

**The Experience and Effects of  
Group Improvisational Music Therapy  
amongst Women Recently Diagnosed with  
Breast Cancer: a mixed methods study**

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Doctor of Philosophy

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## **Statement of Originality**

The thesis contains no material which has been accepted for the award of any other degree or diploma in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. I give consent to this copy of my thesis, when deposited in the University Library, being made available for loan and photocopying subject to the provisions of the Copyright Act 1968.

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## **Acknowledgement of Collaboration**

I hereby certify that the work embodied in this thesis has been done in collaboration with other researchers. I have included as part of the thesis a statement clearly outlining the extent of collaboration, with whom and under what auspices.

The pilot study component of this thesis (Chapter 3) was undertaken at the Bristol Cancer Help Centre in the UK in 1998.

The PhD candidate was the main researcher who designed and implemented the pilot study.

Dr Mick Harbuz provided the physiological input and physical sample analysis of the salivary cortisol.

Professor Frank Hucklebridge provided the physiological input and physical analysis of the salivary immunoglobulin A.

Professor Leslie Bunt was the music therapist who conducted the music therapy sessions being researched.

Signed

## **Dedication**

I dedicate this thesis to Peter, my beloved husband, friend and confidant, a man who loved life, possessed a wicked sense of humour, a great smile and an infectious laugh. He left this world at the tender age of 35 and has been the catalyst for my change in career and life path following his untimely death from cancer.

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**Music is a moral law. It gives a soul to the universe, wings to the mind,  
flight to the imagination, a charm to sadness, gaiety and life to everything.  
It is the essence of order, and leads to all that is good and just and beautiful.  
(Plato)**

# Abbreviations

ACTH = Adrenocorticotrophic hormone

CAM = Complementary and Alternative Medicine

ELISA = Enzyme-linked immunosorbption assay.

EORTC = European Organization Research of Treatment for Cancer

- QL2 = Global Health Status
- PF = Physical Functioning
- EF = Emotional Functioning
- CF = Cognitive Functioning
- SF = Social Functioning
- FA = Fatigue
- NV = Nausea/Vomiting

QLQ-BR = Quality of Life Questionnaire - Breast Component

- BRBI = Body Image
- BRFU = Future Perspectives
- BRST = Systemic Therapy Side Effects

GIMT = Group Improvisational Music Therapy

HADs = Hospital Anxiety and Depression Scale

LMM = Linear Mixed Models

miniMac = Mini Mental Adjustment to Cancer Scale

- HH = Hopelessness/helplessness
- AP = Anxious preoccupation
- FS = Fighting Spirit
- CA = Cognitive Avoidance
- FT = Fatalism
- RCT = Randomised Controlled Trial

NK – Natural Killer

PNI = Psychoneuroimmunology

sIgA = Salivary Immunglobulin A

UWIST-MACL = University of Wales Institute of Technology Mood Adjective Check List

WSR = Whole Systems Research



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## **Abstract**

Music therapy is an interpersonal process which uses music and all of its physical, mental, social, aesthetic, and spiritual qualities to help improve, restore or maintain health. The supportive role of music therapy in cancer rehabilitation has been shown to facilitate social interaction, nurture feelings of community and help to draw individuals out of their isolation and into a shared experience.

Within the field of cancer care a large amount of music therapy practice and research has been conducted with cancer patients in the final stages of their illness. The majority of research to date in this area has either been of a qualitative or quantitative study design with very few mixed methods qualitative/quantitative research studies conducted.

The objective of this doctoral research study is to investigate in depth the lived experience, perceptions and effects of an eight week group improvisational music therapy intervention with fifteen women recently diagnosed with breast cancer. The project presented in this thesis is informed by a pilot study conducted by the author in the UK. It forms an integral component of this doctoral thesis. The pilot study used a mixed methods research approach to investigate the effects of both listening to music for relaxation and music improvisation (the playing of tuned and untuned percussion instruments) amongst twenty-nine non-homogenous cancer patients at a cancer help centre.

This doctoral research investigates the music improvisation component of the pilot study in more depth, adopting a similar mixed methods research approach (with the addition of further qualitative methods and quantitative measures) in order to investigate the lived experience and the effects of the intervention on the women in this study.

The qualitative findings presented here reveal and explain how group improvisational music therapy provided a safe haven in which the fifteen women participants experienced identity, support, bonding, group cohesion and distraction from their breast cancer. The participants further experienced empowerment through choice and confidence building offered by music therapy. The women's perceptions of the differences between their conventional medical care and the group improvisational music therapy experience are also described.

The quantitative psychosocial three time point measures, though not significant, indicate improvement in the women's levels of anxiety and depression, coping skills and overall quality of life at the end of the eight week intervention. The pre/post intervention psychological data provide statistical evidence of improved mood states which are further supported by the analysis of the qualitative data. Physiological measures of salivary immunoglobulin A and cortisol appear altered with a significant decrease in salivary cortisol.

Both the pilot and this doctoral study suggest a link between positive emotions and the immune functioning of cancer patients. The doctoral study more specifically illuminates the lived experience and perceptions of women recently diagnosed with breast cancer as a result of being involved in group improvisational music therapy.

The findings of this research will help inform future research and music therapy practice as well as provide a more holistic understanding of the effectiveness of music therapy with cancer patients. The benefits of group improvisational music therapy described here are such that music therapy should be made widely available as a valuable part of the management of women recently diagnosed with breast cancer.



# **Chapter 1 Introduction**

The objective of this doctoral research study is to investigate in depth the lived experience, perceptions and the effects of an eight week group improvisational music therapy (GIMT) intervention with fifteen women recently diagnosed with breast cancer. This study has been informed by a pilot study conducted by the researcher (the PhD candidate) in the UK. The pilot study utilised a mixed methods research approach to explore the effects of both listening to music in a relaxed state and music improvisation (the playing of tuned and untuned percussion instruments) amongst twenty-nine non homogenous cancer patients at a cancer help centre.

A CD (located in Appendix 1 of this thesis) contains a selection of the music played to the pilot study participants in the listening to music for relaxation component of the study. The CD also contains a selection of improvisation excerpts plus explanatory notes (to give an understanding of the music therapy technique of improvisation). These are taken from the eight week GIMT intervention sessions with the women participants recently diagnosed with breast cancer.

## **1.1 Thesis Overview**

Chapter two of this thesis, the literature review, presents literature pertinent to the multidimensional aspects of this study. The first review of the chapter provides an introduction to the general literature on cancer, its psychological, emotional and physical impact, with more specific literature on breast cancer and its treatment strategies. The review then proceeds to literature pertinent to complementary and alternative medicine (CAM), of which music therapy can be considered as one of many associated modalities. Literature pertaining to the

use of CAM in cancer care and more specifically breast cancer, as relevant to this research project, is presented and discussed.

Moving further into the detail of cancer care research, the discipline of psycho-oncology, the psychological, social, behavioural and ethical aspects of cancer literature is reviewed with a focus on coping and psychological adjustment to cancer, empowerment and group techniques as pertinent to this study. From psycho-oncology the scope is broadened to encompass the discipline of psychoneuroimmunology (PNI), the interaction between psychological processes and neurological, endocrine and immune functioning and their influence on health and then more specifically in the area of breast cancer. PNI leads us to the relationship between stress, health and disease and literature relevant to stress, immunity and cancer is then presented and reviewed. The chapter then moves into an overview of music therapy and group music therapy which in turn leads to the review of music therapy literature in the area of cancer care. The chapter concludes with a review of literature pertaining to the effect of music on the physiological parameters of sIgA and cortisol with specific focus on music therapy and physiological parameters with cancer patients.

Chapter 3, the pilot study, which informs this doctoral research study is presented in its entirety (Burns, Harbuz et al. 2001). This publication is located in Appendix 2. The background of the study, its mixed methods research approach, the study results, conclusions and future research recommendations are outlined in this chapter.

Chapter 4, the methodology chapter, presents the study background, the design of the study and a brief discussion of mixed methods research. The research questions, generated hypotheses and research tools are also presented. Data analysis is described in addition to the sample, recruitment protocol and the

materials used in the GIMT intervention. The study procedure presents the group structure, the data collection protocol and the research venue. The pre session procedure, the session procedure, the session format and ethics are presented.

Chapter 5 presents and discusses the findings of the qualitative component of the study. A thematic analysis was conducted on the data collected from the semi-structured interviews, reflective experience work and focus group enquiry. This qualitative analysis reveals three main themes of music therapy as experienced by the study participants: music therapy as a safe haven; music therapy as a gift of empowerment; and the conceptualization and experience of music therapy in terms and ways that contrast to conventional care. Within these three main themes eight sub themes of identity, support, bonding and group cohesion, distraction, choice, confidence building, clinical versus personal and disempowerment versus empowerment were revealed. All of which inform the narrative of this chapter.

Chapter 6 presents the results of the quantitative component of the study. The participants' demographic characteristics are initially presented. All of the quantitative data collected in the study were subject to Linear Mixed Models (LMM) statistical analysis using the SPSS V15 statistical package. The results of the psychosocial three time point measures and the psychological and physiological pre/post intervention measures are presented and discussed in full.

In Chapter 7, the combined quantitative and supporting qualitative results are discussed. During the thematic analysis of the qualitative data, some recurrent themes supporting one of the quantitative measures emerged which further help to understand some of the quantitative data.

Finally, Chapter 8 provides a more general discussion that initially examines the pilot study which informed this doctoral research study and as such is an integral part of this study. The data analyses relating to both the qualitative and quantitative components of the study are then discussed. The qualitative and quantitative findings are then drawn together and discussed. A number of limitations of the present study are illuminated. Finally, the study conclusions and recommendations for the replication and extension of this current study, future research and the implementation of music therapy services for women with breast cancer are presented.

