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Review Article

Coping Strategies and Psychosocial Well-Being in Subjects with Musculoskeletal Impairment: A Review Article

Dim, U. M. E [1], Atare, F. U [1] , Akpan , G. A [1], Achalu, D. I [1], Dim, E. M [2]*, Oforjigha-Dim, C. W [3]

[1] Department of Human Kinetics and Health Education, Faculty of Education, University of Uyo, Nigeria.

[2] Department of Orthopaedics and Traumatology, Faculty of Clinical Sciences, University of Uyo, Nigeria.

[3] Department of Medical Laboratory Sciences, Federal Medical Centre, Ebute-Metta, Lagos, Nigeria.

***Corresponding Author:** Dim, Uchenna Miriam Eberechukwu, Ph.D Nursing Services Division National Orthopaedic Hospital Igbobi, Lagos Nigeria

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Abstract

Acute or chronic musculoskeletal impairments are predictors of diverse forms of stress, which evokes emotional, psychological and psychosocial responses in the victims. These responses may compromise patient's outlook, leading to altered capacity to cope with and recover from the primary musculoskeletal challenge. Coping with a musculoskeletal disorder involves the mobilization of thoughts and behaviours to manage both the internal and external stressful bodily situations occasioned by the disorder. Patients with relatively similar problems may respond differently, but the knowledge of coping strategies can help them to overcome the psychosocial trauma of their stressful conditions. The aim of this review article is to promote the awareness of coping strategies among musculoskeletal patients' and health care providers' populations within the study locality and beyond. A review of the literature on the subject of coping strategies and effects on psychosocial well-being was done, bearing in mind subjects suffering musculoskeletal impairments. Theoretical frameworks, conceptual reviews and empirical reviews were extracted and presented.

Keywords: musculoskeletal; impairment; coping strategies; psychosocial; well-being

Introduction

Coping is the ability to manage threatening challenges or potentially harmful situations, and is an ability that is crucial for well-being. Coping can also be defined as the cognitive and behavioural effort made to master, tolerate, or reduce external and internal demand and conflicts (Ali et al, 2020). Coping is also defined as the thoughts and behaviours mobilized to manage internal and external stressful situations (Algorani and Gupta, 2022). Knowledge of coping strategies can help one overcome the psychosocial trauma of stressful conditions. It has been observed that patients with relatively similar problems may respond differently to their medical care and management. These differences could be as a result of their ability to cope with stressful conditions. According to the American Psychological Association (2018), coping strategies are an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation, or in modifying one's reaction to the situation. Additionally, Yu et al., (2020) defined coping strategies as the specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimize stressful events.

According to Ali et al., (2020), exposure to coping strategies education improved knowledge and behaviours in their subjects compared to their pre-education level. Moreover, the knowledge of coping strategies may also lead to an improvement in health related quality of life not only for patients but also for their families (Ryan et al., 2013). Interestingly, coping strategies do not only play an important role in the psychosocial adjustment of individuals with disabilities but also influence the health related quality of life of people with disorders (Umucu and Lee, 2020). Together with the knowledge and awareness of coping strategies, it becomes a vital factor in improving the ability to deal successfully with situations by minimizing its impact on social and psychological functioning (Corn et al., 2020).

Coping strategies, according to Weiten et al., (2011), are those reactions or efforts made to master, reduce or tolerate the demands created by stress. According to the American Psychological Association (2018), coping strategies are an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation, or in modifying one's reaction to the situation. Additionally, Yu et al., (2020) defined coping strategies as the specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimize stressful events. In order to better understand the range of coping efforts used by persons facing stressors, including for trauma and orthopaedic conditions, a number of authors over the years have tried to categorize coping strategies. Some of the coping dimensions that have been explored are: Adaptive and Maladaptive (Mahmoud Alilou et al, 2022, Zeidner and Saklofske 2015), Active and Passive (Perez-Tejada et al, 2019), Emotion based (Perez, 2017), and Avoidance (Brands et al., 2014, Stanisławski, 2022).

Generally speaking, adaptive strategies help patients to reduce pain and stress, while promoting or improving function (Mahmoud Alilou et al, 2022). Adaptive coping strategy might involve problem solving, including collecting information and refocusing on the problem, or regulation of emotion by focusing attention on the emotional response aroused by the stressor). Maladaptive coping strategies are those that attempt to manage stress, but end up decreasing function despite temporary respite from certain symptoms (Jensen et al., 2011).

Emotion-based coping style involves the management of stress through emotion, frequently by avoiding the issue. When the individual engages in emotion-based coping, he or she is actively regulating the emotional reaction that the problem elicits rather than attempting to change the stressful situation itself (Perez, 2017). Strategies can include distraction, suppression of feelings, thinking comforting thoughts, avoidance, and expression of emotions. Emotion-based coping does not refer to dealing with stress by using emotional control. Instead, it refers to using coping skills that address emotional reactions, and are less cognitive in nature, including sleeping, wishful thinking, worrying, and ignoring the problem.

Avoidance coping strategies involve active efforts to ignore or withdraw from the distressing situation and its associated emotions (Stanisławski, 2022). Avoidance activities involve, "procrastination, passivity, or inaction, and dependency." An individual who rates high on these types of activities, "puts off solving problems as long as possible, waits for problems to resolve themselves, and attempts to shift responsibility to others" (Stanisławski, 2022). This coping style has received strong support (Endler and Parker, 1999), and has been identified as an independent coping style in several different coping instruments (Brands et al., 2014). Hence, avoidance coping, including the use of denial and withdrawal, are associated with maladaptive behaviours and psychological distress (Rückholdt et al., 2019).

Active coping strategies include securing social support, biofeedback, active distraction, problem solving, gathering information, prioritizing tasks, turning to religion, requesting and accepting help from family and friends. Active coping mechanisms usually involve an awareness of the stressor and conscious attempts to reduce stress. Active coping refers to cognitive and behavioural attempts to deal directly with problems and their effects (Prell et al., 2021).

Passive coping responses are often used when individuals decide that the basic circumstances cannot be altered and, thus, they need to accept a situation as it is (Kavčič et al., 2022). Passive coping responses to depressive symptoms can interfere with treatment outcomes (Mannes et al., 2020), since the feelings and behaviours associated with learned helplessness can contribute to worsening cognitive distortions about the level of threats from a minor adverse event and negatively affect one's sense of control over life stressors and self-efficacy related to the outcomes of treatment (Xie et al., 2022). Individuals under pressure typically use multiple tactics to deal with the stressors, especially when they appraise the stressors as severe threats, with potentials for harm and loss (Folkman and Lazarus, 1980; Kavčič et al, 2022). Nevertheless, a high level of passive coping responses to depressive symptoms, with or without active coping, may amplify a depressed mood. Rather than engaging in pleasurable activities with or without seeking help from social support networks to alleviate depressed mood, those with passive coping responses may choose to further withdraw from activities and interactions with others, resulting in increased social isolation and worsening depressed mood (Saravanan et al., 2019).

Coping strategies are usually classified as active or favourable, and passive or unfavourable (Prell et al., 2021). Of these, the "passive avoidant" and "active positive" strategies predominate in patients with stressful and chronic diseases. The "passive avoidant" strategies are also associated with diseases with the worst health outcomes (Adnan et al., 2013). According to Burns (2016), psychosocial well-being is about lives going on well. It has to do with inter-individual and intra-individual levels of positive functioning that can include one's relatedness with others and self-referent attitudes that include one's sense of mastery and personal growth. Subjective well-being reflects dimensions that affect judgments of life satisfaction. Chang et al., (2022) viewed psychological well-being as some combination of positive affective states such as happiness (the hedonic perspective) and functioning with optimal effectiveness in individual and social life (the eudaimonic perspective). Oluwaseyi (2020) reviewed the consequences of psychological well-being as being in better physical health, mediated possibly by brain activation patterns, neurochemical effects and genetic factors. Additionally, the East African Community (2019) viewed psychosocial well-being as involving the development of cognitive, emotional, and spiritual strengths among individuals, families and communities which creates overall positive social relationships among them. This state of well-being motivates the development of life skills which enables

individuals, families, or communities to understand and engage with their environment and make it healthy.

It is obvious that trauma, including orthopaedic injuries, remains one of the leading causes of mortality in the first four decades of life, although most people with traumatic injuries survive their accidents (Elgheriani, 2021). Management of such patients focuses on the patient's medical resuscitation, stabilization of injuries, and restoration of function (Iyengar et al., 2023). Several studies of patients with musculoskeletal impairment from orthopaedic disorders and trauma have focused on measures of functional recovery, complications, mortality and costs of treatment (Adams et al., 2012; Moed et al., 2013). Less attention has been focused on psychosocial status of subjects with musculoskeletal impairment associated with orthopaedic disorders and trauma (Kang et al., 2021; Robinson et al., 2022).

One condition that elicits the usage of coping strategies is the burden of trauma. It is enormous on survivors, their families and the society at large. It greatly works against the survivors' mental health and interferes with their recovery (Guedes et al., 2020). Trauma survivors may develop a spectrum of psychological disorders in the short-term or long-term time frame after experiencing the trauma (Arenth et al., 2014). Although a significant number of orthopaedic trauma survivors develop serious psychiatric disorders, only a few of them get appropriate mental health services by trained professionals. Traumatic injury victims suffer from physical disabilities which may persist during their year of work-life. Different emotional and behavioural conditions in these subjects are a common source of complaints. The magnitude of psychological disorder after orthopaedic trauma varies depending on the screening tool, site of injury and the timing of the study period from the injury. Mental health problems have been reported to have an association with reduced health-related quality of life among trauma survivors (Brands et al., 2014).

Psychological disorders in patients who have sustained orthopaedic traumatic injuries are common. Symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) in orthopaedic trauma patients have been reported to range between 13–56% in a meta study (Schemitsch and Nauth, 2020). The same meta study found that symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD) in orthopaedic trauma patients could also range between 15–51% (Schemitsch and Nauth, 2020). Ohliger et al., in 2020 reported the prevalence of mental health diagnoses as 43%, where mental health diagnoses in the particular patient cohort consisted of alcohol dependence, opioid dependence, cocaine dependence, social phobia, posttraumatic stress disorder, paranoid personality disorder, major depressive disorder, bipolar affective disorder, polysubstance abuse, schizoaffective disorder, schizophrenia, unspecified nonorganic psychosis, organic psychosis, anxiety, panic disorder, adjustment disorder, antisocial disorder, oppositional defiant disorder and borderline personality disorder. According to Bedaso et al., (2020), the prevalence of probable PTSD among road traffic accident survivors was 15.4%. Little attention was given to the negative mental health outcomes of orthopaedic trauma, and this could be related to the fact that there was limited research data in this area showing the overall burden of the condition.

