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RESEARCH

SUMMATIVE ASSESSMENT
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An exploration of the impact of injury on motivation in Mixed Martial Artists: A qualitative study.

I hereby declare that the Research Report submitted for the BA Psychology Honours degree to The Independent Institute of Education is my own work and has not previously been submitted to another University or Higher Education Institution for degree purposes.

Signed:

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Abstract

There is much research on motivation in Martial Artists (MMA) and injury in MMA respectively, there is a gap in literature addressing the possible relationship between the two. Leaving the phenomenon impact of injury, a regular occurrence in the sport, on the motivation of the athletes, and their experience unclear; this needs to be addressed and explored to establish a better understanding of the phenomenon for athletes, coaches and researchers. The study aims to investigate the ways injury impacts an MMA athlete's motivation, specifically to determine whether a link between injury and motivation in MMA athletes exists by explaining which motivational factors influence the athlete's decision to return to the sport and what role support holds. A semi-structured interview was done over Zoom on a sample of 3 MMA athletes with 5 or more years of experience who have experienced an injury. The results suggested there is a link between injury and motivation it was initially assumed this relationship would illicit a negative affect with athletes becoming less inclined to participate, however, this was not the case. While a link is established more research is needed to develop a more concrete understanding of its nature.

TABLE OF CONTENTS

1. Introduction	1
1.1. Contextualisation	1
1.2. Rationale	2
1.3. Problem Statement and Purpose Statement	2
1.4. Research Questions	3
1.5. Research Objectives	3
2. Literature Review	4
2.1. Conceptualisation	4
2.2. Theoretical Foundation	5
2.3. Critical Review of Literature	6
3. Research Design and Methodology	15
3.1. Research Paradigm	15
3.2. Research Design and Research Approach	16
3.3. Population and Sampling Method	18
3.4. Data Collection Methods and Implementation of Data Collection Methods	19
3.5. Data Analysis Methods and Implementation of Data Analysis Methods	21
4. Findings and Interpretation of Findings	25
4.1. Presentation of Findings	25
4.2. Interpretation of Findings	27
4.3. Findings in Context	29
4.4. Trustworthiness	32
5. Conclusion	33
5.1. Addressing the Research questions, Problem and Objectives	33
5.2. Implications of Findings for Future Studies	34
5.3. Final Conclusion	34
5.4. Ethical Implications	35
5.5. Limitations	36
Annexures	37
Reference List	45

1. Introduction

1.1. **Contextualisation**

Mixed Martial Arts (MMA) is a rapidly growing combat sport and due to the physical nature of the sport, as an expected consequence, MMA is associated with various types of injuries (Rainey, 2009). The exceptional level of effort and striving for perfection close to physiological boundaries increases the frequency of this possibility of injury (Masten, Stražar, Žilavec, Tušak, & Kandare, 2014). Bishop, La Bounty and Devlin (2013) found MMA to have 65% more injuries than boxing overall. Extending from this, athletes respond to injuries in varying manners, exhibiting an extensive range of cognitive, emotional and behavioural responses (Masten *et al.*, 2014). An estimated 5–13% of athletes were found to display significant levels of psychological distress following injury thus it is important to understand said responses to facilitate an athletes' return to their sporting careers (Masten *et al.*, 2014). Injuries range from small abrasions and contusions to more serious conditions including concussions (Rainey, 2009), and while current literature has focused on the prevalence of injury in MMA, little research has been done on how injury and the psychological distress it produces impacts on the motivation of MMA athletes and their participation in the sport. Thus, it is unclear which motivating factors influences an athletes' decision to return to MMA post-injury. The review will explore the various aspects of motivation in MMA athletes, both intrinsic (anxiety, extroversion, self-efficacy, self-esteem) and extrinsic (social, physical fitness, skill, reward), alongside the role of injury and the support they receive thereafter on these factors in athletes' motivation to participate in the sport.

1.2. *Rationale*

This topic was selected due to the lack of literature and understanding surrounding it, it is a relevant topic to study due to the fast-growing nature of the sport. It is crucial for researchers and MMA community alike to be aware of the implications of such a relationship will have on athletes to prepare and plan efficient interventions or self-educate to buffer its effects. It is also a useful study for both academic psychological/sporting uses and for generating new knowledge on the topic.

1.3. *Problem Statement and Purpose Statement*

Problem Statement:

While there is much research on motivation in Martial Artists (MMA) and injury in MMA respectively, there is a gap in the literature which addresses a possible relationship between the two. This leaves any impact of injury on the motivation of the athletes, and their experience and variations of the experience unclear; this needs to be addressed and explored to establish a better understanding of the phenomenon for athletes, coaches and researchers, and inform intervention strategies as well as highlight possible areas of future study.

Purpose Statement:

The study's purpose is to explore this possible correlation between injury and motivation in the MMA context to increase understanding on this overall relationship, the relationship of injury with various motivating factors as well as factors like support and the athletes experience of this and whether or not these factors influence their motivation to participate in the event of an injury. This is relevant in order to assist in interpreting outcomes of motivation based on literature/data collected and give insight to the implications of the topic.

1.4. *Research Questions*

Primary Research Question:

1. How does injury in MMA impact the athlete's motivation to participate in the sport?

Secondary Research Questions:

2. Can a link between the experience of injury in MMA athletes and their motivation to participate in the sport be determined?
3. What factors of motivation influence the athletes return to the sport?
4. What is the role of support in conjunction with injuries in this sport?

1.5. *Research Objectives*

Objectives:

1. Describe the ways injury impacts an MMA athlete's motivation.
2. Determining whether a link between injury and motivation in MMA athletes exists.
3. Explaining which motivational factors influence the athlete's decision to return to the sport.
4. Determining the role support has regarding injured MMA athletes.

2. Literature Review

2.1. **Conceptualisation**

Mixed Martial arts: MMA is a combat sport combining traditional and non-traditional martial arts, where grappling and striking aspects were merged to develop a method for competition (Bishop *et al.*, 2013) that originated in the far east, commonly considered by the Asian culture as a way of living, promoting discipline and greater values (Fabio & Towey, 2018). This combined definition is the concept referred to in the review.

Injury: To be harmed, damaged, or offended (Soanes, 2002). Contextualised in the review as an indicator of bodily damage, an unpleasant sensory and emotional/ mental experience associated with an actual or potential tissue damage (Jensen *et al.*, 2017).

Lacerations: A wound or irregular tear of the flesh (Taber's medical dictionary online, 2020).

Contusions: a crushing/ bruising (Taber's medical dictionary online, 2020)

Strains: Trauma to muscles/tendons from violent contraction or excessive/ forcible stretch (Taber's medical dictionary online, 2020).

Sprains: Trauma to ligaments that causes pain and disability, depending on the degree of injury to the ligaments (Taber's medical dictionary online, 2020).

Motivation: The reason or reasons behind an individuals' actions or behaviors (Soanes, 2002) which can be further broken down into extrinsic motivation and intrinsic motivation (Vallerand & Losier, 1999). This is how motivation will be referred to in the study.

Extrinsic motivation: Extrinsic motivation is described as the drive to participate or take part in a particular task in order to derive tangible benefits such as material rewards (trophies or money), social (friendship, affiliation or prestige) or to avoid punishment (Vallerand & Losier). The study will refer to this concept in terms of this definition.

Intrinsic motivation: The review refers to this as intrinsic processes that reflect trait-like characteristics (Covington & Mueller, 2001).

Self-Efficacy: The review refers to the concept as belief about one's capabilities to achieve certain levels of performance on a specific task (Morales-Negron, 2008).

Social support: Social support is defined as the subjective belief that there exist sources of support, help, and caring within one's social network (Smith, 2016). In this context 'Social support' refers to positive feedback and encouragement provided by teammates, coaches, and even friends.

2.2. Theoretical Foundation

Wigfield and Eccles (2000) proposed the expectancy–value model of achievement, performance and choice and studied it initially in the mathematics achievement domain, it has since been applied to various other domains including sports. This theory postulates that an individuals' choices, effort, persistence, and performance can be explained by their beliefs about how well they will do on the activity (expectancy) (Gao, Lee & Harrison, 2008) and the extent to which they value the activity and its possible outcomes (Studer & Knecht, 2016). Value is determined by the degree to which an outcome is believed to satisfy needs for security, esteem, autonomy, and self-actualization through four components: (i) degree of enjoyment (intrinsic value), (ii) personal importance of succeeding in a given task (attainment value), (iii) the degree of alignment with current goals (utility value), and (iv) "relative cost" which are required effort, lost alternative opportunities, and negative affect (Studer & Knecht, 2016). As stated by Studer and Knecht (2016) this theory allows for the exploration of ones motivating factors for pursuing a task, in this case MMA, both intrinsically and extrinsically and whether the reward and value of the task (skill development, fitness, social) outweighs the relative costs such as risk of reinjury, or decreased ability to physically perform.

The two core factors are integrated through multiplication, such that motivation $\times$ expectancy = value, motivation is high when both expectancy and value are high but lowers when one of these factors equals zero (Studer & Knecht, 2016). Choices, performance, effort, and persistence are thus influenced by task-specific beliefs such as

ability beliefs, the perceived difficulty of the task, self-schema, individuals' goals, and affective memories (Wigfield & Eccles, 2000). These social cognitive variables are, in turn, influenced by individuals' perceptions of their own previous experiences (Wigfield & Eccles, 2000). In this study Eccles' theory assists in the understanding of the role of individuals' prior experience of injury corresponding with their attributes to help determine their expectations or how valuable they may find the task, and the probability, of returning to MMA as a result.