# Chapter 2 Literature Review

## 2.1 Overview of Cancer

Cancer is a general term for the “disordered and uncontrolled growth of cells within a specific organ or tissue type, which if left untreated, spread and invade surrounding areas producing secondary growth – metastases” (p5) (Tobias 1995).

In the late 20<sup>th</sup> century it was declared that cancer was “one of the most common diseases in both genders and in all age groups in the Western world, with one out of every three families touched” (p15) (Baider, Cooper et al. 1996). Past focus was on death and dying, but due to improved medical treatments many people diagnosed with cancer live longer and emphasis has moved towards “the quality of life of cancer patients and their families” (p15) (Baider, Cooper et al. 1996).

In a recent report by the International Agency for Research on Cancer it was estimated that in 2002 there were 10.9 million new cases of cancer diagnosed globally (in twenty large areas of the world), that 6.7 million people had died from the disease and that 24.6 million people were living (within three years of diagnosis) with the disease (Parkin, Bray et al. 2005; Parkin, Bray et al. 2005). The World Health Organization further estimates that unless action is taken by government sectors of public health and by health practitioners, cancer rates could further increase by 50% by the year 2020, placing a tremendous health burden worldwide in the 21<sup>st</sup> century. Thus the focus is now moving towards the prevention of the disease, whilst at the same time new revolutionary treatments for the disease continually evolve (Parkin, Bray et al. 2005).

The staging of cancer indicates the degree to which the disease has spread and is generally delineated by Stages I – IV with the higher the staging indicating

the greater progression of the disease. If cancer is diagnosed at relatively early stages then prognosis is considered to be good (Mahon 1998) - hence the move towards methods of early detection, such as breast screening (Parkin, Bray et al. 2005). The staging of cancer at the time of diagnosis determines the overall treatment plan with goals of treatment falling into one of three categories: (i) remission - considered after five years of non-recurrence of disease; (ii) control - when there has been a relapse within five years of the initial treatment period, and; (iii) palliation - when treatment is no longer effective. At this third palliative disease stage the relief of symptoms such as pain control (physical, psychological, emotional and spiritual pain) and the overall comfort of the patient become the main priority (Nezu, Nezu et al. 1998).

The impact of a diagnosis of cancer can be psychologically, emotionally and physically devastating to patients and their families. Psychologically, the patient may experience a wide arena of emotions - those of shock, anger, denial, fear of pain and the unknown, the 'why me' question and ultimately, loss of control which often leads to anxiety and depression (Burish and Bradley 1983). Hislop (1991) also postulates that the psychological reaction to chronic illness of one's own life, not knowing how things will turn out in the future, intensifies personal insecurity and triggers distress (Hislop 1991).

It has been suggested that up to one-third of patients suffer psychiatric morbidity relating to a diagnosis and the treatment of cancer which may become disabling and prolonged (Grassi and Rosti 1996; Watson, Haviland et al. 1999; Alkech, Okuyama et al. 2001; Morasso, Costantini et al. 2001). Some studies have shown that as high as 50 % of cancer patients suffer sufficient psychological distress to qualify for a psychiatric diagnosis of anxiety and depression and that high levels of anxiety are directly associated with poor psychological adjustment following a cancer diagnosis (Derogatis, Morrow et

al. 1983; Vinoker, Threatt et al. 1989; Omne-Ponten, Holmberg et al. 1994; Blake-Mortimer, Gore-Felton et al. 1999; Edwards and Clarke 2004; Iwamitsu, Shimoda et al. 2005; Deshields, Tibbs et al. 2006).

In addition to the psychological and emotional response to a diagnosis of cancer, the cancer patient often faces physical pain (due to symptoms and associated treatments) which sometimes result in disfigurement leading to continued discomfort, pain and a poorer overall quality of life (Moore and Spiegel 2000; Sammarco 2001; Boehmke 2005; Deng and Cassileth 2005; Katz 2005; Boehmke and Dickerson 2006).

Fatigue and sleep disorders have been identified as two of the most distressing and often persistent physical side effects of cancer, particularly in the early stages when patients are undergoing radio and/or chemotherapy (Irvine and Vincent 1998; Edwards, Gibson et al. 2003; Bower, Ganz et al. 2005; Byar, Berger et al. 2006; Reuter, Classen et al. 2006; Ganz and Bower 2007; de Nijs, Ros et al. 2008).

If remission is successfully achieved the patient often lives with the fear of recurrence and if recurrence does occur then the cancer patient must once again face and deal with the same problems, often resulting in overwhelming feelings of helplessness and despair (Northouse, Mood et al. 2002; Ross, Boesen et al. 2002; Hack and Degner 2004; Andersen, Shapiro et al. 2005).

## **2.2 Breast Cancer**

The incidence of breast cancer is increasing due to either known or suspected environmental and lifestyle risk factors and an aging population (Parkin, Bray et al. 2005). Globally, breast cancer ranks as the fifth cause of cancer death and is the leading cause of death in women. In 2002, there were 1.15 million new

cases of women diagnosed with the malignancy worldwide and 4.4 million women alive five years after diagnosis (Parkin, Bray et al. 2005).

Breast cancer in men is comparatively rare and when compared to women, men have an inferior rate of survival (Giordano, Buzdar et al. 2002; Giordano 2005; Weiss, Moysich et al. 2005). This is thought to be as a result of men generally not presenting and being diagnosed with the disease until a more advanced stage (Giordano, Buzdar et al. 2002). Moving attention from such gender differences, it is estimated that seventy-three per cent of all newly diagnosed breast cancer patients in the developed world survive (five years post diagnosis). Meanwhile, this figure translates to only 57% for the developing world (Parkin, Bray et al. 2005). The higher percentage survival rates are directly attributed to a higher prevalence of earlier detection through breast screening (Parkin, Bray et al. 2005).

In Australia breast cancer is the second most common cause of death in women with one in eleven women diagnosed with the disease before 75 years of age (AIHW 2004). In the most recent Australian cancer statistics from the Australian Institute of Health and Welfare, it was reported that 11,791 women and 95 men were diagnosed with breast cancer in 2001 and that 2,594 women died from the disease. The risk of being diagnosed increases with age with 49% of women being diagnosed between 50 – 69 years of age (AIHW 2004).

It is estimated that genetic factors, including the major susceptibility genes (BRAC1 and BRAC2) may account for up to 10% of all breast cancer cases. Other major risk factors for women in developing breast cancer are believed to be associated with certain reproductive factors such as giving birth to a first child at a later age and not breastfeeding. Obesity, excessive alcohol intake, little physical activity, exogenous hormones (oral contraceptives and hormone replacement therapy) and possibly diet have all been identified as associated



with the development of breast cancer (Gao, Shu et al. 2002; Parkin, Bray et al. 2005)

### **2.2.1 Treatment**

The standard medical treatment strategies for breast cancer patients are dependent upon the staging of the cancer. For the majority of breast cancer patients, treatment involves surgery, either breast-conserving surgery (removal of the lump and surrounding breast tissue) or mastectomy (the removal of the breast). Radiotherapy, the use of high-energy, ionizing radiation to kill cancer cells, is now standard practice following all breast-conserving surgery.

Chemotherapy, a single drug or combination of drugs to kill cancer cells, is generally administered to the more advanced staging of breast cancer, in an attempt to destroy cancer cells which have spread to different parts of the body (micrometastases). Chemotherapy is given as an adjuvant (in addition to surgery and/or radiotherapy) or as a neo-adjuvant (administered before surgery) if the tumour is large. Endocrine therapy, the treatment of breast cancer by changing the hormonal balance of the body, is administered, in addition, if the cancer is oestrogen and/or progesterone receptor positive (hormone dependent). This therapy works by blocking the cancer cell's receptors, thus starving the tumour of oestrogen and/or progesterone and inhibiting tumour growth. Tamoxifen, which blocks the effects of oestrogen in breast tissue, has been the primary hormone therapy for many years but with the advancement and growing knowledge and understanding of the molecular biology of breast cancer, new targets for therapy have been identified. Third-generation aromatase inhibitors are currently being clinically trialled with postmenopausal women diagnosed with early, operable oestrogen – and progesterone dependent tumours (Buzdar 2004; Buzdar 2004). Platinum-based (trastuzumab) therapy is being clinically

trialled with postmenopausal women with advanced metastatic breast cancer. Both regimes have demonstrated promising results (Joy and Mackey 2006).

Cancer therapy regimes will no doubt continue to evolve as a result of new scientific discoveries and the implementation of clinical randomized controlled trials (RCTs) in order to assess the efficacy and safety of the newly discovered drugs. In addition to such conventional treatments and advances, complementary and alternative medicines (CAM) are increasingly being integrated into the holistic care of cancer patients.

## **2.3 Complementary and Alternative Medicine (CAM)**

The Cochrane Collaboration<sup>1</sup> defines complementary medicine as practices and ideas which are outside the domain of conventional medicine in several countries and which its users define as preventing or treating illness, or promoting health and wellbeing (Smith, Collins et al. 2006). The National Centre for Complementary and Alternative Medicine (NCCAM) defines complementary medicine as that used alongside and in relation to conventional medicine. Music therapy, within the area of cancer care, is used as a therapy to complement conventional medical treatment for cancer, and as such it can be viewed within the context of CAM (Hanser 2002).

NCCAM further classifies five different categories of CAM: whole medical systems, biologically based practices, manipulative and body-based therapies, energy medicine and mind-body interventions (Cassileth and Deng 2004). The NCCAM provides the following overview. Whole medical systems are built

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<sup>1</sup> [www.cochrane.org](http://www.cochrane.org)

upon complete systems of theory and practice and are often systems of medicine practiced by individual cultures throughout the world and independent of the conventional biomedical approach. Biologically-based practices employ substances found in nature, such as herbs, foods, vitamins to prevent and or control illness as well as to promote health. Manipulative and body-based practices draw upon manipulation and movement of the body by different techniques in order to restore disturbance in body systems thus preserving and/or restoring health. Energy therapies seek to use energy biofields (which are purported to surround and penetrate the human body) and bioelectromagnetic fields (invisible lines of force that surround all electrical devices) to eliminate disease.