Despite exposure to traumatic stress, not all patients react in the same way and it is possible for them to employ a variety of adaptive coping strategies that can limit the negative impacts of trauma on psychosocial health and well-being, especially as both patients and surgeons can feel uncomfortable discussing emotions, stress, and coping strategies. According to Ryff's model (1989) of psychological well-being in Aguayo et al., (2011), the six dimensions of well-being are guided and shaped by our socio-demographic characteristics such as age, gender, ethnicity and culture, as well as both positive and negative life experiences by all persons. In her study on positive ageing, Ryff identified constructs such as well-being, positive health and resilience as important building blocks for positive human development and mental health.

Obviously, when trauma is involved, varying coping strategies are commonly deployed to match specific situational demands by intuition (American Psychiatric Association, 2013). Traumatic and orthopaedic injuries can significantly affect physical, emotional, functional, social, and economic outcomes. The researcher, with more than two decades of experience as an orthopaedic specialist nurse in an orthopaedic hospital, observed that patients with musculoskeletal impairments at the National Orthopaedic Hospital in Lagos react differently to pain, which is the commonest source of stress among these patients. Therefore, the rationale for this work was to promote the understanding of coping strategies and attendant effects on psychosocial well-being among the musculoskeletal impaired population in the study locality and beyond. It is expected that educational and supportive interventions can be formulated for the purpose of future planning of patient rehabilitation as part of the holistic care of musculoskeletal impairments. Coping strategies can be applied to alleviate psychological impacts, emotional impacts and social impacts on traumatic and orthopaedic patients. The concept of coping strategies is expected to gain popularity in public circles and across our health care institutions.

Theoretical Framework

The understanding of the knowledge of coping strategies and their effect on the overall psychosocial well-being of individuals is built on models and theories such as the theory of stress and coping, the model of psychological well-being and the PERMA well-being theory (Lazarus and Folkman, 1984; Ryff, 1998; Seligman, 2011).

Theory of Stress and Coping by Lazarus and Folkman (1984)

A major contribution to the contemporary understanding of coping is derived from the work of American psychologists, Richard Lazarus and Susan Folkman. The concept of the transactional model of stress and coping was first propounded by Richard Lazarus in 1966 in a book entitled "Psychological Stress and the Coping Process". In 1984, working in conjunction with Susan Folkman, he further

elaborated this concept in a book entitled “Stress, Appraisal and Coping” (Lazarus and Folkman, 1984). According to the transactional model of stress and coping, stressful experiences are perceived as person-environment transactions. In these transactions, the person undergoes a four-stage assessment known as appraisal. When confronted with any possible stressful situation, the first stage is the primary appraisal of the event. In this stage, based on one's previous experience, knowledge about one’s self, and knowledge about the event, the person internally determines whether he or she is in trouble. If the event is perceived to be threatening or has caused harm or loss in the past, then the stage of secondary appraisal occurs. If, on the other hand, the event is judged to be irrelevant or poses no threat, then stress does not develop any further and no further coping is required.

The secondary appraisal determines how much control one has over the situation or the event. This understanding leads to the third stage where the individual ascertains what means of control are available to him or her. This stage is known as coping. Finally, the fourth stage is the stage of reappraisal, where the person determines whether the original event or situation has been effectively negated or not. The primary focus of conceptualization of coping by Lazarus and Folkman is on coping as an application of thought processes and behavioural efforts to combat demands that exceed a person's resources. The hallmarks of this conceptualization of coping are: (a) its focus on the "process" of coping as opposed to personality traits; (b) importance of specificity of specific stressful situations in inducing coping as opposed to a general physiological response; and (c) having no reference to the outcome (whether positive or negative) as opposed to the mastery concept that only emphasizes the positive aspects.

The hypothesized role of coping as a mediator of the effects of stress on psychological and social well-being of individuals provides a major impetus for the study of coping. The case for a relationship between coping and psychological outcomes is substantial, mainly because the coping process is initiated in response to a cognitive appraisal of a situation as stressful. When a situation is appraised as stressful, it is judged significant to the person involved, and is very capable of putting significant demand, or quickly exceeding the person’s ability to cope. The appraisal is made by a person with a particular psychosocial and biological heritage at a particular developmental stage in a particular setting, with particular personal, social, and material resources for coping, and with other demands competing for those resources. When those resources cannot match the demand placed on them, negative psychological outcomes are imminent.

In considering how the theory of stress and coping by Lazarus and Folkman (1984) relates to musculoskeletal injuries, anecdotal evidence suggests that effective coping to a stressful condition depends on how a person views the stressful event. A person with a past history of musculoskeletal injury will probably see a subsequent injury as minor, if he or she is able to use the affected part, and may cope without any form of treatment. However, if the subsequent injury resulted in pain, swelling and loss of function of the affected part, he or she will likely perceive it as serious and would seek for treatment. Also, a patient who has had surgery in the past, will most likely cope better when scheduled for another surgery. He will cope well with hospitalization and pain management.

Model of Psychological Well-Being by Ryff (1998)

The Psychological Well-Being Scale (Ryff, 1995; Ryff and Keyes, 1995; Compton, 2005) that operationalized Ryff’s model gained recognition as a valid measure of positive mental health across different populations. The six dimensions in the model were used to obtain a holistic picture of well-being, with individuals doing a positive self-evaluation in relation to their present and past life, continued sense of personal growth and purpose in life, as well as their good relationships with others (Ryff and Keyes, 1995; Ryff and Singer, 2008). In her work, Ryff found that the well-being components had different outcomes at different periods in the human development process. For example, whilst high psychological well-being amongst young people emanated more from personal growth and was less based on environmental mastery, high levels of well-being amongst older individuals emanated more from autonomy and environmental mastery (Ryff, 1989b). She further found that, for younger people, psychological well-being was associated with pleasant activities, whilst older people associated well-being with positive relationships and work experiences (Ryff and Heidrech, 1997).

In her study on psychological well-being, Ryff (1989) argued that the meaning and measurement of well-being could not be understood within the traditional framework, which viewed health as the absence of illness, rather than as the presence of wellness. Based on this argument, Ryff (1989) aimed at developing an integrative view of well-being that took into account the role of positive functioning and mental health found in the work of life span theorists such as Erikson in 1969; the theory of psychosocial stages found in Rogers’ 1961 depiction of the fully functioning individual; as well as Maslow’s 1968 notion of self-actualization. It was this integrated view which led to Ryff’s description of well-being as “an individual’s striving for perfection, leading to the realization of one’s optimum potential”. Ryff (1989) presented a model of psychological well-being entrenched within the eudaimonic tradition, and comprising six dimensions, namely self-acceptance, environmental mastery, personal growth, purpose in life, autonomy, and positive relations with others (Ryff, 1989a; Ryff, 1989b, Ryff, 1995; Gallagher et al., 2009).

Self-acceptance refers to an ability to evaluate oneself, whilst accepting both the positive and negative aspects in one’s abilities. Environmental mastery has to do with a sense of mastery and competence in making decisions conducive to meeting life goals; whilst personal growth is related to one’s capacity for personal growth, self-knowledge, effectiveness and openness to new experiences. A purpose in life refers to one’s sense of meaning,

purpose and direction in life. Autonomy is characterized by independence and self-determination, coupled with abilities to resist societal pressures as well as self-regulation. Positive relations with others refer to an ability to create and sustain close relationships with others, a concern for the welfare of others and empathy and affection for others (Compton, 2005).

According to Ryff's 1989 model of psychological well-being, the six dimensions of well-being are guided and shaped by our socio-demographic characteristics such as age, gender, ethnicity and culture, as well as both positive and negative life experiences. In her study on positive ageing, Ryff identified constructs such as well-being, positive health and resilience as important building blocks for positive human development and mental health. This means that people cannot be studied in a vacuum, but within the context of their surrounding circumstances and experiences.

The experience of the researcher in clinical and nursing practice relates well to this theory in the present study. For instance, patients with high level of self-acceptance exhibit positive attitude towards their health conditions, resulting in good psychosocial well-being. Similarly, hospitalized patients with high levels of environmental mastery cope better with problems of hospitalization, such as change of environment, and this relates with psychosocial well-being. Also, patients with high levels of positive social relation will maintain good relationship with the health care team, their families and friends, and co-patients. This is an indication of a good psychosocial well-being.

PERMA Well-Being Theory by Martin Seligman (2011)

Seligman's theory on well-being was developed as an extension of his earlier theory on authentic happiness (Seligman, 2002). He is described as one of the founders and leaders of the positive psychology movement among others (Linley and Joseph, 2004; Compton, 2005; Baumgardner and Crothers, 2010; Dodge et al., 2012). In his theory on well-being, Seligman (2011) postulated that well-being itself was a theory of free choices made by human beings and comprised a number of elements. The five elements, he argued, were characterized by what individuals would choose on their own accord and for their personal benefit. Each of these elements, according to Seligman (2011), must have the following three characteristics: a) It makes certain contributions to the individual's well-being; b) The individual will pursue it for its own sake, exclusive of other elements; and c) The definition and measurement of the element is independent of others. The five elements in Seligman's well-being theory are positive emotion, engagement, positive relationships, meaning as well as accomplishment. These elements are represented by the acronym, PERMA (Seligman, 2011), and are briefly described.

Positive emotions, also known as the pleasant life, are crucial building blocks of well-being and comprise subjective measures of happiness and life satisfaction. These are divided into physical pleasures such as enjoying a good meal, or the more sophisticated pleasures such as a complex game of chess, which are described as complex combinations of emotions capable of producing feelings of joy or ecstasy (Compton and Hoffman, 2013). In relation to engagement, Seligman (2011) indicated that the good life was achieved through engagement in absorbing activities, which promote full participation in life. His description of the good life was embedded in the construct of signature strengths, described by Peterson and Park (2009) as "positive traits that a person owns, celebrates and frequently exercises". Authentic happiness, according to Seligman (2002), is an innate ability to identify and cultivate one's strengths in everyday activities such as work, play and being a parent. Closely related to this is the notion of "gratification", which is described as the emotional response to activities that promote the enactment of signature strengths and virtues, which in turn culminate in authentic happiness and abundant gratification (Compton and Hoffman, 2013; Butler and Kern, 2016).

Human beings are said to be inherently in need of positive and reciprocal relationships (Seligman, 2011). Closely related to this need for relatedness (Butler and Kern, 2016), is their need for living autonomously, deciding on goals and challenges which they can strive to achieve, coupled with a sense of competence and mastery of life and environmental contexts (Compton and Hoffman, 2013). In a meaningful life, personal or signature strengths are employed for the achievement of something more significant than one's individual self, thus approaching life from a wider perspective of purpose and meaning. This would lead people to understand their world better and make sense out of it, most especially as they would get a sense of fulfilment when they believe that their lives are significant and have a purpose (Seligman, 2011; Compton and Hoffman, 2013; Butler and Kern, 2016).

