Dancers’ Experience of Osteopathy and their Attitudes Towards Dance Injuries

Kaley Maddren

A thesis submitted in partial fulfilment of the requirements for the degree of Master of Osteopathy, Unitec Institute of Technology, 2019
Declaration

Name of candidate: Kaley Maddren

This thesis entitled: ‘Dancers’ Experience of Osteopathy and their Attitudes Towards Dance Injuries’ is submitted in partial fulfillment for the requirements for the Unitec degree of Master of Osteopathy.

Principal Supervisor: Dr Sylvia Hach

Associate Supervisor/s: Robert Moran

Candidate’s declaration

I confirm that:

• This thesis represents my own work;
• The contribution of supervisors and others to this work was consistent with the Unitec Regulations and Policies.
• Research for this work has been conducted in accordance with the Unitec Research Ethics Committee Policy and Procedures, and has fulfilled any requirements set for this project by the Unitec Research Ethics Committee.

Research Ethics Committee Approval Number: 2018-1004

Candidate Signature: [Signature] Date: 20.03.2019

Student number: 1431586
Abstract

**Background:** Professional dancers almost invariably experience injury at some point in their dance careers. There is weak evidence to show that many dancers do not seek professional consultation to manage their injuries. Moreover, many dancers attempt to continue to practice and perform and this can negatively impact on their physical, mental and emotional wellbeing. When treatment is sought, manual therapists (such as osteopaths, physiotherapists) are most commonly consulted. Despite this, there is minimal research examining dancers’ experiences of manual therapy, and more specifically, their experiences of consulting osteopaths.

**Aim:** To explore New Zealand dancers’ experiences of osteopathic care for dance-related injuries and their attitudes towards seeking help for dance injuries.

**Method:** A descriptive phenomenological study of four New Zealand professional dancers. Dancers were interviewed using semi-structured and open-ended interview techniques. Transcripts were analysed using Braun and Clarke’s approach to thematic analysis.

**Results:** Three essential themes were revealed which helped provide insight into dancers’ attitudes towards injuries and their experiences of osteopathy. The first theme ‘pushing through pain’ considered some of the reasons for dancers to continue to dance despite injury. The second theme, ‘deciding if and who’ explained some of the factors that dancers contemplated when deciding whether their pain or injury warranted treatment. The third essential theme, ‘experience of different treatment modalities’ provided an insight of what dancers found most helpful during consultations and treatments.

**Conclusion:** Participants’ attitudes towards injuries were compelling with their decision-making being influenced by pressures within dance culture coupled with self-expectations. Dancers were often competitively driven and their hesitancy to seek treatment may be similar to those identified in other high-level athletes involved in other sports. The fear of disappointing their peers and colleagues appeared to be more dominant in the accounts of dancers than what has been reported for other athletes. Dancers found osteopathy to be beneficial, which was largely attributed to positive communication and the whole-body treatment approach used by osteopaths. It is important for osteopaths to be aware of the challenges dancers face surrounding their pain and injuries in order to produce the best possible outcome.

**Keywords:** dance, dancers, injury, pain, attitudes, osteopathy
Acknowledgements

A huge thank you to all the participants involved in this study. I greatly appreciate you giving up your time in your busy lives and sharing your personal experiences with me.

To Dr. Alexandra Hart and Dr. Julia Hollis thank you for passing on all your knowledge and for your guidance throughout this project. To Dr. Sylvia Hach and Rob Moran, thank you for stepping up and seeing me across the finish line.

Most importantly, to my friends and family for your endless support over the last five years. Thank you for being there to hear about the never-ending ups and downs and all your encouragement and motivation along the way.
Table of Contents

Declaration .......................................................................................................................... i
Abstract ............................................................................................................................... ii
Acknowledgements ........................................................................................................ iii
List of Tables .................................................................................................................... vii
List of Abbreviations ....................................................................................................... viii
Note to the reader ............................................................................................................ viii

Chapter 1: Introduction ..................................................................................................... 1
Personal Background ....................................................................................................... 2

Chapter 2: Literature Review ......................................................................................... 4
Outline ............................................................................................................................... 4
Search Process .................................................................................................................. 4
Overview of Dance Injuries ............................................................................................. 4
Injury Definitions .............................................................................................................. 4
Prevalence and Incidence of Dance Injuries ................................................................. 6
Injuries within dance genres .......................................................................................... 7
Injury Characteristics ..................................................................................................... 8
Dance Injuries in New Zealand ..................................................................................... 9

Impact of Injuries on Mental Health and Dancers’ Careers ........................................ 10
Dance Injury and Eating Disorders .............................................................................. 11

Help Seeking Behaviours in Dancers .......................................................................... 13
The Under-reported Nature of Dance Injuries ............................................................ 13
Dancers’ Pain Perceptions ............................................................................................ 15
When Dancers Seek Help ............................................................................................. 15
Where Dancers Seek Help ......................................................................................... 16

Overview of Manual Therapy and Osteopathy ............................................................ 17
Patients’ Experience of Osteopathy .............................................................................. 18
Dancers’ Experience of Osteopathy ............................................................................. 19
Chapter 3: Methodology and Methods

Qualitative Research
- Phenomenological Research
- Qualitative Data Analysis
- Qualitative Data Collection
- Rigour in Qualitative Research

Methods

Ethical Considerations

Participant Sample and Recruitment
- Inclusion Criteria
- Recruitment
- Participants

Data Gathering
- Preparing for Interviews
- Data Collection
- Data Analysis
- Summary

References

Chapter 4: Results

Participants
- Suzy
- Laura
- Jordan
- Amy

Essential Themes
- Pushing Through Pain
- Deciding If and Who
- Experience of Different Treatment Modalities
Chapter 5: Discussion

Pushing Through Pain..........................................................61
Dancers’ Pain Appraisal and Coping Strategies............................63
Dancers’ Experience of Osteopathy ..........................................65
Strengths and Limitations......................................................67

Chapter 6: Conclusions ..........................................................69

References.............................................................................70

Appendices..............................................................................75

Appendix A: Ethics Approval ....................................................75
Appendix B: Participant Information Sheet ....................................76
Appendix C: Participant Consent Form .........................................77
Appendix D: Confidentiality Agreement ........................................78
Appendix E: Interview Question Guide ..........................................79
Appendix F: Reflective Journal Excerpt .........................................80
Appendix G: Master Copy of Codes ...............................................81
Appendix H: Full Mind-Map on DebateGraph .................................83
Appendix I: Push Through Pain Code ..........................................84
Appendix J: Letting Everyone Down Code ......................................85
Appendix K: Self-Managing Code ...............................................86
Appendix L: ‘Good Pain’ Code ..................................................87
Appendix M: ‘Bad Pain’ Code ...................................................88
Appendix N: ‘Osteopath’ Code ..................................................89
Appendix O: ‘Communication’ Code ............................................90
Appendix P: ‘Holistic’ Code .....................................................91
List of Tables

Table 1: Table of Essential Themes

List of Abbreviations

ACC  Accident Compensation Corporation
NZ    New Zealand
Note to the reader

The thesis is presented in six chapters. Chapter 1 consists of a brief introduction to the research topic and a section providing details around the personal background of the primary researcher. Chapter 2 is a literature review to provide the reader with more detailed background information as well as a summary of literature surrounding dancers’ attitudes towards dance-related injuries and their experience of osteopathic care. Chapter 3 explains the methodology of phenomenological research and also describes the methods used in this study. The latter includes sections on rigour, ethical considerations, participant recruitment, data collection and data analysis. Chapter 4 describes the results of the study and Chapter 5 provides a detailed discussion of results. The thesis is concluded in Chapter 6 with final conclusions and recommendations for further research.
Chapter 1: Introduction

The aim of this thesis was to understand New Zealand (NZ) dancers’ attitudes towards dance-related injuries for seeking treatment and to understand their experiences of osteopathic care for their dance-related injuries. Dance can be defined as human movements that extend through time and exist in space, usually accompanied by rhythm (Ingram, 1978). Historically, dance was used as a form of expressive communication and performed during cultural ceremonies and rituals (Dick & Brinson, 1996). In NZ, the haka (a ceremonial dance or challenge) has been a dominant feature within Maori culture, seen during ceremonies, celebrations, welcomings, war, and since 1988 at NZ sporting events (Ministry for Culture and Heritage, 2012). Dance has developed in NZ over the decades. In the 1920’s jazz dancing was popular, in the mid 1950’s rock ‘n’ roll and in the 1960’s nightclubs begun to replace dance halls (Cook, 2013; New Zealand History, 2014). Street dancing became more common in the 1980’s and in the 2000’s dance schools for all different types of dancing were established (Cook, 2013). For centuries dance has provided a range of health benefits and enhanced quality of life. However, dance at the professional level presents its challenges. One of these challenges is the physical demand placed on the body, which can cause regular pain and injury driven by internal pressures within the dance culture (Jacobs et al., 2016). These stresses cannot only cause physical injuries but also psychological issues such as anxiety, depression and eating disorders (Mainwaring & Finney, 2017).

In NZ, the number of dance-related injury claims through Accident Compensation Corporation (ACC) has increased over the last five years. In the period from July 2013 to June 2014, ACC recorded 7552 new dance-related injury claims, costing $5,419,507. These numbers have increased in the year ended June 2018, with 8478 new dance-related injury claims, costing ACC $7,573,287 in total (Accident Compensation Corporation, 2018b). Due to the increasing number of injuries among dancers in New Zealand, it is important future research is undertaken to understand whether this increase is due to an increase in injury incidence or due to dancers reporting their injuries.

Unfortunately, many dancers do not seek help for their injuries and instead choose to continue to dance in pain (Jacobs et al., 2016). This poses risks for injury aggravation, and
may risk development of chronic or persistent pain, and may contribute to premature retirement from professional dance. Among professional ballet and modern dancers, chronic injuries account for 48% (Bowling, 1989), and the average age of retirement from professional dance is approximately 30 years of age (Ekegren, Quested, & Brodrick, 2014). Previous literature has identified several reasons why dancers are hesitant to seek help such as financial issues, self-expectations, pressures from peers and colleagues, and fear of being told to stop dancing from a healthcare professional (Jacobs et al., 2016; McCabe, Ambegaonkar, Redding, & Wyon, 2014). All of which contribute to the endemic attitude of ‘the show must go on’ (Pollard-Smith & Thomson, 2016). Although there has been an increase in new dance injury claims with ACC in NZ, across the world there are differing reports regarding dancers seeking professional help. For example, in the United Kingdom (UK), in 2002, 60% of dancers sought medical treatment and in 2011 this number decreased to only 20% (McCabe et al., 2014). It is important we begin to understand the reasoning behind dancer’s decision making for seeking help to ensure they are receiving adequate support and management for their injuries.

When dancers do make the decision to seek professional help, physiotherapists, osteopaths and general practitioners (GP’s) are their top three preferences (Alimena & Air, 2015; McCabe et al., 2014). However, there is minimal research examining dancers’ experience of these professions. Given the rising number of dance-related injury claims and pervasive practice to not seek help, it is important we can begin to understand dancers’ perspectives. Improved understanding of dancers’ perspectives is thought to lead to better support for them in times of injury. Next is a brief background of the researcher, followed by a summary of the literature that has been published to date surrounding dancers’ attitudes towards injuries and their experience of osteopathy in chapter two.

**Personal Background**

As per the criteria for reporting on qualitative research the COREQ guidelines require the researcher to state their possible personal interest in the research area and the experience and training of the researcher (Tong, Sainsbury, & Craig, 2007). This improves the credibility and provides transparency across the study.
I am a 23-year-old student of the Master of Osteopathy degree. I began dancing at the age of six and discontinued 14 years later when commencing full-time studies for my Bachelor’s degree. Even though I stopped dancing, the passion for dance continued and heavily influenced my decision to make dance the topic of my research. Throughout my years of dancing, there were several times I personally experienced injury, or observed peers managing injuries. Whether it be a result of dance or not, we would continue dancing each week. At the time I considered this normal as it was a normal part of dance culture. When I began osteopathic studies, I reflected on the injuries and pain that dancers were pushing through and wondered why most dancers had this mentality. Through a literature review it was identified that this area was not particularly rich in research and relatively few studies had examined dancers’ attitudes towards injury and help seeking behaviours. Through this research, I hope to identify why dancers are hesitant to seek help for injuries, as well as their own experience of osteopathic treatment.
Chapter 2: Literature Review

Outline

Chapter 2 provides a review of the background literature regarding dancers’ attitudes towards dance-related injuries, as well as their experience of osteopathic care. This chapter begins by describing the search process used, followed by an overview of dance injuries including definitions, incidence, prevalence and common causes of injury. This is followed by the impact injuries have on dancers, dancers’ attitudes towards seeking treatment, and concludes with an overview of manual therapy, specifically osteopathy.

Search Process

An electronic database search was conducted to identify relevant literature. Databases included EBSCO Host, ScienceDirect, Google Scholar, Scopus, PubMed/Medline, and ProQuest. Multiple searches through these databases were made using a combination of the following keywords: dance*, injury*, osteopath*, sports, athletes, treatment, experience, attitudes, beliefs, and decision-making. Due to the limited number of studies addressing osteopathy and dance injuries specifically, a broader search including manual therapy and orthodox medicine was added. The reference lists of retrieved articles were scanned for additional relevant articles.

