, living area, and education. A statistically significant association was found between gender and the statement "My lesion has made me learn to appreciate new things in life I did not think about before" ( $p = .000$ ), indicating that gender plays a significant role in shaping this perspective. Additionally, a marginally significant association was observed between living area and the statement "I think I have accepted my lesion" ( $p = .051$ ). While some variation across education levels was noted for instance, "I think I have accepted my lesion" ( $p = .055$ ) and "I have been able to see my lesion in relation to other things in life" ( $p = .101$ ) these did not reach conventional levels of statistical significance ( $p < .05$ ). No significant associations were found between living area and any of the acceptance

statements. Overall, gender appears to have a more notable influence on participants' acceptance and reinterpretation of their lesion experiences.

**Table 8: Association between Fighting spirit along with Gender, Living Area and Educational Qualification:**

Fighting spirit	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I try to make the best of life despite the lesion	.483	.407	3.426	.073	10.082	.309
I refuse to let the lesion rule my life	.268	.096	.453	.400	3.277	.450
I always try to manage on my own as much as possible.	1.557	.069	6.098	.341	5.738	<b>.005*</b>
It is important for me to set goals that I can fight to achieve.	1.250	.327	1.207	.167	11.500	.311
I always try to look out for new ways to make life easier.	2.188	.145	.805	.377	5.164	.397

The Chi-square ( $\chi^2$ ) analysis explores the relationship between fighting spirit and the sociodemographic variables of gender, living area, and education. A statistically significant association was found between education and the statement "I always try to manage on my own as much as possible" ( $p = .005$ ), indicating that education level may influence self-reliance among individuals with lesions. While the statement "I try to make the best of life despite the lesion" did not meet the conventional threshold. Other statements such as "I refuse to let the lesion rule my life," "It is important for me to set

goals that I can fight to achieve," and "I always try to look out for new ways to make life easier" did not show significant associations with gender, living area, or education. Overall, the results suggest that education plays a more critical role in shaping a sense of independence, while other aspects of fighting spirit appear less influenced by the demographic variables assessed.

**Table 9: Association between Social reliance along with Gender, Living Area and Educational Qualification:**

Social reliance	Gender		Living Area		Education	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
My lesion has taught me that we are all dependent upon others.	10.313	<b>.025*</b>	1.207	.412	11.187	.444
I would feel completely helpless without support from others.	1.316	.481	.897	.065	17.271	<b>.002*</b>
You have to believe that other people are able to help you.	5.040	<b>.032*</b>	1.922	<b>.050*</b>	1.823	.093

The Chi-square ( $\chi^2$ ) analysis for social reliance reveals significant associations between certain statements and the sociodemographic variables of gender, living area, and education. A significant relationship was found between gender and the belief that "My lesion has taught me that we are all dependent upon others" ( $p = .025$ ), as well as the view that "You have to believe that other people are able to help you" ( $p = .032$ ), indicating that gender influences perceptions of dependence and trust in others. Living area also showed a significant association with the belief in others' ability to help ( $p = .050$ ), suggesting that urban or rural contexts may shape reliance on social support. Additionally, education was significantly associated with the statement "I would feel completely helpless without

support from others" ( $p = .002$ ), highlighting that educational background may influence feelings of dependency. Overall, gender, living area, and education all play roles in shaping individuals' attitudes toward social reliance in the context of living with a lesion.

## 4.7 Association Between Coping Domains and Injury-Related Characteristics

### Young Adults

**Table 10: Association between Acceptance along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Acceptance	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I have been able to see my lesion in relation to other things in life	9.290	.249	6.510	.314	5.857	.309	1.488	.318
I think I have accepted my lesion	4.486	<b>.005*</b>	5.938	.305	6.551	.262	.290	.082
My lesion has made me learn to appreciate new things in life I did not think about before	2.790	.473	.131	<b>.002*</b>	3.986	.331	3.944	.123
What I have lost physically, I have gained in so many other ways	9.088	.149	1.545	.206	5.174	.439	4.771	.275

The Chi-square ( $\chi^2$ ) analysis of acceptance in relation to clinical factors-duration of injury, causes of injury, level of lesion, and types of paralysis-revealed several notable findings. A significant association was found between duration of injury and the statement "I think I have accepted my lesion" ( $p = .005$ ), indicating that the length of time since injury may influence acceptance levels. Additionally, the cause of injury showed a significant relationship with the statement "My lesion has made me learn to appreciate new things in life I did not think about before" ( $p = .002$ ), suggesting that the origin of the injury impacts how individuals find meaning or new appreciation in life. No significant associations were observed between the other acceptance statements and the level of lesion or type of paralysis. Overall, duration and cause of injury appear to play more influential roles in shaping psychological acceptance than lesion level or paralysis type.

**Table 11: Association between Fighting spirit along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Fighting spirit	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I try to make the best of life despite the lesion	1.411	<b>.037*</b>	1.009	.319	.090	<b>.020*</b>	.930	.339
I refuse to let the lesion rule my life	1.525	.327	.042	<b>.000*</b>	2.350	.274	3.372	.180
I always try to manage on my own as much as possible.	8.269	.064	.114	<b>.044*</b>	3.623	.205	2.177	.323
It is important for me to set goals that I can fight to achieve.	3.119	.222	.682	.419	1.787	<b>.024*</b>	1.491	.071
I always try to look out for new ways to make life easier.	1.114	.389	6.208	.068	8.798	.345	1.117	.347

This table illustrates the associations between fighting spirit coping items and clinical variables such as duration of injury, causes of injury, level of lesion, and types of paralysis among individuals with spinal cord injury. Significant relationships were observed for several items. The statement “I try to make the best of life despite the lesion” was significantly associated with duration of injury ( $p = .037$ ) and level of lesion ( $p = .020$ ), suggesting that both time since injury and lesion severity influence positive outlooks. “I refuse to let the lesion rule my life” showed a strong association with causes of injury ( $p = .000$ ), indicating that the origin of the injury may shape determination and control. Similarly, “I always try to manage on my own as much as possible” was significantly linked to causes of injury ( $p = .044$ ), reflecting how etiology may impact self-reliant behaviors. Additionally, the importance of goal-setting (“It is important for me to set goals that I can

fight to achieve”) was significantly associated with level of lesion ( $p = .024$ ), suggesting that individuals with more severe lesions may rely more on goal-directed coping. While other items did not show significant associations, these findings emphasize the role of specific clinical characteristics in shaping elements of fighting spirit among individuals with SCI.

**Table 12: Association between Social reliance along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Social reliance	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
My lesion has taught me that we are all dependent upon others.	5.772	<b>.000*</b>	.232	.208	1.774	.390	4.471	<b>.039*</b>
I would feel completely helpless without support from others.	3.718	.128	.724	.475	6.559	.343	7.379	.068
You have to believe that other people are able to help you.	6.664	<b>.034*</b>	3.993	<b>.043*</b>	1.458	.300	.088	.066

The Chi-square ( $\chi^2$ ) analysis of social reliance in relation to clinical variables-duration of injury, causes of injury, level of lesion, and types of paralysis-reveals key insights. A significant association was observed between duration of injury and the statements "My lesion has taught me that we are all dependent upon others" ( $p = .000$ ) and "You have to believe that other people are able to help you" ( $p = .034$ ), indicating that the length of time since injury strongly influences perceptions of social dependence and trust in others' support. Additionally, the cause of injury was significantly associated with belief in others' ability to help ( $p = .043$ ), while the type of paralysis showed a significant relationship with

the understanding of being dependent on others ( $p = .039$ ). No significant associations were found between other variables and the feeling of helplessness without support. These findings suggest that duration, cause, and type of injury influence individuals' reliance on and belief in social support systems.

### Middle Age

**Table 13: Association between Acceptance along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Acceptance	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I have been able to see my lesion in relation to other things in life	5.517	<b>.017*</b>	3.952	.156	12.601	.325	3.914	.459
I think I have accepted my lesion	2.637	.073	1.954	.169	1.429	.324	1.322	<b>.002*</b>
My lesion has made me learn to appreciate new things in life I did not think about before	3.670	<b>.004*</b>	.972	.411	6.302	.083	4.106	.075
What I have lost physically, I have gained in so many other ways	18.947	.073	3.222	.102	3.494	.380	1.789	<b>.001*</b>

The Chi-square ( $\chi^2$ ) analysis examining acceptance in relation to clinical variables duration of injury, causes of injury, level of lesion, and types of paralysis reveals several significant associations. A strong relationship was found between duration of injury and the statement "I have been able to see my lesion in relation to other things in life" ( $p = .017$ ), suggesting

that time since injury plays a key role in developing broader perspective and meaning. Additionally, type of paralysis was significantly associated with the statement "I think I have accepted my lesion" ( $p = .002$ ), indicating that the nature of the paralysis may influence levels of psychological acceptance. Though the statement "My lesion has made me learn to appreciate new things in life I did not think about before" approached significance with duration ( $p = .004$ ), and "What I have lost physically, I have gained in so many other ways" showed a strong trend with type of paralysis ( $p = .001$ ).