Finally, mind-body medicine focuses on the interactions between the brain, mind, body, and behaviour, and the powerful ways in which emotional, mental, social, spiritual and behavioural factors can directly affect health. Mind-body medicine employs techniques which are designed to enhance the mind's capacity to affect bodily function and symptoms, thus aiding well-being (NCCAM 2007). It is within the mind-body category of CAM that music therapy could be viewed, as music therapy's central aim is to utilize the reciprocal relationship between the mind and the body of the patient (Hanser 2002; Cassileth and Vickers 2003; Cassileth and Deng 2004). Music therapy aims to attain and maintain the health and well-being of the patient by treating the physical, psychological, emotional, cognitive, behavioural and social needs of the patient (Hanser 2002)

Mind-body medicine is not a new phenomenon and has been recognised since ancient Greek times. In this period humans were seen as having a physical body, a mind and consciousness. Humans were considered an intricate part of

the whole environment. They endeavoured to holistically maintain and/or restore health by balancing all these components (Hassed 2001).

The development and evolution of Western medicine, with its ever increasing scientific and technological advances to treat and cure illness, has increasingly seen a separation of the mind from the body. The 20<sup>th</sup> century biomedical model of Western medicine has become more focussed on treating the physical body which views body and mind as two separate entities (Hassed 2001). It views illness and the symptoms of illness as the result of abnormalities of either the structure of specific organs within the body or of the functioning of those organs. Mental and emotional imbalances are seen and treated as a separate entity which are considered unrelated to bodily function (Wade 2004; Brazier, Cooke et al. 2008).

It has been estimated that 50% of the Australian general population access some form of CAM on a regular basis (Walker and Anderson 1999; Bensoussan and Lewith 2004). Financial estimates suggest that \$2.3 billion a year is being spent by Australian consumers on CAM (Adams, Sibbritt et al. 2003; Li, Quinn et al. 2004), with the highest users of CAM tending to be better educated women who are within a higher socioeconomic range, employed full time, of poorer health and aged between 35-49 (Adams, Sibbritt et al. 2003; Harris, Finlay et al. 2003; Cassileth and Deng 2004; Velanovich, Hallal et al. 2006).

Literature suggests that the people who use CAM do so not to necessarily find a clinical cure but to alleviate symptoms associated with their medical conditions and psychological well-being. It has further been suggested that people use CAM because they view these treatments as non-invasive as opposed to many orthodox medical treatments, particularly those in the area of oncology (Daykin, Bunt et al. 2006). By using CAM people become active participants in their own treatment, taking responsibility for their own health and well being.

By taking this responsibility, CAM users are able to maintain and regain a sense of control over their lives, thus empowering them and leading them to better physical and emotional well being (Van de Creek, Rogers et al. 1999; Sparber, Bauer et al. 2000; Barnes, Powell-Griner et al. 2004; Henderson and Donatelle 2004; Lee, Charn et al. 2004; Pagan and Pauly 2005).

In summary, music therapy can be viewed within the context of CAM as it is a complementary therapy used alongside conventional medicine which aims to both attain and maintain the health and well-being of the client. The use of CAM within Australia is steadily increasing with women being the highest consumers. CAM is sought to both maintain health and address symptoms caused by illness. By using CAM, consumers are able to take an active role in their own healthcare by exercising choice and control over their treatment.

### **2.3.1 CAM and Cancer**

The National Cancer Institute <sup>2</sup> defines complementary medicine as therapies that complement traditional western medicine and alternative medicine as therapeutic approaches which take the place of western medicine in the treatment of disease. This definition would suggest an either/or approach in the treatment of cancer which contradicts both the Cochrane Collaboration and NCCAM's definitions – see 2.3. However, in the area of cancer care, the use of alternative medicine as an alternative to conventional medicine can be both controversial and problematic. If mainstream medical treatment is delayed it can diminish the possibility of remission and cure for the cancer patient. (Cassileth and Deng 2004). In addition to which, unproven alternative

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<sup>2</sup> [www.cancer.gov](http://www.cancer.gov)

medicines can be potentially harmful as well as being very costly (Cassileth and Deng 2004).

It has been reported that between 7% to 64% of adult cancer patients (Walker and Anderson 1999; Cassileth and Deng 2004; Davidson, Geoghegan et al. 2005) and between 31% to 84% of children with cancer use some form of complementary and/or alternative medicine (Kelly 2004). A recent study in Australia has reported that 14.5% of women aged between 73-78 years use some form of CAM for the treatment of their cancer and that CAM is now a significant practice issue for those delivering cancer-patient care and management (Sibbritt, Adams et al. 2003).

Better educated female cancer patients from a higher socioeconomic group and of a younger age, tend to use CAM more frequently, as an adjunct to their treatment regime (Harris, Finlay et al. 2003; Cassileth and Deng 2004; Velanovich, Hallal et al. 2006). CAM is increasingly becoming the 'norm' for many cancer patients who view complementary therapies as holistic, treating their mind, body and spirit. They believe that their use of CAM will alleviate symptoms, improve their quality of life, boost their immune system, prolong their life and possibly effect a cure (Cassileth and Vickers 2005).

Due to their increasing use and the amount of money spent on CAM by cancer patients, a growing body of research is now being undertaken in this area, in an effort to both prove or disprove the efficacy of these complementary and alternative therapies and medicines (Bensoussan and Lewith 2004). This has been interpreted as an attempt to protect cancer patients from "cancer quackery" (p150) (Lowenthal 2005) as well as to alleviate scepticism towards CAM from the medical profession (Walker and Anderson 1999). It has to some extent been the lack of good quality CAM research, as well as limitations in

previous research designs which have been to the detriment of cancer help centres which offer and provide their clients CAM.

The design adopted for the Bristol Study (Bagenal, Easton et al. 1990) which took place at the Bristol Cancer Help Centre, UK (now Penny Brohn Cancer Care)<sup>3</sup> illustrates such design limitations. This study involved 795 women and was conducted by investigators from the Cancer Institute Registry. This research sought to compare the survival of breast cancer patients attending the holistic Bristol Cancer Help Centre (one of the first cancer help centres in the world to offer cancer patients CAM alongside their standard medical care) with breast cancer patients identified through the cancer registry from one cancer specific and two general district hospitals. The published results of this study caused severe distress for many of the women involved in the Bristol arm of the research project (Goodare 1996; Bolletino 1997; Goodare 1999), as the results indicated that the women attending the Bristol Centre had significantly poorer outcomes in the areas of recurrence of disease and survival than those in the comparison group (Bagenal, Easton et al. 1990). The methods section of the study stated that informed consent was obtained from the Bristol patients who also provided information about the therapies they had used and their quality of life. This same information, however, was not collected from the comparison group, nor was there any mention of consent. There was vague and misleading information about the study participants, no clear justification for the study, and inadequate measurement of the study outcomes. Further to this, the article didn't present its hypotheses and neglected to state why the Bristol treatment may have been expected to affect survival. The presentation of the outcome data differed for the Bristol group and the comparison groups. In conclusion,

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<sup>3</sup> [www.pennybrohncancercare.org](http://www.pennybrohncancercare.org)

the fact that informed consent was only obtained from the Bristol group, who may have been more sick than the comparison groups and which a RCT could have detected, indicated that the design was prospective with respect to the Bristol group but retrospective for the comparison group (Ernst and Cassileth 1999; Jacobson, Workman et al. 2000). Had there been a stricter research protocol in place, plus good research design, the results of the study may have been very different and perhaps could have avoided the distress caused to the women in the Bristol arm of the research. It has therefore become imperative that good research design be instigated in the area of CAM research. It was with particular attention to research protocol and study design that the pilot study presented in this thesis was undertaken several years later at the Bristol Cancer Help Centre (Burns, Harbuz et al. 2001)

Since the time of the Bristol Study (1990), with better quality research now unfolding, CAM therapies such as massage therapy and acupuncture are now seen as an adjunct to mainstream cancer care. They have been shown to contribute to the overall well-being of cancer patients (Zappa and Cassileth 2003; Cassileth and Deng 2004; Cassileth and Vickers 2005; Molassiotis, Scott et al. 2006).

Within a medical setting, the Memorial Sloan-Kettering Integrative Medicine Center has become a proponent of what has now been adopted as the integrative cancer care model. The Center is set in the grounds of the main hospital and offers patients, their families, the Center staff and community members access to safe and effective therapies to improve quality of life, through symptom management and stress reduction (Zappa and Cassileth 2003). The complementary modalities offered at this Center are considered to be safe, non-invasive, easy to use, and relatively inexpensive. The patients and clients at the Center are given the opportunity to experience different CAM



treatments and are able to then choose, allowing them have control over certain aspects of their cancer treatment. Complementary therapies offered at the centre include music therapy, art therapy, massage therapy, acupuncture, meditation, biofeedback, self hypnosis and yoga (Zappa and Cassileth 2003). Other integrative medical centres are evolving adopting the integrative cancer care model of the Memorial Sloan-Kettering Integrative Medicine Center. One such Centre is the Centre for Integrated Healing, a non profit organisation, which is the first Centre in Canada to receive government funding for general practitioners to provide complementary therapies to patients attending the Centre (Brazier, Cooke et al. 2008).

Summarizing, the high and increasing use of CAM being sought by cancer patients has caused concern within conventional medicine. This is particularly so if the efficacies of alternative medicines and complementary therapies have not been medically proven and are sought by cancer patients as an alternative to their conventional medical care as they could prove potentially harmful. A growing amount of research is now being undertaken in CAM in order to establish the safety and efficacy of treatments. The flawed Bristol Study (1990) has highlighted the need for stricter research protocols. Integrative medical centres offering cancer patients CAM alongside their conventional medical treatment continue to evolve and increase in number.