Overview of Dance Injuries

Injury Definitions

There is no standardised definition of ‘dance injury’ that has been widely accepted, with many studies failing to define injury (Air, 2009; Jacobs et al., 2016; McCabe, Ambegaonkar, Redding, & Wyon, 2014). In sports injury epidemiology, three definitions of injury are used consistently, these are ‘time-loss’ injury, ‘medical attention’ injury, and ‘all complaints’ injury. In sport, the definition that is most widely accepted is a time-loss definition (Orchard & Hoskins, 2007). Time-loss injury refers to “an anatomic tissue-level impairment diagnosed by a healthcare practitioner that results in time loss of activity for one or more days beyond
the day of onset’ (Gamboa, Hagins, Liederbach, & Welsh, 2012, p. 144). This definition is considered to work well in sports and especially with acute injuries often resulting in time off. In an attempt to standardise a definition for dancers, the International Association of Dance Medicine and Science have recommended applying the time-loss definition to dance injuries (Gamboa et al., 2012). However, this definition does not encompass all aspects of dancer’s injuries, as many dancers do not take time off for injuries. This definition may also not encompass chronic or overuse injuries, as dancers are more likely to continue dancing with this type of injury (Kenny, Palacios-Derflingher, Whittaker, & Emery, 2018). It has been argued that, for this reason, the use of a time-loss injury definition for injuries occurring in dance may result in a biased representation of the underestimation injury prevalence and incidence (Kenny et al., 2018).

The second definition that is used in sports is a ‘medical attention injury’. This is defined as an “anatomic tissue level impairment that resulted in seeking medical care from a medical practitioner” (Kenny et al., 2018, p. 187). This definition also has its limitations concerning dancers specifically, as studies indicate that dancers are hesitant to seek treatment for injuries (Jacobs et al., 2016). Additionally, this definition is reliant on the affordability and availability of the medical practitioner. However, a strength of applying this definition in research is that a more accurate classification of injuries according to site, severity and cause may result following consultation with a medical professional (Clarsen & Bahr, 2014).

Finally, the ‘all complaints’ injury definition has been defined in the context of dance as “any physical complaint sustained by a dancer resulting from performance, rehearsal, or technique class, irrespective of the need for medical attention or time loss from activities” (Bronner, Ojofeitimi, & Mayers, 2006, p.69). Bronner, Ojofeitimi and Mayers (2006) suggested that this definition is more applicable to dancers compared to the aforementioned injury definitions as it accounts for the tendency of dancers to ‘push through’ an injury and not seek medical attention or avoid time off. Due to this definition’s ability to encompass overuse injuries and re-aggravation of existing injuries, it has been recommended for adoption by several authors (Bronner et al., 2006; Jacobs et al., 2016; Kenny et al., 2018). For example, one recent well-conducted international cross-sectional study by Jacobs et al. (2016), reported musculoskeletal injuries in 260 professional ballet and modern dancers and found that the ‘all
complaints’ injury definition was suitable to the dancers in their study. Recently, Kenny et al. (2018) also acknowledged the benefits of the ‘all complaints’ definition as it captures all aspects of dancers’ injuries.

Prevalence and Incidence of Dance Injuries

There have been many epidemiological studies to date investigating dance injuries (Allen, Nevill, Brooks, Koutedakis, & Wyon, 2012; Bronner, Ojofeitimi, & Rose, 2003; Garrick & Requa, 1993). However, due to there being no standardised dance injury definition and lack of detail in many studies regarding level of dance, genre of dance and geographical locations, the quality of evidence is generally low. This makes it difficult to draw comparisons across different studies.

Most dancers across all genres and levels of dance suffer an injury at some point in their career (Allen, Nevill, Ribbons, & Wyon, 2014; Jacobs et al., 2016). In a systematic review, Hincapié, Morton and Cassidy (2008) reported significant differences between injury rates in professional and pre-professional ballet dancers, with an incidence of 0.18 and 4.7 per 1000 hours of dancing, respectively. A later systematic review by Allen, Nevill, Ribbons and Wyon (2014) reported injury rates of approximately 1.33 per 1000 dance hours with an average of 1.93 injuries per dancer per year, however, this is based on ballet, modern, contemporary and broadway dancers, therefore a direct comparison cannot be made. Moderate differences between these incidence rates are likely due to variations in the injury definition used, variation within the methodology of reporting injury, and the inclusion of different genres and levels of dancers between studies.

It is important to note that although the above figures are from systematic reviews, the number of studies included in each review was relatively low due to limited good quality epidemiological research. In Hincapié, Morton and Cassidy's (2008) review, 29 studies were included and Allen, Nevill, Ribbons and Wyon (2014) reviewed 47 studies. The lack of literature highlights the need for good quality epidemiological research into dance injuries. Caine, Goodwin, Caine and Bergeron (2015), for example, suggest the need for a standardised injury surveillance program to improve uniformity across the literature, as well
as a larger number of intervention studies as it appears this type of design is greatly lacking among dance studies compared to other sports and athletes.

When comparing dance injuries to other sports, the incidence of dance injuries is relatively low. Gymnasts are similar to dancers, due to their movements also requiring skill, precision, strength and artistry. In pre-professional and professional gymnasts over a one-year period, injury incidence was reported to be 3.7 per 1000 hours (Campbell, Bradshaw, Ball, Pease, & Spratford, 2019). Gymnasts likely experience a greater number of injuries due to the increased risk and difficulty involved with mastering maneuvers. These can involve highly technical, dynamic, and ballistic movements required to attract greater points for degree of difficulty in order to maximize scoring opportunities in competitions (Kolt & Kirkby, 1999).

In comparison to female netball players, whose movements can be seen as similar to dancers due to the jumping, leaping and reaching required. Netball players have an average incidence of injury between 11 to 14 per 1000 hours (Hides, Mendis, Parker, & Smith, 2018). This is considerably higher than dance injuries, likely due to the high intensity, frequency of collisions and awkward landings (Hume & Steele, 2000). While a direct comparison suggests that other athletes are more prone to injuries, this may not be the case due to the underreporting of injuries that occurs in dance (Hincapié, Jacobs, & Cassidy, 2012; Jacobs et al., 2016).

**Injuries within dance genres**

There are varying rates of injury among different dance genres. Classical ballet dancers have been found to be particularly susceptible to injury, probably due to the high intensity and repetitive nature of movements involved (Gamboa, Roberts, Maring, & Fergus, 2008). A prospective single cohort study by Allen, Nevill, Brooks, Koutedakis and Wyon (2012) followed 52 professional ballet dancers over a one-year period. The authors reported that 50 dancers (96%) suffered a time-loss injury (mean of 6.8 injuries per dancer) during the one-year period. Conversely, a 10-year retrospective study by Varner and Mcculloch (2016) involving 153 dancers reported that professional ballet dancers sustained only one new injury every year, not including re-injury or aggravation of a previous injury. The one-year prospective study by Allen et al. (2012) had several limitations. Firstly, the validity and
reliability of the injury surveillance tool had not been investigated. Secondly, dancers may not have reported all injuries, as it is likely they suffered injuries that allowed them to dance in a limited manner, without taking time off.

In modern and contemporary dance, the incidence of injury in professional dancers has been reported to be 82% (Shah, Weiss, & Burchette, 2012). Varner and McCulloch (2016) compared injury rates per 1000 hours between modern dancers and ballet dancers. The authors reported that modern dancers had slightly lower rates with 0.18-0.57 injuries per 1000 hours, compared to ballet where there were 0.62-0.91 injuries per 1000 hours. Hip-hop dancers’ injury rates are also prominent, which is hypothesised to be due to exaggerated and fast contractions, jerking movements and regular floor contact (Ojofeitimi, Bronner, & Woo, 2010). Ojofeitimi, Bronner and Woo (2010) reported advanced hip-hop dancers experienced an average of 2.3 to 3.5 injuries per year.

**Injury Characteristics**

There is strong evidence to suggest that dancers across different genres experience injuries in similar body regions (Allen et al., 2012; Shah, Weiss, & Burchette, 2012; Varner & McCulloch, 2016). The most common body region for injury in ballet dancers is the lumbar spine and lower extremity, particularly the foot and ankle (Allen et al., 2012; Varner & McCulloch, 2016). This is similar to modern dancers, who also frequently injure the ankle and lumbar spine, subsequently followed by the knee and foot (Shah et al., 2012). Likewise, hip-hop dancers most commonly injure the foot, knee, hip and wrist (Ojofeitimi et al., 2010). The lower extremity is thought to sustain the most injuries due to strenuous movements that involve both strength and flexibility (Smith et al., 2015).

Evidence from several studies suggest that injuries most frequently occur from overuse. An overuse injury is classified as an injury that occurs from repetitive movements causing microtrauma as the loaded structure is unable to adapt to the stresses imposed (Bahr, 2009). Allen et al. (2012) reported that within a cohort of 52 professional dancers, overuse injuries was statistically greater than traumatic injuries (P <0.05) over a one-year period. In females, 68% of injuries were due to overuse and 32% of injuries were traumatic and in males, 60% of
injuries were overuse injuries and 40% of injuries were traumatic. It is plausible that males had higher occurrence of traumatic injuries than females due to their role in providing support and lifting female dancers. Similar findings were described by Shah et al. (2012) who reported that in a group of 184 modern dancers, 71% of their injuries were from overuse, 28% were traumatic and 1% were “other”. Some of the reasons for traumatic injuries include new or unfamiliar choreography, poor warm-up, environmental hazards or hard floors. Factors such as; incorrect technique, abrupt changes in workload or biomechanical imbalances may contribute to overuse injuries (Malkogeorgos, Mavrovouniotis, Zaggelidis, & Ciucurel, 2011).

**Dance Injuries in New Zealand**

Within New Zealand there were 48,000 new dance injury claims made with Accident Compensation Corporation (ACC) (a no-fault accidental injury scheme) over a 5-year period from July 2013 to July 2018, costing approximately $34 million dollars (Accident Compensation Corporation, 2018b). However, ACC only covers injuries occurring as a result of a traumatic accident with the application of an external force (Accident Compensation Corporation, 2018a). As many dancers’ experience overuse injuries, the total number of dance injuries is expected to be much greater than reported. Further statistics regarding primary diagnosis and primary injury site were requested from ACC. In the financial year between 2017 to 2018 the primary diagnosis group was ‘soft tissue injury’ accounting for 8913 injuries, this was followed by ‘fracture or dislocation’ accounting for 628 injuries. The primary injury site was the knee, ankle and low back respectively (Accident Compensation Corporation, 2019).

Unfortunately, the volume of literature on dance injuries within NZ is limited, and what little exists is of limited methodological quality. Lee, Reid, Cadwell and Palmer (2017) published the first prospective longitudinal cohort study in NZ providing a starting point for the understanding of dance injuries specific to the NZ dancing population. The aim of the study was to investigate injury incidence among pre-professional dancers at a full-time dance school. The study involved 66 dancers studying ballet and modern dance over one academic year (38 weeks). Lee et al. (2017) reported some findings that corresponded with
international dance research. For example, 86% of the dancers sustained one or more injuries over the 38 weeks and a slightly higher incidence rate of 2.27 injuries per 1000 hours of dance participation. Lee et al. (2017) report several limitations of the study and concluded that results should be interpreted with caution. In reference to Equator’s STROBE statement for reporting on cohort studies there were several omissions (Von, Altman, Egger, Pocock, Gotzsche & Vandenbroucke, 2008). These omissions were mostly within the methods and results section. Lee et al. (2017) failed to report on inclusion and exclusion criteria, how the number of acceptable participants was reached and methods surrounding follow up times. Other limitations included a small sample size, loss of five dancers over the duration of the study, and there was no consideration for injuries that allowed for modified dance activity within the time-loss definition. This should be considered when interpreting the incidence and severity of injuries.

**Impact of Injuries on Mental Health and Dancers’ Careers**

Previously, research has mainly focused on the physical aspects of injuries, but more recently, the field of dance psychology has increased the awareness of mental and emotional aspects of dance injuries. For example, several studies in dance contexts explore how psychological issues may contribute to an injury and what the psychological impact of injuries on dancers and their identities might constitute (Cahalan, O’Sullivan, & Ther, 2013; Jacobs et al., 2016; Macchi & Crossman, 1996). For example, according to a study by Macchi and Crossman (1996) involving 26 professional ballet dancers, initial emotions following injury included fear, distress, anger and depression. Dancers were also afraid of the reactions from teachers, parents and their peers. Additionally, they showed concern over the possible impact of an injury on their career and identity as a dancer. However, upon recovery and return to work, dancers felt relief, optimism and excitement. Conversely, in a retrospective study by Cahalan, O’Sullivan and Ther (2013) involving 178 professional Irish dancers, the main psychological issues identified in relation to injury were general anxiety (19.5%), followed by performance anxiety (17.2%), and tension with other people (14.8%). Interestingly, these issues were not only apparent but also were more prominent when injury-free and working, with general anxiety (29%), performance anxiety (27%) and tension with
other people (47%) all higher than when injured. These results indicated that dancers had increased anxiety when injury-free. This could be due to having no excuses or reasons not to perform well. This is contradictory to research suggesting dancers are more anxious and fearful when injured as they believe they will lose their position or let their company down (Jacobs et al., 2016). The differing emotions reported by the dancers in Macchi and Crossman’s (1996) study and Cahalan, O’Sullivan and Ther’s (2013) study could be due to increased prevalence of anxiety across this time period. This is thought to be due to health and social changes for example, a decrease in activity levels, increase consumption of processed foods and impact of technology.

