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Is Dance Good for the Body or Not? : An Examination of Body Awareness and Injury Prevention for Specialised Tertiary Dance Students

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**'Is dance good for the body or not?': An
examination of body awareness and injury
prevention for specialised tertiary dance students.**

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(WAAPA)**

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ABSTRACT

The purpose of this research paper is to discover more about tertiary dance and the effects that dance has on the body. I will discuss the pressures that dance places on the body, looking specifically at the years during full time study as a tertiary student. I will address dance issues such as common injuries, the reasons these injuries occur, prevention strategies, the effect that dance has on the mind and training conditions generally. Research into tertiary dance education programs, dance injuries, injury prevention, and general dance patterns will be supported by survey responses to come to some conclusions about the question 'Is dance good for the body, or not?'

Dance is a challenging, aesthetically pleasing, innovative art form, where the participants - the dancers - are consistently aiming for the best possible individual appearance, performance quality, technique, and unique style. This means that the risk of pushing a fraction further than what is physically possible and working the body too hard is elevated. The danger of injury is always apparent in the back of a dancers' mind. As Orthopaedic Surgeon Reza Salleh said to me during an injury rehabilitation session, 'Injuries are a dancer's occupational hazard.'

The first and most obvious finding from the surveys conducted as part of this research and my study of the participants is that students who are enrolled or have graduated from a tertiary dance program strongly believe that they have learnt more about their bodies and are better prepared for injury prevention and maintenance due to their tertiary studies.

The injury rate was different for each survey participant however the age where most injuries occurred was between the ages of 18 to 22. The increased amount of pressure that the dancer experiences when taking this step into full-time study can have several effects on the body. It is a time of vulnerability and change, and the dancer will take part in many activities that they have potentially never practiced before, leaving them feeling unsafe and nervous in some aspects of class or rehearsal activity.

From this study I have discovered that the time when students are studying full-time at a tertiary education program is when they are exposed to many new physical practices, mostly unfamiliar. It is these years that injury occurrences increased due to heavy scheduling, exposure to new and difficult genres of techniques and skills, and the drive to reach full potential before the last day of the final year, as the gates open to the professional world and the comfort of the institution is left behind.

Declaration:

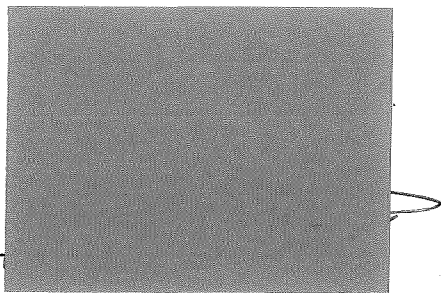
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'Is dance good for the body or not?': An examination of body awareness and injury prevention for specialised tertiary dance students.

A Thesis by Kylie Murray

'Professional dance is not just something that you do; in a very deep sense it is who you are.' Paul Taylor once said that "Dance is an international language that all people can appreciate and that all societies have some form of dance as a means of communication"' (Paul Taylor, <http://2nilssons.com/dancequotes.htm>, 26/05/2008).

Dance is enjoyed worldwide as both a professional career and casual activity. As an art form, hobby, exercise regime, course of study, or therapeutic treatment dance is becoming more popular around the world for the purposes of enjoyment, but especially for maintaining high fitness levels and healthy bodies. The wonderful thing about dance is that anyone and everyone has the ability to understand and enjoy its beauty, and its many concepts and stories. You do not have to be an artist to be an audience member and be stimulated by the physical skills exhibited at a dance performance.

As one of the most ancient forms of art, dance is described as 'the art where the artist is the work itself' (Scialom, Goncalves, and Padovani- 2006, pg 29).

This is why the body is essential to the existence of dancing, and for dancers their bodies are their way of life. 'Through movements, experiences are deepened and communication is performed' (Scialom, Goncalves, and Padovani- 2006, pg 29).

1.1 What Am I Researching?

The purpose of this research paper is to discover more about tertiary dance and the effects that dance has on the body. I will discuss the pressures that dance places on the body, looking specifically at the years during full time study as a tertiary student. I will address dance issues such as common injuries, the reasons these injuries occur, prevention strategies, the effect that dance has on the mind and training conditions generally.

Research into tertiary dance education programs, dance injuries, injury prevention, and

general dance patterns will be supported by survey responses to come to some conclusions about the question 'Is dance good for the body, or not?'

The initial motivation behind this paper was to discover more about dance injuries across all ages of the participants involved in the study (16-38years). My interest was centred on whether attending a specialised tertiary dance program that educates dancers in all areas and prepares them for a professional career in dance, increases the risk of injury due to the heavy schedules and constant pressure, or whether it in fact decreases the percentage of injuries because of the students gaining a greater awareness of their own bodies boundaries and limitations.

CHAPTER 2

2.1- Literature Review

When researching contemporary dance it is difficult to come across a meaning of what contemporary dance actually is. Blackfish Arts Academy in the UK describe it well by stating:

‘Contemporary Dance describes a range of techniques and styles used in classes, workshops and dance choreography. Contemporary dance was developed in the early 20th century as a reaction against the rigid techniques of ballet. Pioneers such as Isadora Duncan and Martha Graham searched for ease of movement using the body's natural lines and energy, allowing a greater range and fluidity of movement than conventional dance techniques.

Contemporary dance is characterised by its versatility: contemporary can be danced to almost any style of music, or united with other dance forms to create new styles of movement. Contemporary seeks to work with the natural alignment of the body, and is therefore safe and accessible for beginners. At the same time, the ease of movement promoted by contemporary dance technique allows experienced dancers to push new boundaries of body movement’ (Blackfish Arts Academy, 2006).

Contemporary dance broke away from a formal tradition to pioneer an experimental, free form way of moving across the stage. (Chiff- 2008, pg 1). Contemporary dance is a more relaxed, free style of dance in which dancers and choreographers use emotions, moods, current events, or religion (for example) to design their own steps, in contrast to classical ballet's structured system of steps. It has a deliberate use of gravity and release, completely the opposite to ballet, which strives to be light and airy, creating illusions. Modern dance is approximately 100 years old. (Dunning, 1991- article).

The quest for this ease of movement has been replaced over the last decade or so by a much more virtuosic style. The choreographers and dance teachers who began the development of contemporary dance passed their skills in the technique on to other groups of performers who then developed their own style on top of the basics they already had.

This process has been continued throughout the duration of the contemporary technique bringing us to the countless numbers of stylistic approaches for the contemporary genre we have today.

As a result of the freedom of the style, contemporary dance invites people of all ages to express themselves however they like and allows for growth and individuality regardless of the level.

Professional dance requires an intense practice that demands a high level of physicality, strength, and concentration at all times. With such an intense activity, the body is exposed to a number of strains and pressures that regular human beings don't experience. With the high impact dance exerts on a dancer's body there are some risk factors that linger overhead at all times, particularly that of becoming injured and having to take time out from practice and rehearsals. This exposure to injury makes it of enormous importance that the dancer maintains a healthy conditioned body at all times, protecting him or herself, as best he/she can, from injury. It is when the dancer is not in the appropriate condition to train or perform, that things can turn bad and injuries can occur.