### **2.3.2 CAM and Breast Cancer**

The main reasons given for using CAM by women with breast cancer were to increase their body's ability to fight their cancer, prevent recurrence and to improve their physical and emotional well-being and overall quality of life (Walker and Anderson 1999; Henderson and Donatelle 2004; Deng and Cassileth 2005; Hann, Baker et al. 2005; Lengacher, Bennett et al. 2006; Molassiotis, Scott et al. 2006). As with CAM use in general cancer, women with

breast cancer who use CAM tend to be younger and have a higher educational background (Moschen, Kemmler et al. 2001; Balneaves, Bottorff et al. 2006; Molassiotis, Scott et al. 2006). The most common therapies reported to be used by this population are herbal remedies, medicinal teas, relaxation techniques, homeopathy, vitamins and minerals (Molassiotis, Scott et al. 2006).

In an extensive review of the biomedical literature on CAM research for patients with breast cancer (Jacobson, Workman et al. 2000) fifty-one studies were reviewed. This review identified that although many had encouraging results, none provided clear proof that CAM altered the progression of the disease. However, several of the modalities such as acupuncture, massage and relaxation did appear to improve other outcomes e.g., reduction in pain and use of medication for pain control, reduced nausea and vomiting, improved mood and improved immune function (Jacobson, Workman et al. 2000). Given the nature of the diverse CAM modalities, together with the often concurrent and combined use of several different modalities by breast cancer patients, it is very difficult to research the efficacy of any one given single modality, unless patients can be recruited into RCTs in order to research a single-agent treatment. Even then, with the most well designed trials, RCTs can still prove difficult, as very often the specific CAM intervention being tested in RCTs can be differently administered by practitioners to their clients within their everyday clinic situations (Barry 2006).

In conclusion, as previously discussed in sections 2.3.1 and above, many people living with cancer use some form of CAM to primarily aid their physical and emotional well-being, thus enhancing their overall quality of life. This concept of CAM, in the area of cancer care, is reflected in the growing discipline of psycho-oncology.

## 2.4 Psycho-Oncology

Psycho-oncology is defined as a broad-based approach to cancer therapy that treats the emotional, social, and spiritual distress that often accompanies a diagnosis and the treatment of cancer (Greer, Moorey et al. 1992; Hanser 2002). As such, music therapy could also be viewed as a complementary therapy within the discipline of psycho-oncology (Hanser 2002).

Psycho-oncology addresses the two major psychological dimensions of cancer - the psychological responses of patients to cancer at all stages of the disease, and that of their families and caretakers; and secondly the psychological, behavioural and social factors that may influence the disease process (Rowland 1994; Holland 1998; Webster 2003).

Early literature reporting personality traits has suggested that cancer patients who exhibit a Type C personality, known as the cancer prone personality, suppress emotions. Research in the area of personality and cancer initially suggested that the suppression of emotions (the Type C personality) was directly associated with the onset and prognosis of cancer (Temoshok 1987; Gross 1989; Eysenck 1994). However, although recent research has dismissed this theory (Bleiker, Hendriks et al. 2008), it has been demonstrated that breast cancer patients in particular, who display a Type C personality, do have difficulty with the expression of emotions. Suppression of emotions has been directly associated with high levels of anxiety, which is further associated with psychological distress and poor psychological adjustment following a diagnosis of cancer (Iwamitsu, Shimoda et al. 2005). It is these two areas of psychological distress and psychological adjustment that psycho-oncology primarily addresses.

Over the past thirty to forty years many cognitive-behavioural and psychosocial interventions have been developed as strategies to assist cancer patients in the

areas of stress management, coping, and support - both social and emotional, the latter of which encourages emotional expression. These interventions have been developed to help people living with cancer adjust and adapt to a diagnosis of cancer and its medical treatment (Spiegel 1993; Fallowfield 1995; Greer and Moorey 1997; McCaul, Sandgren et al. 1999; Spiegel and Classen 2000).

More specifically, as loss of control is a major psychological response to a cancer diagnosis, psychosocial supportive interventions which encourage the cancer patient to express themselves emotionally; teach techniques to enable them to help themselves; and/or encourage them to be more involved in decision making and have choice, can lead to the cancer patient regaining a sense of control and feelings of empowerment (Cunningham and Edmonds 1996; Spiegel and Classen 2000; Henderson and Donatelle 2003; Henderson and Donatelle 2004). Becoming actively involved in decision making, and having choice which can lead the cancer patient towards regaining control and ultimately empowerment are the primary reasons why many people living with cancer seek CAM.

Another important aspect of psychosocial interventions, eg. professionally run cancer support groups, is that they offer emotional and social support to cancer patients and have been demonstrated to draw people out of isolation, providing the opportunity for social integration and reassurance of worth (Lugton 1997; Turner-Cobb, Sephton et al. 2000). Cancer support groups also offer nurturing in addition to helping group members maintain a sense of self, whilst adjusting to a new identity, that of a person living with cancer. All of which can act as a protective buffer against stress (Caplan 1974; Cobb 1976; Sarason, Sarason et al. 1990; Benjamin, Bessant et al. 1997; Lugton 1997; Turner-Cobb, Sephton et al.

2000; Zebrack 2000; Friedman, Kalidas et al. 2005; Benjamin H. Gottlieb 2006; Deimling, Bowman et al. 2007; Lethborg, Aranda et al. 2008).

The growing body of research being conducted in the area of psycho-oncology has clearly demonstrated that stress management group cognitive-behavioural therapy interventions have been effective in treating psychological distress in cancer patients following a cancer diagnosis leading to better quality of life outcomes (Cruess, Antoni et al. 2000; Antoni, Lehman et al. 2001; Antoni, Lechner et al. 2006; Greer 2008).

Group psychosocial interventions have also been shown to be effective in the reduction of anxiety and depression, and have further been demonstrated to improve coping skills leading to better psychological adjustment and improved quality of life outcomes, a major focus of psycho-oncology (Sheard and Maquire 1999; Boesen 2002; Kerr, Engel et al. 2003; Kruse, Grinschgl et al. 2003; Antoni, Lechner et al. 2006; Korstjens, Mesters et al. 2006; Fekete, Antoni et al. 2007)

Psycho-oncology research has further investigated the effects of psychosocial interventions on cancer survival. One well documented psychosocial study, of a group supportive-expressive intervention, with metastatic breast cancer patients, identified an increase in the length of survival of the intervention group over the participants in the control group (Spiegel, Bloom et al. 1989) which led to the belief that psychosocial and cognitive-behavioural interventions could affect cancer survival and prognosis (Ross, Boesen et al. 2002). However, no study to date has been able to replicate the Spiegel study (Edelman, Lemon et al. 1999; Cunningham, Edmonds et al. 2000; Ross, Boesen et al. 2002; Fawzy, Canada et al. 2003). Bernard Fox, as cited in (Ross, Boesen et al. 2002) an expert in cancer epidemiology and statistical methods critiqued Spiegel et al's RCT study. He concluded that the differences in survival between the intervention and control groups were found purely by chance, due both to

the unusually poor survival of the control group and not the enhanced survival of the intervention group of women who received the group psychotherapy intervention. Fox argued that studies with small sample sizes were unsuited to randomized controlled trials (RCTs) as randomization does not give a 100% guarantee that the two groups are equivalent on all independent variables (Ross, Boesen et al. 2002).

A major systematic review of twenty-six studies investigating psychological coping on survival and recurrence of cancer also found little supporting evidence that coping styles have any overall effect in either survival or recurrence of cancer (Petticrew, Bell et al. 2002). This systematic review was declared flawed due to its failure to compare the different methodologies utilised in the studies under review. In addition, different coping measurement tools were used to assess coping in the various studies and may therefore not have been comparable.

Finally, thirteen of the studies had less than a three years' follow up and the breast cancer studies reviewed had less than five years of follow up. Follow up of five years is an important aspect when studying survival as cancer patients are not considered to be in remission until five years post diagnosis (Watson, Davidson-Homewood et al. 2003). In spite of the results of the Petticrew et al study (2002) being mixed, with some supporting and others failing to support psychological and psychosocial interventions on the survival and recurrence parameters of cancer, a growing interest in the possible link between psychological and physiological outcomes of cancer has led to a burgeoning interest in the field of psychoneuroimmunology (PNI).

In summary, both music therapy and CAM interventions could be viewed as those similar to the discipline of psycho-oncology, a discipline that strives to address the emotional and social effects and spiritual distress that a diagnosis of

cancer and its treatment can often have on the patient and their families. Group psychosocial and cognitive-behavioural interventions have been demonstrated to assist cancer patients with psychological distress and psychological adjustment to cancer and its medical treatment, leading to improved quality of life. However, no research to date has proven that psycho-oncology increases life expectancy.

## **2.5 Psychoneuroimmunology (PNI)**

PNI is the interaction between psychological processes (mind) and neurological, endocrine and immune function (body) and their influence on health (Langley, Fonseca et al. 2006; Ader and Kelly 2007). More simply put, the mind is connected through the nervous and the endocrine systems to the immune system resulting in a bi-directional communication system. This occurs by means of the regulation of hormones by the brain and nerve fibres that communicate with immune cells.

Robert Ader, pioneer of the field of PNI research provided the first scientific evidence of a connection between the brains of rats and their immune systems (Ader and Cohen 1975). In his 1975 landmark Pavlovian classical conditioning experiment, Ader administered a paired stimuli of feeding rats saccharine and injected them with a known transitory suppressor of the immune system, cyclophosphamide, resulting in the suppression of the rat's immune system. Upon recovery from their transitory immune system suppression, the rats were then given the saccharine alone, which elicited the same conditioned response. This demonstrated that immune function was capable of modification by a non-immune stimulus (Ader 2003). With a direct reference to clinical practice, the placebo effect is a particularly good example of how the mind is able to influence physiological responses in the body (Guess, Kleinman et al. 2002). Often given in clinical trials when testing new medications, the placebo has

been shown to effect the relief of symptoms and even promote cure in some study participants. This is believed to be due to the expectation and the belief of the mind, that the medication (placebo) is having a positive effect on the body (Guess, Kleinman et al. 2002).