Accomplishment is achieved by using one's most prominent strengths, which in turn leads to the experience of more positive emotion and deeper meaning. Feelings of accomplishment will also have a positive impact on our relationships (Seligman, 2011). The importance of strengths and virtues in the development of well-being was proven by a number of research studies over the past few decades (Petersen and Seligman, 2004; Seligman, 2011), and the findings in such studies equally appraised strengths as an imperative part in the conceptualization of well-being. Seligman (2011) constructively criticized his own theory of authentic happiness (Seligman, 2002) as being one-dimensional, in that it concentrates on feeling good and attempting to maximize these feelings on a continuous basis. The well-being theory was, in contrast, appraised by Seligman (2011) for its multipronged nature, both in method and application. In his criticism of the PERMA theory, Wong (2011) argued against the use of the term "gold standard" for measuring well-being, which had been used in Seligman's description of the theory. Wong contended that there was a global agreement amongst positive psychology scholars that the Ryff and Singer (1998) model of well-being deserved the title of gold standard of well-being. Wong (2011) further argued that research had not found any undisputed evidence supporting the PERMA theory as a representation of a new theory of well-being, as suggested by Seligman (2011). The author, however,

credited the theory for its scientific expansion of the theory of authentic happiness (Seligman, 2002; Wong, 2011).

The addition of the elements of accomplishment and relationships, in particular, brought a social component to the PERMA theory, thus making it more inclusive and integrative than other theories of well-being (Keyes, 1998; Wissing and Van Eeden, 2002; Gallagher et al., 2009; Butler and Kern, 2016). The PERMA theory, therefore, is a relevant scientific theory that could be operationalized for use in future research studies in order to understand the concept of well-being, from yet another viewpoint.

A practical example that relates to this theory is seen in people with high level of well-being. High level of well-being is associated with better physical health, stronger immune system, reduced cardiovascular mortality, fewer sleep problems, greater self-control, better self-regulation and coping abilities. A patient with high level of well-being will be able to cope better, relate well with the health team and be more cooperative in his care.

Conceptual Review

Coping is the ability to manage threatening challenges or potentially harmful situations, and is an ability that is crucial for well-being. Coping is also defined as the thoughts and behaviours mobilized to manage internal and external stressful situations (Algorani and Gupta, 2022). Coping can also be defined as the cognitive and behavioural effort made to master, tolerate, or reduce external and internal demand and conflicts (Ali et al, 2020). According to the American Psychological Association (2018), coping strategies are an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation, or in modifying one's reaction to the situation. Additionally, Yu et al., (2020) defined coping strategies as the specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimize stressful events.

The Concept of Coping Strategies

Weiten et al., (2011) referred to coping strategies as those reactions or efforts made to master, reduce or tolerate the demands created by stress. According to the American Psychological Association (2018), coping strategies are an action, a series of actions, or a thought process used in meeting a stressful or unpleasant situation, or in modifying one's reaction to the situation. Additionally, Yu et al., (2020) defined coping strategies as the specific efforts, both behavioural and psychological, that people employ to master, tolerate, reduce, or minimise stressful events.. The extent to which a stressor affects an individual's physical, psychological and behavioural outcomes is accounted for, in part, by one's coping resources and strategies. Coping skill is necessary for students' educational, professional and personal development. The ability and skill to manage imposed stresses effectively will lead to high levels of psychological well-being, while inability or skill deficits to manage it leads to lower levels of psychological well-being (Weiten et al., 2011).

Frydenberg (2018) emphasized that coping does not occur in a vacuum. The social context of family, friends and community not only influences one's appraisals of situations, but also one's choice of coping strategies (Aldwin, 2011). The implication here is that the development of constructive coping strategies during childhood and adolescence determines how the individual would cope with adversities throughout the youth and adult years (Melato et al., 2017). A variety of other factors such as age, intellect, gender and parental/social support was found to influence coping styles amongst young people, while culture, race and nationality also emerged as prominent factors influencing coping processes (Breik and Zaza, 2019; Saleem et al., 2020; Ajibewa et al, 2021).

According to Liu et al., 2023, support from family and friends serves an important function as a coping resource during adolescence. Frontiers Media SA (2022) argued that any change in the social relationships with parents, siblings and peers during adolescence would have an impact on the extent to which those relationships will serve as sources for emotional support, even into adulthood. For individuals with brain injury, coping can be influenced by cognitive and interpersonal consequences of the head trauma. When accompanied by decreased perceived control, these individuals are more easily prone to use maladaptive coping styles, which can lead to a downhill spiraling into emotional instability (Murray, 2019; Roth and Hardin, 2019). For example, research has found that one of the main contributing factors to the presence of enduring post-injury emotional complaints in this population is their use of maladaptive coping styles (Velikonja et al., 2013).

In other words, coping skill can be conceptualized as a combination of coping style, and range of implementable coping strategies. Coping style is a mixture of attribution style (perceived source of stress, locus of control, optimistic or pessimistic outlook on finding a solution), and personality characteristics, such as risk tolerance, sense of self-efficacy, and introversion or extroversion. Coping strategies enable the individual to handle stressors more effectively, reduce the intensity of symptoms and help recover faster from exposure (Morganstein and Ursano, 2020; Anderson et al., 2022). These are adaptive capacities that provide immunity against damage from stress. The effectiveness of the coping strategy, however, depends on the degree of distress, variations in individual coping, the level of social support available and, to a large extent, the consultation skills and support of health professionals (Anderson et al., 2022).

People using problem focused strategies try to deal with the cause of their problem. They do this by finding out information about the problem and learning new skills to manage the problem. Problem focused coping is aimed at changing or eliminating the source of the stress, whereas emotion focused strategies involve releasing pent-up emotions, distracting one, managing hostile feelings, mediating or using systematic procedures. Emotion focused coping is oriented towards managing the emotion that accompanies the perception of stress (Singh and Singh, 2020). Typically, people that use a mixture

of all two types of coping strategies, and coping skills will usually change over time. All these methods can prove useful, but some claim that those using problem focused coping strategies will adjust better to life (Gerhold, 2020). Problem focused coping mechanisms may allow an individual greater perceived control over their problem, while emotion focused coping may sometimes lead to a reduction in perceived control (maladaptive coping). According to Boamah., (2015), personality disposition (self-rated health status), age, location, educational level, occupation, ethnicity, housing quality and income are all significant predictors of the adoption of coping strategies in Nigeria.

The increase of knowledge can provide patients with more confidence. However, other researchers highlight that the choice of coping strategies depended mainly on the individual's personality. Job position influenced significantly the selection of coping strategies (Zyga et al., 2016). In particular, Zyga et al., (2016), showed that educated victims tended to choose such coping strategies as "Positive re-evaluation", "Problem solving" and "Positive approach". Also, educated victims adopted more "Denial" strategies than uneducated victims. Consequently, Zyga et al., concluded that it is more likely for educated victims to refuse or to transfer their resolution of a stressor situation.

According to Nguyen, (2020), knowledge of coping methods specific to each group is important for nurses and other health professionals to know which coping methods people tend to use within each group, and to be prepared to improve or seek positive coping methods. They also noted an association between forms of coping and the socio-demographic variables of people on chronic hemodialysis. Using level of education as an example, they noted that the people with duration of education ≥12 years had a preponderance of problem-focused coping methods compared to people with lesser years of education (Nguyen, 2020). In other studies, people with high levels of education were less likely to suffer depression when they adopted problem-focused coping methods (Chan et al., 2011; Subramanian et al., 2017). According to Alnazly (2016), the use of coping strategies in relation to the level of education shows that only two coping subscales were significantly different in terms of the level of education, distancing, and self-controlling. Alnazly (2016) also noted that a lower educational level was associated with more frequent use of distancing and self-control than a higher educational level. Trauma patients appeared to distance themselves from stress-provoking events and controlled themselves to avoid stress. Although these strategies have a calming effect on patients, they do not increase their comfort level and are effective only temporarily. If their effects lasted longer, these strategies might result in maladaptive coping, leading to a stressful lifestyle. Interventions to educate patients on effective coping strategies, including self-controlling and distancing was recommended (Alnazly, 2016).

Types of Coping Strategies

In order to better understand the range of coping efforts used by persons facing stressors, including for trauma and orthopaedic conditions, a number of authors over the years have tried to categorize coping strategies. Some of the coping dimensions that have been explored are: Adaptive and Maladaptive (Mahmoud Alilou et al., 2022, Zeidner and Saklofske 2015), Active and Passive (Perez-Tejada et al., 2019), Emotion based (Perez, 2017), and Avoidance (Brands et al., 2014, Stanisławski, 2022). The number of dimensions seems bounded only by the imaginations of the various researchers involved.

The proliferation of categories, and the lack of consensus among theorists, has not stopped researchers and clinicians alike from declaring that certain types of coping are better than others. A general audience webpage article discussing problem focused versus emotion focused coping, for example, concludes that "In general problem focused coping is best, as it removes the stressor, and deals with the root cause of the problem, providing a long term solution". Similarly, several reviews have concluded that responding to traumatic pain with "passive" strategies has been associated with poor overall adjustment (Jensen et al., 2011). Similarly, Zeidner and Saklofske (2015) unequivocally referred to avoidance coping as "maladaptive," a stance that self-help websites and magazine articles are quick to agree with.

It is worth noting that there is a lot of overlap between coping strategies when they are employed by real people in real situations. The categorization of coping strategies is for the purpose of study and understanding – they are not used in exclusion of each other. In practical terms, a person will employ a vast variety of coping strategies simultaneously when in stressful situations.

Adaptive and Maladaptive Coping Strategies

The term adaptive coping strategy has been replaced by many other words and includes such words as active, problem-oriented, task-based, etc. Generally speaking, adaptive strategies help patients to reduce pain and stress, while promoting or improving function (Mahmoud Alilou et al., 2022). Adaptive coping strategy might involve problem solving, including collecting information and refocusing on the problem, or regulation of emotion by focusing attention on the emotional response aroused by the stressor). Maladaptive coping strategies are those that attempt to manage stress, but end up decreasing function despite temporary respite from certain symptoms. Several reviews have concluded that responding to traumatic pain with "passive" strategies has been associated with poor overall adjustment (Jensen et al., 2011). Similarly, Zeidner and Saklofske (2015) unequivocally referred to avoidance coping as "maladaptive," a stance that self-help websites and magazine articles are quick to agree with. The difference between adaptive and maladaptive coping strategies are not the strategies themselves, rather the outcomes they produce. Adaptive/Maladaptive are descriptors of the outcomes of applying said coping strategy with respect to the particular stressor involved. In other words, if the strategy manages stress while promoting optimal function in the user, it is in that sense an adaptive strategy. On the other hand, if the strategy manages stress symptoms but produces an overall decrease

in function in the user, it is referred to as maladaptive. The proof of the particular cake is in the eating.

i.Task-based Coping Strategy

Task-based coping strategies are used when an individual is actively seeking a solution to the problem by defining the problem. This has also been called planful coping by Krpan et al., (2013). When using this type of coping, the person is addressing and confronting the situation by changing it or by attempting to obtain more information, resources, and skills. It may include defining the problem, generating alternative solutions, weighing the options, choosing among all potential alternatives, and acting upon them (Lazarus and Folkman, 1984). Planful or task-based coping has been consistently linked to positive outcomes, and thus it is considered an adaptive coping strategy. Although this type of coping seems to be more useful in the long term, there is still very limited research on post-acute coping strategies. Hence, there is a great need to identify those specific patient characteristics that are associated with the use of adaptive coping styles in the long-term periods after brain injury.