Leaper (2011) asserts expectation is strongly linked to performance, for instance if a MMA athlete believes they will do well/ avoid reinjury post injury they are more likely to return and re-integrate successfully, in comparison to an athlete with the opposite belief (Leaper, 2011). Task value is closely tied to achievement related choice, thus an athlete that values skill development, fitness or sport related socialization would be more motivated to choose to return to MMA following an injury than one who does not value these components as highly (Leaper, 2011).

2.3. *Critical Review of Literature*

Motivation is one of the most important factors driving human actions and a commonly discussed topic in sport contexts (Ding, Chen, Zou & Tian, 2015) including within the Mixed Martial Arts context. An athlete's motivation has a significant impact on the types of experiences they will derive from their engagement in a sport (Vallerand & Losier, 1999). Due to the physical nature, Mixed Martial Arts (MMA) is associated with various types of injuries (Rainey, 2009). How an MMA athlete handles injury and their participation in the sport post-injury is relative to their motivating factors. This assumed relationship between injury and motivation in MMA athletes and the existing literature will be explored.

Injury

There have been numerous studies done that have evaluated the type and frequency of injuries sustained in athletes who participate in MMA and its component disciplines (Jensen, Maciel, Petrigliano, Rodriguez & Brooks, 2017). Martial arts styles that involve

striking have higher injury rates than those that are grappling based, such as jujitsu (Rainey, 2009). Scoggin, Brusovanik, Izuka, van Rilland, Geling and Tokumura (2014) found the elbow to be the joint most commonly injured during grappling in MMA, however, asserted there was still a substantially lower risk of injury than in striking. The most common body region injured is the head/neck/face, followed by the lower extremities and upper extremities (Rainey, 2009). Jensen *et al.* (2017) found similar evidence that facial lacerations and upper extremity injuries were the most common injury in the MMA athlete population. Rainey (2009) argues the most common type of injury in these regions was contusions occurring to head/neck/face, followed by strains and sprains to lower and upper extremities.

Alternatively, Petrisor, Del Fabbro, Madden, Khan Joslin and Bhandari (2019) found a high prevalence of injury sustained overall among grapplers, for each body region, with injuries primarily sprains and strains to fingers, upper extremity, and neck. With the severity of the injury the frustration in athletes rises, not able to continue their sports career for a very long period due to their injury, experience greater mood disturbances (Masten *et al.*, 2014). However, participants required to take more than 4 months off training were more likely to consider quitting compared with those who took less time off and individuals requiring surgical treatment are more likely to consider quitting compared with those requiring other treatments, including no treatment (Petrisor *et al.*, 2019). Whilst there is vast research on injury there is a lack of in-depth research on the role injury has in regard to an athlete's motivation.

To summarise above, the literature is congruent that striking styles involve more injuries than grappling, with the most common injuries being head/neck/ face lacerations and contusions followed by strains and sprains and the more severe the injury the more likely the athlete is to consider quitting MMA. This probability of quitting, due to an injury, may depend on what the utility and attainment value of the task is to the athlete or their evaluation of the relative costs of returning to the sport. This is important information for both researchers and athletes to understand as it may assist in interventions or buffering affects and could be considered for future in-depth or longitudinal research.

Motivation: Extrinsic

Jones, Mackay and Peters (2006) found in their study motives for participation were notably similar to those motives found in traditional sports, including motivations such as fun, physical fitness, skill development, and friendship. Meyer and Bittmann (2018) supports that physical exercise, skill development (both of which hold utility values) and friendship are motives for martial arts engagement. Jones *et al.* (2006) found in their study of 300 MMA athletes that the social factor of 'friendship' ranks in the top four extrinsic motivators, supporting this, information presented by Ding *et al.* (2015) notes social interaction are major motives associated with the sport and adherence to it, reasoning that this is a common and important motivating factor to explore in the study. It was further noted by Ding *et al.* (2015) that participation in martial arts presented athletes with opportunities to make friends when attending or participating in sporting events, which was a preferred motive for those with individual memberships to MMA gyms. While this is an extrinsic motivator it increases the degree of enjoyment and thus holds intrinsic value (Studer & Knecht, 2016). This information suggests that MMA athletes are initially motivated to participate in the sport by the appeal of social interaction thereby supporting the precursory conceptual framework of motivation in these athletes.

In previous research on male athletes, the intensity in training was elevated by the physical presence of others (Harpold, 2008). Something noted by Green (2015) is participants seek constant affirmation from teammates stating impressing peers appeared to matter more than the activity itself. Some MMA participants stated that their coaches and training partners were sources of motivation for workouts and competition (Harpold, 2008). Others' behaviour toward you influences our thoughts, feelings and behaviour this conclusion supports the notion that ones' social environment can have a potent impact on motivation as individuals seek out the needs of autonomy, relatedness, and competence (Vallerand & Losier, 1999). Congruent with this, training partners and coaches generally supply the athletes needs of both competence, which is an attainment value, and relatedness, utilizing social facilitation and encouragement as a source of motivation (Harpold, 2008). The level of performance and value of the task can then be

predicted based on an MMA athletes' perception of how valuable the social environment is as a motivator in relation to their circumstances and need fulfillment. It is then noteworthy to add that modifying social factors is known to have an impact on an athlete's level of motivation and in turn their persistence toward the sport (Vallerand & Losier, 1999).

In addition to the social aspect of motivation is physical fitness as a motivator. Physical fitness motives were deemed to be the most important individual motivations (Jones *et al.* 2006) while Ding *et al.* (2015) argued fitness was less motivating than social motivators. MMA athletes are driven to test their corporeal limits, participating in the sports allows for the opportunity to reclaim a lost corporeal knowledge (Green, 2015). Ding *et al.* (2015) cites participants obtain capabilities in physical competence, muscle endurance and strength. Ding *et al.* (2015) indicates many participants only regarded self-defense as having health and fitness related functions. Utilisation for self-defense is not the main goal (Meyer & Bittmann, 2018) but rather altering of the phenomenological experience—feeling stronger, better conditioned, and tougher (Green, 2015). The motivation lies in the self being viewed as a project, the sport proffering functional strength development wherein the participant can feels accomplished by engraving multiple movements into the body memory, contributing to conditioning bodies for the future are driving goals (Green, 2015). This indicates motivation to participate is more closely linked to improving the physical self and health benefits than to the utility value, electing the sport as an alternative form of strength training, however, it is yet to be determined if this motive is circumstantially impacted by an event like injury.

The last notably common extrinsic motivator for MMA athletes is skill development, this ranges from enhanced aerobic, balance and sensory functions (Ding *et al.*, 2015), desire to learn martial arts for ones job as a bouncer or taxi driver or in the pursuit of protection, which is the most prevalent motive in women (Meyer & Bittmann, 2018). Green (2015) presents aligning information that within the MMA setting participants frequently discuss the uses of MMA and the skills it provides in protecting oneself from everyday violence, such as muggings or criminal threats. Meyer and Bittmann (2018) add improve their

fighting skills to become more effective athletes, practicing until techniques can be done almost naturally with flawless perfection. Green (2015) indicates this emphasizes the centrality of no longer needing to think, and instead trusting what the body has learned, it is noted by MMA athletes that the body craves this repetition, unconsciously performing particular movement patterns in the shower, in bed, and at work. This excellent body control ensures the safety of the opponent and of oneself as inaccurately executed techniques can be extremely dangerous and lead to injury (Meyer & Bittmann, 2018).

Thus, as noted from this collection of resources, extrinsic motivation not only has intrinsic and attainment value, but influences athletes behaviour in varying ways. From satisfying the need for friendship (Ding *et al.*, 2015), to achieving a superior physical form and need for affirmation (Green, 2015). It also holds a utility value as skill development and ability to perform naturally and flawlessly or protection uses has been a strong and valued motivator. For the purpose of the study it is important to explore and understand the uses, value and role external motivations holds in participation in the event of injury and the effects this may have on the athletes perception of their competence and the overall value of continuing the sport.

Motivation: Intrinsic

Parallel to extrinsic motivators are intrinsic motivators, they are considered deep-level dispositions that exist within individuals to varying degrees (Covington & Mueller, 2001) such as fun or interest (Vallerand & Losier, 1999) and assumes that intrinsic processes reflect trait-like characteristics (Covington & Mueller, 2001). Fabio and Towey (2018) found self- efficacy, as an intrinsic motivator, to be a high in MMA athletes. Self-efficacy has been associated with high levels of motivation and continued participation in a variety of activities (Morales-Negron, 2008). Self-efficacious athletes are more likely to engage in a task, even if perceived as being difficult, instead of avoiding it (Fabio & Towey, 2018) and the more successful an individual has been in a task, the more efficacious that person will become about his or her performance (Morales-Negron, 2008). Masten *et al.* (2014) stated certain personality traits can perceive situations as more stressful and are therefore more vulnerable to stress, those with low self-efficacy were more at risk of injury.