Stress, negative life events and mood states, sleep disturbances, trait anxiety, and the use of emotion-focused coping strategies such as alcohol and drug use are all associated with dance injuries. (Rip, Fortin, and Vallerand, 2006, pg. 14). While most people suffer from one or more of these problems during their life, when dancers experience any one of them and attempt to perform or practice, their chance of injury is dramatically increased. While the dancer's head is in another space all the thinking that should be happening isn't, and accidents are more likely to happen during these down periods. Combining the physical demands of rehearsal or performance with the mental straining or fatigue that occurs puts the dancer at a great risk for injury.

Physically demanding in all characteristics, dance requires its participants to be in top condition in order to maintain a healthy, uninjured, mind and body. Dancers are often perceived as independent, hard working, perfectionists, who rarely complain about the hidden hardships of their chosen career path. The downsides of being a dancer occur when injuries, eating disorders, unemployment and other forms of occupational stress take their toll. Most dancers start training at a young age and continue learning and feeding their minds with knowledge during their teen years and on through their twenties, gaining

experience, maturity and strength in order to maintain a stable professional career when that time comes. As the professional dance industry is not too vast in size, it can be a difficult process to move from being a highly trained performing artist to being the real deal professional. This is why many performing arts academies and universities are introducing specifically designed performance-based programs and courses to allow dancers to bridge the gap from student to career professional.

The Perth based LINK Dance Company is the Honours year at the Western Australian Academy of the Performing Arts. It builds on the Academy's existing Bachelor of Arts (Dance) program and invites applications students from other undergraduate courses from around the country. This one-year full time study program enables outstanding students to learn and apply practical, theoretical and research skills in either or both creative (choreographic or other media) and scholarly areas of dance. (Courses & Admissions: Dance, Western Australian Academy of the Performing Arts, at Edith Cowan University, http://www.waapa.ecu.edu.au/courses/courses_view.php?rec_id=0000000032, accessed 29/09/2008). A similarly structured course is the Transitions Dance Company located at Laban's new lottery-funded building at Deptford Creekside, London. Laban is one of Europe's leading institutions for dance artist training. Transitions Dance Company brings together the world's most exciting choreographers with exceptional young dancers. The Company is respected for the consistent quality of its choreography, production and performers. (Transitions Dance Company, Laban, http://www.laban.org/transitions_dance_company.phtml, accessed 15/12/2008). Quoted on the Laban homepage, it states that 'At Laban we believe that contemporary dance has a vital part to play in everyone's lives. Our unique mix of energy and creativity advances the dance art form and fuels the dance world, connecting people to the exhilarating possibilities that dance offers'. These courses offer their students the best training and preparation available and allow their students to experiment with their own individual style and explore new and different genres.

To give a picture of how and where tertiary dance was initiated, a short analysis of the beginning of modern, or contemporary, dance in the USA by Fiona Kirk who writes for the journal 'Dance Teacher' is included below:

'In the early 20th century the idea of pushing dance into educational institutions began. A university graduate from the United States of America reluctantly agreed to start a dance program at the university where she'd graduated - University of

Wisconsin, Madison. The woman was Margaret H'Doubler, and although she was not a dancer, she became excited about the idea of a new way of exploring movement, that could potentially assist with her love of sports. (Kirk 2007, pg 58). The dance program she established at the University of Wisconsin became the first of its kind in the United States and was officially founded in 1926.

H'Doubler began her classes on the floor so that her students could study the way the body moved without struggling to balance against the pull of gravity. This was borrowed from an innovative idea she had observed in New York during her study of dance, where a music teacher had her students lie on the floor to play.

As a former athlete, H'Doubler viewed the body as an instrument, one that could be developed through discovery and exploration. She often used a human skeleton as a teaching tool. She approached dance as a means of expression, not a theatrical art, providing the field of dance with an intellectual element that had never before been considered, embodied by her phrase "the thinking dancer."

Although today's contemporary dance techniques did not come into play directly from this source, it is a good example of how contemporary dance has been founded around the world. Often not planned, groups gradually build up and techniques are developed, introducing more dancers into the professional world of their art form. It was H'Doubler's students, who carried on the contemporary practice and developed the stepping-stones to the many techniques that are around today.'

Australia's very first degree course was established and directed by Shirley McKechnie, in 1975, at the Australian tertiary institution at Rusden College, now known as Deakin University. McKechnie has played a significant role in the development of tertiary dance in Australia, along with many other avenues of the art form. (Lumb, 2008).

For the past three decades, dance education in Australia has been moving away from the government's insistence that dance be a subordinate part of physical education. (Brinson, 1991 pg. 55-57). So it is safe to say that over the last few decades, dance has been further introduced into our schools and university educational programs as a visual and creative stimulation for students' benefits under the banner of arts. In some instances, dance is

used for rehabilitation and calming treatments and in many cases is being looked at more like a career than a hobby. The idea of introducing dance into schools and universities is to teach the educational value of the art form, looking closely into dance for its contributions to the individual, society, and for the culture as a whole. At the secondary education level, dance brings forward a broader range of subjects, and allows the students to engage more in the creative arts, building self-confidence, coordination, and other life skills.

At a university level, specialised training and development courses have emerged where dance is studied as a whole course (Graduate Diploma of the Arts or a Bachelor of the Arts - DANCE) rather than just as one subject, or elective unit. It can however be studied as an extra unit that assists with the major course of study. Studying dance at a tertiary level provides insight into dance as an art form and the detailed knowledge needed to pursue a professional career. It addresses similar areas of study to the current secondary courses in Australia, but delves further into specific areas of interest and offers a broader range of units. The courses develop skills in communication, critical thinking, research and analysis and demand that students are creatively productive in whatever area of interest they pursue. (Bachelor of Arts (Dance): Course Information, Edith Cowan University, accessed 29/10/2008).

Dance courses in universities and academies around Australia encourage students to pursue individual goals as dance artists, choreographers, teachers, or researchers. (Bachelor of Arts (Dance): Course Information, 2008). The courses encompass a range of dance genres and allied arts subjects to allow individuals to follow their passion and to discover new interests or build on those they already have. The gruelling schedules and intensity of these courses is deliberate in order to prepare for the demands and challenges of careers in dance.

Some of the units within the course that are available to the students include the more obvious subjects such as performance and classical ballet and/or contemporary technique, and then the allied arts units that include dance history, anatomy, kinesiology, alignment, circus skills, Indian, aerial, yoga, Pilates, arts management, and arts history to name a select few. Each one of these units is developing the student's knowledge in the industry and broadening their skills and therefore their opportunities later in their career. Each unit is interconnected in some way or form and assists with the student's chosen units of study.

The question is, 'Does attending a specialised tertiary dance program increase body awareness, limitations, and ability, therefore decreasing injury occurrences, or does it lead to more injury incidents?'

Attending a tertiary dance program allows you to train in your specialised areas of interest with highly qualified and experienced teachers and mentors. It allows you to gain a greater understanding of dance technique, personal career aspirations, physical and mental limitations, and personal boundaries. But does it really teach you all these things?