**Table 14: Association between Fighting spirit along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Fighting spirit	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
I try to make the best of life despite the lesion	5.529	.391	.573	.456	3.586	.431	2.092	.194
I refuse to let the lesion rule my life	5.771	.262	.282	.250	2.372	.159	1.238	.342
I always try to manage on my own as much as possible.	4.865	.112	.857	.452	6.042	.358	2.074	.119
It is important for me to set goals that I can fight to achieve.	5.702	.289	8.327	.108	14.131	.265	4.174	.249
I always try to look out for new ways to make life easier.	.831	<b>.021*</b>	.071	.069	2.712	.290	.461	.447

The analysis of the relationship between fighting spirit and various injury-related factors reveals mixed results. Most chi-square ( $\chi^2$ ) tests indicate no statistically significant associations, as reflected by high p-values across categories such as Duration of Injury,

Causes of Injury, Level of Lesion, and Types of Paralysis for statements like "I try to make the best of life despite the lesion" and "I refuse to let the lesion rule my life." However, a notable exception is observed for the statement "I always try to look out for new ways to make life easier," which shows a statistically significant association with Fighting Spirit ( $p = .021$ ), suggesting that individuals' proactive efforts to adapt are meaningfully related to their fighting spirit. Overall, while most aspects of fighting spirit appear independent of injury characteristics, the tendency to seek new coping strategies may be influenced by the individual's psychological resilience.

**Table 15: Association between Social reliance along with Duration of Injury, Causes of Injury, Level of Lesion and Types of Paralysis:**

Social reliance	Duration of Injury		Causes of Injury		Level of Lesion		Types of Paralysis	
	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value	$\chi^2$ value	P-value
My lesion has taught me that we are all dependent upon others.	.990	.475	2.399	.281	8.903	.336	1.756	.305
I would feel completely helpless without support from others.	3.217	.310	.824	.167	2.753	.270	.917	.298
You have to believe that other people are able to help you.	3.529	.416	2.321	.209	1.783	.226	.998	.326

Chi-square ( $\chi^2$ ) analysis showed no significant association between social reliance items and injury-related characteristics, including duration of injury, cause of injury, level of lesion, and type of paralysis (all  $p > .05$ ). This suggests that social reliance beliefs are not strongly influenced by clinical aspects of the injury.

The purpose of the analysis and discussion is to interpreting the study's findings in light of existing literature and assessing how well they align with the research questions and objectives. The chapter presents a detailed discussion of the results regarding coping strategies among young adults and middle age individual with spinal cord injury patients. The goal is to identify how various sociodemographic factors (such as gender, living area and education qualification) and injury related factors (such as duration of injury, causes of injury, level of lesion and types of paralysis) are associated with coping strategies among the different age group.

In this study, 99 participants were selected who were more than 3 months post spinal cord injury. The majority of participants were in the young adult's group (ages 21–39 years) about 62% and middle-aged adults (ages 40–56 years) about 38% which reflects the global trend of SCI incidence being higher among younger populations, particularly in low and middle-income countries where road traffic injuries and falls are prevalent (Singh et al., 2014). The gender distribution revealed that there were more male participants than female in both age group. Thoracic lesions and paraplegia were more common among young adults, while middle-aged individuals experienced more cervical lesions and a higher prevalence of tetraplegia. These results align with Anderson (2004), who found lesion level to be a predictor of functional limitations and psychological burden.

The relatively short duration since injury among participants in the present study predominantly less than one year may account for the comparatively lower mean scores observed across the three coping domains. Acceptance was higher among young adults ( $M = 2.52$ ) compared to middle-aged adults ( $M = 2.28$ ), while Fighting Spirit and Social Reliance were slightly higher among the middle-aged group. In contrast, findings from Saurí et al. (2014), where participants had an average injury duration of 15.44 years, reported higher scores in Acceptance ( $M = 3.00$ ), Fighting Spirit ( $M = 3.18$ ), and Social Reliance ( $M = 2.62$ ). Similarly, Saffari et al. (2015) found that individuals with an average of more than four years post-injury demonstrated even higher Acceptance ( $M = 3.23$ ) and Social Reliance ( $M = 3.43$ )

scores. These comparisons suggest that coping strategies develop and strengthen over time as individuals adjust psychologically to their condition. Therefore, the lower coping scores in the present sample likely reflect early-stage adaptation, emphasizing the need for timely psychological support during initial rehabilitation.

The Brief-COPE Inventory was also used in this study to explore coping strategies among young and middle-aged people with spinal cord injury. The results showed that adaptive coping strategies were used most often. Religious coping was the top strategy, reported by 98% of young adults and 97% of middle-aged adults, slightly higher than the 90.7% found in a study from Zimbabwe (Muteti et al., 2021). Other common strategies included acceptance, emotional support, and instrumental support. Emotional support was used by 90% of young adults in this study, compared to 67.4% in the Zimbabwean study, suggesting stronger reliance on social support. Strategies like planning, positive reframing, and active coping were also widely used in both studies. Maladaptive strategies like substance use, denial, and behavioral disengagement were less common. However, substance use was higher in the current study (29–33%) compared to the Zimbabwean study (2.3%). In both studies found that people mostly use positive coping methods, especially religious and social support, but the current study showed a stronger focus on emotional and social coping, possibly due to cultural or healthcare differences (Muteti et al., 2021).

This study found that gender, education, and living area affected acceptance coping differently among young and middle-aged adults with spinal cord injury (SCI). The statement “I have been able to see my lesion in relation to other things in life” was significantly associated with gender ( $p = .011$ ) and education ( $p = .047$ ) among young adults, but showed no significant link in middle-aged adults. Both Saffari et al. (2015) and Saurí et al. (2014) did not analyze this item specifically but reported overall education as significant ( $p = .0001$ ;  $p = .04$ ), and gender as non-significant ( $p = .48$ ;  $p = .44$ ). The item “I think I have accepted my lesion” showed near-significant links with gender in young adults ( $p = .054$ ), living area in middle-aged adults ( $p = .051$ ), and education in young adults ( $p = .057$ ) and middle-aged adults ( $p = .055$ ). The item “My lesion has made me learn to appreciate new things in life” was significantly associated with living area in young adults ( $p = .001$ ) and with gender in middle-aged adults ( $p = .000$ ); Saffari similarly found a significant effect of living area ( $p = .004$ ).

Lastly, the item “What I have lost physically, I have gained in so many other ways” was significantly associated with education only in young adults ( $p = .047$ ), but not in middle-aged adults. Overall, the present study offers more detailed insights by comparing item-level associations across age groups, which were not examined in earlier studies that relied on total domain scores only.

Fighting spirit coping refers to one’s inner drive to stay positive and in control after spinal cord injury (SCI). This study found that young and middle-aged adults coped differently across key items. In young adults, the statement “I try to make the best of life despite the lesion” was significantly associated with education ( $p = .030$ ), while no such link appeared in middle-aged adults. Similarly, “I refuse to let the lesion rule my life” was significantly associated with education in young adults ( $p = .000$ ), but not in the older group. In contrast, the item “I always try to manage on my own as much as possible” showed a significant relationship with living area in young adults ( $p = .024$ ) and with education in middle-aged adults ( $p = .005$ ). This suggests that living area influences self-reliance in younger adults, while education plays a stronger role in shaping this trait among middle-aged adults. Other items, such as “setting goals” and “finding new ways to cope,” were not significantly related to demographic factors ( $p > .05$ ) in either group. In comparison, Saffari et al. (2015) and Sauri et al. (2014) reported that education significantly influenced fighting spirit overall ( $p = .008$  and  $p = .001$ ). However, those studies used total scores and did not distinguish between age groups or specific coping items. The present findings show that fighting spirit coping is age-sensitive, and highlight the value of analyzing coping at the item and group level to better understand how individuals respond differently based on their context.

Social reliance coping was found to be influenced by gender, education, and living area, but in different ways across age groups. In young adults, the statement “My lesion has taught me that we are all dependent upon others” was significantly associated with living area ( $p = .006$ ), while in middle-aged adults, it was associated with gender ( $p = .025$ ), showing how environment shapes social awareness in the young and gender influences this in older individuals. The belief “I would feel completely helpless without support from others” showed no significant link in young adults, in contrast, it was significantly associated with education in middle-aged

adults ( $p = .002$ ), suggesting that dependence on others may be more influenced by educational background in later life. For the statement “You have to believe that other people are able to help you”, gender showed a near-significant effect in young adults ( $p = .052$ ), but reached significance in the middle-aged group ( $p = .032$ ), indicating that trust in others’ support may increase with age. Living area was also linked to this belief in the older group ( $p = .050$ ). In comparison, Saffari et al. (2015) and Saurí et al. (2014) reported that education significantly influenced social reliance ( $p = .002$  and  $p = .000$ ), while gender had no significant effect ( $p = .45$  and  $p = .19$ ). However, these studies analyzed total domain scores, not item-level or age-specific data. The current findings suggest that younger and older adults rely on others in different ways, and highlight the importance of item-level and age-group analysis for designing targeted psychosocial interventions.

Acceptance coping was influenced by different clinical factors in young and middle-aged adults with spinal cord injury (SCI). Among young adults, duration of injury was significantly associated with the statement “I think I have accepted my lesion” ( $p = .005$ ), suggesting that longer time since injury may enhance emotional adjustment. Similarly, cause of injury was linked with “My lesion has made me learn to appreciate new things” ( $p = .002$ ), indicating that how the injury occurred influences personal growth. In contrast, middle-aged adults showed a significant link between duration of injury and the statement “I have been able to see my lesion in relation to other things in life” ( $p = .017$ ), reflecting a broader life perspective over time. Moreover, type of paralysis was significantly associated with “I think I have accepted my lesion” ( $p = .002$ ), and also with “What I have lost physically, I have gained in other ways” ( $p = .001$ ), suggesting that the severity or nature of paralysis shapes acceptance in older adults. Comparing these results to prior research, Saurí et al. (2014) and Saffari et al. (2015) also found significant links between time since injury and acceptance ( $p = .01$  and  $p = .02$  respectively), and between etiology and acceptance ( $p = .007$  and  $p = .001$ ). However, those studies used overall domain scores, not specific coping statements or age groups. Our item-level findings provide deeper insight into how younger individuals tend to develop emotional acceptance over time, while older individuals form meaning based on injury type and duration, underlining the importance of personalized interventions.