Task-based coping generally is said to be the best coping strategy, attested to by Cupples et al., 2021, as it removes the stressor, so deals with the root cause of the problem, providing a long term solution. Problem-focused strategies are successful in dealing with stressors such as discrimination, HIV infections and diabetes. However, it is not always possible to use problem-focused strategies. For example, when someone dies, task-based strategies may not be very helpful for the bereaved. Dealing with the feeling of loss requires emotion-focused coping. Task based approaches will not work in any situation where it is beyond the individual's control to remove the source of stress. They work best when the person can control the source of stress (e.g. exams, work based stressors etc.). It is not a productive method for all individuals. For example, not all people are able to take control of a situation, or perceive a situation as controllable. For example, optimistic people who tend to have positive expectations of the future are more likely to use task-based strategies, whereas pessimistic individuals are more inclined to use emotion-focused strategies (O'Connor et al., 2017; Scheier et al., 2021).

Ersek et al., (2006) found that among older adults with persistent pain, the most frequently reported coping strategies were Task Persistence (maintaining activity, for example despite fluctuations of pain intensity), Pacing (activity avoidance), and Coping Self-Statements (a form of conditioning to put a stop to thoughts that lead to anxiety and to replace them with rational thoughts). The least frequently used strategies were Asking for Assistance and Relaxation. Findings from that study suggest useful coping strategies clinicians could explore with individual patients (Ersek et al., 2006).

ii. Emotion-based Coping Strategy

Emotion-based coping style involves the management of stress through emotion, frequently by avoiding the issue. When the individual engages in emotion-based coping, he or she is actively regulating the emotional reaction that the problem elicits rather than attempting to change the stressful situation itself (Perez, 2017). Strategies can include distraction, suppression of feelings, thinking comforting thoughts, avoidance, and expression of emotions. Emotion-based coping does not refer to dealing with stress by using emotional control. Instead, it refers to using coping skills that address emotional reactions, and are less cognitive in nature, including sleeping, wishful thinking, worrying, and ignoring the problem.

For individuals living with brain injury, it has been suggested that emotion-based strategies, particularly denial, can be more adaptive during the acute phase following brain injury, although these strategies are not useful in the long term. Instead, task-based styles in the chronic phases are more suitable (Krpan et al., 2007; Whiting, 2016; Watson et al., 2020). Emotion-based coping strategies, such as emotional worry and escape avoidant coping may increase in the first six months post brain injury, and such increase has been linked to diminished productivity (Dawson et al., 2006; Whiting, 2016; Watson et al., 2020). In addition, other similar strategies such as self-blame, preoccupation, ignoring a problem, and keeping to oneself have been associated with increased stress, depression and anxiety in these patients. Because emotion-based coping has been related to poor outcomes following brain injury in the post-acute phases, it is considered a maladaptive coping style (Krpan et al., 2007; Whiting, 2016; Watson et al., 2020).

Hobfall's Conservation of Resources theoretical model (COR) suggests that individuals strive to retain, protect and build resources and that what is threatening to them is the potential or actual loss of valued resources (O'Brien and Cooper, 2022). After people experience potentially traumatic events, they are at risk for a loss of material, social and psychological resources and with each resource loss, additional loss can occur creating a spiral of loss that can negatively impact mental health (O'Brien and Cooper, 2022). Emotion-focused coping is commonly a strategy to reduce stress and provide safety or conservation of resources, particularly in humanitarian contexts with ongoing conflict (Elnakib et al., 2021). In this way, emotion-focused coping allows youth to have control over emotional resources that can be particularly important when youth are facing resource loss at the individual, family and community level as a result of conflict. Emotion-focused coping may also be particularly effective when used in conjunction with other coping strategies (Elnakib et al, 2021).

Emotion-focused coping strategies aim to reduce and manage the intensity of the negative and distressing emotions that a stressful situation has caused rather than solving the problematic situation itself. These coping strategies thus help the subject to feel better but do not solve the source of the distress. Emotion-focused coping often gets utilized when the problem is out of the subject's control as maybe seen in terminal illness or sudden death of a loved one, in which condition the subject has no other option but to cope with and accept the situation. Among the terminally ill, it has been proven that emotional coping combined with actively expressing and processing emotions has psychological adjustment benefits, decreases

depression, hostility and increases life satisfaction (Stanisławski, 2022). Sometimes, the strategies are used when one cannot use problem solving strategies or when the stressor is perceived to be overwhelming. Emotion-focused coping increases the sense of pleasure, positivity and contentment, and promotes the ability to focus on that which can be changed. Women are better than men at first controlling their emotions with the emotion-focused coping technique before engaging the problem-focused coping technique to solve their problems (Stanisławski, 2022). Examples of emotion-focused coping techniques include listening to music, massage, meditation, physical exercise, going out with a friend, writing in a journal or diary, taking a hot bath, expressing emotions creatively in painting, humour (jokes or funny movies), etc. Positive self-soothing thoughts and self-reassurance can be of help. Seeking social support provides the individual an avenue to seek sympathy, understanding, moral support, information, advice and resources. Deep religious and spiritual alignment provide great potential for comfort, because they help the individual to cope with emotionally stressful conditions by providing belief systems and concepts which aid the understanding and acceptance of the situation by the religious adherents. It also helps the individual to find a silver lining, some positive meaning in otherwise negative circumstances (Elnakib et al, 2021).

Some emotion-focused coping strategies are more positive, functional and adaptable than others. People may choose to mentally disengage from the situation by day-dreaming or over- sleeping, or just giving up dealing with the situation all together. It lowers the level of mental involvement and thus one feels temporarily less distressed but it can become a dysfunctional method of coping quite quickly. Denial of the reality of the event is another method which might help reduce the intensity of negative emotions and negative appraisal. The denial of the existence of the threat can have negative consequences such as not receiving the right medical treatment on time when the symptoms only start to appear. Substance abuse and even over-eating or smoking might provide a short relief and aid disconnect from reality, but it starts a vicious cycle of dependency and creates additional problems. An additional strategy that distressed individuals utilize is self-blame or shifting blame to others (Dorresteijn et al., 2019).

It is a common reaction to initially react in an emotionally focused manner especially to traumatic events. In the shorter term it is adaptive coping. However, after a while, problems become more complicated and less controllable. Emotionally focused coping is useful if it creates a pause, a break, which the individual takes for himself or herself, that enables him or her to have the time to gather strength and to look at the problem from different perspectives. It should, however, be a short term solution because it does not fix the core of the problem. Emotionally focused coping is most useful when circumstances will not change and the individual needs to learn to accept the situation as it is and to learn to live with its aftermath, as is common in conflict or medical emergency rooms (Dorresteijn et al, 2019). In cases of problems that can be solved and changed, more direct and active problem solving strategies are needed.

iii.Avoidance Coping Strategy

Avoidance coping strategies involve active efforts to ignore or withdraw from the distressing situation and its associated emotions (Stanisławski, 2022). Avoidance activities involve, “procrastination, passivity, or inaction, and dependency.” An individual who rates high on these types of activities, “puts off solving problems as long as possible, waits for problems to resolve themselves, and attempts to shift responsibility to others” (Lazarus and Folkman, 1984). This coping style has received strong support (Endler and Parker, 1999), and has been identified as an independent coping style in several different coping instruments (Brands et al., 2014). Hence, avoidance coping, including the use of denial and withdrawal, are associated with maladaptive behaviours and psychological distress (Rückholdt et al., 2019). Endler and Parker (1999), particularly, specified that individuals can engage in inactive avoidance coping either by getting away from the stressor or by engaging in other tasks (distraction) or by using other people as means to evade it (social diversion).

In a cohort study by Cherewick et al., (2016), they found that avoidance coping reduced internalizing and externalizing problems in girls, but also resulted in lower empathy in girls. No change in outcome measures was observed in boys using avoidant coping. Therefore, for girls, avoidant coping is effective in reducing psychological symptoms of internalizing and externalizing problems on the one hand, but negatively impacts the well-being measure of empathy on the other. Similar to the results found with problem-based coping, use of avoidant coping may affect different outcomes along different paths. It is conceivable that avoidant coping strategies may limit the types of social interactions and bonds that girls form and thus negatively impact emotional connections to others and result in lower empathy for others in the community. It is believed that avoidant coping strategies may be more adaptive in the short term but less adaptive in the long term and consideration of adaptive trajectories in coping warrants further research (Sirois and Kitner, 2015).

Although other coping styles (e.g. acceptance, seeking social support) have been proposed, the most common are: task-based, emotion-based, and avoidance. It has been suggested that problem-solving (task-based, problem-oriented, planful coping) is a more adaptive and positive approach, and that predominant use of this coping style is associated with a better quality of life (Wilski et al., 2019; Perez, 2017; Fairfax et al., 2019; Brands et al., 2014; Rückholdt et al, 2019). A clearer understanding of the factors that influence the use of these coping styles may facilitate rehabilitation treatment (Perez, 2017). Previous research has found patterns of relationships between coping and post brain injury outcomes. People who endorse less avoidant coping strategies and more problem-solving coping have better psychosocial outcomes, whereas those who indicate less plan and more avoidant coping have worse psychosocial sequel and lower productivity (Tomberg et al., 2005; Krpan et al., 2013; O'Connor et al., 2017; Scheier et al., 2021). It is important to note that most of the research studies on coping styles

have largely relied on self-assessment measures, without taking into consideration the level of self-awareness that the individual has regarding his cognitive deficits and without using other objective measures to complement self-reports. An over-reliance on self-assessments and a lack of objective measures to confirm the individual's reports can limit the validity of test results. Using assessments rated by professionals to measure treatment outcomes could potentially help minimize patient biases.

The choice of coping strategy is influenced by the quantity and quality of available resources for coping that may be available to a person. These include knowledge, such as knowledge of the functioning at a workplace; skills such as analytical skills; attitudes, including self-efficacy or confidence in one's ability to perform a specific behaviour; social resources, including people with whom a person can exchange information; physical resources such as health and stamina; material resources such as money; and societal resources such as policies and laws.