The pressure a regular 'work-place' body is put under on a day-to-day basis is far less than what a professional or student dancer would undertake in the same period of time. This is due to a number of different reasons and varies largely from dancer to dancer. As one of the highest forms of physical activity, dance requires its participants to maintain a consistently high level of physical and mental strength. It is the specific movement vocabulary of both classical ballet and contemporary dance that puts this uncommon pressure on dancers' bodies, increasing their chances of acquiring an injury, especially in the lower extremities.

There are a group of injuries that fall under 'acute injuries', where uncommon pressure on the joints abruptly causes injuries to the body, usually on impact, and another group of 'chronic injuries', where there is a gradual overloading pressure to the joints and muscles of the body as a result of continual repetition of incorrect or unsafe techniques and alignment practice. It is this gradual build up on a specific area of the body that causes these acute injuries.

Dance artists are always trying to overcome the body's restrictions, despite the need to respect body limits, which are unique to each individual. This is one of the most common reasons why injuries occur, and can be caused by a number of external sources, as well as personal beliefs. A similar point was made in the article 'Dance: a suitable form of exercise?' which offers a physiological appraisal stating that many dancers' physical problems result in injuries due to attempts of the individual, who aims at technical perfection, to overcome the body's limits within a short period of time. (Pepper, 1984, pg. 883-888).

Dance is a physical activity that is great for keeping fit and healthy, while noting that this supports the notion that 'Dance *is* good for the body', there are many reasons that dance can be unsafe for people of all skill levels. As the workload is so high and specific, the

pressure the body feels during and after a training session, class, or rehearsal is high, which is why it is extremely important to prepare the body before class with a warm-up, and settle it down to its normal levels after class by giving it a decent cool down and stretch. This would be similar if you were going for a run in the park, or a ride around the lake.

However, comparing dance with these activities is not quite right, as the specific load for each activity is completely different. In cycling or the running, you have a continual repetition of the circular action, always using the same joints and muscle groups, whereas in dance the load is continuously distributed throughout different joints in the upper and lower body. As the movement is varied and changes from one session (or moment) to the next, the load may become too much or may be performed incorrectly thus the risk of injury increases dramatically and the dancer can potentially severely injure themselves within the working joint and/or structure.

These injuries can initially be missed as they feel like the result of the high intensity work out just performed. Delayed onset muscle soreness is the correct term used for this sensation and is the pain felt 24 to 48 hours, particularly after a new exercise program, a change in sports, or a dramatic increase in the duration or intensity of physical exercise.

Little information is available about the frequency and type of injuries that occur in modern dancers at a university level. Modern techniques present varied physical demands to dancers and injuries within the academic setting can be particularly detrimental, both academically and artistically. (Weigert, June 2007, pg 52). Aside from the physical devastation an injury can create, injuries can also take their toll on the emotional state of the dancer. When an injury occurs the initial thought a student dancer faces is 'what am I going to do about my dancing?' thinking only of their technique and strength. Caught up in the moment, an injured dancer often forgets the bigger picture and the impact the injury will have not just on their dancing, but over the course of the recovery period.

The list of potential injuries that any one dancer could sustain is vast, and could lead to an entirely separate discussion point in itself. The injuries that are most often encountered are typically, but not restricted to, the lower extremities of the body, the feet, ankles, and knees, along with lower back injuries. The main injuries recorded in some of the articles

included in my research (Storm, Bronner, Martin, and Hamilton) together with the survey results are,

- **Strains, sprains.** A sprain is where the ligament is stretched or torn and occurs mainly when the joint is forced out of alignment, it's normal position, in either a fall or bump type action. The giveaway signs that a sprain has occurred are pain, inflammation, bruising, swelling, and inability to move the joint. A strain however is when the muscle or tendon is damaged, either torn, pulled, or twisted. This commonly occurs if the muscle or tendon is over-stretched or over-contracted. (Eustice, 2006). Depending on the severity of the sprain or strain, these injuries can often have a longer recovery than a minor stress fracture.
- **Stress fractures.** Repetitive loading of bone through ground reaction force or continuous traction by soft tissues may result in the mechanical failure and development of a stress injury (Ritchard, 2007). Other causes of a stress fracture are biomechanical abnormalities, muscle fatigue, over use, technical faults, and the condition of the practice surface. Stress fractures require a high amount of attention and care to ensure that return to training activities is possible and to prevent any re-occurrences from happening.
- **Bunions, hallux valgus, stiffness of the tarsals, and hammer toes.** Deformities in the feet are sometimes the cause of stress related injuries, due to instability and incorrect alignment, raised pressure, and incorrect foot placement.
- **Back injuries.** Due to the extreme ranges of motion and artistic demands placed on the back, muscle strains and lumbar sprains are the most common causes of low back pain, similarly to regular sprains and strains they occur when the muscle fibres are abnormally stretched or torn. Muscle tearing can lead to guarding and spasm of the back musculature to protect the area from further harm. Dancers will typically experience pain exclusively in the low back area due to the load that is placed on the joints in many aspects of a technique class.
- **Foot injuries.** There are many different types of injuries that a dancer can suffer in the foot region, the most common acute injury being the 'Dancer's fracture', occurring along the 5th metatarsal (Injuries, 2008). The most common method of injury is landing from a jump on an inverted (turned-in) foot, with the individual feeling pain and swelling immediately and the ability to walk potential lost. Another major foot injury that dancers often suffer from is Plantar Fasciitis, which

is an overuse injury affecting the sole of the foot. As the fascia, the band of tissue on the sole of your foot, becomes inflamed and painful, there is a strong chance that Plantar Fasciitis has developed in the foot. Dancers will often experience an increase in pain after class, or following lengthy weight bearing activities. Plantar fascia pain can also be influenced by dancing on a hard surface or a non-sprung floor (Injuries, 2008).

- **Ankle injuries.** Achilles tendinitis can occur in any of the tendons within the ankle however it most commonly occurs in the body's longest tendon, the Achilles tendon. This tendon is responsible for plantar flexion of the foot to achieve relevé (standing on your tip toes), and performing jumps. Due to these movements within the dancer's vocabulary, dancers are more prone to ankle injuries and very few dancers manage to perform without ever spraining an ankle. According to Dr. William Hamilton, orthopaedic consultant to the New York City Ballet, American Ballet Theatre, and the School of American Ballet, ankle sprains are the most common acute injury in dance. Less well-known is that they also tend to happen more than once. (Hamilton, 2005, pg. 64).
- **Knee injuries.** The knee is vulnerable to injuries that range from mild to severe due to its limited range of motion as a hinge joint. It has a small amount of rotation as well as circular movement, and the main knee injuries suffered include meniscal or cartilage tears. Apart from the usual wearing out of cartilage from loading the joint, Dr. Douglas Padgett, who practices at the Hip and Knee Center at the Hospital for Special Surgery in New York, believes that some of these knee problems may occur in dancers with limited hip rotation. Twisting of the knees to improve turnout may place the dancer at risk for meniscal damage. (Hamilton, 2005, pg. 64).

Inadequate treatment of injuries and lack of attention to the potential differences of technical demands and physical abilities can have significant implications for a dance career. The difference between the technical demands and physical ability of a dancer is one of the highest and most common causes of injury in all styles and levels of dance. At the university level, these implications may include limited participation in class and therefore diminished growth as an artist and technician, as well as missed opportunities to perform and work with artists in residence.