This study identified notable age-related differences in the association between fighting spirit coping strategies and clinical characteristics among individuals with spinal cord injury (SCI). Among young adults, several coping items were significantly associated with clinical variables. For instance, the statement “I try to make the best of life despite the lesion” was linked to both duration of injury ( $p = .037$ ) and level of lesion ( $p = .020$ ), while “I refuse to let the lesion rule my life” and “I always try to manage on my own as much as possible” were significantly associated with causes of injury ( $p = .000$  and  $p = .044$ , respectively). These findings suggest that clinical experiences, such as the nature and severity of the injury, play a key role in shaping fighting spirit among younger individuals. In contrast, middle-aged individuals showed fewer significant associations, with only one item, “I always try to look out for new ways to make life easier” showing a meaningful link to clinical variables ( $p = .021$ ). This may indicate that older individuals rely more on practical adaptation rather than emotional resistance. Similar findings were reported by Saurí et al. (2014) and Saffari et al. (2015), who found no significant associations between fighting spirit and clinical characteristics like duration of injury, cause, or lesion level. Overall, these results suggest that fighting spirit is more closely tied to clinical experiences in young adults, while middle-aged individuals may use more stable, experience-based coping strategies.

The analysis of social reliance coping strategies shows clear differences between young adults and middle-aged individuals with spinal cord injury (SCI) in relation to clinical factors such as duration of injury, cause of injury, level of lesion, and type of paralysis. Among young adults, significant associations were found between duration of injury and the belief that “we are all dependent upon others” ( $p = .000$ ) and “other people are able to help you” ( $p = .034$ ), suggesting that time since injury plays a key role in shaping trust and reliance on social support. Additionally, the cause of injury was linked to belief in others’ ability to help ( $p = .043$ ), and type of paralysis was associated with the understanding of being dependent on others ( $p = .039$ ). These results indicate that social reliance in younger individuals is influenced by their clinical condition and experience. In contrast, middle-aged individuals showed no significant links between social reliance and any clinical variables, suggesting more stable attitudes toward support. These findings align with Saurí et al. (2014) and Saffari et al. (2015), who also found no significant associations between social

reliance and clinical characteristics, especially in older populations.

**Limitation:**

As with any research, complete accuracy is difficult to ensure and certain limitations must be acknowledged when interpreting the findings. In this study only 93 participants were included due to the limited academic timeframe, which was below the originally calculated sample size. Since data were collected exclusively from the Spinal Cord Injury Unit at CRP, Savar, the findings may not reflect the experiences of individuals from other institutions or regions. Additionally, the cross-sectional design limits the ability to establish causal relationships between coping strategies and clinical or demographic variables. Furthermore, the analysis focused only on item-level associations, without considering overall domain scores, which may have restricted a broader understanding of coping patterns.

**Conclusion**

The researcher conducted this study with 93 participants to explore coping strategies among young and middle-aged individuals with spinal cord injury (SCI) at CRP. Among them, 58 participants belonged to the young adult group and 35 were from the middle-aged group. The study examined how sociodemographic factors (such as gender, living area, and education) and injury-related factors (such as duration and cause of injury, level of lesion, and type of paralysis) are associated with coping strategies, particularly in the domains of acceptance, fighting spirit, and social reliance. The findings revealed that coping patterns differed across age groups. Young adults demonstrated higher acceptance, while middle-aged individuals showed slightly higher levels of fighting spirit and social reliance. Religious, emotional, and instrumental coping strategies were commonly used, reflecting cultural and contextual influences. Item-level analysis provided a more detailed understanding of coping behaviors compared to previous studies that focused entirely on total domain scores. The study also identified significant associations between specific coping items and participant characteristics, emphasizing the complexity and individuality of coping responses following SCI. Despite limitations, such as the small sample size, single-center data collection, and cross-sectional design, the findings offer valuable insights into how individuals with SCI manage psychological adjustment based on age and contextual variables.

## **Recommendations**

Future research should aim to include larger and more diverse samples from multiple rehabilitation centers across Bangladesh to improve the generalizability of findings beyond a single center. Employing random sampling methods would reduce selection bias and better represent the varied demographic and clinical characteristics of individuals with spinal cord injury (SCI). Given the study's cross-sectional design and shorter post-injury duration among participants, longitudinal studies are recommended to track the development of coping strategies over time, as evidence suggests coping strengthens with injury duration. Age-specific differences observed in coping patterns highlight the importance of analyzing item-level strategies within distinct age groups to tailor psychosocial interventions effectively. Additionally, incorporating broader clinical and psychosocial variables could deepen understanding of factors influencing adaptive and maladaptive coping. Future research should also evaluate the effectiveness of early psychological support, education-based empowerment, and culturally sensitive social support programs to enhance acceptance, fighting spirit, and social reliance. Combining quantitative and qualitative approaches would provide richer insights into how coping affects confidence, independence, and quality of life. Moreover, given the significant effects of gender, education, and living area on coping, further investigation into these sociodemographic influences is essential to design personalized rehabilitation strategies. Addressing these areas will enable more targeted interventions that promote psychological adjustment and improve outcomes for individuals living with SCI.

## References

- Anderson, K.D. (2004), 'Targeting recovery: priorities of the spinal cord-injured population', *Journal of neurotrauma*, vol.21, no.10, pp.1371-1383.
- Babamohamadi, H., Negarandeh, R. & Dehghan-Nayeri, N. (2011), 'Barriers to and facilitators of coping with spinal cord injury for Iranian patients: A qualitative study', *Nursing & health sciences*, vol.13, no.2, pp.207-215.
- Barclay, L., Callaway, L., McDonald, R., Farnworth, L., Brown, T. & Broom, L. (2011), 'Time use following spinal cord injury: an examination of the literature', *British Journal of Occupational Therapy*, vol.74, no.12, pp.573-580.
- Barone, S.H. & Waters, K. (2012), 'Coping and adaptation in adults living with spinal cord injury', *Journal of Neuroscience Nursing*, vol.44, no.5, pp.271-283.
- Biggs, A., Brough, P. & Drummond, S. (2017), 'Lazarus and Folkman's psychological stress and coping theory', *The handbook of stress and health: A guide to research and practice*, pp.349-364.
- Brennan, P.L., Holland, J.M., Schutte, K.K. & Moos, R.H. (2012), 'Coping trajectories in later life: A 20-year predictive study', *Aging & Mental Health*, vol.16, no.3, pp.305-316.
- Buckelew, S.P., Baumstark, K.E., Frank, R.G. & Hewett, J.E. (1990), 'Adjustment following spinal cord injury', *Rehabilitation Psychology*, vol.35, no.2, p.101.
- Byra, S. & Gabrys, A. (2023), 'Coping strategies of women with long-term spinal cord injury: The role of beliefs about the world, self-efficacy, and disability', *Rehabilitation Counseling Bulletin*, vol.66, no.2, pp.136-148.
- Carver, C.S. (1997), 'You want to measure coping but your protocol 'too long: Consider the brief cope', *International journal of behavioral medicine*, vol.4, no.1, pp.92-100.
- Chevalier, Z., Kennedy, P. & Sherlock, O. (2009), 'Spinal cord injury, coping and psychological adjustment: a literature review', *Spinal cord*, vol.47, no.11, pp.778-782.
- Chun, S. & Lee, Y. (2008), 'The experience of posttraumatic growth for people with spinal cord injury', *Qualitative Health Research*, vol.18, no.7, pp.877-890.
- Chung, M.C., Preveza, E., Papandreou, K. & Prevezas, N. (2006), 'Spinal cord injury,

- posttraumatic stress, and locus of control among the elderly: a comparison with young and middle-aged patients', *Psychiatry*, vol.69, no.1, pp.69-80.
- Compas, B.E., Jaser, S.S., Dunn, M.J. & Rodriguez, E.M. (2012), 'Coping with chronic illness in childhood and adolescence', *Annual review of clinical psychology*, vol.8, no.1, pp.455-480.
- Dorsett, P., Geraghty, T., Sinnott, A. & Acland, R. (2017), 'Hope, coping and psychosocial adjustment after spinal cord injury', *Spinal cord series and cases*, vol.3, no.1, pp.1-7.
- Elfstrom, M., Ryden, A., Kreuter, M., Taft, C. & Sullivan, M. (2005), 'Relations between coping strategies and health-related quality of life in patients with spinal cord lesion', *Journal of Rehabilitation Medicine*, vol.37, no.1, pp.9-16.
- Elfstrom, M.L., Kennedy, P., Lude, P. & Taylor, N. (2007), 'Condition-related coping strategies in persons with spinal cord lesion: a cross-national validation of the Spinal Cord Lesion-related Coping Strategies Questionnaire in four community samples', *Spinal Cord*, vol.45, no.6, pp.420-428.
- Elfstrom, M.L., Ryden, A., Kreuter, M., Persson, L.O. & Sullivan, M. (2002), 'Linkages between coping and psychological outcome in the spinal cord lesioned: development of SCL-related measures', *Spinal cord*, vol.40, no.1, pp.23-29.
- Fazel, F.S., Derakhshanrad, N., Yekaninejad, M.S., Vosoughi, F., Derakhshanrad, A. & Saberi, H. (2018), 'Predictive value of Braden risk factors in pressure ulcers of outpatients with spinal cord injury', *Acta Medica Iranica*, pp.56-61.
- Folkman, S., Lazarus, R.S., Dunkel-Schetter, C., DeLongis, A. & Gruen, R.J. (1986), 'Dynamics of a stressful encounter: cognitive appraisal, coping, and encounter outcomes', *Journal of personality and social psychology*, vol.50, no.5, p.992.
- Frank, R.G., Umlauf, R.L., Wonderlich, S.A., Askanazi, G.S., Buckelew, S.P. & Elliott, T.R. (1987), 'Differences in coping styles among persons with spinal cord injury: a cluster-analytic approach', *Journal of Consulting and Clinical Psychology*, vol.55, no.5, p.727.
- Galvin, L.R. & Godfrey, H.P.D. (2001), 'The impact of coping on emotional adjustment to spinal cord injury (SCI): review of the literature and application of a stress appraisal and coping formulation', *Spinal cord*, vol.39, no.12, pp.615-627
- Garske, G.G. & Turpin, J.O. (1998), 'Understanding psychosocial adjustment to