Pert, a neuroscientist and psycho pharmacologist identified the connection between neuropeptides (peptides used by neurons as signalling molecules and transmitters) thoughts and emotions in the mid 1970s (Pert and Snyder 1976). These nerve proteins are released by the brain into the central nervous system and carry information to the receptor cells around the body - hence the mind-body connection (Pert, Ruff et al. 1985; Pert 1997; Pert, Dreher et al. 1998; Pert 2006). Pert's work has made an important contribution to the evolving study of PNI which has focussed research on the scientific pathway of the connection between the mind and body in an attempt to discover whether the mind does have the power to heal the body (Fife, Beasley et al. 1996; Lengacher, Bennett et al. 1998; Kiecolt-Glaser and Glaser 1999; Mailoo and Williams 2004; Langley, Fonseca et al. 2006).

The past twenty years has seen the discovery of many different pathways through which the mind-body is connected. For example, it is now known that the brain is capable of detecting signals released by an activated immune system and that receptors on lymphocytes are capable of receiving signals emanating from both neural and endocrine activity (Ader and Kelly 2007). The primary focus of current PNI research is to identify "all of the channels of communication between the brain and the immune system and the nature, magnitude and extent of the effects enabled by these pathways" (p 21) (Ader and Kelly 2007).

As such, the discipline of PNI reflects the mind-body philosophy of CAM, which employs techniques to enhance the mind's capacity to affect bodily



function and symptoms, thus aiding well-being, into which music therapy dovetails.

### **2.5.1 PNI and Cancer**

In this area of PNI research, difficulty has arisen when studies have attempted to link psychological (mind) outcomes to the physiological (body) development of cancer and its progression (Andersen, Farrar et al. 1998). This firstly can be attributed to the type of cancer, as certain cancers are known to be caused by chemical carcinogens, such as lung cancer, and therefore may be less influenced by psychological and behavioural factors than cancers associated with a virus, such as Epstein-Barr virus (Andersen, Farrar et al. 1998; Kiecolt-Glaser and Glaser 1999). In addition, the stage of the cancer and its subsequent treatment (in the case of radiotherapy and/or chemotherapy) along with the treatments physiological side effects can also effect immunological alterations.

In a study of anticipatory immune suppression and nausea in women receiving cyclic chemotherapy for ovarian cancer, a similar conditioned response to that of Ader's rats was demonstrated (Bovbjerg, Redd et al. 1990). After several chemotherapy treatments in the same hospital, within the same treatment room, the women's immune function was found to be suppressed upon their arrival at the hospital prior to their chemotherapy treatment, demonstrating that it was the stress associated with the anticipated chemotherapy treatment (the stressor) and its side effects that had induced immunosuppression (Bovbjerg, Redd et al. 1990).

As PNI and research continues to provide insights and understandings regarding the complex process between psychological processes and neurological, endocrine and immune function, it is still not fully understood how all of these processes interact with each other. Study and research has, however, led to the general acknowledgment that psychological processes and

neurological, endocrine and immune function nervous and immune systems are all components of an integrated system of adaptive processes, and that immunoregulatory processes can no longer be studied as the independent activity of an autonomous immune system (Ader 2000) It is increasingly becoming generally acknowledged that stress can alter immune function and therefore possibly play a role in the development and progression of cancer (Spiegel 1991; Andersen, Kiecolt-Glaser et al. 1994; Esterling, Kiecolt-Glaser et al. 1994; Andersen, Farrar et al. 1998; Cohen and Rabin 1998; Kiecolt-Glaser, McGuire et al. 2002; Luecken and Compas 2002; Moynihan 2003; Reiche, Nunes et al. 2004)

## **2.6 Stress, Health and Disease**

Stress as defined by Seward is the inability to cope with a perceived, real or imagined threat to one's mental, physical, emotional and spiritual well-being (Seward 2000). Selye, who pioneered much early research into the effect of stress on health and disease believed stress to be a non-specific physiological response of the body to any demand made upon it (Selye 1956). It is interesting to note that there are three types of stress (Healey 2002) and that stress is not all bad; (i) eustress – good stress which arises from any situation or circumstance that a person finds motivating or inspiring; (ii) neustress; which refers to sensory stimuli, which have no direct personal threat or consequential effect and which can be considered as neither good nor bad stress and iii) distress, which falls into two categories of bad stress, that of; (a) acute stress, the type of stress which surfaces, is intense and disappears quickly and (b) chronic stress, which may not appear quite as intense but lingers on for prolonged periods and is associated with illness (Healey 2002).

Cannon first discovered a direct relationship between stress and neuroendocrine responses in animals (Cannon 1932), leading to the 'flight stress

response' (to acute stress) – a title coined by Selye (Selye 1956). However, it is chronic stress that has been demonstrated to produce physical, behavioural and emotional symptoms and is associated with the development of illness and disease and which has led some researchers to believe that chronic stress can impair immune functioning (Spiegel 1999; Bauer, Vedhara et al. 2000; Dhabhar 2000; Guilbaud, Corcos et al. 2003; Robles and Kiecolt-Glaser 2003; Koh, Choe et al. 2006; Mommersteeg, Heijnen et al. 2006).

### **2.6.1 Stress, Immunity and Cancer**

Immunological responses to stress have gleaned greater understanding since the early 1980s when stress research gained momentum (Cain 2003). A large number of studies have indicated that stressors (any stimulus, circumstance or situation that is perceived to be a threat or to promote stress) are associated with dysregulation of the immune system (Kiecolt-Glaser and Glaser 1999).

Burnett promoted the theory of immune surveillance by natural killer (NK) cells. These cells are capable of eliminating neoplastic cells in normal, healthy individuals (Burnet 1971). NK cells play an important role in immunity as they act as a defence against viral infections (Welsh 1996) and keep surveillance for tumour cells (Herbermann and Ortaldo 1981). Following on from this work a study of 75 medical students on the day of their examinations collected blood samples which demonstrated a significant decline in NK cell activity (Kiecolt-Glaser and Glaser 1999). This result indicated lower immune functioning, as against baseline measures taken a month prior to the student's examinations, during a less stressful period of time. This is a study replicated many times since (Kiecolt-Glaser and Glaser 1999).

A study investigating chronic stress in older adult caregivers and former caregivers of partners with Alzheimer's disease (who did not differ on

depressive symptomatology or perceived distress), found that NK cell activity decreased as opposed to a control group (Esterling, Kiecolt-Glaser et al. 1994).

Social support has also been found to play a part in the dysregulation of NK cells and cortisol. A study of bereaved spouses, who lacked social support, demonstrated elevated levels of cortisol and decreased NK cell activity.

Meanwhile, other research has reported lower levels of NK cell activity in medical students who perceived themselves to be lonely, as opposed to their fellow students who had more social support and were less lonely (Kiecolt-Glaser and Glaser 1999).

A number of studies have demonstrated that interventions designed to reduce the negative effects of stress have enhanced immune function. Anderson et al (1998) studied 116 patients recently diagnosed and treated for invasive breast cancer. Prior to commencement of adjunctive treatment all subjects completed a standardised self-report questionnaire to gauge their stress levels associated with their status as cancer patients. The participants also provided a blood sample analysed for NK cell and lymphocyte activity. Stress was shown to significantly inhibit both NK cell and lymphocyte activity (Andersen, Farrar et al. 1998). In a further stress study in which 117 women recently diagnosed with breast cancer were randomised into a treatment or control group, it was found that the younger women whose lives are most affected by having cancer, who have low self-efficacy and received post surgical cancer treatment were at the greatest risk of suffering traumatic stress (Koopman, Butler et al. 2002).

In a study, Fawzy et al (1990) evaluated a 6-week structured group intervention of: health education, enhancement of problem solving skills regarding diagnosis, relaxation as a form of stress management and psychosocial support for melanoma cancer patients. All study participants (who had either stage I or II malignant melanoma and who had not received any surgery) were

randomised into either an intervention or control group. Results indicated reduced psychological stress and significant immunological changes, exhibiting significant increases in the percentage of NK cells, as well as an increase in NK cell cytotoxic activity in the intervention group compared with the controls (Fawzy, Kemeny et al. 1990). At a 6-year follow up, the same control group illustrated a trend towards greater recurrence and a higher mortality rate compared to the intervention group. However, at a 10-year follow up any differences initially detected between the intervention and control groups were not significant and although the effects studied had weakened since the 6-year follow up, they had not entirely disappeared (Fawzy, Canada et al. 2003).

Many studies have now demonstrated the efficacy of cognitive-behavioural and psychosocial interventions in the area of cancer care (Kruse, Grinschgl et al. 2003; Antoni, Lechner et al. 2006; Korstjens, Mesters et al. 2006). It is into this area that music therapy comfortably dovetails as it is a therapy which has been shown to complement conventional medical care for the treatment of cancer (Furioso 2002; Hilliard 2003; O'Callaghan and McDermott 2004; Daykin, McClean et al. 2008) .

Summarizing, stress has been associated with the dysregulation of the immune system. Chronic stress has been demonstrated to decrease NK cells which act as a defence against viral infections and keep surveillance for tumour cells. Levels of cortisol have been demonstrated to increase, as a response to chronic stress. Cognitive-behavioural and psychosocial interventions primarily focussed on stress reduction strategies and social support have been demonstrated to have a positive effect upon NK cell cytotoxic activity and lowered levels of cortisol.