Minor problems, if not addressed, can progress to more major problems, and potentially to career-threatening injuries. Though these issues apply to all dance populations, they can be particularly critical in a university setting, where the time for achieving artistic and academic goals is limited due to the academic calendar. Left alone, any injury can leave permanent damage to the dancer's body and create problems many years on. Common side effects of dance injuries that only develop later in their career and can affect an individual's later years in life are osteoarthritis, bone and muscular degeneration, and incorrect posture.

People's risk of developing these conditions increases with age and body weight and is mainly associated with certain occupations in which particular joints are subjected to repeated heavy use. Dancers are a perfect example of the type of people who could potentially suffer from osteoarthritis at a young age.

Modern dance can be more difficult to study than ballet for several reasons. Whereas specific modern techniques, such as Graham and Horton, are very structured, many modern dance teachers 'borrow' from more than one style and incorporate such variations into their own choreography. Training includes more improvisation and emphasis on new ways of moving, and thus the physical demands of training and performing are much more varied, which may affect injury risk and applicability more so than to other populations. It also has a different aesthetic and generally includes a wider range of body types.

Because these injuries may have detrimental effects on current artistic and academic progress as well as future health and disability, injury prevention is an important goal. Although screening programs are widely promoted as a means for detecting potential musculoskeletal problems and preventing injury, there is little evidence in the literature that supports their effectiveness. Other ways to prevent injuries from occurring are to ensure that class technique is applied correctly and executed to the best of your capability, wearing correctly fitted foot wear- if applicable, creating a strong, able body that is well conditioned and ready for all aspects of physicality, and always thinking about yourself and all that you do, putting yourself first is the most important job.

It is sometimes a challenge to treat dance-related injuries as many healthcare providers aren't familiar with the demands of dance training and may not fully appreciate the particular loads that dance places on the joints of the lower extremities. As it is important

for injuries to recover in the quickest amount of time possible, it is more important to seek medical help from someone who knows the stresses of being a dancer, though this may not always be possible.

Injuries can be sustained as a result of other pressures, such as the ongoing pressure from the educator/teacher pushing students to their limits, over support of family and friends, or the environment that the dancer practices in. The latter can include the rehearsal, and or performance space, flooring, studio condition, or even the footwear danced in.

Dr. Peter Lavine, a Washington, DC-based orthopaedic surgeon who specialises in Performing Arts medicine says that lack of shock absorption and poor floor quality are two of the leading causes of injury. If a wooden floor is not sprung, it can result in repetitive stress to the bones. Some common injuries caused by inadequate flooring include shin splints and stress fractures of the foot, ankle and tibia. These injuries are especially troublesome to dancers because of their long recovery time. Floors not made expressly for dance can also cause dancers to get prematurely fatigued, putting them at risk for additional injury. A dancer will never practice and perform on exactly the same surface every time, so there is a risk that the floors could vary substantially in slipperiness, or tension. When a floor is unfamiliar, and slippery, the dancer holds more tension in their body and the likelihood of a fall is greater.

The famous dancer Fred Astaire highlighted this concern when he said:

‘Slippery stages were the terror of my life.’ (<http://2nilssons.com/dancequotes.htm>, 26/05/2008)

The high number of contact hours in the studio means that the dancer becomes fatigued and often doesn’t eat correctly for their body’s needs. Not the most important aspect of maintaining a healthy, fit, and conditioned body, but definitely a key factor in a dancer’s life is their diet, and a comfortable, suitable, living and sleeping routine. Without a balanced diet suitable to each individual dancer, their bodies become tired and energy levels drop, putting unwanted pressures on their physical resources during practical classes, and pushing their bodies in ways that may not be possible in the condition in which they have exposed themselves. This is worse in some dancers and can lead to high scale eating disorders and the need for specialised treatments.

Often this problem with eating disorders comes from the perception that ballerinas, and dancers in general, are petite elite athletes, who must have the 'ballet figure' to become anything great. This idea is becoming less important to many dancers and it is great to see different body types prancing around on stages all over the world.

Like most professional athletes, dancers have heavy work schedules, long days, and little time to wind down. Most days they will work at least 6-8 hours, more if there are performances, and their weeks consist of 6 working days. Due to this commitment, the level of pressure they put their bodies under is increased dramatically. This is however, the life style of a dancer, and one that many choose!

Another way that dancing can affect the dancer and his/her body in the long term scheme of things is due to the huge amount of practice and rehearsal time required in order to become a stronger, better dancer. This busy schedule can often cause fatigue, malnutrition, and loss of a social life with family and friends. Many dancers delay having children and starting families until after their peak performance years while their bodies are in their prime condition.

Maybe this is just an assumption and proves to be more relevant for the past few generations, as it seems that more and more professional dancers are child bearing during the peak of their career and returning back to the studio as quickly as a few months after childbirth.

Dance, in general, has a higher percentage of injuries than most other sports and professions, due to the pressure on the body addressed above. This is generally because dancers strive for perfection and to achieve this perfection for the dancers, in most cases, it means pushing beyond individual body restrictions and limitations.

I have found that there are several different theories about exceeding limitations and restrictions, and that the majority of them agree on the idea that this is the main reason that injuries occur. I agree, and strongly believe that it does come down to an individual taking care of his or her body.

It is said that ballet dancers have a higher chance of injury than the other genres of dance as a result of the highly specific load placed through their feet, and other major joints of the body, during physical practice. This seems to be the general consensus amongst the

authors of the journals I have read: 'In no other profession is the athlete more predisposed to injury than in ballet' (Storm, 2006, pg 797).

The lack of published material about contemporary dance and the high impact that it has on dancers' bodies means that this is a fairly broad assumption. Contemporary dance and Ballet dance have very different techniques, but both put a great amount of pressure on the dancer's body.

In an article in the 'Physical Medicine and Rehabilitation Clinics of North America-Performing Arts Medicine', it states that 67% to 95% of a company's dancers per year average approximately 1.7 to 6.7 injuries per dancer per contract year. Overuse injuries remain the most common type of reported injury, with the highest incidence in the feet and ankles followed by the hip, lumbar/thoracic/cervical spine, and the knee/leg.

In the same journal, Seneca Storm discusses how non-musculoskeletal health-related problems of stress and anxiety have a significant negative effect on performance. These findings are based on a study of dance students from three performing arts schools in North America. It was these psychosocial stressors that had an adverse effect on the dancer physically and contributed to a higher injury rate.

When an injury is sustained it is important that the dancer rests for the recommended period of time to ensure that the problem has sufficient time to completely heal and recover. If the dancer rushes back into classes and rehearsals, there is a very strong chance that the injury will re-occur.

If the injury isn't nurtured correctly the chance of it becoming acute becomes higher, and re-occurrence is highly likely, and predictable. Injury prevention has begun focusing on educating the performer, teachers, and staff to modify activity levels to allow for adequate rest and recovery time for the dancer's body (Storm, 2006, 804-809). If an ongoing pressure or pain in the body is ignored, the chance of long-term damage in the related area increases. Damage can come from the ignorance of injuries, lack of treatment time, high levels of unusual pressure placed on the body, mal-alignment and technique, and not maintaining a conditioned and fit body.