Mental health concerns amongst high-level athletes in other sports are also common. Schinke, Stambulova, Si, and Moore (2018) reported that the peak age of onset for mental health concerns align with the most competitive years as an athlete. However, the overall prevalence of mental health disorders in athletes is comparable to the general population, although there are higher occurrences of depression and anxiety during specific events such as those experiencing injury, performance failure, or end of career transition (Rice et al., 2016). Among professional rugby players, Lambert et al. (2017) concluded that over four-week period 13% reported sleep disturbances, and 30% reported anxiety or depression which is relative to mental health disorders in the general population. This is comparative to injury-free professional dancers, with 29% experiencing general anxiety and 27% experiencing performance anxiety (Cahalan et al., 2013).

Dance Injury and Eating Disorders

The physical stress, limited recovery time, social pressures, and emotional stress (often placed on the dancer by themselves) can result in reduced physical functioning and lead to greater health issues. One particularly pernicious problem can include eating disorders. Several studies show that at least 6.5% of female dancers suffer from an eating disorder such as anorexia or bulimia in an attempt to achieve the desired aesthetic (Mainwaring & Finney, 2017; Ravaldi et al., 2003). The malnutrition associated with eating disorders can alter hormonal function, causing a negative effect and aggravate other health issues. These can
include high incidence of menstrual dysfunction, increased cortisol levels, and low bone density which can lead to osteoporosis (Miller, 2006).

Although there are several studies reporting the nature of eating disorders among dancers, only three studies have examined the direct relationship between eating disorders and dance injury (Liederbach, 2001; Thomas, Keel, & Heatherton, 2011; Traits, Cahalan, Purtill, Sullivan, & Sullivan, 2015). Two of these studies reported that a history of eating disorders, dieting for weight loss and bulimic tendencies were significantly associated with injury in both student and professional dancers (Liederbach, 2001; Thomas et al., 2011). However, both of these studies were retrospective, increasing the difficulty in determining the causal relationship between injuries and eating disorders. The third study by Traits et al. (2015) aimed to identify biopsychosocial characteristics of Irish dancers to determine the relationship between these characteristics and musculoskeletal pain and injury. Traits et al (2015) reported no significant association between eating disorders and dance injury. However, the objective of Traits et al. (2015) study was not directly aimed at investigating the relationship between eating disorders and injury and therefore, results should be interpreted with caution (Traits et al., 2015).

Injuries can significantly impact a dancer’s career both physically and psychologically, which can threaten the dancer’s ability to perform. Air, (2009) conducted a cross sectional descriptive study involving pre and post retirement age Dutch dancers. The dancers average age of retirement was 35, with 30 years of age being a ‘turning point’ in a dancer’s career due to both physical and social pressures to retire. The most common reasons for dancers retiring include health issues/eff ect of injury, “feeling too old” to continue and a desire to pursue a different career (Roncaglia, 2006; Throsby & Hollister, 2005). Other reasons include financial burden, work availability, and family commitments (Throsby & Hollister, 2005). Once a dancer decides to transition away from dance, they often face several challenges such as being underqualified for work or study in other fields, financial burdens and loss of identity. In Throsby and Hollister’s (2005) study exploring the transition from working to retiring from dance in professional Australian dancers, 77% of dancers reported feeling underprepared for a career after dance. Conversely, in a more recent study, professional ballet dancers in the UK felt that they had a smooth transition aided by social support, coping
strategies, and pre-retirement planning (Lavallee & Willard, 2016). These differing perspectives may be due to the difference in the average age of participants in each study. In Throsby and Hollister's (2005) study, the mean participant age was 31 years, whilst in Lavallee and Willard's (2016) study, the mean age was 36.2 years. This variance in age and perspective could suggest that an older age made dancers feel more equipped for a career transition. Additionally, differences in local economic climate and availability of other jobs opportunities between the different countries may have impacted their perspectives.

Help Seeking Behaviours in Dancers

The Under-reported Nature of Dance Injuries

The reporting aspect of dance injuries is not well understood. There has been little research surrounding the reporting of injuries and dancers seeking professional treatment. A systematic review by Hincapié et al. (2008) included four admissible studies between 1989 and 1999 on healthcare seeking behaviours in dancers. One of these studies reported 92% of dancers sought professional help (Evans, Evans, & Carvajal, 1998), whilst another reported a lower rate of 70-85% among pre-professional dancers (McNeal, Watkins, Clarkson, & Tremblay, 1990). The variations between these results are likely due to dancers in McNeal et al.’s (1990) study being younger and pre-professional. Older, professional dancers are likely to have better technique and therefore may be less prone to injury compared to younger student dancers who are more technically-challenged. However, the methodological quality of all four studies included in Hincapié et al.’s (2008) review was low. Specific issues were small sample sizes and seemingly inappropriate design of the studies. For example, McNeal et al.’s (1990) study used a cross-sectional design which did not allow for behaviours to be analysed over time, while Evans, Evans and Carvajal (1998) used a retrospective design, therefore participants may have had problems recalling all injuries. This is a well identified problem in retrospective studies (Sedgwick, 2013).

Since Hincapié et al.’s (2008) review, a series of UK surveys have been completed in 1996, 2002 and 2011 called ‘Fit to Dance’. These surveys explored various aspects of both student and professional dancers’ injuries over the 12-month period prior to completing the surveys.
According to McCabe, Ambegaonkar, Redding and Wyon (2014) who compared the three surveys, the 1996 survey reported that 37% of dancers sought medical treatment (Dick & Brinson, 1996). This increased in the 2002 survey to 60% and then dropped in the 2011 survey to 20% (McCabe et al., 2014). The fluctuation of these numbers could be due to the large time gap in between the surveys and the change in economic climate from 1996 to 2011. When the dancers did not seek medical treatment following injury, 58% of dancers in the 2002 survey told someone else (for example, a peer) compared to only 4% in 2011 survey. In the 2002 survey 41% of dancers took their own preventative steps compared to only 21% in 2011 survey. Additionally, in the 2002 and 2011 survey 6% and 7% of dancers respectively chose to ignore their injury completely. Due to the nature of the questionnaires utilised, no further explanation as to why dancers made these decisions was possible, which should be considered a major limitation of these studies. As these figures are reported from a UK based survey, the percentage of dancers seeking professional help for their injuries may not be transferable to NZ. One key factor that needs to be considered is that the ACC scheme is unique to NZ and would likely place a major impact on the way that New Zealanders engage with health care for musculoskeletal injuries.

Jacobs et al. (2016) reported several possible reasons that could influence a dancer’s decision-making process around whether to disclose an injury or to seek help. A decision-making process can be defined as a cognitive process where an individual chooses a preferred option or course of actions from a set of alternatives based on one’s values, beliefs and other intangible factors (Wang & Ruhe, 2007). Based on the study of Jacobs et al. (2016) there appear to be three key factors which underpin why dancers may be hesitant to report injuries. Firstly, due to the competitive nature of the dance culture, dancers reported reasons such as “pain is an inherent part of dancing” and “I did not want to lose my role”. Secondly, due to self-expectations, dancers reported reasons such as “I did not want to stop dancing” and “I did not want to be seen as unreliable”. Thirdly, dancers may not have reported injuries due to their perception of pain and reported reasons such as, “I did not feel it was important” and “I can cope with the pain”. If dancers continue to have these attitudes towards injuries, it is possible that pain associated with the dance injury may become more persistent or become more severe over time (Bergman, 2007).
Dancers’ Pain Perceptions

Pain has been defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage” (Loeser & Melzack, 1999). There are several factors that influence a person’s perception of pain such as, neurophysiological, immunological, cognitive, social, cultural and environmental factors, all of which can directly affect the intensity of pain (Hainline, Turner, Caneiro, Stewart, & Moseley, 2017). When considering the aforementioned pressures associated with the dance culture, it is conceivable that particularly in dancers, psychosocial elements of pain may have a major impact on pain perception.

Dancers typically experience pain in two different contexts: performance pain, and injury pain (Thomas & Tarr, 2009). Performance pain is commonly viewed as ‘good pain’ and is usually perceived as being muscular in nature and brought on by exertion (Thomas & Tarr, 2009). Performance pain is often of short duration and is viewed positively by a dancer, as it suggests that they are working hard, resulting in a sense of satisfaction (Anderson & Hanrahan, 2008). In contrast, injury pain is perceived negatively and can create fear and anxiety for a dancer (Anderson & Hanrahan, 2008). This is viewed as ‘bad pain’ and typically relates to joint, ligament and tendon pain (Thomas & Tarr, 2009). It is important for dancers to be able to appropriately categorise their pain and notice warning signs to limit the likelihood of tissue damage (Anderson & Hanrahan, 2008). This is in contrast to a small (n=51), but well-conducted study by Anderson and Hanrahan (2008) with three outcome measures, all of which had established good internal reliability and validity. Anderson and Hanrahan (2008) reported that not all dancers can differentiate between performance and injury pain. Consequently, some dancers appeared to employ the same coping mechanisms and injury management for both types of pain.

When Dancers Seek Help

When a dancer experiences an injury, one of the first decisions made is whether to seek treatment, followed by when to seek treatment. According to a cross-sectional descriptive study involving 154 Dutch dancers by Air (2009), older dancers were more likely to wait and
see if the injury resolves without professional consultation. One third of the dancers believed this to be the case. It took older dancers four times longer to seek help from a general practitioner (GP) than younger dancers (8.4 months vs 2.1 months respectively). This could be because older dancers had more experience and stronger self-awareness about their ability to cope. A study by Alimena and Air (2015) explored French professional dancers’ healthcare seeking behaviours and reported 68.4% of dancers continued to dance immediately after onset of a severe injury. Although the majority (86.1%) did eventually seek medical treatment, the average time before consulting a healthcare professional was 2.5 weeks. During this 2.5 week period, dancers would assess how severe the injury was, whether it had got better or worse, and whether they could push through it. If dancers established they needed help, the next decision they faced, was where to seek help.

Where Dancers Seek Help

The decision concerning where dancers will seek help is complex and varies across the literature. Physiotherapists, followed by GPs, are the most common first providers sought (Air, 2009; Bowling, 1989; Riding McCabe et al., 2014). These providers are then followed by either osteopaths, dance teachers, or massage therapists (Air et al., 2014; Alimena & Air, 2015; Bowling, 1989; McCabe et al., 2014). A cross-sectional descriptive study by Air (2009) involving 154 Dutch dancers, suggested that complementary and alternative medicine providers such as acupuncturists, homeopaths and Chinese medicine practitioners were rarely cited as first or second-line treatment providers. If they were consulted, it was usually in conjunction with other healthcare professionals. This was also concluded in a prospective cohort study by Air et al. (2014) involving 40 American college dancers.

The most common factors that influenced a dancer’s decision when seeking medical treatment included: being recommended by a colleague, the GP accepting the dancer’s insurance plan, and the GP having a background in dance (Air et al., 2014). Other factors that were important included: a perception that the GP gave an accurate diagnosis, the management plan was feasible with the dancer’s activity and schedule, and the GP being personable and understanding dance terminology (Air et al., 2014). Sabo (2013) reported that dancers rate physiotherapy as the most beneficial when compared to other health
professionals. This was due to the perceived understanding that physiotherapists had of dance culture, as well as the education they provide and the specific strategies they have when managing a dancer’s injury. Many professional dance companies also have physiotherapists onsite or have a close relationship with local providers which means physiotherapist services are easily accessible and convenient for the dancer (Ekegren et al., 2014). Another key factor is the ability for treatment providers to recognise and understand that psychological distress is often associated with injuries and have the potential to exacerbate the injury. In a study by Air (2013), 60% of dancers met the clinical criteria for referral to a psychologist or psychiatrist for psychopathological symptoms, highlighting the importance of the health professional being able to relate and understand dance culture.

**Overview of Manual Therapy and Osteopathy**

Manual therapy is a generic term used to describe hands-on physical treatment used to primarily treat musculoskeletal pain and dysfunction, and typically involving manipulation, passive and neuromuscular mobilisation, and soft tissue techniques (Nyberg & Basmajian, 1993). There are a range of manual therapists in NZ, including physiotherapists, osteopaths, chiropractors and massage therapists. All of these, except massage therapists can be ACC accredited, which means that treatments are subsidised to assist with injury and rehabilitation (New Zealand Legislation, 2001). The following provides further details of osteopathy as an example of a manual therapy that provides a holistic approach to treating an individual.