Harpold (2008) presents supporting information that self-efficacy facilitates optimal martial arts performance. This denotes MMA athletes join largely based on the belief they hold in their abilities to achieve and perform a task; it is then important to understand how injury interacts with self-efficacy and the individuals beliefs of their competence in the sport thereafter.

Additionally, consideration of the effects of MMA has focused primarily on the enhancement of assertiveness, self-esteem, reduction in anxiety as well as addressing a perceived control have been intrinsic motivators for participants (Ding *et al.*, 2015). The philosophy and moral teachings inherent in the study of martial arts is credited with self-discipline rules and regulations: such as punctuality, courtesy, righteousness, integrity, kindness, self-control, and respect— which must be followed by the students (Fung & Lee, 2018). The philosophy which permeates traditional martial arts is one of attaining the Zen state whereby the participant is capable of fighting to their fullest extent but without aggressive feelings, highlighting the importance of meditation and philosophies such as peace, benevolence, humanity, and self-restraint (Hardwood, Lavidor & Rassovsky, 2016).

Fung and Lee (2018) noted a significant reduction in self-ratings of reactive and proactive aggression in MMA participants, highlighting the sport facilitated the development of a high moral standard and promoted nonviolent attitudes and behavior, advocating for self-control and tolerance. Furthermore, MMA provides an outlet for participants to channel energy into a productive and self-enhancing activity proven effective in reducing aggressive tendencies (Hardwood *et al.*, 2016). The intrinsic motivator of aggression centered self-control has been a factor that motivates participation, the prospect of learning the philosophies and obtaining emotional control or having a productive outlet.

To surmise this information, high self-efficacy indicates a greater likelihood of engaging and participating in the sport and its activities, but the opposite is also true. Thus, a high self-efficacy would align positively with a high attainment value for athletes. Also, contrary to popular stigma's the moral teachings of MMA assist in improving control and decreasing aggression in athletes which is a desirable aspect and this may promote the levels of intrinsic value of the sport.

The relationship between intrinsic motivation when correlated with an event like injury and its impact has not been explored in depth and the understanding of this could help remove negative stigmas and facilitate intervention to solidify or improve motivation.

Mental impact of injury

Athletes respond to injuries in very different ways, exhibiting a range of cognitive, emotional and behavioural responses, an estimated 5–13% of athletes report clinically meaningful levels of psychological distress following injury (Masten *et al.*, 2014). Empirical investigations indicate that returning athletes can experience fears/anxieties associated with reinjury and concerns about their ability to perform up to preinjury levels as one of their most salient sources of stress on return to sport (Podlog & Eklund, 2005). Investigations have revealed that the fear of re-injury may be a source of concern prior to and after a return to competition, these fears may persist for years (Podlog & Eklund, 2007).

Heightened competitive anxiety, unnecessary focus on the injured area, and struggle to regain their technical skills and abilities are negative thoughts and experiences that may increase the risk of reinjury and can have a detrimental effect on athletes' confidence and postinjury performance (Podlog & Eklund, 2005). These all are contributors to the assessment of the relative risk of the task (Studer & Knecht, 2016). Athletes may experience frustrations regarding an inability to meet pre-injury performance expectations, a reduced sense of self-efficacy may be a consequence of these fears and frustrations (Spencer, 2012). The nature of involvement or reasons for taking part in a sport influence ensuing affective consequences positively or negatively (Vallerand & Losier, 1999).

While the impact of injury on intrinsic motivation does not have a lot of literature it can be seen from the mental impact how injury can negatively influence internal processes like fear and development of anxiety. This section also notes the concern of performing to pre-injury level, indicating attainment value is influenced which could ultimately lower the athletes' value of participating in conjunction to the evaluation of relative costs. It is then evident that motivation may be influenced in the event of an injury, impacting on the

cognition and perceptions of MMA athletes in varying regards (from self-efficacy and anxiety to contemplating quitting) and a study such as the one to be done may help assist in facilitating support or increasing motivation post – injury by understanding possible fears or anxieties.

Role of support

Given that injury can be a stressful and traumatic experience for many athletes the potential for social support to buffer the negative relationships between stressors and psychological responses has important implications for the injury process (Rees, Mitchell, Evans & Hardy, 2010). Family and friends provided all three major social support, but importance was placed on the emotional support they provided (Bianco, 2001). Evidence demonstrates that social support can enhance the well-being of injured athletes by reducing distress preventing perceptions of isolation and fears of re-injury and by increasing motivation (Rees *et al.*, 2010). Coach support is instrumental in keeping athletes involved in the sport: providing perspective and focus, reassurance on recovery, encouraging perseverance assisted in the individuals' beliefs in their abilities (Bianco, 2001). Coaches who interact with athletes in a supportive manner facilitate motivation in a positive way (Vallerand & Losier, 1999). Social support is beneficially associated with psychological responses (Bianco, 2001) and assist to alter an individual's perceptions of his/her available resources to cope, or lead an individual to feel more in control, which could all prevent or reduce an injury from being appraised as highly stressful (Rees *et al.*, 2010). For these reasons, this aspect cannot be ignored in relation to motivation and the impact injury has on it as support plays a crucial role in helping or hindering the process of recovery and the influencing the decisions athletes make.

While the role of social support has been well documented and results are supported and congruent across majority of the literature as to the positive role of support, especially, from family and coaches, there was an incredible lack of information regarding psychological support for these athletes. This highlights a possible gap for future research. This section also indicates the importance of understanding the role of support

and could assist in rehabilitation interventions and athletes' perception on the value of accepting support as positive.

In conclusion, it is evident athletes' various motivating factors has a significant impact on the type of experiences they will derive from engagement in the sport. Injury types can vary and with it the experience the athlete has in terms of motivation, however, support can play a role in buffering negative effects and promoting a return to the sport. Thus, it is important to understand athlete's responses or perception of injury in relation to their motivating factors to facilitate psychological adjustment to the process of recovery as well as their return to their sports careers.

3. Research Design and Methodology

3.1. **Research Paradigm**

A paradigm constitutes the abstract beliefs and principles that shape how a researcher sees the world, constructs meaning embedded in data, and examines the methodological aspects of their research project to determine their research methods and how s/he interprets and acts within that world (Kivunja & Kuyini, 2017). For this reason, it is important to choose the right one. The interpretivist paradigm, selected as most appropriate for the purposes of the study, aims to reach understanding of meanings over facts and numbers and is open to interpretation within the subjective social context/conventions/ norms (Maree, 2020) from which the phenomenon such as motivation stems, all of which are subjective, much like the experience of injury and its impact. Interpretivism aims to understand the viewpoint of the subject being observed, emphasis is placed on their understanding and interpretation their world around them, versus the viewpoint of the observer (Kivunja & Kuyini, 2017).

Their subjectivist *epistemology* means that the researcher makes meaning of their data through their own thinking and cognitive processing of data informed by their interactions with participants. The researcher constructs knowledge socially via their personal experiences of the real life within the natural settings investigated (Kivunja & Kuyini, 2017). The aim of the study is to understand the root factors of MMA athlete's motivation and reasoning for individual decisions relating to motivation post injury, and ideally build on current theory or records to better understand the experience of a possible link between injury in MMA, its impact both generally and on the motivation to continue participating in the combat sport via discourse on others experiences.

The relativist *ontology* believes the situation studied has multiple realities, and those realities can be explored and meaning constructed or reconstructed through human interactions between the researcher and the subjects (Kivunja & Kuyini, 2017). The experiences and interactions of MMA athletes with injury and the impact it has is not universal, this varies according to the individual and their personality or psychological tools to cope and process the event. There is no one, singular experience however the multiple realities may be reconstructed, and any commonalities can be examined for

better understanding or future predictions. This applies to the occurrence of the injury and what can be expected of the individual athlete depending on their intrinsic and extrinsic motivations.

Axiology assumes that the outcome of the research will reflect the values of the researcher, trying to present a balanced report of the findings (Kivunja & Kuyini, 2017). Value is placed on subjective and unique experience, on understanding their experiences and reasoning and describing or explaining them which is done in a non-judgmental manner (Maree, 2020). This can be applied the injury and motivation topic presented by this study in that the individual athletes recall of their unique experiences, with injury and its impact on their motivation, is the focus of the study and the basis for which data will be analysed and further explained accordingly.

3.2. *Research Design and Research Approach*

Conceptual Approach:

The approach is qualitative, this is a method that is naturalistic, it does not rely on structured or numerical data but rather utilises words, narratives and their concepts, terms and symbols to convey or construct meaning (Maree, 2020). Most of these terms or concepts refer to complex human behaviors/ understandings which cannot be assigned a fixed unambiguous definition (Maree, 2020). It uses open exploratory questions and emphasises understanding (Maree, 2020). This approach extracts meaning from subjective data which is then analysed to construct meaning which cannot be given an overall unambiguous definition (Maree, 2020). This is most suitable as the focus of the study is on the subjective experience and recall of events that participants experience, within their environment, in relation to injury and motivation as experienced by MMA athletes.

Research Design:

The design used is the phenomenological design which allows the researcher to observe and explore the subjective lived experiences and phenomena of injury, and the meaning this holds, for each athlete and build meaning off this (Maree, 2020). This

assists the researcher establish a generalisation off these lived experiences that can be applied to similar events in the future (Maree, 2020). Such as noting the experience of injury and the various motivating factors for athletes, as well as their individual expectancies, values (attainment, intrinsic and utility) and perceptions of relative costs for these factors to develop a generalised description of the lived phenomenon. This description consists of what was experienced (injury) and how they experienced it (the impact it had on their motivation) which is composed as the essence of the experience for all individuals (Maree, 2020).