Active Coping Strategies

According to Grommisch et al., 2020, coping strategies reflect the repertoire of responses available to the individual and which can be successfully deployed in times of stress. Whereas personality is relatively fixed, coping strategies can be taught explicitly or through modelling. The effect of coping strategies is usually classified as active or favourable, and passive or unfavourable (Prell et al., 2021). Active coping strategies include securing social support, biofeedback, active distraction, problem solving, gathering information, prioritizing tasks, turning to religion, requesting and accepting help from family and friends. Active coping mechanisms usually involve an awareness of the stressor and conscious attempts to reduce stress. Active coping refers to cognitive and behavioural attempts to deal directly with problems and their effects (Prell et al., 2021) as explained hereunder.

i.Social Support

This is the support accessible to an individual through social ties to other individuals, groups, and the larger community, and which stands on the premise of social interactions and relationships that offer help or attachment and are perceived as loving and caring (Elnakib et al., 2021; Frontiers Media SA 2022). Alsubaie et al., (2019) defined social support as any social relationship that promotes health and wellbeing. Research has maintained that a positive correlation exists between social support and mental health, irrespective of how the researchers have differentiated social support and how they went about measuring and quantifying it (Elnakib et al, 2021). The National Cancer Institute's Dictionary of Cancer Terms defines social support as a network of family, friends, neighbours, and community members available in times of need to offer psychological, physical, and financial assistance (www.cancer.gov). Social support comprises such emotional support as love, trust, and understanding; it also includes advice and such concrete measures as helping in time management. Social support may depend on the developmental stage of the person who is receiving the support. For example, parental support seems to be more valuable in early adolescence than it is in late adolescence (Frontiers Media SA (2022). It has been shown that the perception of social support is associated with the degree of social interaction in the elderly and with instrumental support in younger adults. Moreover, the type of social support seems to be important in conferring resilience to stress. In a sample of childhood sexual abuse survivors, a combination of self-esteem support (the individual perceives that he or she is valued by others) and appraisal support (the individual perceives that he or she is capable of getting advice when coping with difficulties) was most useful in preventing the development of post-traumatic stress disorder (PTSD).

ii.Biofeedback

The concept of biofeedback was developed in the 1960s, and research on human patients with particular pathologies or disorders began in the 1970s (Yates, 2012). Biofeedback is a method through which various biological processes of the body can be monitored, recorded, and potentially controlled by the patient undergoing treatment with the assistance of specialized equipment. These processes are usually involuntary or not easily or fully perceptible. They can be recorded with electronic equipment that translates the input to visual, auditory, or other cues. The patient may become aware of these autonomous functions and may attempt to influence or control them. The patient is trained to alter a given signal to a certain level through exercise or relaxation, thus approaching "normal" or the nearest normal levels. Electromyographic biofeedback is a specific form of biofeedback. The goal of treatment is to train the patient to control the reduction or increase of tension during a specific encounter.

iii.Religiosity and Spirituality

Religiosity and spirituality are coping strategies that are predictive of physical and mental health outcomes among chronically ill patients (de Diego-Cordero et al., 2022; Sohail et al., 2020). Religion has been consistently found to be an important coping resource for those with life-threatening illnesses. Religious coping can be particularly compelling for disenfranchised populations, such as the elderly, minorities, and women who often confront challenges in accessing health care (de Diego-Cordero et al., 2022; Sohail et al., 2020). More specifically, religious practices such as prayer and meditation can enhance a sense of control over stressful events by helping individuals achieve a personal relationship with a higher entity that offers strength and support to cope with their illness. Furthermore, religion provides a sense of purpose and meaning for seemingly incomprehensible events or chronic adversity. Religious belief systems can provide a framework for understanding the experience of death and dying (Campbell et al., 2020; Sallnow et al., 2022). Religious resources may provide individuals with a terminal illness a sense of self-efficacy to accept their illness and manage problems associated with it more effectively. Self-efficacy has been posited by some to be crucial to the psychological adjustment of individuals living with chronic illnesses (O'Brien et al., 2019). Cross-sectional

and longitudinal studies reveal that religious coping has been predictive of better mental health and physical health of individuals, after controlling for the effects of socio-demographic variables and nonreligious coping measures (O'Brien et al., 2019).

iv. Active Distraction Coping

According to Waugh et al., (2020), active distraction coping is distinct from avoidance in that it is an adaptive disengagement strategy, while avoidance is maladaptive. Active distraction itself can be further qualified as involving positively-valenced or emotionally neutral alternative targets (positive active distraction or neutral active distraction, respectively). It is unlikely for active distraction coping to be negatively-valenced. Distraction is the turning away from a stressor and towards a target that induces negative emotions. It implies an extreme desire to disengage from a stressor, in which case it is not likely that one intends to cope with the stressor at all (Waugh et al., 2020). Active distraction therefore is a distraction that a victim can engage in, which takes so much effort and focus, making it difficult to spend any time worrying about the trauma. It involves thinking or engaging in other activities not related to the stressor. Waugh et al., (2020), found that engaging in leisure activities (leisure coping) as a means of active distraction coping predicted improved coping efficacy and well-being even when accounting for the predictive effects of other commonly studied coping strategies including avoidance and other forms of disengagement. As such, positive distraction has the potential to bestow on a stressed individual all of the immediate and more long-term psychological and physiological benefits of positive emotionality that characterize these other positive emotional coping strategies and ultimately promote resilience to stress.

v. Prioritizing task

Prioritizing tasks is a coping strategy that can accelerate psychosocial well-being of trauma and orthopaedic patients. According to Petersen (2019), prioritizing tasks involves deciding in what order the task is done and how much time is allotted to the task. But at the most basic level, prioritizing tasks always boils down to the single decision of selecting what task should be done at a particular time (Petersen, 2019). According to MentalHelp (2020), when prioritizing tasks concerning traumatic and orthopaedic patients, it is advisable to make a list of tasks requiring attention, and tackle them in order of importance. Unpleasant or stressful tasks should be given priority and addressed early. By this the rest of the day becomes more pleasant and this enhances well-being and quicker recovery. MentalHelp (2020) posited that task prioritization can be accomplished as a coping strategy through values-driven time management process. Time management methods involve finding ways to work more efficiently, so as to maximize the use of time, avoiding depression for traumatic and orthopaedic patients. In prioritizing tasks, a vital way to preserve life balance when faced with trauma, is to make sure to build time for play and relaxation directly into the routine schedule.

vi. Gathering information

Gathering information is one way victims try to cope with victimization (Begotti et al., 2020). This may help the person make decisions regarding further action. Information may also provide further direction regarding the status of a criminal case, learning new skills, identifying treatment resources or a host of other issues the victim believes are salient to his or her well-being. Unfortunately, many victims may have difficulty accessing appropriate information. When gathering information concerning trauma and orthopaedic patients, it simply means gathering information about life history of trauma, identifying post-traumatic symptoms, collecting genetic and other types of biological data, and performing brain scans. This helps patients to know how best to cope with trauma, and hence making it an active coping strategy for trauma and orthopaedic patients. When faced with trauma, there is always lots of information to take in and well-meaning family and friends may be helpful with such information. Too much information leaves patients confused about what to do. Instead, only information relevant to the specific situation or ways of handling available information is what is considered necessary and vital.

vii. Problem solving

Problem solving is also another vital coping strategy for psychosocial well-being of trauma and orthopaedic patients. According to Heppner et al., (2019), problem-solving is related to cognitive and affective coping activities when dealing with stressful life problems. Specifically, there is a consistent association between a positive problem-solving appraisal and problem-focused coping (approaching and attempting to alter the cause of a stressful problem). In addition, demand appraisal and self-efficacy are significant predictors of problem-focused coping (Pakmehr et al., 2021). Victims' strategies for seeking and using helping resources are also related to their appraisal of their problem-solving skills. A positive (as opposed to negative) problem-solving appraisal is associated with more awareness of the availability of helping resources, higher rates of utilization, and more satisfaction with those resources (Heppner et al., 2019).

Both personal and social coping resources are inversely distributed by social status (Schmitt et al., 2023). Personal coping resources, or a sense of control and mastery over life, have been presumed to influence the choice and the efficacy of the coping strategies that people use in response to stressors. By the same token, social coping resources that include social support and, willingness and comfort with help-seeking from others are also likely to influence an individual's coping responses. Some low-income home-bound older adults with limited personal and social coping resources may adopt passive coping responses to their depressive symptoms, perceiving that they have limited control over life circumstances that led to their depression and over the symptoms of depression (Schmitt et al., 2023).

Passive Coping Strategies

Passive coping responses to depressive symptoms can also interfere with treatment outcomes (Mannes et al., 2020), since the feelings and behaviours associated with learned helplessness can contribute to worsening cognitive distortions about the level of threats from a minor adverse event and negatively affect one's sense of control over life stressors and self-efficacy related to the outcomes of treatment (Xie et al., 2022). One previous study that examined the primary care of post-traumatic stress disorder (PTSD-PC) and coping styles (related to the general life stress) among primary care patients (average age of 55.2 ±16.0; 64% employed at least part time) with minor depression found that those who were high in avoidant coping, but not those low in avoidant coping, showed greater improvement with PTSD-PC than those who received usual care consisting of routine physician practice (Oxman et al., 2008). The authors credited PTSD compensatory effect on those with avoidant coping style. The compensatory effect of PTSD-PC may be lower for depressed, low-income home-bound older adults with limited personal and social resources than for younger, mostly employed primary care patients. Passive coping responses are often used when individuals decide that the basic circumstances cannot be altered and, thus, they need to accept a situation as it is (Kavčič et al., 2022). Previous studies found that individuals under pressure typically use multiple tactics to deal with the stressors, especially when they appraise the stressors as severe threats, with potentials for harm and loss (Folkman and Lazarus, 1980; Kavčič et al., 2022). Furthermore, certain coping strategies have both active and passive components. For example, ruminative and distracting responses to depression are largely passive coping styles as they tend to aggravate depressive symptoms, may also be considered active, as even ruminative individuals focus on their symptoms of depression to try to assess and remedy their depressed state (Morrow and Nolen-Hoeksema, 1990). Nevertheless, a high level of passive coping responses to depressive symptoms, with or without active coping, may amplify a depressed mood among home-bound older adults in many ways. Firstly, given that the cognitive symptoms of the feelings of hopelessness, helplessness, and worthlessness tend to be more sensitive to depression in older than younger adults, passive coping may prolong the course of depression by reinforcing these feelings. Secondly, as late-life depression is also characterized by anhedonia and a depletion syndrome, manifested by withdrawal, apathy, and a lack of vigour (Devita et al., 2022), passive coping can aggravate these tendencies. Rather than engaging in pleasurable activities with or without seeking help from social support networks to alleviate depressed mood, those with passive coping responses may choose to further withdraw from activities and interactions with others, resulting in increased social isolation and worsening depressed mood (Saravanan et al., 2019).

A study found that higher avoidant coping was associated with greater depression, anxiety, post-traumatic stress, and somatization symptomatology (Morse et al., 2023). Personal coping resources, or a sense of control and mastery over life, have been presumed to influence the choice and the efficacy of the coping strategies that people use in response to stressors.

i.Distraction by Others as a Passive Coping Strategy

Distraction is notoriously difficult to characterize, having once been relegated to the maladaptive group, along with avoidance and other traditional forms of disengagement such as wishful thinking and denial, but it is more and more frequently recognized as predictive of successful coping. The broadest description defines distraction by others as a means to cope with stress by disengaging or diverting one's attention and efforts away from a stressful stimulus by family members or friends (Menges et al., 2017).