Osteopathy was founded in 1874 by Andrew Taylor Still in the United States of America and is a form of alternative and complementary medicine (Still, 1908). Still’s theory was that the body contains its own self-healing mechanism to fight disease and therefore does not typically need a physician’s intervention to restore health. Osteopathy is based on four major principles (Di-Giovanna, Schiowitz, & Dowling, 2005); the body is a unit; the body possesses self-regulatory mechanisms; structure and function are reciprocally inter-related; treatment is based on these principles (Paulus, 2013). Although osteopathy today is still largely based on these four core principles, it should be noted that modern osteopaths are beginning to incorporate additional models such as Evidenced Based Practice and the Biopsychosocial Model into their practice (Cotton, 2013). In addition, these core principles and models are
likely to be interpreted with unique attitudes and opinions by different practitioners. This diversity should be considered when trying to understand patient’s experience of osteopathy. Additionally, the complexity within these models include intricate concepts that connect mind, body and spirit which help create a patient-centred approach.

In NZ, osteopathy is regulated by the Osteopathic Council of New Zealand under the Health Practitioners Competence Assurance Act 2003 (Osteopathic Council of New Zealand, n.d.) Osteopaths are primary healthcare practitioners which means they have a duty to overall care of the patient and have the responsibility to coordinate with other healthcare practitioners when required (Osteopathic Council of New Zealand, n.d.). This service, as well as the holistic approach, provides an appealing alternative to orthodox medicine.

**Patients’ Experience of Osteopathy**

There is limited research exploring patients’ experiences of osteopathy. A few studies from the UK (Cross et al., 2013; Rajendran, Bright, Bettles, Carnes, & Mullinger, 2012; Strutt, Shaw, & Leach, 2008) and one study from Australia (Orrock, 2015) identified the importance of communication, therapeutic relationships, and a patient-centered approach to be integral components of osteopathic care. Additionally, the Australian study reported a common theme of ‘patient decision making’, referring to patients seeking osteopathic treatment on their own accord, which has not been a theme seen in other studies (Orrock, 2015). An important source of bias in this study was response bias as only the participants that choose to return to the osteopathic clinics involved had the opportunity to fill out a questionnaire form and be interviewed. Consequently, participants that responded and consented to an interview were seemingly satisfied clients and therefore may have skewed the data.

In New Zealand there is even less research exploring patients’ experiences of osteopathy. Judkins, Vaughan and Mulcahy (2017) published the only study to date investigating patients’ experiences after an osteopathic treatment within NZ. This study was survey-based and involved 12 osteopaths and 107 patients. To gain an understanding of patients’ experiences a Patient Perception Measure-Osteopathy (PPM-O) tool was used. The PPM-O is a 13-item self-reporting measure aimed to identify patients’ self-reported outcomes and
perceptions of osteopathy (Mulcahy & Vaughan, 2015). The first section of the PPM-O measured elements of patient education and treatment effectiveness. Patients with higher scores in this section reported feeling ‘happy’, ‘releasing’ and ‘loose’ after osteopathic treatment, compared to those with lower scores. It must be noted that although this is not the first study to use the PPM-O tool, Judkins et al. (2017) concluded that the validity of the tool needs to be further investigated.

**Dancers’ Experience of Osteopathy**

To date, there is a single qualitative study which explores dancers’ experiences of osteopathy. Pollard-Smith and Thomson (2016) conducted a study using a grounded theory approach to explore eight professional UK ballet dancers’ experiences of osteopathic treatment for dance-related injuries. Overall, dancers in this study viewed osteopathy positively. The dancers believed osteopathy focuses on treating both the area of discomfort and taking the entire body into consideration, therefore treating the underlying cause of the injury. They reported that the osteopath aided their posture, alignment, and dance technique, and provided advice for long-term benefits. Additionally, although not exclusive to osteopaths, the osteopath’s ability to appreciate the demand of dance and incorporate dance terminology into the consultations resulted in a more positive experience. These findings align with osteopathic principles, with the body being described ‘as a unit’, which is commonly interpreted within osteopathy to mean that dysfunction may originate away from the area of pain or injury (Paulus, 2013). In Pollard-Smith and Thomson’s (2016) study a proportion of osteopaths were ex-dancers themselves or had prior experience in treating dancers. This preconception and previous experience of dancing and treating dancers may have altered the data in a in a positive way towards osteopathy which may have led to a biased representation of dancers’ experiences of osteopathic care (Pollard-Smith & Thomson, 2016).

**Summary**

This review of literature shows that injuries are common in a dancer’s life. It appears there is insufficient good quality research exploring dancers’ attitudes towards injuries. More specifically, behaviours and actions dancers take while injured appear to be under-explored.
It is important to understand the reasons why dancers may be hesitant to report injuries in order to better support them and prevent further injury. Additionally, there is no research in NZ surrounding dancers’ experience of osteopathic care. Understanding dancers’ experience of osteopathy is important, as it will help inform osteopaths working with dancers.
References


Hainline, B., Turner, J., Caneiro, J., Stewart, M., & Moseley, L. (2017). Pain in elite athletes-


[https://doi.org/10.4018/jcini.2007040105](https://doi.org/10.4018/jcini.2007040105)
Chapter 3: Methodology and Methods

Chapter 3 outlines the methodology and methods used in this study. It introduces qualitative research, explores phenomenological theories that underpin the basis of this research and data analysis methods. The second part of this chapter discusses ethical issues, participant inclusion criteria, data collection and the data analysis process.

Qualitative Research

This study aims to explore dancers’ attitudes towards and experiences of injuries and osteopathic treatment. To adequately explore attitudes and experiences, a qualitative approach underpinned by phenomenological philosophy was required. A qualitative approach is suitable for this study as it provides an in-depth understanding of dancers’ attitudes and beliefs towards injuries. According to Yilmaz (2013), qualitative research mainly uses an inductive approach based on people’s experiences, perspectives and opinions to form non-numerical data to understand a phenomenon. One of the benefits of qualitative research is the subjective nature of the data as the research process can accommodate personal perspectives, attitudes, values and experiences leading to in-depth and rich data. Furthermore, qualitative research can support trends that are already apparent in quantitative research by providing a subjective lens on the topic, as well as discovering new trends that can be explored further (Flick, 2009).

Phenomenological Research

Phenomenology is one approach within qualitative research which is based on strong philosophical origins dating back to work of philosophers Edmond Husserl and Martin Heidegger in the 20th century (Wilson, 2015). Since then, phenomenology has continually developed and has become a popular approach for studying individuals’ experiences (Matua & Van Der Wal, 2015). Phenomenology is defined as the study of experience from the perspective of an individual, which is gathered from reported feelings, thoughts and opinions (Harrison & Ruddock-Hudson, 2017; Lester, 1999). Within phenomenology, there are several different approaches. Descriptive and interpretative are the two most common approaches
and are based on work by Husserl and Heidegger respectively (Reiners, 2012). ‘Descriptive’ “is the requirement to explore, analyse and describe a phenomenon while maintaining its richness, breadth and depth, so as to gain ‘a near-real picture’ of it” (Matua & Van Der Wal, 2015, p. 23). This approach aims to set aside any preconceptions and existing knowledge and engages directly with the true essence of a phenomenon (Matua & Van Der Wal, 2015). An ‘interpretative’ approach involves a “detailed examination of the participant’s life, it attempts to explore personal experience and is concerned with an individual’s personal perception or account of an object or event” (Smith & Osborn, 2008, p. 53). An interpretative approach differs from descriptive by allowing the researcher to bring their own understanding and experience to the research process (Roberts, 2013). Descriptive phenomenology has been used for the present project as it allows the researcher to gain a ‘pure form’ of dancers’ experience within different phenomena such as dance injuries, treatment options and osteopathy, free of presuppositions (Wilson, 2015). This is an important first step in this research area as there is currently little known about dancers’ attitudes and beliefs around dance injuries and osteopathy and will help provide a pre-cursor to future research.

**Qualitative Data Analysis**

Within qualitative research there are several different analysis methods that can be applied depending on the nature of the data set. Some of these methods include content analysis, thematic analysis, grounded theory, and discourse analysis (Noble & Smith, 2012). After consideration, a thematic analysis was selected for this research. A thematic analysis uses pattern recognition to uncover themes that are important to describing phenomena (Fereday & Muir-Cochrane, 2006). Identification of themes involves becoming familiar with the text by reading and re-reading the raw data, followed by the identification and generation of codes (Bowen, 2009). A ‘code’ is a word or short phrase that represents a collective or evocative attribute for a portion qualitative data (Saldaña, 2008). During the encoding process, it is important the codes accurately represent the context of the raw data. This process can be aided using software application which can help track back to the original source of the data.
**Qualitative Data Collection**

Within qualitative research there are several different approaches to the collection of data that depend on the research question. For this research, semi-structured, face to face interviews were the best method to gain an understanding of dancers’ beliefs surrounding injuries. The face to face nature of the interviews allows the interviewer to build rapport with the interviewee, developing a relationship that helps the interviewee to feel comfortable to disclose their experience (Shuy, 2018). Additionally, it allows the interviewer to notice non-verbal signs such as hand gestures and facial expressions which provide another level of depth within the data (Carr & Worth, 2015).

To capture the true essence of participants experiences explicitation interview techniques are used. This form of interview style allows the participant to focus on specific events in their past and focus on details such as time and place and give a reflective encounter, rather than giving a general and superficial encounter of the event (Cahour & Karsenty, 2002; Maurel, 2009). One key component within this explicitation interviews is the use of epoche. Epoche is where the interviewer is required to abstain from the use of personal knowledge, theory, or beliefs, and adopt a stance to take nothing for granted (Bevan, 2014).

**Rigour in Qualitative Research**

Within qualitative research, rigour refers to the way studies show integrity and competence (Tobin & Begley, 2004; Tracy, 2012). This is important to establish as it helps provide high-quality research and confidence in the research findings (Thomas & Magilvy, 2011). Ensuring rigour is important as a phenomenological approach is often critiqued for lack of structure (Neergaard, Olesen, Andersen, & Sondergaard, 2009). Rigour can be ensured by adhering to Guba & Lincoln (1989) trustworthiness criteria which is based on credibility, dependability, comfortability, and transferability.

Credibility refers to the plausibility and the truth in the data that is presented in the research, similar to validity in quantitative research (Ryan-Nicholls & Will, 2009). This was achieved by asking participants to review and validate the transcription to ensure they believe the data is correctly represented (Koch, 1994).
Dependability is the equivalent of reliability in quantitative research. If the research is dependable it means the research is logical, traceable and clearly documented enabling the process to be followed out by another researcher (Tobin & Begley, 2004). It should be detailed and clear enough to an external person as to why particular decisions were made and how conclusions were drawn (Houghton, Shaw, Casey, & Murphy, 2013). Dependability in this research was ensured by using an electronic data analysis software called NVivo (QSR International Pty Ltd, 2015), this allowed all data to be located and traced to original sources.

Confirmability is the equivalent to objectivity in quantitative research. It means the researcher cannot be biased and must be aware of their own interest in the study and preconceptions to ensure the data remains accurate (Houghton et al., 2013). Confirmability can only be achieved once credibility, dependability and transferability have been established (Thomas & Magilvy, 2011).

Transferability is the equivalent to generalisation in quantitative research which refers to the degree in which data can be applied to other areas, populations and contexts (Ryan-Nicholls & Will, 2009). However, due to smaller sample sizes in qualitative research it must be up to the reader to make informed decisions as to whether the data is transferable (Houghton et al., 2013). To ensure this could be achieved relevant details such as participants’ age and geographic position are provided (Thomas & Magilvy, 2011).
Methods

The remaining part of this section will discuss ethical considerations, participant recruitment and inclusion, data collection and data analysis method.

Ethical Considerations

An ethics application was submitted and approved by the Unitec Research Ethics Committee in March 2018 (UREC Reference 2018-1004) (Appendix A). An information sheet (Appendix B) outlining the study and participant involvement was provided to each potential interviewee to ensure they were fully informed of the process and their participation. Before commencing each interview, a participant consent form (Appendix C) and researcher confidentially agreement (Appendix D) were signed by the participant and researcher respectively.

To ensure confidentiality of all participants, pseudonyms were used to conceal their identity in the audio recording and interview transcripts. All personal information that could be used to identify the participant or organisations was removed from the transcript. The audio recordings from the interviews along with the transcribed files are securely maintained on one password protected computer. The participant consent forms are kept in a locked filing cabinet at Unitec Mount Albert campus. All data will be kept for five years as per the Unitec Research Ethics Committee policies, after which all hard copy and electronic files will be destroyed.

Consideration was given to the potentially sensitive nature of the research topic, and possible distress that may be invoked when participants speak of their experiences. All participants were informed of this and online links to support services were supplied on the participant information sheet (Appendix B). The interviewer is a clinically trained health practitioner and has been formally instructed and assessed in interviewing skills. These skills include the ability to recognise participant comfort and alter lines of questioning accordingly to minimise potential harms.
Freely volunteered, informed consent was gained after participants had time to consider their participation in the study. Participants were made aware of their right to decline their participation and made aware they could withdraw from the study up to two weeks after receipt of their interview transcripts for review.