The design is a cross-sectional, the information is collected at one point in time (For example, after an event has been experienced) from a population selected for variables of interest (Ader & Meller, 1999). In this study the cross-sectional design can be used to determine if exposure to a certain risk factor (injury) might lead to particular outcomes (motivation being impacted) (Adler & Meller, 1999). This may also prompt further studies, such as longitudinal studies on the same topic.

Further, inductive reasoning will be implemented as this allows the researcher to move from specific observations of each individual's experience to broader generalisations and theories based on the consensus of the collective individual experiences (an example generalisation would be: injury negatively impacts motivation) based on commonalities found across the reconstructed realities (Hodkinson, 2008). The study will also be exploratory as this is used to investigate a problem that is not clearly defined in order to have a better understanding of the existing problem but at the same time, not provide conclusive results (Du Plooy-Cilliers, Davis & Bezuidenhout, 2016). The study aims to analyse the subjective experiences of MMA's athletes' experience with injury and its impact. While there is much research on the respective components of injury and motivation in MMA there is little research into the relationship between the two which may have implications that athletes could be made aware of to better understand or prevent adverse outcomes as a result of observed commonalities with the event as experienced in multiple people.

3.3. *Population and Sampling Method*

Individual Mixed Martial Arts athletes are the unit of analysis. The population are individual athletes over the age of 18 with 5 or more years of experience from the Kwa-Zulu Natal region. It is important that the athletes have 5 or more years of experience as those with less training are more likely to be injured due to less overall skill, proper technique execution, and defensive strategies (Rainey, 2009) versus athletes who are of higher belt ranking and have sufficient training in offense/defense against an opponent and injury still results as an inherent risk sparring with an equally trained partner (Rainey, 2009). Injury is more frequent in lower ranks due to inexperience and would skew the data, compared to experienced athletes.

This sample will be three (3) athletes who fit the aforementioned criteria taken from the Mustangs MMA gym, as it is one of the larger and more accessible establishments in ZN. A smaller sample size is preferred for qualitative research as larger samples make it difficult to extract rich, dense data which is needed when collecting data on subjective experiences (Maree, 2020).

A non- probability sampling methods do not use randomized selection of in their population, this means that the units of the population do not all have an equal chance of being selected which limits representation and generalizability (Maree, 2020). However, this method is useful when time and resources are limited (Maree, 2020). The type of sampling used will be the convenience sampling, this method refers to population elements selected based on their accessibility and convenient availability (Maree, 2020). While it limits the data representation it is useful in exploratory research (Maree, 2020) this is most appropriate as the sample taken was chosen due to ease of access to the Mustangs gym and its members who are fellow athletes.

Due to familiarity as known sportsman these participants will be contacted directly via whatsapp as their contacts are on hand and readily available, to request their participation should they be willing or eager to do so. There is no gatekeeper to be contacted initially as the interviews will not be done on the premises nor will they involve the establishment, only the individuals' experiences with the sport either before, during or after affiliation with the Mustangs.

3.4. *Data Collection Methods*

Semi-structured interviews, conducted over Zoom calls, have been chosen to collect data. There are certain open questions that will be followed by probing and clarification where necessary to learn about perceptions and behaviours or ideas held by the participants (Maree, 2020). Probing includes detail-oriented questions to ensure understanding of the who/what/where/how. For example, “who was your biggest support?”, “what did you feel?”, elaboration to get a more holistic picture For example, “can you explain that/ tell me more” or clarification wherein accurate understanding is ensured, “what do you mean by that?” (Maree, 2020). This allows for lines of inquiry directly related to the phenomenon being explored (such as the link between injury and motivation) (Maree, 2020). This is the best method as it aims to view the event through the participants eyes in order to obtain detailed descriptive data to understand the individuals’ subjective construction of knowledge and reality (Maree, 2020). There will be one interview per participant, each interview is expected to last from between 40mins to over 1 hour – this accounts for any probing questions or unexpected lines of enquiry related to the study that may be of use or interest.

Semi-structured interviews have been chosen to collect data. As above states allow for probing and clarification and opens a line of inquiry directly related to the phenomenon being studied (injury and motivation) this will allow for a unique subjective record of the individual's experience with the phenomenon and whether or not they were impacted and in what ways (Maree, 2020). Most of the question asked are open-ended to try gain the most information from, however, as seen in Appendix E, probing questions are utilised in order to collection the most amount of relevant information possible should these lines of enquiry present themselves. From there it can be determined if any common themes appear which gives the opportunity to elaborate or share subjective content, it is not restricting and allows for more detail than a structured interview (Maree, 2020).

Implementation of Data Collection Methods

A phenomenon of the experience between motivation and injury was identified prior to collection and the central research question ‘How does injury in MMA impact the athlete’s motivation to participate in the sport?’ was posed. Data was then collected from a small

sample of individuals who have experienced injury in MMA, the sample was collected from the Mustangs Gym via convenience sampling as the participants were previously known acquaintances who were easily accessible, each were contacted via WhatsApp messenger to request participation in the interview if they were interested. Participants agreed willingly and eagerly, word of mouth was possibly involved as unrequested athletes volunteered with the reasoning that there is not much research being done in the community and they wanted to contribute. This surplus of willing participants may be useful for future studies.

Each semi-structured interview conducted lasted between 15 mins to 30mins, shorter than expected to as interviewees supplied rich information in a concise manner—probing questions or unexpected lines of enquiry related to the study that were of use or interest were still covered and accounted for. A total of 3 participants were used as stated and each interview was conducted on a different day, the first and second interviews were conducted via the video application Zoom for convenience to both parties and as an ethical safety measure as a result of the Coronavirus pandemic and social distancing precautions that are required. Recording was done with a separate application for the duration of each interview. Interview times/ dates were scheduled with the selected 3 telephonically. The first two interviews were 15 minutes (Interview 1) and 28minutes (Interview 2) respectively, information was covered in depth and in much detail without straying of topic from both.

Additionally, sufficiently rich data was obtained that fit many of the themes originally proposed for the study and raised additional themes of interest that will prove useful to the topic from all interviews. The final interview (Interview 3) was conducted via WhatsApp call due to technical difficulties with Zoom on the participants side, however the same procedure beyond this was the same regarding the lines of questioning, themes from the data and data richness, this interview was done in 29 minutes. Prior to all interviews all participants signed an informed consent form and consent to record (Appendix A and B), acknowledging the purpose of the study and their voluntary participation, they were reminded of this and their ability to withdraw or refuse to answer questions at the start of the interviews.

3.5. **Data Analysis Methods**

The data was analysed with thematic phenomenology, Phillips-Pula, Strunk, & Pickler, (2011) explains three general types of phenomenology have emerged: transcendental, existential, and hermeneutic. Transcendental phenomenology is the type that was used for this study as it focuses on the essential meanings of the individual experience, for example, a qualitative question that could be asked if using transcendental phenomenology would be, “What is the essence of the experience of injury as it interacts with motivation in MMA athletes?” Phillips-Pula *et al.* (2011). Moustakas recommended that phenomenologists ask the following questions when using the transcendental approach: ‘What are the individuals experiences, and in what context did they experience them?’ Phillips-Pula *et al.* (2011), additionally, Moustakas (1994) views the phenomenological approach as involving the return to the experience to obtain comprehensive descriptions that become the basis for accurately portraying the essence of the experience. This indicates phenomenology is most appropriate and useful for a study such as this as it focuses on the athletes’ individual, lived experiences of the phenomena.

Each experience is considered as a distinct unit particular to a study participant Phillips-Pula *et al.* (2011). Overlapping or redundant statements are identified, and the product of phenomenological reduction is the formation of textural and structural descriptions, imaginative variation follows and is related to using the imagination, senses, and memory to combine what is known with what is being studied (Moerer-Urdahl & Creswell, 2004). A final step for this approach involves constructing meanings and essences by differentiating the multiple realities expressed by study participants and integrating textural and structural descriptions from the essence of what is experienced individually to the essence of what is experience by all in the population (Moerer-Urdahl & Creswell, 2004).

The analysis was done off the interviewee’s transcripts using thematic phenomenological data analysis approach wherein information was broken into themes based on the lived experiences of the event/phenomenon (Maree, 2020). This method excludes the researchers’ presuppositions and attempts to restrict their meanings or interpretations

from entering the unique experience of the participant, it emphasises the uniqueness of the informant's experiences (Maree, 2020). Then meaning is delineated and statements that stand out are isolated or extracted and redundant information is eliminated (Maree, 2020). Researchers search for themes most common in all the interviews while noting significant differences within those. Sock bag coding was also be used here along with themes as “irrelevant” information that participants share, which do not fit into exact themes could be revisited as they may hold information that could inevitably shed light on the phenomenon studied as well as deeper themes that may not have been thought of (Maree, 2020).