Clearly an important function of distraction coping is allowing for temporary, planned breaks from stressful experiences. These moments of respite then serve at least three important coping functions that ultimately help people to feel refreshed and better able to cope with their stressors after a reprieve (Ma et al., 2021; Waugh et al., 2020). Diverting attention away from a stressor pauses the tide of negative emotions associated with the stressful experience, thereby disrupting the harmful processes that link chronic or traumatic stress to poor outcomes. Distraction is most useful for people and more preferred than other emotion regulation strategies when it is employed early during a negative experience because it stops the processing of negative emotions before they become too prominent or cognitively salient (Ma et al., 2021; Waugh et al., 2020).

A second function of temporary breaks is self-restoration. Stress and its negative emotional consequences can be mentally, emotionally, and physically exhausting, often involving some kind of resource loss. People are driven to protect and preserve resources that they hold to be important such as physical health, social bonds, mental energy, self-esteem, etc (Sahabuddin et al., 2023; O'Brien and Cooper, 2022). The subjective experience of stress occurs when these resources are lost, while the stockpiling of, or even just the motivation to gain or regain these resources contribute to successful coping. A wealth of evidence supports this resource gain versus loss model of resilience and stress (Stoverink et al., 2020; Sahabuddin et al., 2023; O'Brien and Cooper, 2022), strongly suggesting that personal resources play an important role in helping individuals to cope successfully with life stressors. Distraction allows people to step away from their stressors temporarily in order to replenish these resources that were lost during the stressful experience. This self-restoration process builds on itself in a self-perpetuating way, such that the more one breaks away from the negative and often narrowed perspective of stress in order to restore lost resources, the easier it will be to cope with the stressor later, and the more time and energy one will have to devote to further cultivation of personal resources (Stoverink et al., 2020; O'Brien and Cooper, 2022).

Preparation is the third important function of planned breaks from stress. Aside from the opportunity to stockpile resources, a number of researchers have proposed that distraction stimulates new ways of

thinking about a negative situation, which in turn may facilitate future coping efforts through accommodation, or fit-focused secondary control (bringing one's personal goals, beliefs, and motivations more in line with the situation in question) of the stressor if it is not controllable, or problem-solving if it is controllable (Blanke et al., 2022; Ma et al., 2021). Specifically, Blanke et al., (2022) found from qualitative reports that people used distraction to gain new perspectives of their stressors and to reappraise them as less stressful than initially perceived, whereas Ma et al., (2021) found that distraction and problem-solving worked synergistically to improve the subjective well-being and job performances of people experiencing high levels of job stress. Together, this evidence suggests that distraction coping is adaptive because it allows people to take a break from their stressors, either to protect from becoming overly taxed or to prepare for more adequate re-engagement with the stressor at another time (Blanke et al., 2022; Ma et al., 2021).

Cases of Coping Strategies

There are various cases in which coping strategies were brought into play, and were shown to help in maintaining and balancing psychosocial well-being, both generally, and specifically in the case of trauma and orthopaedic patients. The planned infrastructural landscape of Victoria Island, Lagos, Nigeria presents a case study of coping strategies. Victoria Island is categorized as a high-income location and is generally well planned and possesses adequate infrastructure, unlike most informal settlements in developing countries. Informal settlements tend to be situated in environmentally precarious locations where they are susceptible to frequent environmental disasters (Ajibade et al., 2015), and their residents engage in the adoption of coping strategies to help mitigate the impact of disasters. The well-planned infrastructure in Victoria Island signifies anticipatory rather than reactive coping (Ajibade et al., 2015). According to Boamah et al., (2015), in Nigeria, individuals in lower income categories or in rural areas of the country adopt coping strategies. The difference in the findings is because higher income status in Nigeria probably confers on individuals the ability to acquire property in locations, which are less susceptible to the location hazards. Consequently, the extent of damage by location hazards surges in the aftermath of disaster may not warrant the adoption of coping strategies (Ajibade et al., 2015; Boamah, et al., 2015; Boer et al., 2015).

Boamah, et al., (2015), in their paper on "Does Previous Experience of Floods Stimulate the Adoption of Coping Strategies, Evidence from Cross Sectional Surveys in Nigeria and Tanzania" examined the relationship between stressful life experiences on particular locations and the adoption of coping strategies among coastal dwellers in Tanzania and Nigeria. The stressful life experiences used in this study were the experience of floods and ocean surges within the past one year. Relationships between stressful life events and the adoption of relevant coping strategies have been explored by some authors (Boer et al., 2015). In their study, the overall findings showed that individuals in both Tanzania and Nigeria who experienced stressful life events engaged in the adoption of coping strategies. Regardless of this, the findings also showed specific cross-country differentials in the predictors of adoption of flood-related coping strategies. This suggests that context-specific policies aimed at encouraging the adoption of coping strategies in vulnerable locations should be designed based on local needs and orientation (Boamah, et al., 2015; Boer et al., 2015).

Coping is influenced by the environment in which the professional is inserted, as well as the experiences of previous stressful situations. There are socio-demographic and functional influences regarding the coping strategy used; therefore, individual efforts linked to organizational conditions related to occupational stress and professional instrumentation on coping are necessary to understand and use them more effectively. High levels of occupational stress can be attributed to the sector of work and workloads. Different results of these experiences in the work environment are revealed, peculiar to each sector and region, but converge to the presence of occupational stress. It is also inferred the need to adopt coping strategies and reflections on prevention of mental illness, knowing that stress consists of trigger and prolonged exposure threatens workers' health.

Even without presenting high levels of stress, individuals experience stressful situations in their daily lives and adopt strategies for coping with them. A cross-sectional study for the impact of coping strategies on mental health disorders among psychiatric nurses indicated that age and years of working experience in nursing were significantly positively associated with the risk of depression. In addition, the risk of depression development was higher in single and divorced/widowed nurses than married nurses, tertiary education nurses than secondary education nurses, and nurses than nursing assistants (Tsaras et al., 2018).

A number of researchers have shown that age strengthens the ability to distance oneself from stressful situations and reassess them positively (Nieto et al., 2020; Livingstone and Isaacowitz, 2021; Nieto et al., 2023). Consequently, older adults report enhanced emotional well-being compared with younger adults. In line with this approach, older adults are better at solving problems with a social component and employ cognitive strategies to improve emotion regulation because they are more focused on emotional goals. It is worth noting that older adults are able to maintain their coping resources to successfully adapt to life changes and reduce the negative impact of stressful events (Nieto et al., 2020). In this sense, it could be beneficial to implement programs to develop coping strategies for successful adaptation in older adults, such as that proposed by Nieto et al., (2023) to promote psychological well-being and life satisfaction in ageing.

Zyga et al., (2016), in their study on "Assessing Factors that affect Coping Strategies among Nursing Personnel," revealed that regarding the influence of gender upon the selection of coping strategies, women were found to outweigh men concerning the choice of specific strategies. In particular, it was found that women

systematically manifest ways focused on emotion. Similarly, Zyga et al., (2016) showed that women more often implement strategies focused on the regulation of emotion while men often use strategies focused on solving the problem. Also, in their study on "Coping response to same stressors varies with gender", Sinha and Latha (2018) concluded that females used emotion-focused coping strategy significantly while males used problem-focused coping strategy significantly. The most commonly used emotion-focused strategy was seeking social support and positive reappraisal while the most commonly used problem-focused strategy was accepting responsibility. Coping skill varies with gender at both physical and psychological levels. These differences are basically due to the following reasons:

a.Physiological makeup of different sex hormones and their interaction with the stress hormones such as adrenaline, noradrenaline and cortisol.

b.Genetically, the SRY gene proteins have effects on the hormonal secretions and have direct effect on the structure of the brain.

c.Cannon called the emergency-induced discharge of the sympathetic nervous system the "preparation for flight or fight." It is a physiological reaction that occurs in response to stress (Barrett et al., 2010). These studies were vastly done on males but physiologically women respond to stress by secreting more endorphins and oxytocin instead of norepinephrine and cortisol. Therefore, in men, the response is fight or flight while for women it is tend and befriend.

According to Bertolin et al., (2011), women reported emotion-focused coping methods with greater frequency than men, and showed more problem-focused coping methods. There is a positive relationship between the female gender, anxiety and emotion-focused coping methods, suggesting that women tend to report more emotion-focused coping methods due to their anxiety. Benson et al., (2020), reported that the majority of women frequently engaged in active coping strategies, the commonest of which was religious coping and the least common was humour. Self-distraction and substance use, respectively, were the most and least adopted avoidant coping strategies. Understanding these challenges and the nature of anxieties in trauma and orthopaedic patient populations is important as abnormal anxiety affects the psychological well-being of the patients.

In the words of Creely (2015), the psychological ramifications of exposure to traumatic events can be debilitating and the process of coping with exposure complicated. A large body of research has demonstrated that religious coping can be a significant resource for individuals. There is, however, a contention in the literature as to the specific process by which religious coping affects outcomes. Some authors have suggested that the relationship between religious coping and trauma outcomes is mediated by other psychological resources, which, if true, could have serious theoretical and clinical implications (Dobrakowski et al., 2021).

Empirical Studies

Cherewick et al., (2016) examined the coping strategies among conflict-affected youth exposed to potentially-traumatic events, looking at the relationship to psychological symptoms and well-being in the Democratic Republic of Congo (DRC). A total of 434 subjects (male and female youth, aged 10-15 years) were used as the sample population. The survey instrument included measures of exposure to potentially traumatic events, an adapted coping strategies checklist, and measures of psychosocial distress and well-being. Exploratory factor analyses were used to identify coping strategies and hierarchical regression was used to assess how coping strategies were associated with psychological symptoms including internalizing and externalizing problems and well-being outcomes, including pro-social behaviour and self-esteem. The result showed that exploratory factor analysis suggested four coping strategies, namely, problem-focused, emotion-focused, avoidance and faith-based strategies. Problem-focused coping strategies were associated with greater internalizing and externalizing problems and lower pro-social behaviour in both boys and girls. However, when problem-focused strategies were used with emotion-focused coping strategies, the result was fewer internalizing problems in girls and fewer externalizing problems in boys and girls. Emotion-focused, avoidance and faith-based strategies were associated with better self-esteem. The results suggested that coping flexibility, or use of multiple coping strategies may be particularly useful to improving mental health and well-being (Cherewick et al., 2016). The need for context specific understandings of coping strategies in conflict-affected populations was highlighted by the results of the study.