Participant Sample and Recruitment

Inclusion Criteria

The inclusion of participants was based on Trotter-Mathison and Skovholt’s phases of practitioner development (Skovholt & Trotter-Mathison, 2016). Dancers in the novice professional phase\(^1\), the experienced professional phase\(^2\) and the senior professional phase\(^3\), or people who have been in one of these phases but have since retired, were eligible for inclusion. Participants in the lay helper phase\(^4\) and the beginning student phase\(^5\) were excluded as the cause of injury in these novice stages is more likely due to inexperience. Participants were required to be 18 years of age or above, must have had an injury directly as a result of dance performance, rehearsal or technique class, and must have consulted an

\(^1\) Novice professional phase: Encompasses the first years after graduation
\(^2\) Experienced professional phase: person is highly experienced
\(^3\) Senior professional phase: person has about 25 years’ experience and is nearing retirement
\(^4\) Lay helper phase: minimal to no professional training, based on common sense
\(^5\) Beginning student phase: enters professional field and learns new ways of thinking
osteopath for the treatment of their injury. Gender was not an eligibility criterion, not was a background in any specific dance genre.

**Recruitment**

Participants were recruited using a ‘snowball’ approach, whereby the interest of one participant can usually interest several other potential participants (Heckathorn, 2011). Known colleagues in the dance community were emailed and asked to recommend names of people who may be interested. Potential participants were emailed to ensure that they meet the inclusion criteria described above and excluded if they did not. A follow up email was sent with further information describing the project and informing the participant of the nature of involvement.

**Participants**

Four females between 20 years and 26 years of age from the Auckland region were recruited to participate in the study. Three participants most closely identified with the experienced professional phase, and one in the novice professional phase of Trotter-Mathison and Skovholt’s phases of practitioner development (Skovholt & Trotter-Mathison, 2016). All had a background in ballet, jazz and contemporary, and one participant also had experience in musical theatre.

**Data Gathering**

**Preparing for Interviews**

In the two-months leading up to the interviews, supervisor Dr. Alexandra Hart mentored the interviewer on how to use correct interview techniques that allow for open conversation and epoche. Iii, (2010) suggest the interview preparation is the most crucial part in the interview process, as it can highlight problematic circumstances that could arise during the actual interviews. Therefore, practice interviews took place in the weeks leading up to the interviews, this ensured the interviewer was familiar with the questions on the Interview
Question Guide (Appendix E) and allowed time to revise the questions if needed. These practice interviews were audio recorded, allowing the interviewer to critique and modify their interview techniques.

**Data Collection**

Data was collected during face-to-face interviews. This method was identified as the most appropriate as it allowed the interviewer to draw in on the participants’ emotions and expressions to develop a deeper understanding of their experiences. The interviews were undertaken at a location of the participants’ choice. One interview occurred at the participants’ home (Suzy), one interview at a local café (Laura), and two interviews in office space at Unitec’s Osteopathy clinic (Jordan and Amy). By allowing the participants to choose the location, all participants felt comfortable within the environment allowing the participants to be themselves leading to rich descriptive data.

The interviews ranged between 35 minutes and 50 minutes, providing a total of approximately 165 minutes of interview time. The interviews were initially transcribed by a professional transcription company (http://www.scribie.com), followed by checking the transcript against the original audio recording before sending the transcript to each participant for review. One participant requested minor amendments.

The interviews followed a semi structured interview style to allow the participants to tell their own story and what was important to them. The interview guide (Appendix E) provided questions to engage the interviewee in dialogue followed by probing questions (not on the interview guide) to explore further depending on their response. The interviewer noted down keywords the interviewee mentioned during the interview, this prompted the interviewer to come back to ideas without interrupting the flow of the dialogue. At the end of each interview the participants were asked if they had anything further they would like to add, two of whom did. Post each interview, the interviewer made an entry into their reflective journal (Appendix F). According to van Manen (1997) this helps the researcher to reduce bias by reflecting on
their first impressions and consider any assumptions thought throughout the interview process.

Data Analysis

The data analysis process for this research was a thematic analysis based on Braun & Clarke (2006) six phases design. A thematic analysis is a widely used method for analysing qualitative research, which helps to identify common patterns and themes across a data set through a flexible approach. Although its integrity is often argued, as breaking the text into words or short phrases may disrupt the coherence and contextuality of the data (Lapadat, 2012). However, following Braun & Clarke, (2006) six phases helps keep the rigour of the research.

Below is a more detailed explanation of each of the six phases as applied to this study.

Phase 1: Familiarising yourself with your data

The first stage of becoming familiar with the data starts in the interview process as the researcher starts to hear the emotion and expression that the interviewees portray. Initial thoughts directly after each interview were noted down. Once all interviews were completed and had been transcribed, the researcher read and re-read the transcripts, followed by listening to the audio recording along with the transcript to ensure the material was correct.

Phase 2: Generating Initial Codes

In this phase, data began to be organised in a systematic way. Opening coding was used. This refers to a coding process that allows for codes to be modified and developed throughout the process rather than pre-set codes (Braun & Clarke, 2006). Codes were generated using a software application designed for qualitative data processing (NVivo version 11, QSR International Pty Ltd, Melbourne, Australia). The codes were directly created using statements of subjects or common phrases found in the texts (Cope, 2010). Each sentence from all the transcripts was assigned a code or codes. To help with this process, NVivo was
used. NVivo sources where each piece of original text originated. This can be helpful to the researcher when checking the context of a statement. A master copy list of all the codes generated can be located in Appendix G.

**Phase 3: Searching for Themes**

On completion of coding the data, searching for overarching themes commenced. To aid this process, an electronic visual mind map was created using online software ([https://debategraph.org/Stream.aspx?nid=623305&vt=ngraph&dc=focus](https://debategraph.org/Stream.aspx?nid=623305&vt=ngraph&dc=focus)) (Baldwin & Price, n.d.). The basis of the map was created by adding each code generated by NVivo. To create connections between the codes, the researcher referred to the statements made by the participants to reason the relationship between each code. For example, is there a relation between code A (ache) and code B (acupuncture) and code A (ache) and code C (anxious), and in the other direction, code B (acupuncture) to code A (ache) and code B (acupuncture) to C (anxious). Once this was completed for all codes, the strength of each relation was considered. Consideration of strength of relationship was completed by ranking each relation on a scale from 1 to 9, with 1 being a weak relation and 9 being a strong relation. The ranking of each relation was assigned by the researcher after referring to the interview transcripts and number of times codes were referenced by the participants to gage the significance of each relation (see Appendix G). Strong relations were then shown closer together on the mind map which revealed ‘clusters’ or closely linked ideas (Appendix H). For direct relations between codes see Appendices I to P.

**Phase 4: Reviewing Themes**

This phase involved two steps, firstly reviewing, and secondly refining themes. The reviewing stage involves re-reading the data within each code to ensure it is significant and coherent enough to make up a theme. The refining stage involves a similar process, but in relation to the whole data set, to ensure accuracy of the potential themes as well as ensuring no data was missed in the earlier three phases. From this process, three themes where identified.
**Phase 5: Defining and Naming Themes**

This phase involved identifying the ‘true essence’ of each theme as well as identifying any subthemes and how they relate to the overarching themes. To do this it was necessary to further refine each theme to capture the most significant points from the data. This included identifying what was most interesting in the data, as well as any observations that were inconsistent with the current literature. At the end of this phase, each theme was clearly summarised in a few sentences.

**Phase 6: Producing the Final Report**

The final write-up of findings commenced once the themes were clearly defined. The write up was drafted with the intention of keeping true to the essence of the data and remain concise and coherent. The themes are presented along with extracts that support the phenomena being analysed, followed by analytical discussion.

**Summary**

By adhering to Braun & Clarkes six phase design a robust analysis of the data was achieved. These six phases ensured rigour was achieved throughout the research project by maintaining credibility, dependability, confirmability and transferability.
References


Reiners, G. (2012). Understanding the differences between Husserl’s (descriptive) and Heidegger’s (interpretive) phenomenological research. *Journal of Nursing & Care, 1*(5), 1–3. https://doi.org/10.4172/2167-1168.1000119


Chapter 4: Results

As previously indicated the aim of this study was to explore and describe the lived experience of New Zealand dancers who have experienced a dance related injury and their experience of osteopathy. An analysis of four dancers’ experiences who were interviewed in 2018, is presented. A brief background about each dancer in the study is provided, as well as an introduction of the essential themes found in the study. Three essential themes emerged from the interview data, ‘pushing through pain’, ‘deciding if and who’, and ‘experience of treatment modalities’. Under each essential theme, are sub-themes which help to further illuminate the essence of participants’ experiences. These themes can best be understood through participants’ narratives, presented in this chapter.

Participants

Suzy  

Suzy was a 21-year-old woman who started dancing at the age of four. She had a passion for a variety of dance genres including jazz, hip-hop, lyrical and contemporary and had spent the last eight years teaching students dance. Suzy has had several dance injuries, including shin splints, neck sprain and a “pinched nerve in her low back” which she is still not recovered from.

\[6\]

Pseudonyms were assigned to each participant to protect their identity
Laura

Laura was a 26-year-old woman and had been a professional dancer for seven years. She mainly worked in the dance industry doing commercial work, but also taught, spent time choreographing and had recently been involved in theatre work. Laura has had previous minor dance related injuries and had recently been suffering a serious shoulder injury, seeing her off work for two to three months. She suffered this injury during rehearsals for a show, where she slipped and dislocated her shoulder. Laura continued dancing through the rehearsal and all the shows following and is now in the rehabilitation process.

Jordan

Jordan started dancing at the age of three and at the time of the interview was in her mid 20’s. She had been a professional dancer for two years and has kept very busy as a freelancer, as well as teaching dance and choreographing. Jordan has had many injuries, with her most severe injury being a broken collarbone after landing on it while performing. Some of her other injuries include a broken toe and foot, and knee strains.

Amy

Amy was in her mid 20’s and started dancing at the age of four. As a young dancer she spent many years doing ballet and later found a love for contemporary dance. She works as a freelancer as well as teaching dance and yoga. Amy has had several injuries that have hindered her dancing including abductor muscle strains, back sprains, knee injuries, and bursitis.
Essential Themes

The essential themes that emerged from the combined interviews are presented in Table 1 and elaborated upon in subsequent text.

Table 1: Table of Essential Themes

<table>
<thead>
<tr>
<th>Essential Themes</th>
<th>Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pushing Through Pain</td>
<td>Growing up in the Dance Culture</td>
</tr>
<tr>
<td></td>
<td>Fear of Letting Everyone Down</td>
</tr>
<tr>
<td></td>
<td>Self-Managing</td>
</tr>
<tr>
<td>Deciding If and Who</td>
<td>Good vs Bad vs Familiar Pain</td>
</tr>
<tr>
<td></td>
<td>Quality of Pain</td>
</tr>
<tr>
<td></td>
<td>Money, Time, Convenience</td>
</tr>
<tr>
<td>Experience of Different Treatment Modalities</td>
<td>Treating the Body as a Whole</td>
</tr>
<tr>
<td></td>
<td>Power of Words</td>
</tr>
<tr>
<td></td>
<td>Peace of Mind</td>
</tr>
</tbody>
</table>

Pushing Through Pain

The essential theme of ‘Pushing Through Pain’ was evident across all the interviews. All four of the dancers told stories about dancing with an injury and continuing to dance irrespective of being in pain. The main reason why the dancers in this current study would continue to dance, despite pushing their bodies to the limit, led to a sub-theme of ‘Growing up in the Dance Culture’. This is about the strong determined mentality and high physical demand that
is placed upon them from a young age and through their career, and how this influences their decision-making. Another common reason for pushing through their pain was their concern that they would be letting other people down, which led to the sub-theme ‘Fear of Letting Others Down’. The last common reason why dancers would continue to dance in pain was due to their preference to self-manage their injury, as opposed to seeking professional help. This led to sub-theme three ‘Self-Managing’.

**Growing up in the Dance Culture**

All the participants in this study started dancing at a young age and grew up watching older dancers that they aspired to be. Two of the participants spoke about how growing up in the dance culture from a young age, started the mentality of pushing through pain because they did not yet understand the risks involved with continuing to dance.

"When I was younger I was like, "Oh, no, I'll be fine. I'll just push through it." But you get to that point where you actually have to realize that you can’t, and you have to get help for it.” Suzy

“I know I think I used to more ignore it when I was younger like, "oh no, its fine. I’ll be fine.” Now that I’m a little bit older, I’m like, “Nah, I need to understand everything now.” I have to know what’s going on with my body.” Laura

Both these participants stated that as they have grown up, their mentality of pushing through pain changed and would now prefer to seek help for an injury when needed. Interestingly, however, these participants continued to tell stories of when they recently pushed through pain.

“You just learn to push and give 100% and to go through it and only when it’s really serious you stop. That’s if you’re really invested in the dancing.” Suzy

“If I’m injured, I don’t get paid and I don’t do a show and I don’t get paid, so I have to find a way to get through it.” Laura
“Be aware of pain and sometimes suck it up and get over it. Your legs sore from jumping, that's nice. Now don’t ignore it, but find ways to mentally get through it, yeah.” Laura

The mentality amongst the dancers was that they were taught and perhaps culturally conditioned to never show signs of pain on their face or through their movements, as there is an expectation that each movement must be aesthetically pleasing and performed with grace and ease. As a result, they thought it was normal to push through pain and was part and parcel of the dance world.