Is it primarily up to an individual to maintain their body's physical condition, or does it also come down to teachers and mentors? Receiving personalised feedback in a class

allows each individual to apply specific information back to their bodies and allows them to work on their own problematic body limitations.

2.2 Literature Review Premise

Dance is a challenging, aesthetically pleasing, innovative art form, where the participants - the dancers - are consistently aiming for the best possible individual appearance, performance quality, technique, and unique style. This means that the risk of pushing a fraction further than what is physically possible and working the body too hard is elevated. The danger of injury is always apparent in the back of a dancer's mind. As Orthopaedic Surgeon Reza Salleh said to me during an injury rehabilitation session, 'Injuries are a dancers' occupation hazard.'

In summary, tertiary dance students should have a greater awareness of their individual body's weaknesses and limitations and so should therefore have a decreased number of injury incidents. It does come down to the individual's motivation and kinaesthetic awareness as to how well they look after their own body and protect it from injury.

The literature shows that there have been few studies carried out in this particular area in the past. To establish the validity of my hypothesis I created a research survey for past and present students and staff to give feedback and offer information towards my research project. Whilst it will be a first study in the specific area, it is believed that such a study can provide future guidance and perhaps even guidance for the current dancer population at a university level. If this study is not used as a guide for the current staff and students to monitor the injury rate and or future injury preventions methods, it can, at least be a source of information for those involved in or affected by the current university courses.

The biggest factor in determining individuals opinions on the research topic is to observe and analyse people's attitudes and responses, which will be done using surveys, due to the need for more specific first hand information to compare and analyse with current literature on the subject.

CHAPTER 3

3.1 – Research Methodology

For this research project, surveys were the main form of primary data collection used, as the research subjects were easily accessible, and offered the quickest and easiest form of data collection. The qualitative research methods that were used were experience surveys, and secondary data analysis, from the literature.

3.2 – Qualitative Research

The qualitative research in this research project included experience surveys and secondary data analysis on data that is found throughout the research period. Zikmund (2003) states that experience surveys are an exploratory research technique in which individuals who are knowledgeable about a particular research problem are surveyed. For the purpose of this research experience surveys were used with dancers of all ages, and levels primarily from the Western Australian Academy of the Performing Arts, (but not limited entirely to this group), to determine if any have had experiences with dance injuries in their personal life. Zikmund (2003) also states that experience surveys may be little more than simple conversations, which means that casual conversations with staff members can be and were used throughout this research. The purpose of this activity is to help formulate the problem and clarify concepts rather than develop conclusive evidence. This is a useful technique in this research project, as there is limited past information available specific to the area of interest, and this helped provide direction and opinions that were previously unavailable. This method was also easy to conduct in the local area, as it involved little cost to get started, and in some cases no cost at all.

Experience surveys for the research problem at hand were distributed amongst staff, students, graduates, teachers, and retired dancer from all areas of Perth and other states of Australia.

Secondary data analysis is a preliminary review of data collected for another purpose to clarify issues in the early stages of a research effort (Zikmund 2003, p.115). Basic theoretical research is rarely conducted without extensive reviews of the literature on similar research. In an extensive range of journals, texts and online sources have been reviewed, revealing that there is very little information on the exact research question, 'Is

Dance Good for the Body, or not?’ and ‘Does attending a specialised tertiary dance program increase body awareness, limitations, and ability, therefore decreasing injury occurrences, or does it lead to more injury incidents?’. The secondary data analysis was continued throughout the entire research project so that in the off chance that a similar study is found, results can be compared and analysed. This data cannot be used alone to make conclusions and recommendations, as it was not specifically conducted on the topic at hand (Zikmund 2003).

Surveys are an ideal method of primary data collection for this research project as they are quick, inexpensive, and efficient and an accurate means of assessing information and gathering statistics from within the dance population. Whilst surveys have these advantages, there are a number of errors that can arise with the use of surveys. Some of these errors that are relevant to this project are non-response error, non-respondent, refusal, self-selection and deliberate falsification. In this case, these are errors that may occur, as the topic may be a very personal issue for some respondents making them reluctant to respond with honesty and willingness. Confronting individual’s dance history and personal injury occurrences could affect how some people respond to the surveys, as it may be probing at a low or difficult part of their life that can be too private or depressing to discuss. In these cases, the data collected from these respondents may be false, and therefore skew results or perhaps be inadmissible in the final evaluation of the data (if the error is identified). Although determining whether a survey has been answered correctly and truthfully can be difficult including some ‘Feeler’ questions will assist in the evaluation and analysis.

‘Feeler’ questions for the participating dancers may be questions like:

- Are there aspects of the course that don’t allow you to give your body the required rest and recovery time when needed?
- Do you have any methods that you use to prevent injury to your body and maintain prime health and physicality?
- Do you think you have a greater awareness of your body from participating in a dance tertiary course?

These questions whilst appearing to be personal are appropriate, as an answer of yes to any of the questions could indicate that the respondent has a negative opinion of the whole process, and thus all the data from their response will be negative and thus inadmissible.

Surveys, whether they are in the form of interviews or questionnaires must be confidential, so that the interviewee is more likely to give truthful information (Zikmund 2003). If the interviewee believes that the information they give will not be treated confidentially, the above errors may occur, which then becomes a waste of time. In this research project questionnaires and perhaps even personal interviews were used, as the Western Australian Academy of the Performing Arts graduates, staff, or community dancers are easily accessible. The questionnaires and personal interviews are relatively cheap, fast and easy forms of survey research, which is ideal for the circumstances under which this research was conducted. Personal interviews and discussions were conducted first, as the data is gathered immediately, it was then analysed to help design the questionnaire that was sent out to gain a wider survey group than is possible from interviews.

There was one questionnaire that was distributed with clear, across the board subject matter. The questionnaire that was sent out can be seen in Appendix 1.1. The questionnaires were accompanied by a cover letter in an email or in person and can be seen in appendix 1.2; this letter explained to participants that their responses are strictly confidential and also explain the purpose of the survey. The time frame has been relatively short, which was necessary in order for the project to be finished in the allotted time frame. It is for this reason that the questionnaires are short and relatively straightforward, so that participants can complete them with little time taken from their regular activities, and also in the hope of receiving as many responses as possible.

The questionnaires were sent to students that were willing and able to participate in the survey. Many of the students who did participate are colleagues and classmates of the surveyor, which ensured that there would be a reasonable return rate of the surveys that were sent out.

CHAPTER 4

4.1 - Research Findings

The findings of this research are sourced primarily from the key studies that have been conducted, through published material such as journal entries, study guides, library books, and the surveys that were returned. In total, the survey responses for the study, there were twenty two returned surveys, representing approximately 33% of the survey pool, which is a higher response rate than anticipated after the dismal response received from personal interview and face to face conversation.

The first and most obvious finding from the surveys and study of the participants is that students who are enrolled or have graduated from a tertiary dance program strongly believe that they have learnt more about their bodies and are better prepared for injury prevention and maintenance due to their tertiary studies. Many believed that although the hours are long and gruelling, it is necessary in the preparation for a professional career. Another fact that I discovered from the survey, but had previously assumed it, is the fact that only a very small group of the respondents had never suffered from any major injury that effected their dancing long term.