Maghan (2017) conducted a study on "Problem Solving Style and Coping Strategies: Effects of Perceived Stress". In the study, 107 freshmen and sophomore undergraduate students from the community college in New Jersey, USA were used as the sample population who completed a questionnaire tagged: "An Assessment of Problem solving style and the COPE Inventory". The respondents were randomly assigned to one of three groups. Group 1 received a vignette of a more serious personal problem. A second group was given a vignette depicting a less stressful problem situation. Their average age was 23.25 (SD = 7.99). Of 94 participants who self-reported a grade-point average, the mean was 2.99 out of 4.00 (SD = .745). Approximately 63.9 percent of participants were Caucasian, 7.6 percent African American, 11.7 percent Hispanic, 2.8 percent Asian, and 13.2 percent were from other ethnic backgrounds. The gender split was 78 (approximately 80 percent) female and 29 (approximately 20 percent) male. The majority of students were considered to be middle- and lower-middle class socio-economically. The third group was given a simple passage about a geography topic. On VIEW, Developer- and Internal problem-solving-styled participants across all conditions reported higher stress ratings, suggesting greater sensitivity to stressful situations. Additionally, there were significant correlations between the VIEW and COPE scores, suggesting that Explorer-, External-, and a Task-oriented problem-solving-styled individuals were more likely to use Restraint as a coping strategy, all of which suggest that in the context

of a personal problem, individuals may be more likely to recognize that any solution will take time to solve, perhaps requiring "new thinking" (Explorer style), help from others (External style), and "hard" choices to be made (a Task-oriented decision-making style). The result showed that there were gender differences on VIEW: males reported significantly lower grade point averages, and were significantly more Explorer and Task-oriented. There were no significant gender differences on age or Problem-focused, Emotion-focused, or Avoidance Coping.

Fadilpašić et al., (2017) carried out a cross-sectional study to explore the relative independent contribution of the variables in the explanation of quality of life among war trauma survivors, with a special emphasis on the variables of religiousness and religious coping in Bosnia and Herzegovina. The research was conducted on 353 subjects who experienced war related traumatic events during the war. The data were collected through several self-report measuring instruments: Manchester Short Assessment of Quality of Life, Stressors Checklist (SCL), Religiousness Scale, Social Support Resources Scale, Religious Problem-Solving Scale, Brief RCOPE, Posttraumatic Growth Inventory and Mississippi Scale for PTSD. According to the results of the study, experience of loss and frequent exposure to war trauma and high levels on the primary stress appraisals, self-directing coping style and PTSD-symptoms were associated with lower perceived quality of life among the subjects. High levels of extrinsic religious orientation, effect of religiousness on social behaviour, positive religious coping and post-traumatic growth were associated with higher perceived quality of life among subjects. These variables showed significant independent contribution to the prediction of the values on quality of life. Results of the study had a scientific significance in understanding the importance and mediating role of religiousness and religious coping for quality of life perception as one of long-term post-traumatic outcomes. Effects of religiousness on social behaviour and positive religious coping showed particularly significant contributions across all prediction models for the quality of life.

Maselesele and Idemudia (2013) reported that some life-event experiences such as injuries in car accidents, gunshots and the like, can be life-changing and traumatic. In their study, they investigated the relationship between mental health and post-traumatic stress disorder (PTSD) symptoms after orthopaedic trauma, and attempted to understand whether social support moderates the relationship between mental health and PTSD. A cross-sectional research model was used. Two hundred participants were selected using simple randomization within a hospital complex in Gauteng, South Africa. The sample consisted of 110 men and 90 women ($\bar{x}$ = 37.8 years, s.d. = 12.9 years). Data were collected using the Revised Civilian Mississippi Scale for PTSD, the Multidimensional Scale of Perceived Social Support (MSPSS), and the General Health Questionnaire version 28.

The findings of the study indicated that there was a statistically significant relationship between mental health and PTSD after orthopaedic trauma, and a positive correlation between poor mental health and PTSD ($r = 0.52$, $n = 200$, $p < 0.05$). However, perceived social support did not moderate mental health or PTSD, indicating that perceived social support did not significantly influence mental health or PTSD, (MSPSS $B = 0.07$, $p = 0.66$). Those with high scores on social support had a lower regression coefficient ($B = 0.19$) for mental health and PTSD than those who reported low social support ($B = 0.26$). They then concluded that there was a significant relationship between mental health and PTSD in orthopaedic patients, and social support did not moderate the relationship between mental health and PTSD.

Prang et al., (2015), examined the effects of family structure and sources of social support on physical health, persistent pain and return to work (RTW) outcomes following musculoskeletal injury (MSI) sustained in a transport accident in Victoria, Australia. The researchers adopted a secondary method of analyzing a cross-sectional survey on Transport Accident Commission (TAC) held in 2010 and 2011. In total 1649 persons with MSI were identified and included. Family structure was determined by marital status and number of children. Sources of social support were measured as perceived help from family, friends, neighbours and employers. Physical health was measured with the Physical Component Summary (PCS) score of the Short-Form-12 Health Survey Version 2. Persistent pain was defined as self-reported persistent pain experienced in the last 3 months, and RTW was defined as being back at work for three months or more at the time of interview.

Multiple linear and logistic regressions were used for the analyses. The result showed that family and friends' support was associated with better physical health among persons with more than a day's hospital stay. Being married or in a de-facto relationship was associated with greater PCS score among non-hospitalized persons. Being widowed, separated, or divorced was associated with more self-reported persistent pain (odds ratio 1.62 [95 % confidence intervals 1.11–2.37]). Support from family (0.40 [0.24–0.68]), friends (0.29 [0.17–0.47]) and neighbours (0.59 [0.41–0.84]) was associated with less persistent pain. Among women, support from family (0.09 [0.01–0.78]) was negatively associated with RTW, whereas support from friends (3.03 [1.15–8.02]) was positively associated with RTW. These associations were not observed among men. For both men (5.62 [2.77–11.38]) and women (7.22 [2.58–20.20]), support from employers was positively associated with RTW.

They concluded that family structure and sources of social support had a positive impact on physical health, persistent pain and RTW following MSI. The researchers highlighted the importance of identifying people who have limited access to a social support network. Those with limited access to social support after a transport accident could potentially benefit from the provision of formal sources of practical and psychological support (Prang et al., 2015).

Williams (2016), investigated the "Relationship between Stress, Coping Strategies, and Social Support among Single Mothers". An

independent sample t-test was conducted to test the hypothesis on whether there was a relationship between stress and coping strategies among single mothers and mothers who were not single. Results revealed significant differences between the single and married mothers on perceived stress (t (171) = 1.98; p = 0.050). There were no significant differences between mothers on measures of coping. Coping was broken into eight categories for comparison as the second variable. The categories were confronting, distancing, self-controlling, seeing social support, accepting responsibility, escape avoidance, planning for problems, and positive reappraisal. Results of social support indicated that married mothers had higher social support than single mothers in the five categories of social support emotional, social support socializing, social support practical assistance, social support financial, and social support advice. This study stressed that it is important to recognize the relationships between the levels of stress, coping strategies, and social support among single mothers.

Yubonpunt et al., 2022 investigated "Prevalence of perceived stress and coping strategies among healthcare workers during the COVID-19 outbreak at Bangkok metropolitan, Thailand". The researchers used a cross-sectional study which was conducted from June to August, 2021, via a self-administered online survey that targeted 517 healthcare workers. Perceived Stress Scale (PSS-10) in Thai-version was used to examine the perceived stress symptoms, and Brief-COPE score was used to determine the coping strategies. Independent sample t-test, one-way analysis of variance (ANOVA), and multivariable regression analysis were utilized to analyze the results. The level of significance was set at p-value < 0.05. The results showed that the prevalence of perceived stress among the HCWs was 41.97%. Coping strategies were used to deal with stress during the outbreak for problem-solving (Mean ± SD = 0.25 ± 0.60) and positive attitude (Mean ± SD = 2.85 ± 0.62). Significant difference was observed in the use of coping strategies among those who differ in marital status (F2, 514 = 7.234, p-value = 0.001), having children (t515 = -4.175, p-value < 0.001), and days off (t515 = -1.992, p-value = 0.047). Multivariable regression analysis reported who those perceived stress symptoms using social support more than those normal stress (AOR 1.54, 95% CI 1.070–2.236, p-value = 0.02). The perceived stress symptoms group used the avoidance strategy 2.03 times more than the other group (AOR 2.03, 95% CI 1.406–2.934, p-value < 0.001). Interestingly, the participants who perceived stress symptoms applied a positive attitude strategy lesser than those who experienced normal stress (57.5%) (AOR 0.42, 95% CI 0.307–0.590, p-value < 0.001). They concluded that Thai HCWs applied coping strategies depending on their condition, but the predominance of problem-solving as a strategy indicated that the healthcare workers were prompt at facing and learning to live with an unpredictable pandemic. They were willing to suggest that each coping strategy is a way to deal with pandemic situations, and that healthcare workers should consider merging each of the coping strategies to balance the work and lifestyle under any stressful condition.

Morales-Rodríguez (2021) investigated "Fear, Stress, Resilience and Coping Strategies during COVID-19 in Spanish University Students". The study aimed to examine the correlation between fear of COVID-19, stress with COVID-19, and technological stress in university students, and their resilience, self-esteem, and coping strategies. The researcher examined the above-mentioned effects via a series of self-report scales administered to a sample comprising 180 Spanish university students, with an average age of 20.76 years (SD = 4.59). The results showed statistically significant associations between fear of COVID-19 and stress with COVID-19, technological stress (total score), overload, and complexity (sub-dimensions of technological stress). Likewise, the study found inverse relationships between the students' fear of COVID-19 and the use of the coping strategy, cognitive restructuring. The researcher asserted that ascertaining the factors that influence the coping strategies of undergraduate university students and their fears, psychological stress, and resilience provides valuable information for the development of educational interventions. The researcher believed the study has relevant implications for the diagnosis, orientation, and design of psycho-educational and clinical interventions that can improve students' well-being and training for effective coping strategies for daily stress and this pandemic situation.

Alharabi et al., (2019) conducted a study titled "Factors associated with physical, psychological and functional outcomes in adult trauma patients following Road Traffic Crash: A scoping literature review" with the objective of identifying the factors reported in the relevant literature that are associated with physical, psychological and functional outcomes of adult trauma patients following a road traffic crash (RTC). A scoping literature review was conducted, and peer-reviewed articles were retrieved from MEDLINE, EMBASE, and CINAHL – databases that were chosen because of the high specificity searches allowed by the MeSH and Emtree thesauri, and the fact that the databases index the major biomedical/health journals in the field. The review identified a number of factors that are clustered into six categories; (i.) injury characteristics and hospital predictive factors; (ii.) demographic factors; (iii.) family and social support; (iv.); compensation system process and fault in the RTC (v.); pre-injury health status. A final category was used to represent the range of (vi.) psychological and functional outcomes. The researchers believe that these findings highlight the multiple and diverse contributors that influence a person's outcomes following an RTC. These factors are intrinsic and extrinsic and commence from the time of injury as well as highlighting the importance for ongoing support after acute care discharge to enable a quick return to optimal wellbeing. Research examining RTC outcomes must integrate information about the crash response and health care system while simultaneously measuring other factors to appropriately quantify the relative contribution of each variable to psychological and functional outcomes.