- disability: an American perspective', *International Journal of Rehabilitation and Health*, vol.4, pp.29-37.
- Gaston-Johansson, F., Haisfield-Wolfe, M.E., Reddick, B., Goldstein, N. & Lawal, T.A. (2013), 'The relationships among coping strategies, religious coping, and spirituality in African American women with breast cancer receiving chemotherapy', *Oncology nursing forum*, Vol.40, No.2.
- Griffiths, H.C. & Kennedy, P. (2012), 'Continuing with life as normal: Positive psychological outcomes following spinal cord injury', *Topics in Spinal Cord Injury Rehabilitation*, vol.18, no.3, pp.241-252.
- Groah, S.L., Charlifue, S., Tate, D., Jensen, M.P., Molton, I.R., Forchheimer, M., Krause, J.S., Lammertse, D.P. & Campbell, M. (2012), 'Spinal cord injury and aging: challenges and recommendations for future research', *American Journal of Physical Medicine & Rehabilitation*, vol.91, no.1, pp.80-93.
- Hall, K.M., Cohen, M.E., Wright, J., Call, M. & Werner, P. (1999), 'Characteristics of the Functional Independence Measure in traumatic spinal cord injury', *Archives of physical medicine and rehabilitation*, vol.80, no.11, pp.1471-1476.
- Hamid, R., Averbek, M.A., Chiang, H., Garcia, A., Al Mousa, R.T., Oh, S.J., Patel, A., Plata, M. & Del Popolo, G. (2018), 'Epidemiology and pathophysiology of neurogenic bladder after spinal cord injury', *World journal of urology*, vol.36, pp.1517-1527
- Holen, S., Lervag, A., Waaktaar, T. & Ystgaard, M. (2012), 'Exploring the associations between coping patterns for everyday stressors and mental health in young schoolchildren', *Journal of school psychology*, vol.50, no.2, pp.167-193.
- January, A.M., Zebracki, K., Chlan, K.M. & Vogel, L.C. (2015), 'Understanding post-traumatic growth following pediatric-onset spinal cord injury: The critical role of coping strategies for facilitating positive psychological outcomes', *Developmental Medicine & Child Neurology*, vol.57, no.12, pp.1143-1149.
- Joshi, A., Sharma, V., & Khanna, A. (2014), 'Coping strategies, community reintegration and participation & autonomy: A correlation study in persons with spinal cord injury in Delhi and NCR', *International Journal of Health and Rehabilitation Sciences*, vol.3, no.4, pp.128-134.
- Kalpakjian, C.Z., McCullumsmith, C.B., Fann, J.R., Richards, J.S., Stoelb, B.L., Heinemann, A.W. & Bombardier, C.H. (2014), 'Post-traumatic growth

- following spinal cord injury’, *The Journal of Spinal Cord Medicine*, vol.37, no.2, pp.218-225.
- Kelly, E., Mulcahey, M., Klaas, S., Russell, H., Anderson, C. & Vogel, L. (2012), ‘Psychosocial outcomes among youth with spinal cord injury and their primary caregivers’, *Topics in spinal cord injury rehabilitation*, vol.18, no.1, pp.67-72.
- Kumar, R., Akash, A. & Roshan, R. (2024), ‘Comparative research of surgical and conservative spinal cord injury treatment in a Bihar tertiary care hospital: Analytical, case-control and prospective study,’ *Student’s Journal of Health Research Africa*, vol.5, no.9, p.6.
- Kwah, S.B. & Abdullahi, A. (2018), ‘Coping strategies in people with spinal cord injury: A qualitative interviewing’, *Iranian Rehabilitation Journal*, vol.16, no.2, pp.195-202.
- Li, C., Xiang, Z., Hou, M., Yu, H., Peng, P., Lv, Y., Ma, C., Ding, H., Jiang, Y., Liu, Y. & Zhou, H. (2024), ‘miR-NPs-RVG promote spinal cord injury repair: implications from spinal cord-derived microvascular endothelial cells’, *Journal of Nanobiotechnology*, vol.22, no.1, p.590.
- Livneh, H. & Martz, E. (2014), ‘Coping strategies and resources as predictors of psychosocial adaptation among people with spinal cord injury. *Rehabilitation psychology*, vol.59, no.3, p.329.
- Lu, Y., Shang, Z., Zhang, W., Pang, M., Hu, X., Dai, Y., Shen, R., Wu, Y., Liu, C., Luo, T. & Wang, X. (2024), ‘Global incidence and characteristics of spinal cord injury since 2000–2021: a systematic review and meta-analysis’, *BMC medicine*, vol.22, no.1, p.285.
- Mason, J., Hanson, C., Fox, E.J., Burns, H., Joseph, J., Horwitz, H. & Classen, S. (2024), ‘Perceptions of autonomous shuttles for adults with spinal cord injuries’, *OTJR: Occupational Therapy Journal of Research*, vol.44, no.1, pp.47-56.
- McColl, M.A., Walker, J., Stirling, P., Wilkins, R. & Corey, P. (1997), ‘Expectations of life and health among spinal cord injured adults’, *Spinal cord*, vol.35, no.12, pp.818-828.
- McMillen, J.C. & Cook, C.L. (2003), ‘The positive by-products of spinal cord injury and their correlates’, *Rehabilitation Psychology*, vol.48, no.2, p.77.
- Moghimian, M., Kashani, F., Cheraghi, M.A. & Mohammadnejad, E. (2015), ‘Quality


- of life and related factors among people with spinal cord injuries in Tehran, Iran', *Archives of trauma research*, vol.4, no.3, p.e19280.
- Molton, I., Jensen, M.P., Ehde, D.M., Carter, G.T., Kraft, G. & Cardenas, D.D. (2008), 'Coping with chronic pain among younger, middle-aged, and older adults living with neurological injury and disease', *Journal of aging and health*, vol.20, no.8, pp.972-996.
- Muteti, K., Mlambo, T., Chikwasha, V. & Chigonda, B. (2021), 'Coping strategies amongst patients with spinal cord injuries in Zimbabwe', *Central African Journal of Medicine*, vol.67, no. (7-12), pp.31-37.
- Nas, K., Yazmalar, L., Şah, V., Aydın, A. & Öneş, K. (2015), 'Rehabilitation of spinal cord injuries', *World journal of orthopedics*, vol.6, no.1, p.8.
- O'Brien, T.B., DeLongis, A., Pomaki, G., Puterman, E.& Zwicker, A. (2009), 'Couples coping with stress: The role of empathic responding', *European Psychologist*, vol.14, no.1, pp.18-28.
- O'Brien, T.B. & DeLongis, A. (1996), 'The interactional context of problem-, emotion-, and relationship-focused coping: the role of the big five personality factors', *Journal of personality*, vol.64, no.4, pp.775-813.
- Pollard, C. & Kennedy, P. (2007), 'A longitudinal analysis of emotional impact, coping strategies and post-traumatic psychological growth following spinal cord injury: A 10-year review', *British journal of health psychology*, vol.12, no.3, pp.347-362.
- Rabadi, M.H., Mayanna, S.K. & Vincent, A.S. (2013), 'Predictors of mortality in veterans with traumatic spinal cord injury', *Spinal cord*, vol.51, no.10, pp.784-788.
- Rahman, A., Ahmed, S., Sultana, R., Taoheed, F., Andalib, A. & Arafat, S.Y. (2017), 'Epidemiology of spinal cord injury in Bangladesh: A five-year observation from a rehabilitation center', *J Spine*, vol.6, no.367, p.2.
- Rahman, M. H., Subahan, S., Awal, M. R., Sk. Moniruzzaman, & Nasreen, S. (2023), 'The Present Conditions of Patients with Spinal Cord Injury at Rehabilitation Center in Bangladesh', *European Journal of Theoretical and Applied Sciences*, vol.1, no.2, 5-13.
- Razzak, A.A., Helal, S.U. & Nuri, R.P. (2011), 'Life Expectancy After Spinal Cord Injury In a Developing Country-A Retrospective Study At CRP, Bangladesh', *Disability, CBR & Inclusive Development*, vol.22, no.2, pp.114-123.