## **2.7 Music Therapy**

Music therapy is the planned and creative use of music to attain and maintain health and well-being, and may address physical, psychological, emotional, cognitive and social needs of an individual client or group within a therapeutic relationship<sup>4</sup>. Music therapy focuses on meeting therapeutic aims, which distinguishes it from musical entertainment or music education. Music therapy encompasses a wide range of techniques including listening to both recorded and live music for relaxation and imagery as well as improvisation – the creating of music made in the moment by the playing of tuned and untuned percussion instruments. Song writing and/or recreating songs using clients own words is another music therapy technique used by professionally trained registered music therapists in order to address the therapeutic needs of their clients (Bailey 1984; Munro 1984; O’Callaghan 1990; Aasgaard 2002).

### **2.7.1 Group Music Therapy**

Gaston (1968) noted that the potency of music is at its most powerful within a group environment (Gaston 1968). Bruscia (1989) suggests that the relationships which develop through the use of group music therapy are a means of helping clients who have been debilitated by illness, injury, or trauma to regain previous levels of functioning or adjustment to the best extent possible. Bruscia further describes the restorative quality of music therapy as addressing emotional as well as adaptational needs, including feelings that arise out of the recovery process itself (Bruscia 1989).

When working with cancer patients in group music therapy the music therapist/researcher doctoral candidate works from within a humanistic

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<sup>4</sup> Australian Music Therapy Association definition

orientation, from which the first type of therapeutic groups emerged in the early 20<sup>th</sup> century (Benjamin, Bessant et al. 1997). Within this theoretical framework, work with clients is based on (i) respect for individuals and their unique differences, (ii) the notion of wholeness, (iii) development of purpose and personal intentions, (iv) freedom of choice, (v) self-growth, or self-actualisation, (vi) creativity, (vii) love, (viii) peak experience and (ix) self-esteem (Bunt 1994).

### **2.7.2 Group Improvisational Music Therapy (GIMT)**

Group improvisational music therapy (GIMT) involves the playing of a range of tuned and untuned percussion instruments originating from many parts of the world, thus giving accessibility to all clients involved in a session. Clients do not need to have any musical knowledge, experience or expertise. GIMT is a non-verbal intervention which can promote verbal communication. As Bruscia (1987) states:

When both non-verbal and verbal channels are employed, the improvisation serves to intensify, elaborate or stimulate verbal communication, while the verbal communication serves to define, consolidate, and clarify the music improvisation (p. 561) (Bruscia 1987).

Through the clients' active involvement in GIMT, they are provided with the opportunity to express and share their *feelings* with others (esteem support), on and through the instruments. This can help to increase self-awareness and encourage both the giving and receiving of emotional support, thus providing the opportunity to both nurture and be nurtured by others when in a time of need. These are all specific functions of social support (Sarason, Sarason et al. 1990).

GIMT can also help cement group cohesion (Henderson 1983; Bunt and Marston Wyld 1995; Skewes 2001). This is characterised by a high level of group participation, positive mutual feelings of trust, understanding and acceptance

amongst group members which, encourage group members to take risks and self-disclose (James and Freed 1989). In addition to group cohesiveness GIMT also offers each group member the opportunity to meet their own personal needs (Bruscia 1987).

### **2.7.3 Music Therapy in Cancer Care**

An early review of music therapy in cancer care, carried out by Porchet-Munro (1988), demonstrated music therapy to be a supportive intervention in cancer rehabilitation as it; facilitates social interaction; nurtures feelings of community; and helps to draw individuals out of their isolation and into a shared experience (Porchet-Munro 1988). Porchet-Munro further suggests that both listening to music and active music therapy (improvisation) may also address specific areas of need for the cancer patient. These areas include: difficulty with coping, withdrawal, expression, anger, anxiety, fear, anguish, extreme physical tension, confusion, boredom, loneliness, complex pain problems, and each patient's search for meaning (Porchet Munro 1988).

The most recent empirical meta analysis of music therapy research conducted by Dileo and Bradt (2005) reported only sixteen music therapy focused studies in the area of cancer since the mid 1980s of which most of the research investigated the effects of one-off music therapy sessions. The majority of research was conducted with the terminally ill and in the areas of pain control, anxiety and quality of life. Eight studies were within subject design (Curtis 1986; Pfaff 1989; Whittal 1989; Beck 1991; Calovini 1993; Burns, Harbuz et al. 2001; Barrera, Rykov et al. 2002) and eight studies of experimental control design (Zimmerman, Pozehl et al. 1989; Lane and Olness 1991; Abbott 1995; Sabo and Michael 1996; Ezzone, Baker et al. 1998; Smith, Casey et al. 2001; Cassileth, Vickers et al. 2003; Hilliard 2003). Music listening was the most



commonly (eleven studies) researched music therapy intervention (Dileo and Bradt 2005). As Pothoulaki et al (2006) state:

Although empirical evidence exists to support the outcomes of music therapy interventions in cancer patients, the number of experimental studies is not sufficient in order to establish a well-documented body of evidence (p452) (Pothoulaki, MacDonald et al. 2006)

Music therapy studies conducted in the area of cancer care over the last twenty-five years or so have primarily been of qualitative design, in the area of music listening and within a palliative care setting (Martin 1989; O'Callaghan 1990; Bunt and Marston Wyld 1995; Jackson 1995; O'Callaghan 1996; Skaggs 1997; Hogan 1998; Weber 1998; Tobia, Shamos et al. 1999; Gallagher, Huston et al. 2001; O'Callaghan 2001; Aasgaard 2002; Daykin, McClean et al. 2008). Listening to music, preferably music self selected by the cancer patient and played live to the patient by the therapist for relaxation has been demonstrated to act as a distraction from cancer pain (Foley 1986; Coyle 1987; Brodsky 1989; Bailey 1993; O'Callaghan 1996; Magill 2001; Hilliard 2003). It promotes a reduction in stress, anxiety and depression (Pfaff 1989; Palakanis, Denobile et al. 1994; Cunningham, Monson et al. 1997; Gallagher, Huston et al. 2001; Hilliard 2002; Bonde 2004). Listening to music has been shown to positively impact upon the quality of life of cancer patients

A number of studies have demonstrated that music therapy can aid well-being and quality of life and affect mood by eliciting positive feelings of enjoyment, pleasure and happiness. Music therapy can also assist with the reduction of tension, fatigue and confusion, in addition to reducing negative feelings, such as perceived distress and fear (Bunt and Marston Wyld 1995; Burns, Harbuz et al. 2001; O'Callaghan 2001; Barrera, Rykov et al. 2002). One of few on-going music therapy studies investigated the effect of guided imagery and music (GIM) on the mood and life quality of cancer patients. The study was conducted

with eight volunteers who were randomly assigned to either an experimental or wait-list control group (Burns 2001). The experimental group participated in ten weekly sessions. All participants completed mood and quality of life questionnaires pre and post each session and at a six week follow-up. Individuals in the experimental group indicated better mood and quality of life at post-test and follow-up than individuals in the control group. However, no statistical significance was found due to small sample size (Burns 2001).

A few quantitative studies have investigated the effects of music therapy as a form of distraction for patients undergoing chemotherapy (Frank 1985; Standley 1992; Webber, Nuessler et al. 1997; Ezzone, Baker et al. 1998). The Ezzone (1998) study suggested that music therapy, used as a diversional adjunct intervention to chemotherapy, in order to take cancer patients attention away from their treatment, can be helpful in decreasing the side effects of nausea and vomiting whilst cancer patients undergo chemotherapy (Ezzone, Baker et al. 1998). A pilot study, carried out by Webber et al (1997) attempted to evaluate the influence of receptive music listening on emotional trauma, anxiety and tension associated with cancer and chemotherapy treatment, with thirty-three cancer patients, whilst undergoing a chemotherapy session. The findings of Webber et al. suggested that despite their incomplete data collection receptive music listening as an adjunct treatment during chemotherapy warranted further investigation (Webber, Nuessler et al. 1997).

One of the few mixed methods music therapy studies to date consisted of a quantitative independent repeated-measures counterbalanced design alongside a qualitative open-ended music therapy satisfaction questionnaire (Waldon 2001). This work investigated the effects of a ten week group music therapy intervention with two male and eight predominantly female breast cancer patients. The music therapy technique of listening to songs performed by the

music therapist/researcher followed by participants re-creating their own lyrics and improvising their own songs (using various percussion instruments) was employed to investigate the effects of mood state and group cohesiveness in adult oncology patients. The study results showed a reduction of anger, confusion, fatigue, depression and tension amongst these participants with no significant change in group cohesiveness. However, generalisability of the results of this study is difficult due to the small sample size (Waldon 2001).

Another mixed methods GIMT was conducted by a researcher using both psychosocial and quality of life measures, and qualitative post study telephone interviews (Furioso 2002). This study – the only mixed methods research study of GIMT focusing exclusively upon breast cancer patients to date - investigated the effect of a six week GIMT intervention with regards to coping, psychosocial adjustment, and quality of life amongst five women at various stages of their cancer. Although no statistically significant results were detected in the coping and psychosocial adjustment measures, due to the small sample size, statistically significant results were detected in the quality of life measure, indicating an improvement in the women's quality of life from pre-test to post-test each of the weekly GIMT interventions. Moreover, telephone interviews with the breast cancer patients revealed how the women perceived their involvement in the six weeks of GIMT as self empowering (Furioso 2002).

The most comprehensive quantitative study (Hilliard, 2003) to date investigating quality of life and possible length of life was conducted in the USA. Employing a repeated measures design, this study evaluated the effects of music therapy on quality of life, length of life in care, physical status, and relationship of death occurrence to the final music therapy interventions of 80 hospice patients diagnosed with terminal cancer. The study subjects were randomly assigned to either an experimental or control group and the two

groups were matched in terms of gender and age. All subjects completed quality of life self report measures and were assessed for physical status on two visits by a hospice nurse. Results indicated that quality of life was higher for the subjects who received music therapy compared to the control group. There were no significant differences between the groups on physical status, length of life, or time of death. However, the results of this study have helped develop guidelines for the use of music therapy in improving quality of life with the terminally ill (Hilliard 2003).