“As dancers, you’re never meant to show that you’re in pain or that you’re in physical strain. If you’ve got a sprained ankle and no one else can perform your role that night, you just have to go on stage and somehow manage it.” Jordan

Fear of Letting Everyone Down

The ‘pushing through pain’ code was also closely associated with the fear of ‘letting everyone down’ code, and referred to peers, teachers, or students (see Appendix I). This was apparent in all four interviews.

“So, it kind of took it away from how I was necessarily feeling and it was more about the others and how they would be impacted if I chose either to not do it, or just half ass do it. So, it was more painful for me, but I would have rather done it than to have let other people down because of it.” Suzy

“I was with the group, and I was in a lot of pain, and then I had to just get up, and mark it, and I was just like, look, you're in pain, you're dealing with this, but you have to be here for the group right now, and you have to just trust it will work out.” Amy

Dancers were fearful about the deadlines they had to meet and finishing dances to make sure positions and spacing arrangements worked.
“Well I have to. It just became not even a thing that I would even question stopping and doing something because there's so many other things that goes into what you're actually doing like the people you would let down, or the people that are involved, or the other things that you just have to do and taking time out of doing that just sets you back quite a lot. And I would have preferred to not be behind on something.” Suzy

“If we try to have a conversation with them but everyone's got their own issues and sometimes you just need to do it because they need to get through it and need to finish this and see if it works.” Laura

Self-Managing

One of the main ways the participants pushed through pain was by self-managing their injuries. All four participants described methods of managing their pain and injuries themselves. Medication, self-massage, exercises and stretching were mentioned by all participants as common methods they would routinely use. Some participants also used strapping, heat, and ice regularly.

“I would try things at home like get a heat pack and put it on my back or sometimes stand in a hot shower and hope that it would heat up the area and then take those Voltaren tablets when it was really bad.” Suzy

Self-managing was accepted by participants and was closely associated with the ‘dance culture’ code and ‘pushing through pain’ code (see Appendix K). They knew the importance that it had and how beneficial it was to help keep them as fit and injury free as possible as they would rather help prevent and manage it themselves to avoid seeking professional help.

“It's really important, even when you're exhausted from a performance, to still make sure you stretch and roll out and do all that stuff so that you're kind of taking care of your body.” Jordan
When self-managing stopped being effective or the injury remained for too long, participants used this as a factor for beginning to think about seeking help.

“And definitely lots of anti-flamm and magnesium cream and ... yeah. I do what I can when I can. I sometimes need a bit of help though.” Laura

The relationship between dancers and pushing through pain seems to evolve from dancers growing up in an environment that is physically demanding. All dancers had experienced times when they pushed through pain because they did not want to let others around them down. One of their strategies to push through pain was to self-manage injuries themselves, however when this was insufficient, or the injury got worse, they would seek additional help. The next theme is about the main factors that dancers used to help decide to seek help or not, and if so, who to see.

**Deciding If and Who**

The essential theme of ‘Deciding If and Who’ refers to dancers deciding if they should seek treatment, and if so, who would they see. All four dancers were regularly faced with these decisions and spoke about several times when they were unsure if they should seek help. There were several common factors that the dancers took into consideration when deciding if they should seek help, one of the main factors leading to the first sub-theme ‘Good vs Bad vs Familiar Pain’. This refers to dancers determining the type of pain. The majority of the time dancers would seek help if the pain was believed to be ‘bad’ and would push through ‘good’ or ‘familiar’ pain. If they decided they would seek treatment, the next decision they were faced with was deciding who to see.

All dancers had experienced between four and eight different treatment modalities for dance related injuries. The most commonly sought therapists were osteopaths, physiotherapists and massage therapists. The characteristics and type of injury the dancer suffered from were one of the main factors that influenced where they would seek treatment from, leading to the second sub-theme ‘Quality of Pain’. Additional factors that dancers would take into
consideration led to the third sub-theme ‘Money, Time and Convenience’ which refers to the logistical aspects they consider when deciding if and who to see.

**Good vs Bad vs Familiar Pain**

All dancers were asked in the interview if they had ever experienced pain while dancing. Each dancer reported ‘yes’ and when asked what they view as pain, each dancer paused before answering. Three dancers categorised pain into ‘good’ and ‘bad’ pain and one dancer categorised into ‘injury’ and ‘safe’ pain.

“I think dancers have a really weird relationship with pain. I think there's the good pain and then there's the bad pain. There's the pain where you're like, oh, I'm doing something structurally which might cause damage to my structure and pull me out of the movement or debilitate me, and I know that pain. It's a joint-y pain. It’s a pain where you're like, oh, that's like twisting, or that's like splitting, or that's crushing, or something like that, and you know immediately stop from there, and you back off.”

Amy

The types of pain the dancers experienced helped inform them if they needed to seek treatment. Dancers described ‘good’ pain as ache, stitch, tight, stretch, fatigue, gripping and pushing. In the case of ‘bad’ pain participants described this as stabbing, joint, crushing, twisting, splitting or restricting movement. If they categorised their pain into the ‘bad’ category they would be more likely to seek help, however, if they determined it was a ‘good’ pain they would push through it.

“Yeah, there's definitely that shared understanding around pain, and a shared frustration around when you've got new pain that you've never felt before, and you're not sure what it is yet. You don't know whether you should sit out or whether you should keep going. That's that not knowing, which is actually more painful than the pain.” Amy
“Because I've accumulated so much knowledge through having so many injuries, and going to see so many people, and having to work through things, after a while you're like, oh, I get what this probably is. I probably don't need to see someone, because I know how to look after it from experience.” Suzy

Dancers would also categorise pain into a ‘familiar’ pain category. If they had experienced a similar pain before and they were able to get through it, they would put it in this category, and they would be unlikely to seek help.

**Quality of Pain**

When participants were asked what factors came into play when deciding which type of treatment to seek, all participants said that one factor was the type of injury they were suffering from. Although, all participants said that it depends on the type of injury they suffered, there were differing opinions when deciding what treatment they would seek. If participants felt their injury was caused from a specific tissue, for example, muscles, bone or ligament, this would help determine which professional to see. However, participants linked different structures to different practitioners.

“Just because I've seen results with the osteo, so I think if it was more a problem like that like my neck, or my back, or say my shoulder, some kind of joint or something I think I would go osteo. But if it was more muscle I think I would go physio.” Suzy

Suzy linked muscles with physiotherapists as a family member saw good results from seeing a physiotherapist for a sports-related muscular tear. She also believed physiotherapists were more sports-based than other forms of practitioners so would be able to relate to her as a dancer more.

“Another dancer and I hit into each other during a rehearsal, and my neck clicked out of alignment, and it was really painful. I had really bad headaches for the next day and couldn't really move my head further than this way. And I was like, "Okay, I need to see an osteopath, because I need to get it put back into alignment." That was my
train of thought was, it needs to be adjusted, so, therefore, I'll see an osteo. And then other things, which I'm like, "Oh, I'm just feeling really tight and sore," then I'll see a massage therapist, or get acupuncture to kind of release sort of the tension.” Jordan

Jordan had similar views to Suzy, when her injury was joint related, she would seek osteopathic treatment and for muscular tension, massage therapy and acupuncture. Interestingly, Jordan would see an osteopath when small issues had built up over time and if she felt her body needed to be ‘realigned’ and see a physiotherapist for any ‘significant’ injury.

“You kind of know what you need. If it's something that I think can heal by itself or it's not too much of an issue or maybe I take it easy for a week, then I'll go see an osteo to help realign the body and see what's going on. But if I know I’ve done something significant, probably go to get an ACC and get physio on it and speak to the physio and see what they say from there.” Laura

Money, Time and Convenience

All dancers spoke about how they had to think about their financial position when deciding if and who to see.

“Even though that's probably been the best choice for me, it's the constant money every single time you go has sometimes been a little bit difficult to justify getting treatment. I would much rather try and deal with it myself than to have to pay that money every single time; even though, especially with my neck, it did benefit me really well.” Suzy

Two of the dancers spoke about subsidies with ACC and the benefits the scheme provided. They were both more likely get help if they knew it would be covered by ACC as this means ACC will fund part of the treatment costs.
“Yeah, if I have the money for it. I mean sometimes it can be on ACC but it still means you have to pay. But if I know I've done something significant, probably go to get an ACC and get physio on it and speak to the physio and see what they say from there.”

Laura

As well as money playing a huge role, time and convenience were two other factors that the dancers took into consideration.

“As an artist, you don't really earn much money, so if it's not on ACC, it tends to be pretty expensive. And I think going more than once or twice can be quite unrealistic for people. And also finding time sometimes, where you're just kind of rushing around, it's like ... Yeah. Just kind of pragmatic. Things like that, really, I think are the main reason people don't do it. So they're like, "Oh, it's fine. Don't have time, money, whatever." And kind of brush it off.”

Jordan

“A lot of it has to do with convenience, and just time, and what's accessible to me, and what I can afford, because it's expensive.”

Amy

The decision that dancers faced in deciding whether to seek help is multifaceted. The first decision they made was what type of pain they were feeling and categorise it into either ‘good’ and ‘safe’ pain or ‘bad’ and ‘injury’ pain. If they determine it as bad or unfamiliar, they were more likely to seek help. The quality of pain was also a factor, for most dancers linking perceived muscle pain with physiotherapy, and perceived joint pain with osteopathy. Other factors include, their financial position and whether it would be covered by ACC. Lastly, decisions about whether or not to seek help were determined by it their busy schedules and as well as it being accessible and convenient for them.

**Experience of Different Treatment Modalities**

All the participants had experienced a range of different treatment modalities for their dance related injuries, such as physiotherapists (n=4), osteopaths (n=4), massage therapists (n=4),
acupuncturists (n=3), chiropractors (n=3), contact care practitioners\(^7\) (n=2) and GP’s (n=1). Three of the participants enjoyed the holistic approach and personalised treatment they received from their osteopaths and from their contact care practitioners, which they believed helped in their recovery, leading to the first sub-theme ‘Treating the Body as a Whole’. Participants also highlighted the importance of feeling listened to and understood by the health professional, as well as the way they communicated with the dancer leading to the second sub-theme ‘Power of Words’. The third sub-theme ‘Peace of Mind’ refers to the sense of ease the dancers received when seeking treatment.

**Treating the Body as a Whole**

The sub theme ‘treating the body as a whole’, refers to looking at all aspects of a person, including all musculoskeletal aspects, as well as mental, behavioural and emotional aspects that may be predisposing or maintaining factors of the underlying issue. Three of the dancers appreciated the holistic view that osteopaths had and found it effective in helping with their injuries. Laura and Amy both compared a physiotherapist’s approach to looking at their injuries to an osteopath’s approach and how these differed between the professionals.

“To me, they've always focused on one point. Like, "Oh, your shoulder is sore." And I'm like, "The body works together. It all kind of needs looking at." That's what I like about osteo is that he looked at the whole body and understands and that's why I like

---

\(^7\) Contact Care Flinchlock Release is a form of manual therapy. It was developed in Ngatea, New Zealand and has been evolving since 2006. Contact Care practitioners believe the body has its own self-defense mechanism which is stimulated when bone is impacted. Practitioners work to locate, release and unwind tensions (Contact Care Limited, 2006). Whilst Contact Care unregulated, compliance with the Health and Disability Commissioner Act is required.
this new guy, this person. They look at the whole body and the fact that they offer acupuncture as well.” Laura

“I guess taking into account the whole picture, so even if the injury is here, going like, okay, what are the different structural things going on in the body, the imbalances, the preferences of movement patterns and so on that could be contributing to why this thing has surfaced? I think just it was like, intellectually, really interesting for me, and less mechanical than say ... I mean, I've seen some really good physios, so I've actually had good experience with physios as well, but I've also seen physios, where they definitely see the body way more mechanically, and they go, okay, here's the problem. Just do this movement over and over again, and you'll be back, and it's like, oh, but it's not that simple, because I'm a dancer and I have to do all these crazy movements that we don't usually do.” Amy

One participant did not speak about her osteopath being holistic or treating the body as a whole, but spoke about her osteopath’s approach being similar to her physiotherapist’s approach. Although, Jordan did admit to not knowing much behind osteopathy framework and techniques.

“You come in, say what's going on, get a diagnosis, then they have a look, and then they suggest a treatment, and go from there. It felt really similar to seeing a physio. I felt like seeing an osteopath was pretty similar to seeing a physio. I just haven't seen an osteo for other types of injuries, because I've always kind of just associated that more with needing to get an adjustment. But I'm sure there's a lot more that osteopaths do that I don't know.” Jordan

For Amy, she was able to relate the holistic treatment approach of her osteopath to models and concepts she would routinely use in her dance.

“Yeah. I think the thing I liked about the osteopath was that the paradigm that they seem to work from seemed to be very applicable to dance, in the way that we look at
the body as a kind of whole thing that has to all move at once and has to figure itself out." Amy

Although two of the dancers reported not grasping all the reasoning behind osteopaths’ approach and decisions, they were able to relate to the concept that the body needs to be looked at and treated as one, as opposed to only the area of injury. The dancers apply a similar concept to their dancing as they are taught to use every inch of their body to help portray character and feeling.