The average age of the group surveyed was 22.5 years old with the majority of the respondents studying either classical ballet and/or contemporary dance at the Western Australian Academy of the Performing Arts. The participants averaged 12 hours of rehearsals per week, and 19.7 hours of classes a week (many of these classes were performance based). Keep in mind that some members of the group no longer attend a tertiary education course and more than likely have less commitment to classes and rehearsal schedules.

When asked how many major injuries they had suffered, 33% of the group responded that they suffered only one or two injuries, 60% had between 3 and 4, and only 6% had more than 5 injuries. Four of the participants claimed that they had countless and didn't give specific figures.

The most common dance injuries that were recorded in the survey were predominantly in the spine and in the lower leg regions. Other high problem areas included the hip and pelvis, knees, shins, calves, hamstrings, shoulders, and wrists. It is hard to specify which

areas were most often injured, as the participants all had multiple problematic areas that resulted in one or more injuries. It was noted that some of the injuries were caused by referral pain and mal-alignment due to issues with the individual's biomechanics.

The injury rate was different for each survey participant however the age where most injuries occurred was between the ages of 18 to 22. This is perhaps to do with the increase in practice as the dancers go from part-time social or exercise based dance, to full-time study, classes, and rehearsal schedules. The increased amount of pressure that the dancer experiences when taking this step into full-time study can have several effects on the body. It is a time of vulnerability and change, and the dancer will take part in many activities that they have potentially never practiced before, leaving them feeling unsafe and nervous in some aspects of class or rehearsal activity.

While most of the survey answers I received similarly state responses, that dance is 'stimulating, engaging, and enjoyable in both the physical and mental activities it provides' (anonymous- survey 2008), many agreed that it can definitely have the alternate affect on individuals and their bodies mainly due to the strain placed on a dancer's body that usually would not, or should not, happen.

The change from part to full-time study can have several emotional and mental effects on the dancer's body as many students spend less time with their families and friends than they are perhaps used to. This emotional turmoil can have negative effects on the individual and send some students in a downward spiral in regards to health, focus, strength and motivation. It is one thing to be dancing precariously when you are feeling one hundred percent, but to add an emotional layer over the top of that increases the risk chance of injury enormously. One respondent wrote that they believe the relationship between the mind and body has a huge influence on how they dance. When the body is restricted due to an injury or lack of strength and/or flexibility, it is a difficult task for the individual to perform to their greatest potential, however when it is a mental or emotional restriction it is not an easy task to even get motivated to participate, let alone apply technique correctly and safely. When dancers become emotional and sometimes depressed, there is a noticeable decrease in participation levels and attention to detail in class and rehearsals. Technique deteriorates and it becomes harder for the dancer to pick themselves back up to meet their prior training level.

Risk factors of dance injuries fall under two categories, intrinsic and extrinsic. Intrinsic risk factors are those that remain relatively constant and are more difficult to address and correct or adjust, for example, inherited anatomy, while extrinsic risk factors are those that put the dancer at risk for injury over brief periods of time. Intrinsic risk factors include anatomical characteristics, past medical history, previous injuries, menstrual history, and previous dance experience. Extrinsic risk factors include training, fatigue, stress, shoes/surface, and nutrition. (Luke, Kinney, 2002, pg.106).

In order to prevent injury, dancers try to learn to control and know their bodies as best they can. However, even with the knowledge and skills obtained from years of training, no amount of control can stop an accidental injury from happening. Students are encouraged and taught to take more risks and move forward from their boundaries in order to discover new qualities and movement patterns. Being risky often means crossing comfort zones, which can potentially be dangerous and when dancing dangerously the chance of injury is greater. Injuries most often occur when the dancer is fatigued or when learning a new skill, and or movement style.

Due to the fatigue factor of tertiary dance students because of heavy workloads and long hours, a high percentage of injuries occur in these performing arts institutions. Often the pressure to perform the correct positions and get noticed by teachers forces the dancer through those niggling pains that can initiate injury (or are possible symptoms from current injury) when in actual fact, the dancer should be sitting down and resting or conditioning their body in other ways. This over use and extra pressure on already injured and/or sore areas is a bad decision made by the dancer and increases their risk of further damage.

The surveys brought back a 98% injury occurrence rate, with all but one participant reporting at least one injury during their time at a university dance course.

Depending on the type of injury, whether it is a freak accident or an alignment weakness injury, sometimes injuries are beyond a dancer's control and cannot be prevented. With the help of course units such as Alignment, Feldenkrais, Kinesiology, and anatomy classes, dancers become more aware of their own alignment patterns and note for themselves what needs to be corrected, protected, or strengthened. Once a dancer has this

ability to recognise their own issues then they can begin to prevent wear and tear injuries, and avoid further unwarranted disappointment.

‘It’s about refining a check list for yourself [of all the little things to think about every time you dance-all the time!], and not until you are completely familiar with that list can you move on.’ –Susan Peacock WAAPA class, November 2008.

Although tertiary dance education does promote and increase the dancers’ awareness of their bodies, allowing them to judge situations before any accidents or injuries can occur, often it is through maturity and experience that dancers gain a better understanding of injury prevention and learn what their body’s specific needs are from day to day.

Having your own individual bodily awareness creates room for thought, growth, and pleasure to some extent. It provides direction and order and means that if the body is fatigued or sore more attention is placed on protecting those areas and potentially building strength elsewhere. For example, if the thighs or hamstrings are sore, tight, or damaged, there is room to think about placement of the upper body, torso, and arm alignment.

Statistics from the survey questionnaire show that 97% of those who participated agreed that their knowledge developed and improved over the duration of their years at a tertiary dance course. It was also highly agreed that most of the injuries that had been obtained were due to an unfortunate accident, certain bio-mechanics in the body, or fatigue. There was a general consensus that core strength is the root of all movement and control and can continually be developed over the entirety of one’s dance career.

When the question was asked about whether the students ‘thought they could prevent an injury from occurring again now that they had the knowledge and skills obtained during the university course’ one student responded,

‘Yes, the course teaches you about the correct way to use your body in order to avoid injury, as well as how to listen to your body to feel when an injury is beginning to occur so that it can be stopped before it’s a big problem.’

The majority of survey participants agreed with this answer and made similar statements in their own completed answers. It was a general group consensus that the students definitely learnt more about their own individual needs over the course of the program, but

unfortunately not all injuries can be prevented, especially with the intense life of a full-time dancer.

Knowing limitations and weaknesses means less time thinking about movements to avoid, and on-going habitual ways, and opens up more time to find new movement patterns and individual expression and creativity. It is however strongly recommended that time is made to maintain and practice the theory of safe dance practice on a regular basis.

Whilst these are the findings of the survey responses and the published materials that were available, it should be noted that there was a very small number of responses to the survey, and as such these findings cannot be deemed to be a completely true representation of the staff population.