Implementation of Data Analysis Methods:

Once data was collected the recorded interviews were manually transcribed word for word into an excel spreadsheet that accounted for various steps. The various steps of data analysis: 1. reading and re-reading, 2. initial noting, 3. developing/identifying themes, 4. searching for connections across emergent themes, 5. moving to the next case as advised by Jeong and Othman (2016). The initial focus of the data analysis was on the 3 interviewees transcribed interview information data collected to contextualize the data gained, analysis started from the first participant, Interview 1, and moved to Interviews 2 and 3 thereafter. Each step was checked rigorously all the time in order to not miss one as suggested by Jeong & Othman (2016). Although these steps were initiated one after another, they needed to be engaged with continually and concurrently throughout the data analysis process (Jeong & Othman, 2016).

Step 1 and 2 included getting closer to the original data this repetitive process enabled the discovery of new information not noted in the initial readings. As Jeong & Othman (2016) suggested, these first two steps merged naturally. At this stage, three kinds of comments were made: descriptive comments rephrasing the the participant’s account; linguistic comments, where attention was paid to the words and expressions that the participant used as well as tone of voice or emotion; and conceptual comments that involved personal knowledge from the literature and real life knowledge of the phenomenon. Different fonts or colors were used as a form of initial coding to identify the three kinds of comment. For each interview text, a five-column table was designed: the

original data were put in the middle column; three kinds of comment were written in the fourth column; the second was used for the question itself and the last column was for key words relating to the topic/ themes to further code data and easily identify the relevant theme, and the first column was used to note the theme the question that was asked covered .

Step 3 involved identifying the emergent themes/ alignment with themes in column 1, referring to the three kinds of comments that had been made from the previous steps; the data reading then became more focused and interpretative. While checking with the linguistic and descriptive comments and the original source, themes were identified in the form of a phrase, key words and sometimes in a sentence. The use of conceptual comments guided by literature was also implemented in the identification of themes for data. Following guidance of Jeong & Othman (2016) the themes were intended to be concise and condensed, but still expressive enough to be reminded of the original sources from which they had emerged allowing for retention of the original data sources and being informed and guided by the research questions and literature, to be certain that each theme was addressing the research question/s. Themes were then reviewed in order to develop a thematic map in the next step (Braun & Clarke, 2006).

Step 4 involved searching for connections across the themes. These themes were grouped into different superordinate themes such as intrinsic motivation, extrinsic motivation, injury, impact of injury and role of support. The superordinate themes were based on subordinate themes like type of injury/severity, social/fitness/skill development as an extrinsic motivator and so, but these were guided by theoretical knowledge. Under each of the superordinate themes, subordinate themes from the interviews were organised so that they could be traced from which interview each came. At this step, a visual map was created so that the organisation and relationship of themes were clearly seen. On top of the map there was the primary research question, under which there were the superordinate themes, and under the superordinate themes were the subordinated themes. A Microsoft Word table following the hierarchy of the thematic map was created, where data extracts that were firstly detached from their original texts were organized. Additional 'irrelevant' information that was found during these previous steps that proved

interesting or useful was revisited and managed with sock bag coding under its own link in the thematic map to be noted as useful for future studies.

Step 5 was a repetition of the previous four steps, following what had been done for Interview 1 for the other Interviews one at a time. In addition, provisionally, the same superordinate themes identified from Interview 1's case were recycled for the other three therefore, the subordinate themes of the other two participants were grouped into the same superordinate themes. The different Interviews were organised under the same superordinate themes to allow each case to relate to each other, contributing to shaping a united theme structure as a whole, thus closely interacting with one another. With this process, some superordinate themes, and subordinate themes that had previously emerged were edited, and sometimes new significant themes were identified as the analysis proceeded for the next participant.

4. Findings and Interpretation of Findings

4.1. **Presentation of Findings**

Analysing the data gathered from the participants interviewees thematically, what arose from the data in *Theme 1 - Injury* confirmed that injury remains a risk among higher level athletes. This was confirmed by participant 1 and 3 specifically who have 14 and 20 years of experience respectively who have both suffered multiple injuries of varying severity throughout their careers. In addition to this the types of injuries experienced, based on the fighter's style of either grappling or striking, were in line with the literature, the more severe injuries were ruptured discs in their neck and lower back as well as lower extremities, elbow hyper extension resulting in partial tearing on the ligaments and severe concussion resulting in epileptic seizures. All of the participants injuries, at their most severe, resulted in breaks from actively participating in training or competing for no less than 3 months, and up to 4 years.

Data also showed, unexpectedly, that athletes found ways to take their injury and use it to better their skill set/ strengthen other aspects of the way in which they performed,

“I got kicked [in the head], as the bell went...so from the age of 20 until the age of 24 I had to take a break and change the way I train; as well as my methodology to get my body in good health again so I could come back [to MMA]”

Theme 2 – Extrinsic motivation

The findings were that the most common extrinsic motivation was self-defense and skill development, and these were highly valued by all participants, not only within the sport but for the real-life applications they hold.

“I always had a fascination with it, and always wished to do those things...being bullied in my childhood and teenage years I wanted to have that boost in confidence to know that I can take care of myself...to have that skillset to rely on”

Theme 3 – Intrinsic Motivation

Intrinsic motivations for participating in MMA confirmed a high self-efficacy and belief in abilities as significantly important to the athletes, as well as the value of the philosophies taught by the Martial Arts, specifically for control of emotions such as anger or fear.

“The teachings influenced me quite drastically, they have improved my outlook on life, when I first started I was struggling with various aspects of my life... it taught me the tools to cope with different situations when you’re already under a lot of stress which translated from the mat to day to day life”

“I do view myself as having grown and gotten better. If I’m stuck in a corner and my way out is to fight, I can handle myself...you have to have a bit of a chip on your shoulder in your confidence of your abilities”

Theme 4 - Impact of injury /Psychological components of injury

It was found the impact injury has, and the psychological components thereof, varied and was subjective. While certain participants felt no negative influences, others reported still having anxieties and fears of reinjury.

“I am always fearful, well maybe not fearful but always aware of what can happen... I’m in a heightened sense of awareness, my reflexes are faster”

Additionally, all participants described being better athletes overall as a result of changes they made to accommodate for their injuries/ handicaps.

“They made me feel more ready for the fight. I felt like if I had run my body down and done so much damage because I worked so hard then the other guy would have no chance because I can dig so much deeper”

Theme 5 – Role of Support

Role of support available was reported by interviews to have primarily been most valuable and influential to the athletes when coming from teammates/ fellow athletes and coaches. Secondary to this is the role of social support from family, however, while none of the participants would quit the sport as a result of familial influence two of the three took the

concerns of their family into account and utilised it to increase their awareness of danger/harm.

“I wasn’t sure if I should be continuing...after consulting my coach and other members of my team they pointed out a few things that picked up my motivation, it gave me a reason to push myself to another level and take things more seriously”

4.2. ***Interpretation of Findings***

The correlation between injuries and years of experience can be interpreted as occurring as a result of competing/ training with an equally skilled partner, in higher belt ranks, as opposed to lower ranks wherein the injuries are caused by lack of knowledge or skill as mentioned by Rainey (2009). Another possible reason for injury at this level is the degree of competitiveness, the more competitive a well-trained individual is the more intensity the athlete will fight with, thus making them more likely to escape a submission and less likely to “tap out” or land more brutal strikes.

The value of extrinsic factors was seemingly based on the past experience of the athletes such as self-defense against bullies or in a bar brawl/ real life application and the desire to not be vulnerable in the future resulting in self-defense being the most valued factor.

“ I joined it [MMA] to be able to look after myself, after watching that movie (Never Back Down) seeing how efficient those guys were at protecting themselves, it thought that’s definitely the way to go...that’s probably the most important thing to me.”

Self-defense was positively perceived and appeared to feed into the value of skill development as a motivator. When discussing the value of skill development, the participants continually related level of skill to degree of protection/self-defense indicating it to be the foundation of importance.

“Purely for the skill, I always wanted to be a better fighter so competing and sparring against these guys helps you elevate your levels all the time... the basic building blocks of Martial arts are your basic skills and your motor functions, your coordination, ability to move fast, see thing quickly and interpret actions”

The athlete's self-efficacy appears more related to their belief of their mental ability to endure challenges as opposed to their belief in their physical competency, perhaps related to the value of mindfulness taught in MMA philosophies. A reciprocal relationship between these arose: a higher motivation for self-defense meant greater skill development, meant higher belief in ones' abilities which results in training more to learn more complex defense measures.

"I can compete with anyone in the country even the pros...I felt like if I had run my body down and done so much damage because I worked so hard the other guy would have no chance"

"I'm confident in my abilities, but I'm always wary of the fact that there will always be someone better so I try my best to stick to my basic techniques and refine those so my abilities may not be as broad but are very, very sound. There is always something to learn"

Athletes motivation may have an impact on how an injury influences them. It was noted that while some participants had anxiety/fear of reinjury, it was only based around the amount of time they would have to take off due to reinjury rather than the pain of injury itself.

"I got better over the years but when I came back at 24 I knew everyone else would have caught up to me... when I came back my goal wasn't to be how I was but to be better but I didn't put that pressure on myself to be the champion again...it humbled me and I realise I'm not immortal."

It is seemingly a primary concern that they may not be able to fight again if the injury is too severe or lose skills which is highly valued as previously mentioned, thereby linking the role of intrinsic and extrinsic motivation to the impact an injury has. Adding to this an unexpected finding occurred, all the participants reported that injury resulted in them becoming better athletes.