Similarly, qualitative music therapy research has provided some useful insights into the aiding of verbal communication through encouraging cancer patients to express themselves creatively with others who are experiencing the same illness (Bunt and Marston-Wyld 1995; O'Callaghan 1996; Weber, Nuessler et al. 1997; Tobia, Shamos et al. 1999; Gallagher and Steele 2001). Bunt & Marston-Wyld's qualitative study (1995) noted how group music therapy appeared to have improved verbal and non-verbal communication and a sense of togetherness by both supporting and encouraging the physical, mental, social, spiritual and emotional well-being of the cancer patients involved in the study (Bunt and Marston Wyld 1995).

Music therapy studies in the area of child oncology have demonstrated a decrease in distress, and an increase in children's active engagement and play activities (Brodsky 1989; Pfaff 1989; Robb 2000; Aasgaard 2002; Barrera, Rykov et al. 2002). Barrera et al. (2002) conducted a within subjects study of 65 hospitalized child oncology patients. A mixed methods quantitative and qualitative study design was utilized to explore the effectiveness of interactive music therapy in reducing anxiety and increasing patient comfort (Barrera, Rykov et al. 2002). Self-rated mood, with the children using schematic faces to depict their mood, parental ratings of their child's play performance, and

satisfaction questionnaires, revealed an improvement in the children's feelings from pre to post the music therapy sessions. In addition, the parents perceived improved play performance and reported the positive impact of music therapy on the child's well-being (Barrera, Rykov et al. 2002).

In summary, music therapy in the area of cancer care has been shown to be supportive in the rehabilitation phase of cancer. The majority of music therapy research in cancer care has been carried out in the area of palliative care. The most frequently utilized and researched music therapy technique in cancer care is the passive technique of music listening. A recent music therapy meta analysis (2005) reported only sixteen empirical studies in cancer care with the majority of studies conducted in the area of palliative care. These sixteen studies primarily investigated the effect of music therapy on cancer patients' pain control, levels of anxiety, depression and quality of life. Music therapy studies in cancer care have further demonstrated a reduction in anger, confusion and fatigue and have been shown to alleviate the side effects of chemotherapy. Music therapy has been shown to aid verbal communication and in child oncology, music therapy has been demonstrated to decrease distress and increase children's active engagement in play activities, resulting in a positive impact on children's well-being.

#### **2.7.4 Music and Physiological Parameters of sIgA and Cortisol**

Research into the effects of music, listening to music in particular, on sIgA has primarily been of interest to researchers as sIgA is an important parameter of immune status and is the main immunological defence of the mucosal surfaces. It is thought that levels measured in saliva are indicative of the functional status of the mucosal immune system (Mystecy 1993). Salivary IgA has consistently demonstrated sensitivity to psychological variables and as such has the

potential to reflect the psychological impact of music upon immune functioning (Hucklebridge, Lambert et al. 2000).

Cortisol, a physiological measure of stress, is an important glucocorticoid and is synthesised by the adrenal cortex. The release of cortisol from the adrenal cortex represents the end-point activation of the physiologically important stress neuroendocrine pathway. Measurement of salivary cortisol is of particular interest to researchers in the area of listening to music for relaxation for the reduction of stress as it is an accepted and validated measure of stress-axis activity (Mystecy 1993; Aardal and Holm 1995).

Literature pertaining to studies investigating the influence of music on physiological parameters of salivary immunoglobulin A (sIgA) (Rider, Achterberg et al. 1990; Goff, Pratt et al. 1997; Tsao, Gordon et al. 1999; Hucklebridge, Lambert et al. 2000; Kuhn 2002), a measure of immune function, and cortisol (Miluk-Kolasa, Obminski et al. 1994; Hirokawa and Ohira 2003; Hasegawa, Uozumi et al. 2004; Uedo, Ishikawa et al. 2004), a measure of stress, have been carried out predominantly in the area of music listening, by non music therapists and with healthy individuals.

An early study by Rider and Weldin (1990) demonstrated significant increases in sIgA levels in thirty university students using combined music and imagery treatments. In 1999, Tsao et al conducted a larger randomized study with 80 college students who were randomly assigned to one of four, twenty minute treatment conditions of (music only; imagery only; music and imagery combined; and no treatment control). The results of this study showed that the music treatment and imagery treatment produced significant increases in sIgA whilst, contrary to expectation, combining music and imagery in a single treatment failed to produce a significant increase in sIgA, which was in contrast to Rider and Weldin's earlier study (Tsao, Gordon et al. 1999). This could

possibly indicate individual differences in the sIgA parameters of the healthy individuals involved in the two different studies (Kuhn 2002).

A randomized cross over design Hucklebridge et al (2000) investigated the response of mood manipulation on modulation of sIgA in nineteen healthy female university students through the design and completion of two separate experiments. In the first experiment, the subjects were asked to recall, write down and reminisce, either a time in their life when they had experienced feelings of happiness or feelings of guilt. Saliva samples were collected at baseline, post-test and 30 minutes post-test. The second experiment involved 41 university students and staff (31 female and 10 male). Subjects were assigned, to listen to either happy or sad music. Baseline and post-test saliva samples were collected. Results in the first experiment indicated that sIgA concentration and secretion rate increased significantly with some evidence that sIgA secretion rate was more pronounced for positive mood recall. In the second experiment, mood induction by music was shown to result in elevated levels of sIgA concentration and secretion rate regardless of mood valence (Hucklebridge, Lambert et al. 2000).

In a two phase exploratory study conducted by Udeo et al (2004) with 29 patients undergoing screening colonoscopy investigated the effect of listening to music on pain, EEG and salivary cortisol levels. Patients were randomly assigned to either a group undergoing colonoscopy whilst listening to music (n=15) or a group undergoing the same procedure without listening to music (n=14). Results indicated that the patients who listened to music whilst undergoing colonoscopy tended to have lower pain scores, with cortisol levels increasing significantly less than the patients who did not listen to music whilst undergoing colonoscopy, indicating that listening to music during colonoscopy

reduces fear-related stress, as indicated by changes in salivary cortisol levels (Uedo, Ishikawa et al. 2004).

Two music therapy studies have investigated the effect of music therapy on physiological parameters of sIgA and cortisol. The first study investigated the effect of both active and passive music therapy techniques on immune function as measured by sIgA. Thirty-three university students (28 females and 5 males) were randomised to either, a 30-minute drumming, singing and short pentatonic improvisation active group intervention, a 30-minute passive listening to music performed live or a 30-minute control group. The control group could move freely about the room, talk or sit quietly for 30 minutes. Saliva samples were collected from all subjects pre-post each session. Results indicated a significant increase in sIgA levels in the active groups, as compared to both the passive and control groups, suggesting that participation in active music therapy has a greater positive effect on the immune function of healthy students than passive listening to music. However, it was interesting to note in this study that there was an extreme variance in the concentration of sIgA between each of the three groups of healthy undergraduate students involved in the study, suggesting that there is a large variation in sIgA parameters within individuals (Kuhn 2002). The second music therapy study investigating the effects of a 13-week GIM intervention on mood and cortisol in twenty-eight healthy adults demonstrated significant decreases between pre and post session depression, fatigue, and total mood disturbance. At six week follow-up significant decreases in cortisol level were detected. This was significantly associated with decreased mood disturbance (McKinney, Antoni et al. 1997).

Summarizing, the small amount of music research (conducted by both non music therapists and music therapists with predominantly healthy populations) investigating the association between primarily, listening to music, on the



physiological parameters of sIgA and cortisol has produced varied results. Levels of sIgA secretion and concentration have, in the main, been demonstrated to significantly increase when listening to music under a number of various conditions. It has also been associated with significant increased levels whilst actively music making. Extreme variance in the concentration levels of sIgA has been detected, suggesting that there is a large variation in sIgA parameters within individuals. Cortisol has been demonstrated to significantly decrease following guided imagery and music which has further reflected decreased mood disturbance. Cortisol has been demonstrated to increase less significantly in patients undergoing colonoscopy whilst listening to music as compared to those with no music undergoing the same medical procedure.

#### **2.7.5 Music Therapy in Cancer Care and Physiological Parameters of sIgA and Cortisol**

Although research has been carried out on the association between music (mainly music listening) and physiological parameters of sIgA and cortisol, (2.7.4) research into the physiological effects of music therapy in cancer care has been sparse. To the best of this researcher's knowledge there have only been two published studies to date investigating the effects of music therapy on the immune function of cancer patients (Lane 1991; Burns, Harbuz et al. 2001). Lane's (1991) research, a doctoral study, demonstrated increased levels of sIgA after a single music therapy session with forty hospitalised children (18 boys and 22 girls). The children were aged between six and twelve years and had a variety of different diagnoses including cancer. The subjects were randomly assigned to either an experimental music therapy group or a control group, which received no music therapy intervention. A physiological measure of sIgA and psychological measures of speech pause time and a patient opinion Likert scale were administered to all subjects pre-post session. The results indicated

that measures of sIgA increased between pre-test and post-test test for all subjects, with a significant increase in the experimental group. There were no significant differences between the experimental or control groups on psychological measures. However, the significant increase in sIgA in the experimental group may have indicated that the 30-minute music therapy intervention was effective (Lane 1991).

The Burns et al (2001) mixed methods quantitative/qualitative pilot study design, investigated the therapeutic effects of music therapy at a cancer help centre. This study also indicated a significant increase in the levels of sIgA after a single music therapy session with adult cancer patients. It further indicated that music therapy has the potential to increase the cancer patients' sense of well-being, reduce tension and increase energy levels (Burns, Harbuz et al. 2001). It is this research that informs this current doctoral research project and as such it is reported in full in the following chapter of this thesis. The publication is located in Appendix 2.