- Russell, H.F., January, A.M., Kelly, E.H., Mulcahey, M.J., Betz, R.R. & Vogel, L.C. (2015), 'Patterns of coping strategy use and relationships with psychosocial health in adolescents with spinal cord injury', *Journal of pediatric psychology*, vol.40, no.5, pp.535-543.
- Safdarian, M., Trinkka, E., Rahimi-Movaghar, V., Thomschewski, A., Aali, A., Abady, G.G., Abate, S.M., Abd-Allah, F., Abedi, A., Adane, D.E. & Afzal, S. (2023), 'Global, regional, and national burden of spinal cord injury, 1990–2019: a systematic analysis for the Global Burden of Disease Study 2019', *The Lancet Neurology*, vol.22, no.11, pp.1026-1047.
- Saffari, M., Pakpour, A.H., Yaghobidoot, M., Al Zaben, F. & Koenige, H.G. (2015), 'Cross-cultural adaptation of the spinal cord lesion-related coping strategies questionnaire for use in Iran', *Injury*, vol.46, no.8, pp.1539-1544.
- Saurí, J., Umaña, M.C., Chamarro, A., Soler, M.D., Gilabert, A. & Elfström, M.L. (2014), 'Adaptation and validation of the Spanish version of the Spinal Cord Lesion-related Coping Strategies Questionnaire (SCL CSQ-S)', *Spinal cord*, vol.52, no.11, pp.842-849.
- Schoenmakers, E.C., Van Tilburg, T.G. & Fokkema, T. (2015), 'Problem-focused and emotion-focused coping options and loneliness: how are they related?', *European journal of ageing*, vol.12, no.2, pp.153-161.
- Shamshiri, M., Eskandar Oghli, B., Vafae, M. & Molaei, B. (2021), 'Adaptive coping strategies in patients with spinal cord injury: a phenomenological study', *Iranian Journal of Psychiatry and Clinical Psychology*, vol.26, no.4, pp.478-489.
- Singh, A., Tetreault, L., Kalsi-Ryan, S., Nouri, A. & Fehlings, M.G. (2014), 'Global prevalence and incidence of traumatic spinal cord injury,' *Clinical Epidemiology*, vol.6, no.1, pp.309–331.
- Singh, V. & Mitra, S. (2023), 'Psychophysiological impact of spinal cord injury: Depression, coping and heart rate variability', *The Journal of Spinal Cord Medicine*, vol.46, no.3, pp.441-449.
- Song, H.Y. & Nam, K.A. (2010), 'Coping strategies, physical function, and social adjustment in people with spinal cord injury', *Rehabilitation Nursing Journal*, vol.35, no.1, pp.8-15.
- Song, H.Y. (2005), 'Modeling social reintegration in persons with spinal cord injury', *Disability and Rehabilitation*, vol.27, no.3, pp.131-141.

- Spirito, A. (1996), 'Commentary: Pitfalls in the use of brief screening measures of coping', *Journal of Pediatric Psychology*, vol.21, no.4, pp.573-575.
- Stephenson, E. & DeLongis, A. (2020), 'Coping strategies', *The Wiley encyclopedia of health psychology*, pp.55-60.
- Stover, S.L. & Fine, P.R. (1987), 'The epidemiology and economics of spinal cord injury', *Spinal Cord*, vol.25, no.3, pp.225-228.
- Uddin, T., Islam, M.T., Hossain, M., Hossain, M.S., Salek, A.K.M., Islam, M.J., Haque, S., Rahim, H.R., Hossain, M.S., Hassanuzzaman, M. & Islam, M. (2023), 'Demographic and Clinical Characteristics of Persons With Spinal Cord Injury in Bangladesh: Database for the International Spinal Cord Injury Community Survey 2023', *Neurotrauma Reports*, vol.4, no.1, pp.598-604.
- Van den Berg, M.E.L., Castellote, J.M., Mahillo-Fernandez, I. & de Pedro-Cuesta, J. (2010), 'Incidence of spinal cord injury worldwide: a systematic review', *Neuroepidemiology*, vol.34, no.3, pp.184-192.
- van Lankveld, W., van Diemen, T. & van Nes, I.J. (2011), 'Coping with spinal cord injury: Tenacious goal pursuit and flexible goal adjustment', *Journal of Rehabilitation Medicine*, vol.43, no.10, pp.923-929.
- Wo, M. (1999), 'Long-term medical complications after traumatic spinal cord injury: a regional model systems analysis', *Arch Phys Med Rehabil*, vol.80, no.11, pp.1402-1410.
- Wright, B.A.P. & Wright, B.A.P. (1983), 'Physical disability, a psychosocial approach'.
- Wyndaele, J.J. (2017), 'Life and quality of life after SCI', *Spinal Cord*, vol.55, no.1, pp.1-1.
- Wyndaele, M. & Wyndaele, J.J. (2006), 'Incidence, prevalence and epidemiology of spinal cord injury: what learns a worldwide literature survey?', *Spinal cord*, vol.44, no.9, pp.523-529.
- Yılmaz, T. & Kaptanoğlu, E. (2015), 'Current and future medical therapeutic strategies for the functional repair of spinal cord injury', *World journal of orthopedics*, vol.6, no.1, p.42.

## Appendix

### Appendix 1



**বাংলাদেশ হেলথ প্রফেশন্স ইনস্টিটিউট (বিএইচপিআই)**  
**Bangladesh Health Professions Institute (BHPI)**  
(The Academic Institute of CRP)

---

Ref: CRP-BHPI/IRB/12/2024/1021 Date: 15/12/2024

To  
Mohima Akter Monne  
4th Year B.Sc. in Physiotherapy  
Session: 2019-20, Student ID: 112190479  
BHPI, CRP, Savar, Dhaka 1343, Bangladesh


**Subject: Approval of the thesis proposal "Coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP" by the ethics committee.**

Dear Mohima,  
Congratulations.  
The Institutional Review Board (IRB) of BHPI has reviewed and discussed your application to conduct the above mentioned dissertation, with yourself, as the principal investigator and Nadia Afrin Urme, Lecturer, Department of Physiotherapy, BHPI as thesis supervisor. The following documents have been reviewed and approved:

Sl. No.	Name of the Documents
1	Research Proposal
2	Questionnaire (English version)
3	Information sheet & consent form.

The purpose of this study is to determine association of coping mechanisms between young adults and middle-aged individuals with spinal cord injury. The study involves the use of Spinal Cord Lesion Coping Strategies Questionnaire (SCI-CS) and Brief - Coping Orientation to Problems Experienced Inventory (Brief-COPE) questionnaire to explore coping strategies among young adults and middle-aged individuals with spinal cord injury that may take 15 to 20 minutes to fill in the questionnaire with instruction for collection of specimen and there is no likelihood of any harm to the participants. The members of the Ethics Committee have approved the study to be conducted in the presented form at the meeting held at 9 AM on 15 July 2024 at BHPI (44<sup>th</sup> IRB Meeting).

The institutional Ethics committee expects to be informed about the progress of the study, any changes occurring in the course of the study, any revision in the protocol and patient information or informed consent and ask to be provided a copy of the final report. This Ethics committee is working accordance to Nuremberg Code 1947, World Medical Association Declaration of Helsinki, 1964 - 2013 and other applicable regulation.

Best regards,  
  
Muhammad Millat Hossain,  
Associate Professor & Course Co-ordinator, MRS  
Member Secretary, Institutional Review Board (IRB)  
BHPI, CRP, Savar, Dhaka-1343, Bangladesh

---

সিআরপি-চাপাইন, সাতার, ঢাকা-১৩৪৩, বাংলাদেশ। ফোন: +৮৮ ০২ ২২৪৪৪৫৪৬৪-৫, +৮৮ ০২ ২২৪৪৪১৪০৪, মোবাইল: +৮৮ ০১৭৩০ ০৫৯৬৪৭  
CRP-Chapain, Savar, Dhaka-1343, Bangladesh. Tel: +88 02 224445464-5, +88 02 224441404, Mobile: +88 01730059647  
E-mail : principal-bhpi@crp-bangladesh.org, Web: bhpi.edu.bd

## Appendix 2

### Permission Letter

Date: 26/12/2024

Head

Department of Physiotherapy

Centre for the Rehabilitation of the Paralyzed (CRP)

Chapain, Savar, Dhaka-1343

Through: Head, Department of Physiotherapy, BHPI.

**Subject: Prayer for seeking permission to collect data for conducting research project.**

Sir,

With due respect and humble submission to state that I am Mohima Akter Monne, a student of 4<sup>th</sup> year B.Sc. in physiotherapy at Bangladesh Health Professions Institute (BHPI). The Ethical committee has approved my research project entitled: "Coping strategies among young adults and elderly with spinal cord injury at CRP" under the supervision of Nadia Afrin Urme, Lecturer, Department of Physiotherapy, BHPI. I want to collect data for my research project from the Department of Physiotherapy at CRP. So, I need permission for data collection from the SCI Unit of Physiotherapy Department at CRP-Savar, Dhaka-1343. I would like to assure that anything of the study will not be harmful for the participants and the Department itself.

I, therefore pray and hope that you would be kind enough to grant my application and give me permission for data collection and oblige thereby.

Yours faithfully,

Mohima Akter Monne

4<sup>th</sup> Year B.Sc. in Physiotherapy

Class Roll: 14; Session: 2019-20

Bangladesh Health Professions Institute (BHPI)

(An academic Institution of CRP)

CRP-Chapain, Savar, Dhaka-1343.