CHAPTER 5

5.1 - Contributions Of The Research

As the literature review found, there is plenty of information on dance injuries and on dance education, but little on dance in tertiary education and the effects that full-time study has on a dancer's body. By conducting this research and making it available, there will be literature available for anyone who wishes to conduct research in this field in the future. The research will also be available for institutions, universities, or schools that run dance courses and units. This could then be used as a basic guide so that teachers and staff members will know what to expect, and be able to plan accordingly for different skill levels in class, techniques for prevention of injury, and maintaining focus and motivation in all students including any injured ones.

5.2 - Limitations

There is one main limitation for this Bachelor of Arts Dance (Honours) research project. It is time limitations. Time is the biggest constraint on the project, as the entire research process, data analysis and conclusions have had to be undertaken and completed in the relatively small time frame of ten months along with full time practice in the studio, overseas tours, and performance seasons. Whilst every effort has been made to ensure that the depth and level of detail in research and analysis is of a high standard, it is not as high as a study that may have been conducted over a greater period of time. However, this means that the research has been conducted in a way that the research and findings are more concise, than might be expected of a research project conducted over a larger length of time, which could lead to a wider topic area.

Whilst there were limitations on time the research project has been carried out to the highest standard possible regardless of this limitations.

5.3 – Recommendations For Future Research

As this research project has been conducted with very limited resources and in a short space of time, it is highly recommended that follow up research is conducted again at the beginning of a particular year group of students (for example, the current first year student) professional career, and again some stage in the future allowing students to develop as artists and technicians, leaving sufficient time for changes to take effect. The

purpose of such studies could be to determine if students have had any more injury occurrences and to compare the situations from tertiary education to those encountered in professional careers. It would also allow a comparison of the respondent's opinion when the individual decides to readdress the subject a few years on in their career.

5.4 - Conclusion

The literature that has been reviewed showed that there is a large amount of information available on the effects of dance on the human body, and the effects that dance injury has on full time students, dancers, and performing artists. A conclusion that has been reached is that the literature available both electronically and in various text formats refers in general, only to dance as a whole, not tertiary dance education. Whilst this is adequate for gaining knowledge of an overall view of the effects that dance has on the body and mind, it does not offer much insight into the education institutions, and whether or not the programs promote greater bodily awareness and prevent higher rates of injury occurrences. Whilst there was a wide range of international literature available on dance educational institutions and their structure, none was found to look at the effects the educational programs had on dancer's bodily kinaesthetic awareness, and injury rates specific to the institution.

My interest in this topic pushed me to research the injury rate of students who had studied at a tertiary level, and to discover their opinions on the course specifics and how they believe they have progressed as performing artists.

Although dance students are trained to take care of their own bodies and learn their own individual limitations, it is a difficult task to perform when long hours and realistic expectations of others get the better of you. I discovered that the majority of injuries suffered by those interviewed occurred during the years they were enrolled in the tertiary dance program. The general consensus from the group was that it comes down to taking control of your own individual injuries, allowing enough time for recovery, following full rehabilitation programs and seeing them through, and getting back into training gradually.

Without the patience and/or strength to do these things the risk of having long term damage and ongoing problems increases and the chance of shortening your career expectancy is greater.

At the beginning of semester 2, I created a questionnaire survey specifically for dancers - tertiary level students, teachers, graduate dancers, professional dancers, and social dancers, in order to come up with an answer to this question.

From this study I have discovered that the time when students are studying full-time at a tertiary education program is when they are exposed to many new physical practices, mostly unfamiliar. It is these years that injury occurrences increased due to heavy scheduling, exposure to new and difficult genres of techniques and skills, and the drive to reach full potential before the last day of the final year, as the gates open to the professional world and the comfort of the institution is left behind.

Students claimed that they were more knowledgeable about their own bodies and their choice of technique due to the high level of tuition at the tertiary dance education programs. They believe that their chance of preventing further injury has developed and is at a higher standard than when they first began studying dance.

I believe that dance is a very personal art form that allows you to study your own body and expressive interests. By opting to enrol in a university dance course you are opening yourself up to three intense years of physical practice and theoretical learning. It becomes your own job to take care of what you have, and to use what you have to the best of your ability, not exceeding personal limitations and only pushing the boundaries that won't push your body over the limit.

5.4.1 So Is Dance Good For The Body Or Not?

The literature review has shown some of the reasons why dancing is good; it is a form of exercise that not only involves your whole body to move but it also definitely improves health and well-being, as well as stimulating your mind. It is a form of cardiovascular exercise and is a great way to get fit, and have fun while doing so. Improved posture, muscle toning, flexibility, endurance and aerobic benefits for the heart and lungs are some of the good things that come from dancing.

Another benefit of the physical activity that dance provides is that of healing and relief for those people recovering from surgery or with a chronic health condition such as arthritis in the knees or lower back pain. The benefits are not just in the body, with the action of learning new dance steps, expressing creative ideas, and keeping time to the music, dance becomes a good mental workout, too.

Dancing relieves stress and often provides an escape from normal daily routines and chores. It is a great source of developing peoples' self image and confidence building.

In my mind dance is good for the body as it is more beneficial than problematic.

From these studies I have concluded that it is the individual's task to be aware of and to stick within personal boundaries and limitations. I believe that although the hours sometimes get the better of full time students and limit the amount of recovery they have, tertiary dance courses do benefit the students' knowledge of themselves and their limitations. The tertiary courses prepare them for the hard yards ahead within the professional dance world. I conclude that while the tertiary dance course provides vastly improved knowledge of the body and increases the dancers' knowledge of injury avoidance, prevention and recovery processes it also increases the potential for injury because of the very high level of physical activity associated with the course programs. It is a classic *Catch22* situation.

BIBLIOGRAPY

Academy, Blackfish Arts. (2006). "What is contemporary Dance?" <http://www.blackfishacademy.com/> accessed- 12/10/08

Bernardi, G. (1991). Finding Balance- Fitness and Training for a Lifetime in Dance. Princeton Book Company, United Kingdom, 1-226.

Brinson, B. P. (1991). Dance as Education: Towards a National Dance Culture- Book RoutledgePalmer Library on Aesthetic Education, London, Routledge.

Bronner S, O. S., Rose D (2003). 'Injuries in a modern dance company: effect of comprehensive management on injury incidence and time loss.' American Journal of Sports Medicine **31**(3): 365-369.

Chiff (1999-2008). "Modern Dance" <http://www.chiff.com/art/dance/modern.htm>, 12/10/08

Courses and Admissions: Dance. (2008). "Western Australian Academy of the Performing Arts." Edith Cowan University. http://www.waapa.ecu.edu.au/courses/courses_streams.php?stream_id=0000000005, 12/11/08

Dunning, J. (March 1991). "Eleanor King, a modern dancer and choreographer, dies at 85." New York Times. [http://query.nytimes.com/gst/fullpage.html?res=9D0CEEDE1F38F931A35750C0A967958260&scp=2&sq="eleanor+king"&st=cse](http://query.nytimes.com/gst/fullpage.html?res=9D0CEEDE1F38F931A35750C0A967958260&scp=2&sq=), 17/10/08

Eustice C. R. (2006). "Sports Injury Guide: The Common Type of Sports Injuries." <http://arthritis.about.com/od/sportsinjuryandarthriti1/ss/sportsinjuryqa.htm>, 12/08/08

Hamilton, L. H. (1998). Advice for Dancers- Emotional Counsel and Practical Strategies. San Francisco, Jossey-Bass Publishers, 1-192.