Labrague et al., (2017) conducted a literature review on studies assessing the stress and coping strategies in nursing students. A systematic review of studies conducted from 2000 to 2015 on stress

and coping strategies in nursing students were included in the review. CINAHL, MEDLINE, PsycINFO and PubMed were the primary databases for the search of literature. Keywords included “stress”, “coping strategy”, “nursing students” and “clinical practice”, which yielded 13 studies meeting the criteria. The researchers found that stress levels in nursing students range from moderate to high. They identified the main stressors to include stress through the caring of patients, assignments and workloads, and negative interactions with staff and faculty. Common coping strategies utilized by nursing students broadly included problem-solving strategies such as developing objectives to resolve problems, adopting various strategies to solve problems, and finding the meaning of stressful events. It was the concluding opinion of the authors that nursing educators “consider the use of formulation and implementation of empirically tested interventions to reduce stress while enhancing coping skills”.

Li and Hasson (2020), with the aim to synthesize the evidence relating to the interaction of resilience, stress, and well-being in undergraduate nursing students across countries, carried out a review titled “Resilience, stress, and psychological well-being in nursing students: A systematic review”. Their data was sourced from peer reviewed studies published from 2008 to December 2018 as returned by search queries in CINAHL, Web of Science, Medline (OVID), PsycINFo, and four biomedical databases originating from China (China National Knowledge Infrastructure, WanFang Data, VIP and CMB). Twelve studies met the inclusion criteria. Outcome analysis revealed the level of resilience as moderate; stress levels were high and the incidence of negative psychological health accounts for a proportion of nursing students. The interaction between resilience and stress and well-being was high. Resilience and low stress were found to better predict well-being. All the studies cited recommendations to inform educational policy and practice in relation to resilience, well-being, and stress among undergraduate nursing students. The researchers concluded that “evidence confirms the importance of resilience in nursing students influencing stress and psychosocial morbidity”. They further recommend nursing educational strategies that foster and enhance resilience.

In 2020, Baloran carried out a cross-sectional study aimed to examine students’ knowledge, attitudes, anxiety, and coping strategies during the COVID-19 pandemic. In the words of the researcher, “results showed that students possessed sufficient knowledge and high-risk perceptions. Non-medical prevention measures were perceived as highly effective”. The researcher observed that students seemed generally satisfied with the government’s actions to mitigate problems, but demonstrated some unwillingness towards the online-blended learning approach. Students utilized various ways to cope up with mental health challenges. The researcher drew attention to the necessity to address students’ mental health during the COVID-19 pandemic.

Amonoo et al., (2022), in a study titled “Coping strategies in patients with acute myeloid leukemia”, sought to describe coping strategies among patients with AML and assess how these inform patient-reported outcomes. Cross-sectional secondary data analyses was used to describe coping in 160 patients with newly diagnosed high-risk AML. The Brief COPE, Hospital Anxiety and Depression Scale, Post-Traumatic Stress Disorder Checklist–Civilian Version, and Functional Assessment of Cancer Therapy–Leukaemia were used at time of AML diagnosis to measure coping strategies, psychological distress, and quality of life (QOL), respectively. The median split method for distribution of coping domains and multivariate regression models were used to assess the relationship between coping and patient-reported outcomes. Participants (median age, 64.4 years) were mostly non-Hispanic White (86.3%), male (60.0%), and married (73.8%). Most (51.9%) had high utilization of approach-oriented coping strategies, whereas 38.8% had high utilization of avoidant coping strategies. At time of diagnosis, use of approach-oriented coping was associated with less psychological distress (anxiety, $\beta = –0.262$, $P = .002$; depression symptoms, $\beta = –0.311$, $P < .001$; and posttraumatic distress disorder symptoms, $\beta = –0.596$, $P = .006$) and better QOL ($\beta = 1.491$, $P = .003$). Use of avoidant coping was associated with more psychological distress (anxiety, $\beta = 0.884$, $P < .001$; depression symptoms, $\beta = 0.697$, $P < .001$; and posttraumatic distress disorder symptoms, $\beta = 3.048$, $P < .001$) and worse QOL ($\beta = –5.696$, $P < .001$). Patients with high-risk AML use various approach-oriented and avoidant coping strategies at time of diagnosis. The researchers concluded that the use of approach-oriented coping strategies was associated with less psychological distress and better QOL, suggesting a possible target for supportive oncology interventions.

In 2016, Baastrup et al., in a study titled “A comparison of coping strategies in patients with fibromyalgia, chronic neuropathic pain, and pain-free controls”, examined coping strategies in two distinctly different groups of chronic pain patients and a group of healthy controls. The study group consisting of thirty neuropathic pain (NP) patients, 28 fibromyalgia (FM) patients, and 26 pain-free healthy controls completed the Coping Strategy Questionnaire (CSQ-48/27) and rated their daily pain. The results showed that FM and NP patients did not cope differently with pain. The only difference between the groups was that FM patients felt more in control of their pain than NP patients. Both patient groups used more maladaptive/passive coping strategies, but surprisingly also more adaptive/active coping strategies than healthy controls. However, FM patients with high levels of passive strategies felt less in control than FM patients with low levels of passive strategies. This was not seen in NP patients. The researchers noted an important implication for clinical practice i.e. passive coping strategies should be restructured into active ones, especially for FM patients. It was noted that the same psychological treatment models can be applied to both groups since they use similar coping styles.

Son et al., (2016) in a secondary data analysis of longitudinal observational study titled “Biopsychosocial predictors of coping strategies of patients postmyocardial infarction”, observed the relationship between biopsychosocial variables and patients' coping

strategies post myocardial infarction. A total of 460 patient–spouse pairs were recruited in January 2003 to October 2005. Hierarchical linear regression analysis examined biological/demographic, psychological and social variables regarding patients' coping scores using the Family Crisis Oriented Personal Evaluation Scale. The researchers noted that lower social support and social support satisfaction predicted lower total coping scores. Also being younger, male gender and time since the myocardial infarction predicted lower positive coping strategy use. It was observed that higher anxiety and lower social support were related to fewer positive coping methods, and lower educational levels were related to increased use of negative coping strategies. Reduced social support predicted lower total coping scores and positive coping strategy use and greater passive coping style use. The researchers concluded that social support from a broad network assisted with better coping; those living alone may need additional support.

Berner et al., (2019) in a cross-sectional study, observed the medication adherence and coping strategies in patients with rheumatoid arthritis with the aim of determining if strategies for coping with illnesses, demographic factors, and clinical factors were associated with medication adherence among patients with rheumatoid arthritis (RA). Medication adherence was assessed using the Medication Adherence Report Scale. Strategies for coping with illness were assessed using the Freiburg Questionnaire for Coping with Illness. Results. Half (N=63, 52.5%) of the 120 patients included in the study were considered completely medication adherent. Female sex (odds ratio [OR]: 4.57, 95% confidence interval [CI]: 1.14 – 18.42), older age (54-65 yr vs. <45 yr OR: 9.2, CI:2.0-40.70; >65 yr vs. <45 yr OR 6.93, CI:1,17 – 40.87), middle average income (middle average income vs. lowest income class OR= 0.06, CI= 0.01-0.43), and shorter disease duration (5-10 yr vs. >10 yr OR= 3.53, CI= 1.04-11.95; 1-4 yr vs. >10 yr OR=3.71, CI= 1.02-13.52) were associated with higher medication adherence. Levels of active coping (15.57 vs. 13.47, p=0.01) or diversion and self-encouragement (16.10 vs. 14.37, p=0.04) were significantly higher among adherent as opposed to less adherent participants. However, in multivariate regression models, coping strategies were not significantly associated with adherence. The researchers found that age, sex, monthly net income, and disease duration were associated with an increased risk for medication non adherence among patients with RA. Coping strategies such as active coping, diversion, and self-encouragement were associated with adherence in univariate models, but not when adjusted for demographic and clinical factors.

Kotas et al., (2021) carried out a study titled “The level of stress and coping strategies in patients with multiple sclerosis and their relationships with the disease course.” The study aimed to test the supposed link between stress, a background of multiple sclerosis (MS), and the disease course. More specifically, the study aimed to assess the level of stress and coping strategies in MS patients within a year of follow-up and to investigate the relationships between these aspects and factors related—or not—to MS. In 65 patients with MS, the Perceived Stress Scale (PSS-10), Type D Scale (DS14) and Coping Orientations to Problems Experienced (COPE) were performed at baseline and after a year. Baseline PSS-10, DS-14 and COPE scores were analyzed with regard to demographics, MS duration, treatment, indices of disability and self-reported stressful events (SEs). Final PSS-10 and COPE results were analyzed with reference to MS activity and SE within a year of follow-up. Initially, 67% of patients reported a moderate or high level of stress and 31% met Type-D personality criteria. Diverse coping strategies were preferred, most of which were problem-focused. The negative affectivity DS-14 sub score (NEG) was correlated with disability level. Non-health-related SEs were associated with higher PSS-10 and NEG scores. After a year, the mean PSS-10 score decreased, while COPE results did not change significantly. Non-health-related SEs were associated with a higher PSS-10 score and less frequent use of acceptance and humour strategies. Those with an active vs. stable MS course during the follow-up did not differ in terms of PSS-10 and COPE results. It was concluded that MS patients experienced an increased level of stress. No significant relationships were found between stress or coping and MS course within a year. Non-health-related factors affected measures of stress more than MS-related factors.

Summary of Reviewed Literature

The effects of the knowledge of coping strategies on the psychosocial well-being of trauma and orthopaedic patients has been widely studied. According to the theoretical review, the importance of specifying the particular threats the patient is experiencing at a time, rather than focusing on the illness in general was emphasized. Survivors of trauma report distress due to the emotional impact of the disease, lifestyle changes, dealing with health professionals, reactions of the partner, changes in roles of social life, return to work, financial difficulties, and dependency. The review also was an expository on the important reason for studying coping because of its hypothesized role as a mediator of the effects of stress on psychological and social well-being. The case for a relationship between coping and psychological outcomes is substantial. This is so because the coping process is initiated in response to a cognitive appraisal of a situation as stressful, which means it is personally significant and it taxes or exceeds the person’s resources for coping.

From the series of literature reviewed, it has been discovered that when people experience traumatic events and orthopaedic surgeries, it creates lasting impressions on the minds of the patients. Though some recover within a short time, others suffer the effect in their entire life. Such impacts are loss of jobs, loss of career, feeling of deep pains, rejection and abandonment by family and community members, inability to meet responsibilities in the case of a married person, etc. These factors give rise to a myriad of thoughts and cases of nightmares, insomnia, difficulty in relationships, emotional outburst, nausea, dizziness, changes in appetite, headaches, substance abuse, shame, fear, denial, anger, sadness, etc. The review has also outlined that the coping strategy applied by one person might not produce the same results on another person. It is therefore

necessary to examine the knowledge of coping strategies and the effects of its applicability on the psychosocial well-being of trauma and orthopaedic patients.

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