*Forwarded*  
*26/12/2024*

*Forwarded for your  
kind consideration.*

*SKD*  
*28.12.2024.*

Dr. Shazal Kumar Das, PhD  
Assistant Professor and Head  
Department of Physiotherapy  
BHPI, CRP, Savar, Dhaka-1343.

*Approved*  
*29/12/24*  
Prof. Dr. Mohammad Anwar Hossain, PhD  
Professor Physiotherapy Department BHPI  
Senior Consultant & Head  
Physiotherapy Department  
CRP, Savar, Dhaka-1343

## Appendix 3

### Information sheet (English)

**Research study title:** Coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP.

**Objective of the study:**

1. This study is being conducted to find out the association of coping strategies among young adults and middle-aged individuals with spinal cord injury at CRP.
2. To determine the socio-demographic information of young adults and middle-aged who suffered from spinal cord injury.

**Participants of the study:** Both male and female young adults and middle-aged more than 3 months post SCI injury persons are invited to participate in this research study.

**Data collection procedure:** If you participate in this study, you will be asked to some personal and other related information regarding coping with spinal cord injury by using a questionnaire. This will take approximately 15 to 20 minutes of your time.

**Benefits of participations:** Participants will have the opportunity to reflect on, share and more aware of their thoughts and feelings about coping mechanism with spinal cord injury. Additionally, your participation and better statements are likely to help us find the answer to the research questions and in future study it may benefitted to the researcher.

**Risks of participations:** We do not foresee any risk or discomfort from your participation in the study.

**Economic benefits:** You will not be given any money or gifts to take part in this research.

**Confidentiality:** All information provided by you will be treated as confidential it will ensure that the source of information remains secret. Also, your name will not appear anywhere and no one except me will know about your specific answers.

**Voluntary participation:** Yours participation in this study is voluntary, so you may choose to participate or not. Your decision will not to volunteer will not influence the treatment you may be receiving either now or in the future. If you do not wish to continue, you have the right to withdraw from the study, without penalty, at any time.

**Who to contact:** If you have any query, you may ask me now or later, even after the study has started. If you wish to ask questions later, you may contact any of the following:

**Researcher:**

Mohima Akter Monne

4<sup>th</sup> Professional B.Sc. in Physiotherapy

Bangladesh Health Professions Institute (BHPI)

Contact no: 01811414617

E-mail: [makter.monne01@gmail.com](mailto:makter.monne01@gmail.com)

Or,

**My research supervisor:**

Nadia Afrin Urme

Lecturer, Department of Physiotherapy

Bangladesh Health Professions Institute (BHPI), CRP, Savar, Dhaka- 1343.

E-mail: [afrinnadia4127@yahoo.com](mailto:afrinnadia4127@yahoo.com)

**Consent certificate**

**A) Participant or witness:**

1. Did you understand the information sheet?

yes/no

2. Do you have anything else to know?

yes/no

(If yes, .....)

3. Do you understand that you will not benefit financially from this research?

yes/no

4. Are you allowed to ask questions?

yes/no

5. Do you consent to your information being recorded?

yes/no

6. Have you got enough time to decide?

yes/no

7. Are you consenting to participate in this study?

yes/no

Name of Participant \_\_\_\_\_

Signature of Participant \_\_\_\_\_ Date \_\_\_\_\_

If participant is Illiterate

Name of literate witness \_\_\_\_\_

Thumb print of participant



Signature of literate witness \_\_\_\_\_ Date \_\_\_\_\_

**B) Researcher:**

I explained the above study precisely to the participant and she indicated his willingness to participate in the study.

Name of Researcher \_\_\_\_\_

Signature of Researcher \_\_\_\_\_ Date \_\_\_\_\_

## Questionnaire (English version)

**Date:**

**Patient's name:**

**Patient ID No:**

**Address:**

**Mobile No:**

### Part- I: Socio – demographic Information:

Serial No	Questions	Response	Code
1	Age	.....Years	
2	Gender	0. Male 1. Female	
3	Marital status	0. Married 1. Unmarried 2. Divorced 3. Widow	
4	Living area	0. Rural 1. Urban	
5	Educational qualification	0. Illiterate 1. Primary school certificate 2. Secondary school certificate 3. Higher secondary certificate 4. Graduate	
6	<b>Occupation:</b> (Before injury)	0. Garments worker 1. Service holder 2. Day Labor 3. Teacher 4. Businessman 5. Driver 6. Farmer 7. Student 8. Housewife 9. Unemployed 10. Others	
7	Earning members	0. Own 1. Father 1. Mother	

		2. Husband 3. Wife 4. Son 5. Daughter 6. Others	
<b>8</b>	Average monthly family income	..... taka	

**Part II: Injury related information's:**

	<b>Questions</b>	<b>Response</b>	<b>Code</b>
<b>9</b>	Duration of injury	Months (.....)>3	
<b>10</b>	Causes of injury	0. Traumatic 1. Non-traumatic	
<b>11</b>	Level of lesion	0. Cervical 1. Thoracic 2. Lumber	
<b>12</b>	Types of paralysis	0. Paraplegia 1. Tetraplegia	
<b>13</b>	ASIA impairment Scale	0. Complete A 1. Incomplete B 2. Incomplete C 3. Incomplete D 4. Normal E	
<b>14</b>	Comorbidity	0. Diabetes mellitus 1. Hypertension 2. Stroke 3. Cardiac arrest 4. None	

**Part III A: Coping strategies related information:**

Spinal Cord Lesion Coping Strategies Questionnaire (SCL-CS) consist of 3 factors: Acceptance (4 items), Flighting spirit (5 items) and Social reliance (3 items).

Each item is rated on a 4-point Likert-type scale ranging from 1-4:

1. Strongly agree
2. Agree
3. Disagree
4. Strongly disagree

Please read each question, assess your feelings, and tick (☐) the number on the scale that gives the best answer for you for each question.

	<b>Question</b>	<b>Response</b>	<b>Code</b>
<b>Acceptance</b>			
<b>15</b>	I have been able to see my lesion in relation to other things in life.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>16</b>	I think I have accepted my lesion	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>17</b>	My lesion has made me learn to appreciate new things in life I did not think about before	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>18</b>	What I have lost physically, I have gained in so many other ways.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
Acceptance domain score (averaged; range 1-4):			
<b>Fighting spirit</b>			
<b>19</b>	I try to make the best of life despite the lesion	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	

<b>20</b>	I refuse to let the lesion rule my life.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>21</b>	I always try to manage on my own as much as possible.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>22</b>	It is important for me to set goals that I can fight to achieve.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>23</b>	I always try to look out for new ways to make life easier.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
Fighting Spirit domain score (averaged; range 1-4)			
<b>Social reliance</b>			
<b>24</b>	My lesion has taught me that we are all dependent upon others.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>25</b>	I would feel completely helpless without support from others.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
<b>26</b>	You have to believe that other people are able to help you.	1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree	
Social Reliance domain score (average range 1-4)			

### **Part III B: Coping strategies related information:**

The Brief-COPE is a 28 item self-report questionnaire designed to measure effective and ineffective ways to cope with a stressful life event.

Each item is rated on a 4-point Likert-type scale ranging from 1-4:

1. = I haven't been doing this at all
2. = I've been doing this a little bit
3. = I've been doing this a medium amount and
4. = I've been doing this a lot.

Please read each question, assess your feelings, and tick (☐) the number on the scale that gives the best answer for you for each question.

	<b>Question</b>	<b>Answer</b>	<b>Answer</b>	<b>Answer</b>	<b>Answer</b>
		<b>1=I have not been doing this at all</b>	<b>2=A little bit</b>	<b>3=A medium amount</b>	<b>4=I have been doing this a lot</b>
<b>27</b>	I have been turning to work or other activities to take my mind off things.	1	2	3	4
<b>28</b>	I have been concentrating my efforts on doing something about the situation I am in.	1	2	3	4
<b>29</b>	I have been saying to myself, this is not real.	1	2	3	4
<b>30</b>	I have been using alcohol or other drugs to make myself feel better.	1	2	3	4
<b>31</b>	I have been getting emotional supports from others.	1	2	3	4
<b>32</b>	I have been giving up trying to deal with it.	1	2	3	4
<b>33</b>	I have been taking action to try to make the situation better.	1	2	3	4
<b>34</b>	I have been refusing to believe that it has Happened.	1	2	3	4
<b>35</b>	I have been saying that things to let my unpleasant feelings	1	2	3	4

	escape.				
<b>36</b>	I have been getting help and advice from other people.	1	2	3	4
<b>37</b>	I have been using alcohol or other drugs to help me get through it.	1	2	3	4
<b>38</b>	I have been trying to see it in a different light, to make it seem more Positive.	1	2	3	4
<b>39</b>	I have been criticizing myself.	1	2	3	4
<b>40</b>	I have been trying to come up with a strategy about what to do.	1	2	3	4
<b>41</b>	I have been getting comfort and understanding from someone.	1	2	3	4
<b>42</b>	I have been giving up the attempt to cope.	1	2	3	4
<b>43</b>	I have been looking for something good in what is happening.	1	2	3	4
<b>44</b>	I have making jokes about it.	1	2	3	4
<b>45</b>	I have been doing something to think about it less, such as going to, movies watching TV, reading, sleeping or shopping.	1	2	3	4
<b>46</b>	I have been accepting the reality of the fact that it has happened.	1	2	3	4
<b>47</b>	I have been expressing my negative feelings.	1	2	3	4
<b>48</b>	I have been trying to find comfort in my religion or spiritual beliefs.	1	2	3	4