One of the interviewees, noted the sensation of heightened awareness and faster reflexes as a result of his injury, supposing it was an unconscious attempt to avoid reinjury: *"It's weird, I see things faster, my sense of smell enhanced – it's like I can see the punches*

coming from different angles and I can't explain it, medically my theory is as a result of my injury I had to basically reteach my body to fire certain signals and that formed a new neural networks through"

Another described his experience *"I tried to maintain my training as much as possible and work on other aspects of my skillset around my arm injury...I got so used to sparring and drilling with a handicap that once that was removed I felt this overwhelming amount of freedom to do what I wanted with the new skills I had acquired from limiting myself prior"*

A possible reason for this is the utility and attainment value of the sport/task over the risks and relative costs, these athletes' passion for the sport motivated them to find other ways to participate and work around the injury and therefore fortifying and developing other aspects of their skills and subsequently improving their self-efficacy or value of the sport in order to feel fulfilled/satisfied.

The role of support may be related to the common knowledge athletes and coaches/teammates hold; athletes seemingly appreciate support from these social groups more due to shared contextual knowledge of injury/recovery in the sport. The athletes possibly feel more understood and genuinely supported by those who have gone through similar situations to them and understand the value of the sport as an athlete. Whereas, while familial support is still important, is based off concern of safety and while some athletes take this into account it may be hindering/confusing and out of context as this side of social support may not understand the athletes' motivation, while teammates and coaches remain relatable. Athletes appear to find it easier to consult with other athletes than non-athletes.

4.3. Findings in Context

Rainey (2009) argues the most common type of injuries was contusions occurring to head/neck/face, followed by strains and sprains to lower and upper extremities. This was confirmed by all participants who reported injuries in these areas. The data that arose in the interviews contradicted the information presented in literature by Petrisor et al., (2019) that states the longer the participants are required to take off training were more

likely to consider quitting compared with those who took less time off, athletes appear to be more concerned with loss of skill or have anxiety about when they can return as opposed to considering quitting, this indicates the negative impact of the injury may serve as a booster for recovery and motivation to continue in some cases. This, according to Eccles' expectancy-value theory, reflects the utility value of the task (achieving goals set such as developing skills or being able to defend oneself efficiently) is high whereas the relative cost of reinjury is low.

The degree to which the injury influences the athlete is influenced by the intrinsic and extrinsic motivation, as previously mentioned skill development was highly valued as noted by Meyer and Bittmann (2018), however, self-defense as a factor was perceived more positively and the value thereof was significant. Self-defense was a more prominent attracting factor than the previously assumed social interaction and was linked to skill, the more highly skilled meant the more protection the athlete had. The utility and attainment values of the sports greatly outweighed the cost injury/reinjury posed to the sample. If recalled Wigfield and Eccles (2000) attainment value is the personal importance of succeeding in a given task and utility value is the degree of alignment with current goals, thus if the athletes value of succeeding in developing their skill/ learning self-defense is significantly important enough, combined with the value held for how well this aligns with their goal will determine how an athlete will evaluate the relative cost of reinjury. From the sample these were valued highly, so much so that the athletes found ways to work with/ around their handicaps to continue participating and training.

This attainment value and the degree to which the task was aligned with the athletes goals was higher in comparison to the cost, unless the cost was loss of skill due to rest from training, this resulted in the cost motivating the athletes to find way to work with their injury and improve other areas rather than lose skills/ defensive abilities. Intrinsic motivators were primarily based around the athlete's efficacy, this included the period of injury, none of the athletes over-estimated their physical abilities, rating them modestly, but rather had a strong sense of mental ability and belief in their capacity to mentally endure challenges. This could be a large contributing factor to their drive to work around their injuries to continue training. The value of efficacy and the moral teaching in relation

to the risk of injury were neutral and inconclusive, however, the link between efficacy and one's capacity to mentally endure challenges suggests it is an important aspect of motivation as the two are interdependent.

As in the literature review, the findings confirm injury can negatively influence internal processes like fear and development of anxiety. The difference here is the sample's anxieties/fears had a positive influence on their participation in the sport as their value of the task were greater than the expectation of reinjury as assumed by Podlog and Eklund (2005). Concern of performing to pre-injury level, indicating attainment value is influenced was confirmed by the data, however this did not lower the athletes' value of participating in conjunction to the evaluation of relative costs, but rather heightened their motivation to train/compete and reportedly made the sample more acute and intuitive athletes. It is evident that motivation has a reciprocal relationship to injury, impacting on the cognition and perceptions of MMA athletes in varying regards that are not necessarily negative like previously assumed depending on levels of motivation. However, this view may be limited due to the sample size, a larger sample may be needed for accuracy.

The role of support was shown to be of lesser value to motivation in MMA athletes than other aspects, the most valued was that of teammates/coaches and these results are positively supported and congruent across majority of the literature. It was confirmed that coaches support was crucial in keeping athletes involved in the sport: providing perspective and focus, reassurance on recovery, encouraging perseverance assisted in the individuals' beliefs in their abilities (Bianco, 2001). It was reported that this is due to the respect the athletes have for their coach and teammates instilled as a part of the intrinsic philosophies taught by MMA, as well as their relatability in the context of sport related injury, over that of family/non-athlete friends. Again, this reveals a link to degree of alignment with current goals (utility value) that coaches/teammates have in relation to the athletes own goal whereas family members central concerns are the relative costs faced by the athlete. No athletes mentioned psychological support nor the requirement thereof, highlighting a possible gap for future research.

4.4. ***Trustworthiness***

Trustworthiness is different terminology for validity and reliability used to by qualitative or naturalistic researchers to distance themselves from the positivist paradigm, Instead, they use credibility, dependability, transferability and confirmability (Maree, 2020).

Credibility is ensured with the use of well-established research methods (semi-structured interviews), participants will be given the opportunity to refuse participation ensuing only willing participants are used. Candor will be encouraged, and it will be known that there are no right answers. The independence of the researcher will be asserted so participants are aware that they may speak freely and honestly, they will also be informed of their right to withdraw from the study. Member checks, iterative questioning, and examining previous research to determine congruency will be used.

Dependability is ensured with processes within the study should being reported in detail, thereby enabling a future researcher to repeat the work, if not necessarily to gain the same result (Maree, 2020). Detailing the research design and its implementation, the operational detail of data gathering and evaluating the effectiveness of the process of inquiry undertaken helps others follow the researchers reasoning and how decisions were made (Maree, 2020).

Transferability: The research context is to be described, the central assumption that are central to the research are to be detailed , This is to allow for another researcher interested in duplicating the studying to accurately replicate it, which would indicate its integrity.

Confirmability: Limitations will be addressed which allow for future researchers to be able to attempt the study with less limitations for more representable or accurate results and help readers understand how the researcher came to certain conclusions (Maree, 2020). Attaching interview transcripts indicates information included in the study was not fabricated by rather shaped from actual participants accounts (Maree, 2020).

5. Conclusion

5.1. *Addressing the Research questions, Problem and Objectives*

The research objectives for this study were met and the research questions were resolved. The participants held a positive/educated attitude towards the phenomenon of motivation and injury and its role and importance in the sport.

The first research objective was to describe the ways injury impacts an MMA athlete's motivation. From the findings, all participants perceived the phenomenon in a relatively positive manner, they showed a drive for learning and growing with the challenge's injury presents, and utilizing the experience to negate challenges in order to continue participating, resulting in enhanced skills.

The second objective was determining what link is experienced between injury and motivation in MMA athletes. It was clear from the data that the link experienced was developmental and part of a learning experience, rather than an inherently negative experience.

The third objective was explaining which motivational factors influence the athlete's decision to return to the sport. Data revealed the most significant motivational factors for the sample to primarily be the value of the sport as a whole and what it has to offer in terms of self-defense and skill development.

The fourth objective was to determine the role support has regarding injured MMA athletes. As discussed, the most influential role was noted to be the support of coaches and teammates, the likely root for this is as a result of shared knowledge and understanding due to experience.

5.2. *Final Conclusion*

The study noted that there is a connection between the event of an injury and the Mixed Martial Arts athletes motivation, however, after investigating the various themes of injury, intrinsic/extrinsic motivation, impact of injury and the role of support, this relationship is slightly different from what was initially assumed. It is now apparent that the relationship is not a negative one but instead serves as a motivating factor in itself, at least in the studied sample. Extrinsic motivation proved to be the more significant type of motivation, while the intrinsic motivation of self-efficacy was important it took on a secondary role. Injury type and the fear of reinjury has little influence, rather, it was seen that the athletes hold greater concern for how long they need to take off from training in order to recover, and subsequently the concern of loss of skill as a result of current or future injury that is more prominent. Additionally, the role of support was most influential from coaches and team members than other sources, and familial support was taken into account, but did not have a significant influence on the athletes' motivation to participate in the sport. Overall, it appears that the process of motivation in relation to risk is largely similar to the process of motivation posed by Eccles' expectancy – value model of achievement in that the intrinsic/attainment/ utility values of the task (participating in MMA) were weighed against the relative costs (risk of reinjury/loss of skill) in order to determine their continuation of the sport following an injury.