**Power of Words**

The subtheme, ‘Power of Words’ refers to the impact that healthcare practitioners’ words had on the dancers in this current study. Dancers told stories of when patient-practitioner communication played an important role in the dancer’s recovery. When they felt listened to, reassured and understood, the dancer was more likely to engage in the treatment plan, including at home exercises. However, often the dancers felt frustrated due to feeling as though the practitioner did not fully understand and appreciate what impact dancing had on their body both physically and emotionally. Laura told a story of when a physiotherapist acknowledged her pain for the first time.

“And he's the first person that's been like, "Your pain is real even though we don't know what's happening. We're going to try and figure out and it's your healing, not just your shoulder. It's your whole healing." Which is quite nice.” Laura

The physiotherapist was also the first person to understand and recognise the demand of dancing and appreciate that they need to be treated uniquely.

“Also he saw the show. He's like, "There's a lot going on." And also a different demand with dancing in heels every night like leaping and turning and the stage is uneven at times and the circle has holes in it and you'll get your foot caught in it turning. Just all those little things you don't think about become a problem. Like "Ow,
my toe hurts." I'm just turning on my big toe. So it's nice that they understand. It's expected." Laura

Up until this point of reassurance from the physiotherapist Laura had constantly been told nothing was wrong.

“Really relieved because I had no idea what was going on and getting so frustrated. Even the specialist was like, "We don't even know." And my MRIs came back perfect. The x-ray came back perfect. They had an ultrasound. Is it bursitis? They're aware of that. But apart from anything else, they're like, "Your scans are perfect." It's like, "Well, it's not because it's still sore." Laura

Jordan had a similar experience when she suffered an injury and reported feeling let down by the way the health professional communicated with her.

“The worst thing was on the way in the ambulance. They were volunteers, and they didn't have the best ... approach. I was like, "Maybe they weren't very well trained. It's not maybe their fault." But they're like, "Oh, you're definitely not going to be dancing in your show that's in two weeks, and just all the stuff that they probably don't realise how much that affects you as a performer when you've worked so hard to get up to that point." Jordan

All these stories were told with emotion and the frustration could be heard through their voices. Positive communication and clear understanding of the demands of dance was a key skill that the dancers felt all health practitioners should have as it changed the whole experience and outcome of the treatment. The way health professionals communicated information had an impact on the dancers mentally and emotionally.

**Peace of Mind**

The sub-theme ‘Peace of Mind’ refers to how dancers gained a sense of empowerment when seeing a health practitioner for an injury resulting in being able
to rest their mind. They were able to make sense of their injury and having the information around exactly what was going and what they could do to help themselves allowed them to focus more on their own recovery.

“It's like, am I dealing with this the right way? How can I know? That's why I go in to see an osteo or physio is so reassuring, because then they can be like, well, this is what you've done, and this is how it relates to this in your structure, and then you have information which is powerful, rather than feeling lost. I think that's why I've always liked .... They make the pain go away with treatment and stuff, but also just giving you information to feel less chaotic... Yeah. It's kind of that point where I'm like, okay, even if it doesn't change something physically, psychologically, it'll make me feel better to go and have this done, to ... You know.” Amy

Laura had similar thoughts and would often do her own research around her injuries to help herself understand and reassure herself.

“But if it's an injury, then I want to know what's happened. I want to know what to do. I need to understand it all so that I know, so I feel a bit calmer about it because your body is your job... I do a little bit of studying myself. So I've actually go and learn things or I always ask questions. So I've learned a lot from my physio this time around because the shoulder injury is so complex.” Laura

Dancers considered a successful and effective treatment one that considered the whole body, not just the area of pain. They also appreciated a practitioner that understood and realised the physical strain dancing had on the body and how much dancing was a part of their lives. Communication, choice of words and reassurance was a key part in building a good rapport with the dancer.
Chapter 5: Discussion

This thesis set out to investigate New Zealand dancers’ attitudes and beliefs around dance-related injuries as well as their experience of osteopathy. Literature indicates that a large proportion of dancers do not seek professional help for their injuries, instead choosing to continue to dance (Dick & Brinson, 1996; Harrison & Ruddock-Hudson, 2017; McCabe, Ambegaonkar, Redding, & Wyon, 2014). The findings of the current study support this, with all four dancers having experienced times where they had pushed through pain despite their injury. Additionally, the dancers’ experience of osteopathy was mostly positive and is in line with previous research surrounding patient satisfaction with healthcare providers. While the aim of this study was to understand the above areas, thematic analyses revealed that dancers’ attitudes surrounding dance injuries and their decision-making process of whether to seek help is complex and multifactorial. This chapter will provide a discussion of these findings, as well as in relation to previous similar studies and will be concluded with the study’s strengths and limitations.

Pushing Through Pain

The idea of dancing with an injury and pushing through pain is embedded within the dance culture (McEwen & Young, 2011; Wainwright & Turner, 2004). A dancer’s identity is rooted in rehearsing and performing regularly and so a disruption to this can deeply affect the dancer’s sense of self (Rivera, Alexander, Nehrenz, & Fields, 2012), thus there is a hesitancy to admit pain or injury. These attitudes are comparable across wider sporting literature. It is common for athletes to have a high athletic identity as their lives, values, relationships and goals revolve around sport (Lockhart, 2010). Thomas and Rinatala (1989) reported athletes who were injured lost a sense of who they were and felt alienated from the world. These athletes were more likely to show signs of helplessness, increased pain and lowered self-esteem (Weinberg, Vernau, & Horn, 2013). Weinberg, Vernau and Horn (2013) reported it is possible athletic identity is an important factor regarding athletes playing in pain, athletes with higher athletic identity were more likely to continuing playing in pain at a recreational
and professional level. There may be benefit in assessing athletes of a variety of types with the use of scales such as, The Athletic Identity Measurement Scale (Proios, 2014) and the Risk of Pain and Injury Questionnaire (Walk & Wiersma, 2005) to help identify athletes early who may be at higher risk of pushing through pain.

Dancers in this study spoke about how the mentality of pushing through pain was reinforced from a young age and through their schooling. Among the dance culture, dancers are brought up admiring older dancers and acquire the expectation to perform without showing any sign of pain or physical strain on one’s face and through movement, driving dancers to push themselves further. This is a common theme across wider sports literature. However, other athletes may hide pain and discomfort for reasons, other than the desire of the performance being aesthetically pleasing. One of the main reasons may be to hide pain from coaches and teammates in order not to appear incapable. Young, White, and McTeer (2016) reported this is potentially a greater issue with male athletes as they do not want to be seen as weak. Being seen as ‘weak’ is commonly perceived as a threat to their sense of personal masculinity by these athletes (Young et al., 2016).

There does not appear to be a difference between males and females’ attitudes towards pain. Hughes and Coakley (1991) suggest that playing through pain is a key principle of ‘sports ethic’ which is engrained in athletes from a young age. A study by Malcom (2006) investigated ‘norms’ between traditional femininity and sports ethic in 250 adolescent girls playing recreational softball. Malcom (2006), reported that at the start of the season most girls did not have strong sports ethic. The coach used strategies on the girls to develop strong sports ethic. Strategies included; downplaying or ignoring minor injuries, joking and teasing the girls about their pain and encouraging the girls to laugh at one another’s pain. At the end of the season, most girls had transitioned from traditional femininity norms to a strong sports ethic. Unfortunately, this mentality of pushing through pain is unlikely to change for both men and women due to the competitive nature of the sporting world and the strong sense of sports ethics that is seemingly required to be a top athlete.
Dancers in the present study reported several reasons for pushing through pain and one of the main ones was their sense of obligation toward other dancers and colleagues. Similar findings were concluded in a review by Mainwaring, Krasnow and Kerr (2001) which showed that dancers would push through pain because they believed others expected it from them. Madrigal, Robbins, Gill and Wurst (2015) reported similar findings among female rugby players. Females over males would play through pain because they believed their personal contribution and encouragement was more helpful on the field than from the sideline. However, in a cross-sectional study by Jacobs et al. (2016) the top three reasons were: they believed they could cope with the pain, they did not believe it would affect their work; and they believed pain was an inherent part of dancing. This appears contrary to a study by Air, Grierson, Davenport and Krabak (2014) who determined that the main reason dancers would push through pain was the fear of not being understood by their doctor. Consequently, if dancers do not feel supported by peers and colleagues it is likely they will not reach out for the support they need, and these attitudes may continue within the dance culture.

**Dancers’ Pain Appraisal and Coping Strategies**

Upon reflection the dancers realised pushing through pain was a poor decision, however acknowledged they would likely continue to do so due to the competitive nature of the dance world. It is accepted by dancers that they are expected to endure and persist through pain (Schnell, Mayer, Diehl, Zipfel, & Thiel, 2014). To be able to do this safely and avoid chronic injuries and re-injury it is important they can differentiate between different types of pain. Doing so would allow them to trigger the appropriate coping strategy going forward. Anderson and Hanrahan (2008) found that dancers could not ascertain the difference between pain associated with performance and endurance and pain related to injury, which meant their decision-making process was the same and consequently resulted in the same coping strategies.

In this present study, dancers were able to differentiate between different types of pain and categorise appropriately into good pain, bad pain, or familiar pain. This is comparable with
Nemeth, Baeyer and Rocha's (2005) study that reported gymnasts had the understanding to determine when they needed to stop and when it was safe to keep going. It was also comparable with Thomas and Tarr's (2009) study which asked dancers to differentiate between good and bad pains. Although Thomas and Tarr (2009) state a key differentiating factor for dancers determining if their pain was good or bad was the quantity of pain rather than quality, meaning they may be at risk of mislabelling pain leading to chronic injuries. In this present study, dancers would use quantity as well as quality to help categorise their type of pain. This may indicate that the dancers were more likely to make the correct decision and choose an appropriate course of action. This would help reduce the risk of chronic injuries, re-injury and early retirement. The difference between this present study and Thomas and Tarr’s (2009) study may be due to differences in dance background, genres, level of dance and developments in education of dance over the last nine years.

The fact dancers in this study theoretically knew they should stop dancing with injuries but continued to do so, shows it may be difficult for dancers to moderate their own attitudes toward injury. This may be due to the dancers in this study being ‘independent’ dancers. This refers to artists who work as freelancers and whose work can be irregular and may require their involvement on several projects at one time. Roles can range from performance and choreography to dance administration (Farrer & Aujla, 2016). This may mean independent dancers are less likely to report injuries because they have an inconsistent support network around them as opposed to being signed on with a dance company that often have manual therapists on site. Further research is required to gain a better understanding around freelance dancers and their support and management of injuries.

Dancers would likely need to employ coping strategies to be able to continually dance with injuries. In this study, ignoring pain and re-interpreting pain was used by all dancers which are active coping strategies and are associated with positive physical and psychological outcomes (Sharma, Sandhu, & Shenoy, 2011). Conversely, passive coping strategies are associated with pain catastrophising, helplessness and reliance on others and are likely to result in negative outcomes such as hyperalgesia and depression (Snow-Turek, Norris, &
Tan, 1996). These active coping strategies are consistent with other female athletes in Ghazaie, Tajikzadeh, Sadeghi and Saatchi's (2015) study. Active coping strategies are a way for dancers to attempt to manage pain themselves. As it is common for dancers to feel pain, it is likely dancers learn from previous injuries which coping strategies are the most effective. Sharma et al. (2011) reported athletes who use active coping strategies are less likely to be affected by negative outcomes of an injury.

**Dancers’ Experience of Osteopathy**

Dancers in the present study had a largely positive experience of osteopathic treatment for their dance-related injuries. There were two key aspects of the consultations that dancers reported on being important for their overall experience. Firstly, the importance of communication involving, feeling listened to, understood was highlighted. Being informed on diagnosis and a management plan was also part of a positive experience of the consultation. This has been a consistent finding across dance satisfaction literature for seeing health professionals. In a recent survey of 211 American university level dancers, 55% of dancers were dissatisfied with healthcare providers (Wang & Russell, 2018). Of the dissatisfied dancers, 70% were due to the healthcare provider not understanding the dancer, 43% reported the provider gave unhelpful advice and 20% felt the provider did not care for them (Wang & Russell, 2018). Comparable findings have been reported across the general public’s satisfaction with healthcare providers (Holopainen, Piirainen, Heinonen, Karppinen & O’Sullivan, 2018; Batbaatar, Dorjdagva, Luvsannyam, Savino & Amenta, 2017).

For example, in a recent phenomenological study by Holopainen et al. (2018) patients with low back pain reported key skills healthcare providers should have. This included being attentive and understanding to build trust with the patient, followed by creating a patient centred approach to start a shift in responsibility of the low back pain from the professional to the patient. This helped the patient to take control and rely less on the healthcare professional. Similarly, elements of communication were reported to be important in a systematic review by Batbaatar et al. (2017). Patients would often recommend a doctor to others based on their
communication and listening skills rather than their competency, showing this is an important element to patients’ experiences. If the osteopath successfully implemented all these different aspects of communication this contributed largely to a positive experience and recovery. One osteopath in this study told a dancer ‘do not do anything’. It is unlikely the osteopath realised how harmful the dancer perceived this comment. Hills and Kitchen (2007) suggest that it is much better to explain what patients can do rather than cannot do. Conversely dancers’ experiences of osteopaths in Pollard-Smith and Thomson's (2016) study and physical therapists in Sabo's (2013) study were mostly positive, both concluding that if practitioners understood the physical demands of dance and were able to include dance terminology within the consultation, dancers could relate and understand the meaning behind their rehabilitation process and were more likely to be compliant.