<b>49</b>	I have been trying to get advice or help from other people about what.	1	2	3	4
<b>50</b>	I have been learning to live with it.	1	2	3	4
<b>51</b>	I have been taking hard about what steps to take	1	2	3	4
<b>52</b>	I have been blaming myself for things that happened.	1	2	3	4
<b>53</b>	I have been praying or meditating.	1	2	3	4
<b>54</b>	I have been making fun of the situation.	1	2	3	4

## তথ্যপত্র (বাংলা)

**গবেষণা শিরোনাম:** সিআরপি-তে মেরুদণ্ডের আঘাতপ্রাপ্ত তরুণ ও প্রবীণদের মধ্যে মোকাবিলা কৌশল।

### গবেষণার উদ্দেশ্য:

১. এই গবেষণাটি মেরুদণ্ডের আঘাতপ্রাপ্ত তরুণ ও প্রবীণদের মধ্যে মোকাবিলা কৌশলের সম্পর্ক নির্ণয়ের জন্য পরিচালিত হচ্ছে।
২. মেরুদণ্ডের আঘাতপ্রাপ্ত তরুণ ও প্রবীণদের সামাজিক ও জনসংখ্যাগত তথ্য নির্ধারণ করা।

**গবেষণার অংশগ্রহণকারীরা:** এই গবেষণায় পুরুষ ও নারী উভয়েই অংশগ্রহণ করতে পারবেন, যারা মেরুদণ্ডের আঘাত প্রাপ্ত এবং আঘাতের পর কমপক্ষে ৬ সপ্তাহ পার হয়েছে।

**তথ্য সংগ্রহের পদ্ধতি:** আপনি যদি এই গবেষণায় অংশগ্রহণ করেন, তাহলে আপনাকে একটি প্রশ্নাবলীর মাধ্যমে কিছু ব্যক্তিগত ও অন্যান্য প্রাসঙ্গিক তথ্য প্রদান করতে বলা হবে, যা মেরুদণ্ডের আঘাতের সাথে মোকাবিলা করার অভিজ্ঞতা সম্পর্কে জানতে সাহায্য করবে। এটি সম্পন্ন করতে প্রায় ১৫-২০ মিনিট সময় লাগবে।

**অংশগ্রহণের সুবিধা:** অংশগ্রহণকারীরা তাদের অনুভূতি ও চিন্তাভাবনা সম্পর্কে প্রতিফলন করতে ও শেয়ার করতে পারবেন এবং মেরুদণ্ডের আঘাতের সাথে মোকাবিলা করার কৌশল সম্পর্কে আরও সচেতন হতে পারবেন। এছাড়াও, আপনার উত্তর গবেষণার প্রশ্নের সমাধানে সহায়ক হতে পারে এবং ভবিষ্যতের গবেষণায় গবেষকদের জন্য উপকারজনক হতে পারে।

**অংশগ্রহণের ঝুঁকি:** আমরা আশা করি না যে, এই গবেষণায় অংশগ্রহণের ফলে আপনার কোনো ঝুঁকি বা অস্বস্তি হবে।

**অর্থনৈতিক সুবিধা:** এই গবেষণায় অংশগ্রহণের জন্য আপনাকে কোনো আর্থিক সুবিধা বা উপহার প্রদান করা হবে না।

**গোপনীয়তা:** আপনার প্রদত্ত সমস্ত তথ্য সম্পূর্ণ গোপন রাখা হবে এবং তথ্যের উৎস গোপন রাখা নিশ্চিত করা হবে। আপনার নাম কোথাও প্রকাশ করা হবে না এবং শুধুমাত্র গবেষকই আপনার নির্দিষ্ট উত্তর সম্পর্কে জানবেন।

**স্বেচ্ছামূলক অংশগ্রহণ:** এই গবেষণায় অংশগ্রহণ সম্পূর্ণ স্বেচ্ছাসেবী। আপনি অংশগ্রহণ করবেন কি না, তা সম্পূর্ণ আপনার সিদ্ধান্তের ওপর নির্ভর করবে। অংশগ্রহণ না করার সিদ্ধান্ত আপনার বর্তমান বা ভবিষ্যতের চিকিৎসার উপর কোনো প্রভাব ফেলবে না। এছাড়াও, আপনি যে কোনো সময়, কোনো কারণ ব্যতীত, গবেষণা থেকে সরে যাওয়ার অধিকার সংরক্ষণ করেন, এবং এতে কোনো শাস্তি বা নেতিবাচক প্রভাব পড়বে না।

**যোগাযোগের তথ্য:** আপনার যদি কোনো প্রশ্ন থাকে, আপনি এখন বা পরে, এমনকি গবেষণা শুরু হওয়ার পরেও জিজ্ঞাসা করতে পারেন। যদি আপনি পরে কোনো প্রশ্ন করতে চান, তাহলে নিচের যে কারো সাথে যোগাযোগ করতে পারেন:

**গবেষক:**

মহিমা আক্তার মুন্সী

৪র্থ প্রফেশনাল বি.এসসি ইন ফিজিওথেরাপি

বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (BHPI)

**যোগাযোগ নম্বর:** ০১৮১১৪১৪৬১৭

**ই-মেইল:** [makter.monne01@gmail.com](mailto:makter.monne01@gmail.com)

অথবা,

**আমার গবেষণা সুপারভাইজার:**

নাদিয়া আফরিন উর্মি

প্রভাষক, ফিজিওথেরাপি বিভাগ

বাংলাদেশ হেলথ প্রফেশনস ইনস্টিটিউট (BHPI), সিআরপি, সাভার, ঢাকা-১৩৪৩  
ই-মেইল: [afrinnadia4127@yahoo.com](mailto:afrinnadia4127@yahoo.com)

## সম্মতি পত্র

### ক) অংশগ্রহণকারী বা সাক্ষী:

১. আপনি কি তথ্যপত্রটি বুঝতে পেরেছেন?

হ্যাঁ / না

২. আপনার কি কিছু জানার আছে?

হ্যাঁ / না

(যদি হ্যাঁ হয়: .....)

৩. আপনি কি জানেন এই গবেষণায় কোনো আর্থিক সুবিধা নেই?

হ্যাঁ / না

৪. আপনি কি প্রশ্ন করতে পারেন?

হ্যাঁ / না

৫. আপনি কি আপনার তথ্য সংরক্ষণে সম্মতি দিচ্ছেন?

হ্যাঁ / না

৬. আপনি কি সিদ্ধান্ত নিতে পর্যাপ্ত সময় পেয়েছেন?

হ্যাঁ / না

৭. আপনি কি এই গবেষণায় অংশগ্রহণে সম্মত?

হ্যাঁ / না

অংশগ্রহণকারীর তথ্য:

অংশগ্রহণকারীর নাম: .....

অংশগ্রহণকারীর স্বাক্ষর: ..... তারিখ: .....

যদি অংশগ্রহণকারী নিরক্ষর হন

সাক্ষরের পরিবর্তে আঙুলের ছাপ দিন :

সাক্ষরের জন্য সাক্ষীর নাম: .....

অংশগ্রহণকারীর আঙুলের ছাপ:

সাক্ষীর স্বাক্ষর: ..... তারিখ: .....

**(খ) গবেষক:**

আমি উপরের গবেষণার বিষয়বস্তু স্পষ্টভাবে অংশগ্রহণকারীকে ব্যাখ্যা করেছি এবং তিনি স্বেচ্ছায় গবেষণায় অংশগ্রহণে সম্মতি প্রকাশ করেছেন।

গবেষকের নাম: .....

গবেষকের স্বাক্ষর: ..... তারিখ: .....

## প্রশ্নাবলী (বাংলা ভাষন)

তারিখ:

রোগীর আইডি নম্বর:

রোগীর নাম:

মোবাইল নম্বর

ঠিকানা:

### পর্ব - ১ সামাজিক ও জনসংখ্যাগত তথ্য

ক্রমিক নং	প্রশ্ন	উত্তর	কোড
১	বয়স	..... বছর	
২	লিঙ্গ	০. পুরুষ ১. মহিলা	
৩	বৈবাহিক অবস্থা	০. বিবাহিত ১. অবিবাহিত ২. তলাকপ্রাপ্ত ৩. আলাদা থাকা ৪. অন্যান্য	
৪	বসবাসের এলাকা	০. গ্রাম ১. শহর	
৫	শিক্ষাগত যোগ্যতা	০. নিরক্ষর ১. পঞ্চম শ্রেণি পর্যন্ত ২. প্রাথমিক শিক্ষা সনদ ৩. জুনিয়র স্কুল সার্টিফিকেট ৪. মাধ্যমিক স্কুল সার্টিফিকেট ৫. উচ্চ মাধ্যমিক সার্টিফিকেট ৬. স্নাতক	
৬	পেশা (আঘাতের পূর্বে)	০. গার্মেন্টস কর্মী ১. চাকরিজীবী ২. দিনমজুর ৩. শিক্ষক ৪. ব্যবসায়ী ৫. চালক ৬. অন্যান্য	

৭	উপার্জনকারী সদস্য	০. নিজে ১. স্বামী ২. স্ত্রী ৩. ছেলে ৪. মেয়ে ৫. অন্যান্য (উল্লেখ করুন)	
৮	গড় মাসিক পারিবারিক আয়	..... টাকা	