5.3. *Implications of Findings for Future Studies*

While this study was aimed at developing an understanding of the link between injury and motivation in MMA athletes as well as add to the body of knowledge that exists, the exact nature of this link is unclear and needs further research to firmly define it. Future researchers may consider looking more closely at the correlation between injury and motivation in order to assist in promoting more effective intervention programs and MMA athletes' understanding of the implication/impact of injury. Including the different sub-topics such as injury and motivation in specific branches of MMA (for example, boxing, jiu jitsu, taekwondo) or injury and motivation in female MMA athletes as well as this same correlation in a purely competitive setting could be explored for a clearer understand of

the minutiae of the phenomena. This study also noted a severe deficit in literature on the role psychologists have in the process of recovery and enhancing athletes' motivation, this could be a topic to be covered in future research. The sample size for this study produced rich data, this implies the possibility for much richer and generalizable outcomes if done on a larger, more randomized, sample.

5.4. ***Ethical Implications***

Ethical consideration has been given to informed consent proposedly resolved with the consent form attached in appendix B, including consent to record interviews attached in appendix C (Maree, 2020). Names will be omitted to give anonymity, are assured interviewer-interviewee confidentiality and participants will be informed of their right to withdraw at any stage of the research (Maree, 2020). Ethics for collecting data will avoid excessively long interview times and harmful questions via prior question planning as seen in appendix D. Due to the COVID-19 pandemic interviews done over Zoom are to be recorded, the data collected is to be stored and protected in a password secured device. (Du Plooy-Cilliers et al., 2014). Participants will be fully informed about the nature of the study and content of the interview, as well as have contact details if they have any queries or concerns, as to maintain honesty and transparency (Du Plooy- Cilliers et al., 2014). Additionally, all individuals will be voluntary participants and will be made aware of their ability to reject participation or not answer questions, language in the interview will be kept professional and non-offensive/discriminatory as to respect the participants and their dignity (Du Plooy-Cilliers et al., 2014).

5.5. ***Limitations***

There is a lack of prior research on the link between injury and motivation overall, and none in the MMA context that was found.

Issues with sample selection exist, non-probability samples are not random and therefore not representative of the population.

The sample size is insufficient for statistical representation, the sample also consists of all males meaning results cannot be generalized for the female population of MMA athletes.

The sample originates from one gym in the KZN region, it may not be generalizable to the international population.

The participants are personally known and may be more or less willing to share subjective information as opposed to strangers.

As a result of the Coronavirus pandemic, all interviews needed to be done virtually which may result in information being lost or misinterpreted, left out due to poor connection or technical difficulty.

Self-reported data can rarely be verified, it is a subjective experience rather than a solid fact. Selective memory, exaggeration and attribution are a risk that may skew data.

Data analysis of detailed data is time-consuming.

Time constraints, a longitudinal study on the impact of injury from its occurrence through to reintegration to or quitting the sport would yield much richer and more detailed data.

Data is based on subjective experiences.

Interviewees can be non-responsive/ side-tracked by trivial aspects unrelated to study.

APPENDICES

Appendix A: ETHICS CHECKLIST



HONOURS RESE, RESM and RMET ETHICS CHECKLIST

Dear student

Please complete this checklist and include this in your proposals as an appendix:

Student name: Jayde Driemeyer

Title of the research: *An exploration of the impact of injury on motivation in Mixed Martial Artists: A qualitative study.*

	Yes	No	Comment:supervisor/ navigator/lecturer
Are you using human subjects in your research?	X		
I intend to use human subjects - I understand that I will not conduct research with human subjects under the age of 18 and other vulnerable groups. - I understand I can only proceed once I receive an ethical clearance letter.			
Interviews/ Focus groups An example of the <i>written consent form</i> I intend to use is attached.	X		
I will record the interview/focus groups and the sample of the letter where I ask for permission to do so is attached.	X		
I plan to use an interview schedule: The example of my research instrument is attached.	X		
I plan to use a questionnaire: The example of my research instrument is attached.		X	
I plan to use a gate-keepers letter: The example of my letter is attached.		X	
I plan to do research on an IIE site/with IIE students/staff/artefacts and I filled in the application for permission to do so. The application is attached. I understand I can only proceed once I receive IIE Approval for this.		X	

Signed:

APPENDIX B: ETHICAL CLEARANCE LETTER



5 August 2020

Student name: Jayde Driemeyer

Student number: 17599494

Campus: Varsity College Durban North

Re: Approval of HPS1 Proposal and Ethics Clearance

HONOURS/PGDIP ETHICAL CLEARANCE LETTER

Your research proposal and the ethical implications of your proposed research topic were reviewed by your supervisor and the campus research panel, a subcommittee of The Independent Institute of Education's Research and Postgraduate Studies Committee.

There are some aspects that you still need to address in your proposal. You will need to address these aspects in consultation with your supervisor before you may proceed (see below):

Please discuss with your supervisor/navigator/lecturer how you will address these issues listed below:

Please note: **Your fieldwork may only proceed once you address the following issues:**

- Informed consent form needs to include an option for any further psychological support needed should the participant become distressed in response to talking about their injuries (state that you will refer the participant to a psychologist should they feel they need support in coping with the psychological effects of the injury).

In the event of you deciding to change your research methodology in any way, kindly consult your supervisor to ensure all ethical considerations are adhered to and pose no risk to any participant or party involved. A revised ethical clearance letter will be issued.

We wish you all the best with your research!

GENERAL CONDITIONS TO BE FULFILLED IN RELATION TO RESEARCH

Permission is granted to proceed with the above study subject to the conditions listed below being met and may be withdrawn should any of these conditions be flouted.

Please note: The panel has not considered the merits, accuracy or ethical soundness of the research. The only merits examined are the use of The IIE as a sample.

Permission is granted subject to the following conditions:

1. The researcher(s) will need to obtain informed consent in writing from all of the participants in his/ her sample if the study is not anonymous.
2. The researcher(s) may only use the data collected for research purposes and in no other way.
3. Photographs of human subjects may only be taken if relevant to the research, informed consent was obtained, and even with informed consent, the photographs may not be published on any online platforms.
4. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
5. No names or identifying information of participants may be used within the research and the research must be voluntary.
6. Please make it clear that the information will not be used punitively in any way and participants may in no way be counselled/advised based on this.

Supervisor: Jarryd Byron

Campus Postgraduate Coordinator (CPC): Dr Razia Khan

Honours co-ordinator: Tracey Haselau

Appendix C: INFORMATION SHEET AND CONSENT FORM TO PARTICIPATE

Explanatory information sheet and consent form for participants
To whom it may concern, My name is JAYDE DRIEMEYER of JARRYD BYRON about CONTRIBUTING TO THE BODY OF KNOWLEDGE ON THE IMPACT OF INJURY IN MMA FIGHTERS. I hope that this research will enhance our understanding of THE POSSIBLE LINK BETWEEN THE TWO FOR BOTH ATHLETES AND RESEARCHS IN ORDER TO BUFFER ITS EFFECTS AND INFORM FUTURE INTERVENTION STRATEGIES. I would like to invite you to participate in my study. In order to explain to you what your participation in my study will involve, I have formulated questions that I will try to fully answer so that you can make an informed decision about whether or not to participate. If you have any additional questions that you feel are not addressed or explained in this information sheet, please do not hesitate to ask me for more information. Once you have read and understood all the information contained in this sheet and are willing to participate, please complete and sign the consent form below.
What will I be doing if I participate in your study?
I would like to invite you to participate in this research as you are an experienced MMA athlete who would be a valued source of information. If you decide to participate in this research, I would like to inform you that participation includes a semi-structured interview to be done over a telephonic call or video call, dependent on what is suitable, wherein I will ask various questions based on your experiences in Mixed Martial Arts, injury and the experience thereof and your motivation within the sport both pre- and post- injury, as well as the role support had in this experience. You can decide whether or not to participate in this research. If you decide to participate, you can choose to withdraw at any time or to decide not to answer particular interview questions.
Are there any risks/ or discomforts involved in participating in this study?
Whether or not you decide to participate in this research, there will be no negative impact on you. There are no direct risks or benefits to you if you participate in this study. You might, however, indirectly find that it is helpful to talk about your injury and motivation in MMA. If you find at any stage that you are not comfortable with the line of questioning, you may withdraw or refrain from participating.
Do I have to participate in the study?
• Your inclusion in this study is completely voluntary; • If you do not wish to participate in this study, you have every right not to do so; • Even if you agree to participate in this study, you may withdraw at any time without having to provide an explanation for your decision.
Will my identity be protected?
I promise to protect your identity. I will not use your name in any research summaries to come out of this research and I will also make sure that any other details are disguised so that nobody will be able to identify you. I would like to ask your permission to record the interviews, but only my supervisor, I and possibly a professional transcriber (who will sign a confidentiality agreement) will have access to these recordings. Nobody else, including anybody at IIE's Varsity College, will have access to your interview information. I would like to use quotes when I discuss the findings of the research, but I will not use any recognisable information in these quotes that can be linked to you.
What will happen to the information that participants provide?

Once I have finished all interviews, I will write summaries to be included in my research report, which is a requirement to complete my Psychology Honors. You may ask me to send you a summary of the research if you are interested in the final outcome of the study.

What happens if I have more questions about the study?

Please feel free to contact me or my supervisor should you have any questions or concerns about this research, or if there is anything you need to know before you decide whether or not to participate.