Kirk, F. (September 2007). "Dancing Through History." Dance Teacher **29**(9): 8.

Lumb, M. (2007). "Professor Shirley McKechnie "The University of Melbourne. <http://www.unimelb.edu.au/unisec/calendar/honcausa/citation/mckechnie.html>, 14/12/08

Luke A.C, K. S. A., D'Hemecourt P.A, Baum J, Owen M, Micheli L.J (september 2002). "Determinants of injuries in young dancers." Medical Problems of Performing Artists **17**(3). 1

Martin, S. (June 2003). "Health and fitness for life.(avoiding knee injuries in dance)." Dance Magazine **77**(6): 1.

Pepper, M. (1984). "Dance--a suitable form of exercise? A physiological appraisal." South African Medical Journal **66**(23): 5.

Price, and Papp-Mlodzienski. (Jan-April 2006). 'Subluxation of the second metatarsophalangeal joint with associated hallux abducto valgus in a dancer.' Journal of Dance Medicine & Science **10**(1-2). 59

Reeves. (Jan-April 2006). 'Medical Problems of Performing Artists: Hormone therapy for the female performing artist.' Journal of Dance Medicine & Science **10**(1-2). 2

Rip, Blanka, Fortin, Sylvie, Vallerand, and Robert. (Jan-April 2006). 'The relationship between passion and injury in dance students.' Journal of Dance Medicine & Science **10**(1-2). 14

Ritchard, M. (2007). "Stress Fractures of the Lower Limb." Sydney physio therapy-
<http://www.sydneyphysio.com.au/pages/bulletins/stress-fractures-of-the-lower-limb.php>, 14/12/08

Scialom, Goncalves and Padovani. ((March 2006)). 'Work and injuries in dancers: survey of a professional dance company in Brazil.' Medical Problems of Performing Artists **21**(1). 29

Shaw Bronner, S. O. a. L. M. ((July-Oct 2006)). 'Comprehensive surveillance of dance injuries: a proposal for uniform reporting guidelines for professional companies.' Journal of Dance Medicine & Science **10**(3-4). 72

Storm, S. A. (November 2006). "Dance Medicine: current concepts." Physical Medicine and Rehabilitation Clinics of North America **17**(4): 798-811.

Taylor, P. (2008). "Dance Quotes." <http://2nilssons.com/dancequotes.htm>., 26/5/08

Transitions, Dance. Co. (2008). "TrinityLaban." <http://www.laban.org/>, 12/11/08

Weigert, B. J. (June 2007). " Incidence of Injuries in Female University-Level Modern Dancers and the Effectiveness of a Screening Program in Altering Injury Patterns." Medical Problems of Performing Artists **22**(2): 52-57.

Zikmund, W. G. 2003, Business Research Methods, 7th Edition, South-Western: Thomson Learning, Ohio, U.S.A

Appendices:

1.1

Kylie Murray- Bachelor of Arts Honours (Dance).
Thesis research and survey questions.

“Is dance good for the body, or not? And does attending a specialised tertiary dance education program increase body awareness, limitations, and ability, therefore decreasing injury occurrences, or does it lead to more injury incidents?”

Your current age (please fill in the circle):

- 10-15
- 16-18
- 19-21
- 22-25
- 26-30
- 31-40
- 41-50
- 51-60
- Over 60

Dance status (please fill in most applicable circle):

- Hobby
- Fitness/exercise
- Secondary dance student
- Tertiary dance student
- Professional dancer
- Independent dancer
- Retired dancer
- Dance teacher
- Other (please specify) _____

1. What style of dance do you primarily practice? _____

2. How long have you been dancing for? (please state whether it has been full-time, part-time, casual, teaching or professional) _____

3. How long do you feel you will continue to dance, either professionally or socially? (Please specify which.) _____

4. (For professional dancers only). How many years in total were you practicing dance as a professional? _____

5. (For students only). How long you have been dancing full-time for? _____

6. In hours, how much time do you spend in classes each week? _____

7. How much time do you spend in rehearsals each week? _____

8. How many times a year do you perform? (total performance time per year?) _____

9. What foot wear do you most often wear in class, and or rehearsals? (name all footwear worn from most to least). _____

10. Please list any other form of physical exercise you include regularly in your exercise regime? (And state how many hours a week.) _____

11. Have you injured yourself during your time as a dancer? (please circle) Yes/No
 - a. How many times? _____

 - b. What were the injuries? _____

 - c. What age were you when the injuries occurred? _____

- d. How long was the recovery time? _____

- e. Were you well supported by mentors, teachers, family? _____

(Questions 7-9 are for students, however all welcome to comment as much as you like).

12. Do you think you have a greater awareness of your body from participating in a dance tertiary course? _____

13. Do you think you could prevent an injury from occurring again now that you have the knowledge and skills obtained during the course? _____

14. Are there aspects of the course that don't allow you to give your body the required rest and recovery time when needed? _____

15. What is your view on the issue of returning to fulltime dance after a serious injury has occurred? _____

16. How does dancing affect you, and your body, personally? (Think about this in physical and mental terms.) _____

17. If you are a retired professional dancer, has a life time of dance decreased bone, and or, muscular degeneration? _____

a. Has it affected your life negatively in any other way? _____

18. Do you have any methods that you use to prevent injury to your body and maintain prime health and physicality? _____

19. Name 3 reasons you believe dance is a good thing for you and your body. _____

1.2- Ethics Letter and Approval

Dear Participant,

As part of my Honours study I am conducting a survey to gain more information in the specific field I am researching.

My thesis is looking at whether “dance is good for the body, or not?” and how dance tertiary education programs effect the outcome of a dancers body. I am looking into whether the program increases awareness and decreases injury, or whether it has the alternate affect and causes more injuries due to the level of participation, and the consistency of pushing individual limitations.

I am comparing the pros and cons of dance as a profession, and looking at the possible outcomes of the body, as a retired dancer.

My project has achieved ethics clearance from the Faculty of Education and Arts Ethics Committee.

I would like to invite you to take part in my survey.

If you agree to take part in my survey, I guarantee your full confidentiality throughout the entire process. There will be no risks involved, and your name will NEVER be used. All evidence of your completed anonymous survey will be shredded at the completion of my studies.

Any information you offer me will lead to a greater understanding of the issues being raised, and will assist me in finding my answer to this large and ongoing question.

If you do agree to take part in the survey please complete the form and return in the supplied addressed envelope, or forward to my student email, stated below.

If you have any questions about this research please contact me on kmurray1@student.ecu.edu or if you wish to speak to an independent person on aspects of the research, please contact

Dr Jan Gray

Chair of E & A Ethics

Edith Cowan University

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08 9370 6320

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My supervisor for this project is Dr Maggi Phillips, Coordinator of Research and Creative Practice WA Academy of Performing Arts (2 Bradford St, Mt Lawley, WA 6050). If you wish to contact her for any reason her contact numbers are:

Tel: 61 8 9370 6129

Fax: 61 8 9370 6665

I thank you for your time in completing the survey.

Much appreciation,

Kylie Murray (student no. [REDACTED])