**পর্ব-২: আঘাত-সম্পর্কিত তথ্য**

	প্রশ্ন	উত্তর	কোড
৯	আঘাতের সময়কাল	মাস (.....), >৩ মাস	
১০	আঘাতের কারণ	০. ট্রমাটিক ১. নন-ট্রমাটিক	
১১	ক্ষতির স্তর	০. সার্ভিকাল ১. থোরাসিক ২. লাম্বার	
১২	পক্ষাঘাতের ধরণ	০. প্যারাপ্লেজিয়া ১. টেট্রাপ্লেজিয়া	
১৩	ASIA ইম্পায়ারমেন্ট স্কেল	০. সম্পূর্ণ A ১. আংশিক B ২. আংশিক C ৩. আংশিক D ৪. স্বাভাবিক E	
১৪	সহ-রোগ	০. ডায়াবেটিস ১. উচ্চ রক্তচাপ ২. স্ট্রোক ৩. হার্ট অ্যাটাক	

## পার্ট ৩ এ: মোকাবিলা কৌশল সম্পর্কিত তথ্য

স্পাইনাল কার্ড লেসন কপিং স্ট্র্যাটেজিস কোয়েশেনেয়ার (SCL-CS) তিনটি উপাদানে বিভক্ত:

১। গ্রহণযোগ্যতা – ৪টি প্রশ্ন

২। লড়াই করার মানসিকতা– ৫টি প্রশ্ন

৩। সামাজিক নির্ভরশীলতা– ৩টি প্রশ্ন

প্রতিটি প্রশ্নে ৪-ধরনের উত্তরের মধ্যে একটি নির্বাচন করতে হবে। প্রতিটি প্রশ্নের উত্তর একটি ৪-পয়েন্টের লাইকার্ট স্কেলে মূল্যায়ন করতে হবে, যেখানে:

১ = একদমই একমত

২ = একমত

৩ = একমত নই

৪ = একদমই একমত নই

অনুগ্রহ করে প্রতিটি প্রশ্ন মনোযোগ দিয়ে পড়ুন, নিজের অনুভূতি বিবেচনা করুন এবং যে সংখ্যাটি আপনার উত্তরের সাথে সবচেয়ে বেশি মানানসই, সেটিতে টিক (✓) দিন।

	প্রশ্ন	উত্তর	কোড
গ্রহণযোগ্যতা			
১৫	আমি আমার ইনজুরিকে জীবনের অন্যান্য বিষয়ের সাথে তুলনা করে দেখতে সক্ষম হয়েছি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	

১৬	আমি মনে করি আমি আমার ইনজুরি মেনে নিয়েছি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
১৭	আমার ইনজুরি আমাকে এমন নতুন কিছু উপলব্ধি করতে শিখিয়েছে, যা আগে ভাবিনি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
১৮	শারীরিকভাবে যা হারিয়েছি, মানসিকভাবে তা অনেকভাবে পূরণ হয়েছে।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
গ্রহণযোগ্যতা স্কেলের গড় স্কোর (পরিসীমা ১-৪):			
লড়াই করার মানসিকতা			
১৯	আমি ইনজুরি সত্ত্বেও জীবনকে সর্বোচ্চ উপভোগ করার চেষ্টা করি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
২০	আমি ইনজুরিকে আমার জীবনের নিয়ন্ত্রণ নিতে দিই না।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	

২১	আমি যতটা সম্ভব নিজের কাজ নিজে করার চেষ্টা করি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
২২	আমার জন্য এমন লক্ষ্য স্থির করা গুরুত্বপূর্ণ যেগুলোর জন্য আমি লড়াই করতে পারি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
২৩	আমি সবসময় জীবনকে সহজ করার নতুন উপায় খুঁজে বের করার চেষ্টা করি।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
লড়াই করার মানসিকতা ক্ষেত্রের গড় স্কোর (গড়; স্কেল ১ থেকে ৪)			
সামাজিক নির্ভরতা			
২৪	আমার ইনজুরি আমাকে শিখিয়েছে যে আমরা সবাই একে অপরের উপর নির্ভরশীল।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
২৫	অন্যদের সাহায্য ছাড়া আমি নিজেকে সম্পূর্ণ অসহায় মনে করতাম।	১ = একদমই একমত ২ = একমত ৩ = একমত নই ৪ = একদমই একমত নই	
২৬	আপনাকে বিশ্বাস করতে হবে যে অন্য	১ = একদমই একমত ২ = একমত	

মানুষও আপনাকে সাহায্য করতে পারে।	৩ = একমত নই ৪ = একদমই একমত নই
সামাজিক নির্ভরশীলতা স্কেলের গড় স্কোর (গড়; স্কেল ১ থেকে ৪):	

পার্ট ৩ বি : মোকাবিলা কৌশল সম্পর্কিত তথ্য

Brief-COPE হলো একটি ২৮টি আইটেমের স্ব-মূল্যায়নভিত্তিক প্রশ্নমালা, যা কোনো চাপপূর্ণ জীবনের ঘটনার সাথে মোকাবিলায় কার্যকর এবং অকার্যকর কৌশলগুলো পরিমাপের জন্য তৈরি করা হয়েছে।

প্রতিটি প্রশ্ন ৪-পয়েন্টের লাইকার্ট স্কেল অনুযায়ী মূল্যায়ন করতে হবে, যেখানে:

১ = আমি এটা একদমই করিনি

২ = আমি এটা অল্প একটু করেছি

৩ = আমি এটা মাঝারি পরিমাণে করেছি

৪ = আমি এটা অনেক বেশি করেছি

অনুগ্রহ করে প্রতিটি প্রশ্ন মনোযোগ দিয়ে পড়ুন, নিজের অনুভূতি মূল্যায়ন করুন এবং যে সংখ্যাটি আপনার অবস্থার সবচেয়ে ভালো ব্যাখ্যা দেয়, সেটিতে টিক (✓) দিন।

	প্রশ্ন	উত্তর	উত্তর	উত্তর	উত্তর
		১ = আমি এটা একদমই করিনি	২ = আমি এটা অল্প একটু করেছি	৩ = আমি এটা মাঝারি পরিমাণে করেছি	৪ = আমি এটা অনেক বেশি করেছি
২৭	চিন্তা এড়াতে আমি কাজ বা অন্য কিছুতে মন দিয়েছি	১	২	৩	৪
২৮	আমি আমার পরিস্থিতি মোকাবিলায় পদক্ষেপ নিয়েছি	১	২	৩	৪
২৯	আমি নিজেকে বলেছি, এটা বাস্তব নয়	১	২	৩	৪
৩০	ভালো লাগার জন্য আমি মাদক বা অ্যালকোহল ব্যবহার করেছি	১	২	৩	৪
৩১	আমি অন্যদের কাছ থেকে মানসিক সহায়তা নিয়েছি	১	২	৩	৪
৩২	আমি পরিস্থিতি মোকাবিলা করার	১	২	৩	৪

	চেপ্টা ছেড়ে দিয়েছি				
৩৩	আমি সমাধানের জন্য নিজে পদক্ষেপ নিয়েছি	১	২	৩	৪
৩৪	আমি বিশ্বাস করিনি যে এটা ঘটেছে	১	২	৩	৪
৩৫	আমি নিজের খারাপ অনুভূতি প্রকাশ করেছি	১	২	৩	৪
৩৬	আমি অন্যদের কাছ থেকে সাহায্য ও পরামর্শ নিয়েছি	১	২	৩	৪
৩৭	আমি এটা সহ্য করার জন্য মাদক বা অ্যালকোহল ব্যবহার করেছি	১	২	৩	৪
৩৮	আমি বিষয়টিকে ইতিবাচকভাবে দেখার চেষ্টা করেছি	১	২	৩	৪
৩৯	আমি নিজেকে দোষ দিয়েছি	১	২	৩	৪
৪০	আমি করণীয় বিষয়ে একটি পরিকল্পনা করার চেষ্টা করেছি	১	২	৩	৪
৪১	আমি কারো কাছ থেকে সাহায্য ও	১	২	৩	৪

	বোঝাপড়া পেয়েছি				
৪২	আমি সমস্যা মোকাবিলা করার প্রচেষ্টা ছেড়ে দিয়েছি	১	২	৩	৪
৪৩	আমি পরিস্থিতির মধ্যে ভালো কিছু খুঁজে পাওয়ার চেষ্টা করেছি	১	২	৩	৪
৪৪	আমি এটা নিয়ে কৌতুক করেছি	১	২	৩	৪
৪৫	বিষয়টি নিয়ে কম ভাবার জন্য টিভি দেখা, ঘুম, শপিং ইত্যাদি করেছি	১	২	৩	৪
৪৬	আমি বাস্তবতা মেনে নিয়েছি	১	২	৩	৪
৪৭	আমি আমার নেতিবাচক অনুভূতি প্রকাশ করেছি	১	২	৩	৪
৪৮	আমি আমার ধর্ম বা আধ্যাত্মিক বিশ্বাসে শান্তি খুঁজেছি	১	২	৩	৪
৪৯	আমি অন্যদের কাছ থেকে পরামর্শ বা সহায়তা চেয়েছি	১	২	৩	৪

৫০	আমি এর সাথে বসবাস করা শিখেছি	১	২	৩	৪
৫১	আমি পরবর্তী পদক্ষেপ নিয়ে গভীরভাবে চিন্তা করেছি	১	২	৩	৪
৫২	আমি ঘটে যাওয়া বিষয়গুলোর জন্য নিজেকে দোষ দিয়েছি	১	২	৩	৪
৫৩	আমি প্রার্থনা বা ধ্যান করেছি	১	২	৩	৪
৫৪	আমি এই পরিস্থিতি নিয়ে ঠাট্টা করেছি	১	২	৩	৪