You should not agree to participate unless you are completely comfortable with the procedures followed.

My contact details are as follows:

JAYDE DRIEMEYER

The contact details of my supervisor are as follows:

Consent form for participants

I, _____, agree to participate in the research conducted by JAYDE DRIEMEYER about CONTRIBUTING TO THE BODY OF KNOWLEDGE ON THE IMPACT OF INJURY IN MMA FIGHTERS

This research has been explained to me and I understand what participation in this research will involve. I understand that:

- I agree to be interviewed for this research.
- My confidentiality will be ensured. My name and personal details will be kept private.
- My participation in this research is voluntary and I have the right to withdraw from the research at any time. There will be no repercussions should I choose to withdraw from the research.
- I may choose not to answer any of the questions that are asked during the research interview.
- I may be quoted directly when the research is published, but my identity will be protected.

Signature

Date

Appendix D: CONSENT FORM FOR AUDIO RECORDING

Consent form for participants	
I, _____, agree to allow JAYDE DRIEMEYER to audio record my interviews as part of the research about CONTRIBUTING TO THE BODY OF KNOWLEDGE ON THE IMPACT OF INJURY IN MMA FIGHTERS. This research has been explained to me and I understand what participation in this research will involve. I understand that:	
• My confidentiality will be ensured. My name and personal details will be kept private.	
• The recordings will be stored in a password-protected file on the researcher's computer.	
• Only the researcher, the researcher's supervisor and possibly a transcriber (who will sign a confidentiality agreement) will have access to these recordings.	
Signature	Date

Appendix E: INTERVIEW SCHEDULE:

Focus Area	Examples of questions and <i>probing</i>
Mixed Martial Arts: General Inquiry	How long have you been training in MMA? Have you ever competed? <i>When? How many competitions have you done?</i> What is your preferred style, grappling or striking? <i>Why?</i>
Injury	Have you ever been injured while participating? How severe was the injury? What was the injury experienced?
Extrinsic Motivation	What motivated you to start MMA? <i>Why?</i> Are any of these: Social, fitness/ skill development a motivator for you? Are these valued factors for you?
Intrinsic Motivation	How do you view your abilities to participate/succeed in the sport? How has the moral teachings/ philosophies influenced you? Has joining MMA impacted on your control? <i>How?</i> Were/are any of these factors a source of motivation for you within the sport?
Impact of Injury	Did your injury have any impact on your mental state? <i>In what way?</i> Do you have any fears of reinjury? <i>Why is that?</i> Did/do you have concerns about reaching pre-injury abilities?
Role of Support	Did you have support during/after your injury? Who was your biggest support in recovery? <i>In what way?</i> Did your coach support you in any way? How did support impact your return to the sport? Is the support continuing presently?

APPENDIX F: SUMMARY DOCUMENT TABLE

Title: An exploration of the impact of injury on motivation in Mixed Martial Artists: A qualitative study.

Research Purpose/ Objective	Primary Research Question	Research Rationale	Seminal Authors /Sources	Lit Review Conceptual Framework	Paradigm	Approach	Data collection Method (s)	Ethics	Anticipated Findings	References
explore possible link between injury and motivation in MMA to increase understanding and add to the body of knowledge	How does injury in MMA impact the athlete's motivation to participate in the sport?	Growing field with little information on the topic. Fill in gaps in current literature and add to the body of knowledge to assist in understanding possible links/interpreting To give insight to the topic and its implications.	Jensen, Maciel, Petriigliano, Rodriguez & Brooks, 2017. McIntosh, 2005. Petrisor, Fabbro, Madden, Khan. Joslin & Bhandari, 2019. Podlog & Eklund, 2005.	Theme 1: Injury (Most common areas/Injuries, style vs injury prevalence). Theme 2: Extrinsic motivations (Social, fitness, skill development) Theme 3: Intrinsic motivations for participating in MMA (Self efficacy & aggression) Theme 4: Impact of injury /Psychological components of injury. (fear, anxiety, motivating factor, other) . Theme 5: Role of support available	Interpretivism (Epistemology) Building on current theory &better understand the experience of a possible link between injury in MMA and their motivation to continue to participate in the sport. Understanding reasoning of their motivation.	Qualitative approach Population Mixed Martial Artists over the age of 18 with 5 or more years in the sport and a past or current injury.	A semi-structured online interview (over zoom).	Informed consent to be resolved with a consent form including consent to record interviews. Anonymity/confidentiality: names will be omitted to give anonymity. Collecting data: excessively long interview times and harmful questions are to be avoided via prior planning.	Describing and understanding a link between injury and motivation in MMA and the impact of the components that contribute to this link.	Jensen, A. R., Maciel, R. C., Petriigliano, F. A., Rodriguez, J. P., & Brooks, A. G. (2017). Injuries sustained by the Mixed Martial Arts athlete. <i>Sports Health</i> , 9(1), 64–69. Retrieved https://doi.org/10.1177/1941738116664860 [13 February 2020]. McIntosh, A. S. (2005). Risk compensation, motivation, injuries, and biomechanics in competitive sport. <i>British journal of sports medicine</i> , 39(1), 2-3. Retrieved http://dx.doi.org/10.1136/bjism.2004.016188 [13 February 2020].
Research Problem	Secondary Questions/ Hypotheses/ Objectives	Key Concepts	Key Theories			Sampling	Data Analysis (s)	Limitations	Anticipated Contribution	
There is a gap in literature which addresses a possible relationship between the injury and motivation. This leaves the athletes' experience and variations thereof unclear.	What link is experienced between injury in MMA athletes and their motivation to participate in the sport? What factors of motivation influence the athletes return to the sport? What is the role of support in conjunction with injuries in this sport?	Motivation (extrinsic/intrinsic) Injury - Severity/ duration Impact of injury - Cause of fear/anxiety -On progress/training/ competing/career - possibility of no impact. Role of support	Eccles expectancy-value model of achievement		(Ontology) The experiences/ interactions of MMA fighters with injury and its impact. (Axiology) Values subjective/ unique experience of fighters & understanding their experiences/reasoning & describing/explaining them. Done in a non-judgmental manner.	Non- probability convenience sample taken from the Mustangs MMA gym in KZN using 3 interviewees.	Analysis of the interviewee's transcripts using thematic phenomenological data analysis approach.	Little to no literature on the impact of injury on motivation in MMA Based on subjective experiences. Interviewees can be non-responsive/ side-tracked by trivial aspects unrelated to study. Convenience sampling is not representative of the whole community.	Contribute to understanding of/ describing a possible experienced link between injury and motivation in MMA. Fill gaps in literature.	Ding, L., Chen, B., Zou, L., & Tian, Z. (2015). An investigation of motivational differences for participants in Chinese martial arts. <i>Asia Pacific Journal of Sport and Social Science</i> , 4(1), 53-66. Retrieved https://doi.org/10.1080/21640599.2015.1005391 [Accessed 20 June 2020]. Podlog, L., & Eklund, R. C. (2005). Return to sport after serious injury: a retrospective examination of motivation and psychological outcomes. <i>Journal of sport rehabilitation</i> , 14(1), 20-34. Retrieved https://doi.org/10.1123/jr.14.1.20 [13 February 2020]. Wigfield, A., and Eccles, J., S. (2000). Expectancy – value theory of achievement motivation. <i>Contemporary Educational Psychology</i> , 25(1), 68-81. doi:10.1006/ceps.1999.1015.

APPENDIX G: ORIGINALITY REPORT

10/27/2020

Originality Report

SafeAssign Originality Report

RESE8419_VCDN1 • Safe Assign Plagiarism Practice

[View Originality Report - Old Design](#)

Jayde Driemeyer

Submission UUID: 39624513-d0e4-544a-2234-52a343c7a893

Total Score:  High risk 100 %

Total Number of Reports

1

Highest Match

100 %

RESE SUMMATIVE ASSIGN 17599494.docx

Average Match

100 %

Submitted on

27/10/20

10:17 GMT+2

Average Word Count

16,137

Highest: RESE SUMMATIVE ASSIGN 17599...

 Attachment 1 100 %

Word Count: 16,137
RESE SUMMATIVE ASSIGN 17599494.docx

Institutional database (18)

100 %

- ① My paper
- ⑧ Student paper
- ② Student paper
- ⑫ Student paper
- ③ Student paper
- ⑤ Student paper

- ⑪ My paper
- ⑩ My paper
- ⑬ Student paper
- ⑮ My paper
- ⑩ Student paper
- ⑦ Student paper

- ⑨ My paper
- ④ Student paper
- ⑰ My paper
- ⑬ My paper
- ⑥ Student paper
- ⑫ Student paper

Internet (1)

0 %

- ⑭ mass-4d

Top sources (3)

- ① My paper

- ⑪ My paper

- ⑨ My paper

Excluded sources (0)

17599494

Research

Summative assessment RESE8419

HPS1

① An exploration of the impact of injury on motivation in Mixed Martial Artists: A qualitative study.

② I hereby declare that the Research Report submitted for the BA Psychology Honours degree to The Independent Institute of Education is my own work and has not previously been submitted to another University or Higher Education Institution for degree purposes.

Signed:

[11825 words]

JAYDE DRIEMEYER

17599494

① Due October 2020

SUPERVISOR JARRYD BYRON

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