Osteopaths and other health professionals need to be aware that, as well as physical injury, dancers suffer psychological distress associated with injuries. As dancers are unlikely to seek help for physical injuries, it is possible dancers will be even less likely to seek help for psychological issues. This may be due to the stigmatisation surrounding seeking help for mental health. In a study by Kaier, DeMarni-Cromer, Davis, Strunk and Johnson (2016), students participating in athletics had higher levels of perceived public stigma compared to non-athlete. This highlights the importance for osteopaths to understand the close connection between physical injury and mental health to then be able to recognise, assess and manage psychological issues. Unfortunately, studies suggest that New Zealand osteopaths lack knowledge and education in this area despite knowing that psychological issues are an important factor (Kovanur & Roy, 2015; Roy & Kovanur-Sampath, 2017). It also highlights the importance of building a positive patient-practitioner relationship via good communication as it is likely the dancer will be more open about psychological aspects if they are in a comfortable environment.

The second aspect that dancers in this study found beneficial, was the osteopath’s approach toward the treatment. Three dancers specifically appreciated their osteopath’s holistic approach toward their injury, as opposed to only focusing on the injured site. This was
believed to help get to the underlying issue, to decrease the risk of the injury re-occurring and help prevent further injuries. Dancers in this study reported this way of looking at the body was not only undertaken by osteopaths but also by physiotherapists and contact care practitioners. Perhaps adding to why some dancers specifically liked a holistic approach was because they likened it to principles used in dance, such as using the whole body, breath and rhythm to create movements. Therefore, they may have felt more at ease with the osteopathic approach.

**Strengths and Limitations**

There are several limitations in this study. Due to the limited scope of this thesis investigation, a small sample size was used which may be a limitation as it lacks transferability across literature. However, the intention of a descriptive phenomenological study aims to understand experiences of a phenomenon thus does not aim to be transferable.

A second limitation was self-selection bias related to all participants volunteering to be a part of this study. This may mean these participants had a particular interest in the area of dance injuries and osteopathy or have had an emotional experience that they wanted to share which is likely to have influenced the data. However, other recruitment methods, such as recruiting from a specific dance academy or company would have introduced other constraints. This was mitigated by self-selected participants, which resulted in participants with a variety of different backgrounds.

The primary researcher in this study was an osteopathy student and had danced for 14 years, which poses a risk of bias. Although the researcher was aware of this and discussed this risk with supervisors and learned how to conduct interviews to minimise preconceptions, this pre-understanding would have unavoidably influenced the interview and data analysis process. Furthermore, the researcher had discussions with supervisors during the data analysis stage to oppose and challenge possible pre-conceptions from the researcher.
A strength of this study is that it provides both retrospective and prospective view points from two participants adding valuable insight on how dancers’ views changed over time. However, the other two participants in this study described experiences from either a retrospective or prospective point of view. The participant describing information retrospectively may have had difficulty recalling details due to the time that had passed and they may have disregarded information because it was no longer relevant in their mind. The participants experiencing an injury at the time of the interview may have had heightened emotions due to their pain being current.
Chapter 6: Conclusions

This study provides further indication that dancers continue to suffer injuries and dance despite pain. It has reinforced some of the literature regarding dancers reasoning for not seeking professional help for dance-related injuries. The study has highlighted that perhaps dancers are beginning to be able to appraise pain appropriately and in turn employ suitable coping strategies for their pain. Further research involving more participants is recommended to evaluate dancers’ knowledge around pain appraisal and coping strategies.

This study appears to be the first that investigates New Zealand dancers’ experience of osteopathy. These experiences emphasised the importance of patient-practitioner communication and showed dancers appear to value a holistic treatment approach. Of importance to dancers was how well the health professional could relate and appreciate the demands of dance on the body and the role dance had in life. If health professionals can better understand this, it is likely that the practitioner-dancer relationship would be strengthened and lead to better outcomes. Further research from healthcare professionals’ perspectives is recommended to investigate the extent of awareness of these factors and the levels of confidence in managing and treating dancers.
References


Hills, R., & Kitchen, S. (2007). Satisfaction with outpatient physiotherapy: focus groups to


Roy, D. E., & Kovanur-Sampath, K. (2017). Barriers to identifying mood disorders in clients...


Appendices

Appendix A: Ethics Approval

March 28 2018

Dear Kaley Maddren,

Your file number for this application: 2018-1004
Title: Dancers experience of Osteopathy and their attitudes towards Dance Injuries

Your application for ethics approval has been reviewed by the Unitec Research Ethics Committee (UREC) and has been approved for the following period:

Start date: March 28 2018
Finish date: March 28 2019

Please note that:

1. The above dates must be referred to on the information AND consent forms given to all participants.

2. You must inform UREC, in advance, of any ethically-relevant deviation in the project. This may require additional approval.

You may now commence your research according to the protocol approved by UREC. We wish you every success with your project.

Yours sincerely,

Nigel Adams
Deputy Chair, UREC

cc: Asher Lewis
Appendix B: Participant Information Sheet

My name is Kaley Maddren. I am currently enrolled in the Master of Osteopathy degree in the Department of Osteopathy at Unitec New Zealand and seek your help in meeting the requirements of research for a Thesis course which forms a substantial part of this degree.

The aim of my project is to explore New Zealand dancers’ experiences of osteopathy and their decision-making process for seeking treatment for dance related injuries.

I would appreciate your participation in the following way: To participate in one face-to-face interview that will take approximately 60-90 minutes which will be audio recorded. The data will be analysed by myself and used to write up my thesis.

Neither you nor your organisation will be identified in the thesis. The results of the research activity will not be seen by any other person in your organisation without the prior agreement of everyone involved. You will be offered a copy of the transcript to comment on and edit before the thesis will be publicly available via the Unitec library. As a thank you for your participation a $20 petrol voucher will be given after data collection.

You are welcome to stop the interview at any point and if you experience any distress, please see links below.

https://www.talkingworks.co.nz/dir/ak.html
https://www.aucklandcitytherapy.co.nz/

I hope that you find this invitation to be of interest. If you have any queries about this research, you may contact either:
Researcher: Kaley Maddren - kaleymaddren@gmail.com mobile: 021 0221 1293
Primary supervisor: Alexandra Hart - ahart@unitec.ac.nz

UREC REGISTRATION NUMBER: 2018-1004

This study has been approved by the UNITEC Research Ethics Committee from March 28 2018 to March 28 2019. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix C: Participant Consent Form

Research Project Title: Dancers’ experience of osteopathy and their attitudes toward dance injuries

I have had the research project explained to me and I have read and understand the information sheet given to me.

I understand that I don’t have to be part of this research project should I chose not to participate and may withdraw at any time prior to the completion of the research project.

I understand that everything I say is confidential and none of the information I give will identify me and that the only persons who will know what I have said will be the researchers and their supervisor. I also understand that all the information that I give will be stored securely on a computer at Unitec for a period of 10 years.

I understand that my discussion with the researcher will be taped and transcribed.

I understand that I can see the finished research document.

I have had time to consider everything and I give my consent to be a part of this project.

Participant Name: ………………………………………………………………………………………………………

Participant Signature: …………………………. Date: ……………………………

Project Researcher: …………………………….. Date: ……………………………

UREC REGISTRATION NUMBER: 2018-1004
This study has been approved by the UNITEC Research Ethics Committee from 28th March 2018 to 28th March 2019. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix D: Confidentiality Agreement

Researcher’s Confidentiality Agreement

**Research Title:** Dancers’ experience of osteopathy and their attitudes towards dance injuries

**Researcher/s Name:** Kaley Maddren

**Address:** 26 Elliot Street, Riverhead, Auckland

**Phone number:** 02102211293

**Email:** kaleymaddren@gmail.com

I ________________________________ (full name - please print) Agree to treat in absolute confidence all information that I become aware of in the course of transcribing the interviews or other material connected with the above research topic. I agree to respect the privacy of the individuals mentioned in the interviews that I am transcribing. I will not pass on in any form information regarding those interviews to any person or institution. On completion of transcription I will not retain or copy any information involving the above project.

I am aware that I can be held legally liable for any breach of this confidentiality agreement, and for any harm incurred by individuals if we disclose identifiable information contained in the audiotapes and/or files to which we will have access.

Signature: ………………………………………………………… Date:

……………………………………

**UREC REGISTRATION NUMBER:** 2018-1004

This study has been approved by the UNITEC Research Ethics Committee from 28th March 2018 to 28th March 2019. If you have any complaints or reservations about the ethical conduct of this research, you may contact the Committee through the UREC Secretary (ph: 09 815-4321 ext 8551). Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.
Appendix E: Interview Question Guide

Please describe your dance background

Can you please tell me about any injuries you have suffered as a result of dance?

- How did this impact your dancing/life?
- Did you seek treatment for this injury?
- How did you decide to seek treatment?

Do you or have you experienced pain when you have been dancing?

- What do you view as pain?
- Do you discuss pain with your peers?
- Do you think people outside of the dance profession understand what you go through?

Have you always sought treatment for dance injuries?

- What influences your decision to seek or not to seek treatment when injured?
- What kind of practitioner treated you?
- How did you decide where to seek treatment from?

What has been your experience of osteopathic treatment for dance injuries?

- Has osteopathy helped you/or not?
- Was your experience of osteopathic care similar or different to other kinds of care?
- What is your first preference for treatment?
Appendix F: Reflective Journal Excerpt

A reflective journal is an essential part of phenomenological research. It helps improve the rigour of the study by remaining true to the essence of the data. An entry into a reflective journal was written directly after each interview. The following is an excerpt from interview four.

12\textsuperscript{th} August 2018

“she had a love/hate relationship with dance when she first started university. She was so caught up in the dance world that it started hurting her not only physically from injuries but also mentally and emotionally from an eating disorder. She showed strength to stop dancing and remove herself from the dance culture when she realised how much harm it was doing. When she went back to dance a few years later, she enjoyed it more than ever and seemed as though her situation gave her a new outlook.”

The above excerpt shows an overview of some of the interviewers first impressions, thoughts and feelings minutes after the interview. This process helped the interviewer reflective and process emotional stories told by the interviewees, as well as assist during data analysis.
Appendix G: Master Copy of Codes

**Source:** number of transcripts referenced within each code

**Reference:** number of word/short phrases within each code from the interview transcripts

<table>
<thead>
<tr>
<th>Codes</th>
<th>Sources</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ache</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Anxious</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Bad Pain</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Chiropractor</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Communication</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Constant</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Contact Care</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Convenience</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Cortisone</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Craniosacral Therapy</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Dance Culture</td>
<td>4</td>
<td>14</td>
</tr>
<tr>
<td>Dance Genre</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Dance Injuries</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Dance Teacher</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Demands of Dancing</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Eating Disorder</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Embodiment</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Exercises</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>Expectations</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Experience</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Fear</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Female Practitioner</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Frustrating</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Get Help</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Good Pain</td>
<td>4</td>
<td>7</td>
</tr>
<tr>
<td>High Pain Tolerance</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Holistic</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Imaging</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Joint Pain</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Learnt</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Let Everyone Down</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Massage</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Term</td>
<td>Frequency</td>
<td>Rank</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------</td>
<td>------</td>
</tr>
<tr>
<td>Mental Health</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Mind Body Awareness</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Money</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Muscle Pain</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Nerve Pain</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Niggly</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ongoing</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Osteopath</td>
<td>4</td>
<td>38</td>
</tr>
<tr>
<td>Pain</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Pain Killers</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Personalised Treatment</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>Professional</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Push Through</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>Psychological</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Quite Serious</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Reassuring</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Resting</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Self-Manage</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Set an Example</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Sharp Pain</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Sit Out</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Stops Me</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>Time</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>Uncomfortable</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Understanding</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>
Appendix H: Full Mind-Map on DebateGraph
Appendix I: Push Through Pain Code
Appendix J: Letting Everyone Down Code
Appendix K: Self-Managing Code
Appendix L: ‘Good Pain’ Code
Appendix M: ‘Bad Pain’ Code
Appendix N: ‘Osteopath’ Code
Appendix O: ‘Communication’ Code
Appendix P: ‘Holistic’ Code
Full name of author: Kaley Maddren

ORCID number (Optional): 

Full title of thesis/dissertation/research project ('the work'):
Dancers' experience of osteopathy and their attitudes towards dance injuries

Practice Pathway: Community studies
Degree: Master of Osteopathy
Year of presentation: 2019

Principal Supervisor: Sylvia Hoch
Associate Supervisor: Robert Green

Permission to make open access
I agree to a digital copy of my final thesis/work being uploaded to the Unitec institutional repository and being made viewable worldwide.

Copyright Rights:
Unless otherwise stated this work is protected by copyright with all rights reserved.
I provide this copy in the expectation that due acknowledgement of its use is made.

AND

Copyright Compliance:
I confirm that I either used no substantial portions of third party copyright material, including charts, diagrams, graphs, photographs or maps in my thesis/work or I have obtained permission for such material to be made accessible worldwide via the Internet.

Signature of author: [Signature]
Date: 21/03/19