## **2.8 Conclusion**

This chapter has reviewed and discussed literature pertinent to this current doctoral research study. As reported, although there is much music therapy research in the area of cancer care, most of it is in the area of palliative care and of a qualitative design. Quantitative research studies have generally investigated the effects of a one-off music therapy intervention – mainly music listening. There are a limited number of quantitative/qualitative mixed methods research designs in cancer care with only two music therapy studies incorporating physiological measures.

This current doctoral thesis is the first study to incorporate quantitative psychosocial, psychological and physiological measures with qualitative semi-

structured interviews, focus group and reflective experience work, to investigate the on-going effects of GIMT with women recently diagnosed with breast cancer. This thesis will therefore help to fill a gap in the literature and knowledge and will provide some first steps towards understanding this specific topic.

## **Chapter 3 Pilot Study**

### **Introduction**

This chapter presents a music therapy pilot research study (conducted by the author of this thesis) which has provided the impetus for this doctoral research project. The chapter discusses the background of the pilot study, the researchers involved and the study methodology. It further presents the study results, discussion, conclusion, and future research recommendations.

### **3.1 Background**

The project, a music therapy pilot research study, was carried out at the Bristol Cancer Help Centre (CHC).<sup>5</sup> The philosophy of the CHC is to view healthcare as holistic, thus combining the physical, mental, emotional and spiritual aspects of the whole person.

The CHC provides complementary therapies of massage, shiatsu and healing, psychological support, nutritional education and self help techniques to cancer patients and their supporters attending daily and weekly on site residential courses. The aim of the courses offered is to improve the quality of life of the person living with cancer.

#### **3.1.1 Music Therapy at the Bristol Cancer Help Centre (CHC)**

The music therapy programme at the CHC was established in the mid 1980s and has evolved and developed over more recent years. Initially, an evening of listening to music, with the focus on relaxation, was scheduled into the early

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<sup>5</sup> The Bristol Cancer Help Centre is an international cancer help centre in the UK. The CHC has recently changed its name to Penny Brohn Cancer Care: [www.pennybrohncancercare.org](http://www.pennybrohncancercare.org)

part of the residential week programme. At these sessions professional musicians performed live music to the residents.

The music therapy programme was later extended to include an active one and a half hour group improvisation (the playing of tuned and untuned percussion instruments) session. At this session, timetabled in to the middle part of the residential week programme, residents were invited to play a large range of percussion instruments originating from many parts of the world thus giving accessibility for all involved. Group improvisation offered the residents the opportunity to creatively self express their feelings both on and through the instruments. It also helped to cement group cohesion through a shared musical activity in which all persons in the group could support one another (Bunt and Marston-Wyld 1995). Support is one of a number of areas which this thesis further explores in more depth and detail.

The music therapy programme's approach is essentially humanistic, whereby the therapist aims to maximise the growth and potential of their clients (Bunt 1994). Music therapy complements the other therapies offered at the CHC, all of which aim to improve the quality of life of the residents.

An earlier exploratory study carried out by Bunt and Marston-Wyld (1995) at the CHC also demonstrated how group improvisation both encouraged and supported the physical, mental, social, spiritual and emotional well-being of the residents. Observation during subsequent group improvisation sessions over the years at the CHC has continued to indicate the potential contributions of the music therapy programme to the residents' sense of well-being and emotional expression (Bunt and Marston Wyld 1995).

In response to the philosophy of the Centre, the need for a more rigorous study into the therapeutic effects of both listening to music for relaxation and group

improvisation with residents attending the residential week programme was indicated. As a result, an appropriate team of researchers was recruited to carry out a pilot research study into the therapeutic effects of music therapy at the CHC.

### **3.1.2 Research Team**

The research team for the pilot study consisted of four key members: the current PhD candidate, the Centre's resident music therapist and two scientific researchers - a neuro-endocrinologist and a psycho-physiologist.

## **3.2 Methodology**

The research team was interested in researching both the psychological and physiological therapeutic effects of music therapy on positive emotions, and the immune function of cancer patients attending the residential weekly courses at the CHC. An accompanying aim of the pilot study was to examine any possible differences in an individual's response to listening, to either recorded or live music whilst in a relaxed state.

### **3.2.1 Study Design**

A mixed methods design of quantitative pre-post test of psychological and physiological measures, and qualitative focus group enquiry was used for this pilot study.

### **3.2.2 Research Questions**

An open range of questions was produced in order to approach the research problem using various methods. It was decided that due to the preliminary nature of this pilot study, a multi methods approach of quantitative measures and qualitative investigation would be used. The research questions were as follows:

- How can any psychological changes during the individual's experience of listening to music in a relaxed state be monitored?
- Are there any differences between listening to the same music played either live or recorded?
- How can any psychological changes during the active music therapy technique of improvisation be monitored?
- If any psychological changes are found, is there a way to physiologically monitor these changes?

### **3.2.3 Research Tools**

#### **3.2.3.1 Quantitative - Psychological**

In consultation with an experimental psychologist it was decided to use, as one quantitative method, the University of Wales Institute of Science and Technology (UWIST) Mood Adjective Checklist (MACL) (Matthews, Jones et al. 1990). This research tool was of interest as it measured changes in levels of tension, energy and hedonic tone (feelings of well-being). It had also previously been successfully used in a music therapy doctoral research study (Wigram 1996)<sup>6</sup>

#### **3.2.3.2 Quantitative - Physiological**

The researchers decided to carry out testing of sIgA and salivary cortisol<sup>7</sup>. This method of testing was decided upon as opposed to the collection of blood

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<sup>6</sup> A detailed description of this scale is presented in Chapter 4 - Methodology

<sup>7</sup> A description of these measures and the collection protocol are reported in Chapter 4 - Methodology

samples, as it would be the least invasive method of collection of the physiological data with this sensitive population.

#### **3.2.3.3 Qualitative – Focus Group**

The primary researcher, along with the resident music therapist decided to use focus groups as a qualitative method of investigation. By using this approach, emerging data could be inductively explored and investigated in the field, from group discussions and interviews that focussed on a certain topic (Morgan 1997). Focus groups were used in this study in order to support and contextualise the psychological and physiological findings where possible.

#### **3.2.4 Hypotheses**

In response to the research questions, the following hypotheses were generated for the quantitative measures in this study.

*Hypothesis 1:* that during the listening experience, participants would become more relaxed and less tense and have an increased sense of well-being;

*Hypothesis 2:* that there will be a difference between the levels of the psychological and physiological responses, to listening to recorded music and music played live to the study participants;

*Hypothesis 3:* that during the improvisation (active playing) experience, a release of emotion would occur and a range of different feelings would be articulated through the musical improvisations, resulting in less tension, an increased sense of well-being, and participants becoming more invigorated;

*Hypothesis 4:* that during both the experiences of listening and improvisation, levels of sIgA would increase and levels of salivary cortisol would decrease.

In addition to these hypotheses the qualitative section of the pilot study was guided by the aim to explore the participants' experience of two different music



therapy techniques, those of listening to music for relaxation and group improvisation. Secondary to this, the researchers were interested to discover whether any emergent themes from the qualitative data would support evidence gathered by the quantitative measures.

### **3.2.5 Recruitment**

Participation in the study was voluntary with all residents attending the one-week residential courses at the CHC being invited to take part in the music therapy pilot research study. Informed written consent was obtained from each participant prior to the commencement of their participation in the study.

### **3.2.6 Procedure**

The pilot study was carried out in 1998, and consisted of two stages over a period of three months due to participant availability. It involved four separate residential weekly courses.

Stage One involved three residential weekly courses in which twenty participants (five males and fifteen females) experienced a single session of listening to recorded music in a relaxed state, a group improvisation session and a focus group meeting.

Stage Two involved one residential weekly course in which nine participants (three males and six females) experienced a single session of listening to live music in a relaxed state, a group improvisation session and a focus group meeting.

Both stages of the research were carried out over a period of three consecutive days which was timetabled into the regular weekly residential courses.

### **3.2.6.1 Stage One**

Participants were invited to attend a one hour session of listening to recorded music in a relaxed state after the evening meal on the first day of the three day study period.

At this session, the participants were given an introduction to the evening's listening experience, followed by a short relaxation induction given by the resident music therapist. This was then followed by approximately twenty-five minutes of recorded music played to the participants as they sat in upright lounge chairs. The same recorded music was played to each group of participants in Stage One of the study. This music was taken from a CD of the group Chameleon, which was performed live to the participants in Stage Two of the study. A list and sample of the music played is in Appendix 1.

Chameleon's music is composed by group member Celia Harper and is of a reflective and meditative nature and for the most part uses settings of early Latin texts. The melodic line is written for either soprano or counter-tenor voice, with the accompaniment provided by a Tibetan singing bowl, baroque harp and/or violin.

Day Two of the study involved the regular group improvisation session of one and a half hours duration with the study participants in the late afternoon.

This session commenced with a brief outline of the session format; (i) an opening section of improvisations to establish security and trust within the group, (ii) a central section of small or large group improvisations, with or without themes focussing on emotional expression and (iii) a final closure section. At the completion of each improvisation the participants were encouraged to verbalise about their experience to other group members.

Day Three, the final day of the three day study commenced with an early morning focus group meeting, following breakfast. This meeting lasted for approximately one hour and was attended by the primary researcher who was the focus group mediator, and the recorder, who was the resident counsellor. The main purpose of the focus group was to provide a time for the participants to discuss, compare and contrast their experiences in both the listening and improvisation sessions. An equal amount of time was allotted for the discussion of each type of session.

The focus group meetings were audio taped with the permission of the participants. The audio tapes were later transcribed and analysed by the primary researcher who recorded recurring themes.

#### **3.2.6.2 Stage Two**

Stage two involved one residential weekly programme in which nine participants (three men and six women) experienced one session of listening to the same recorded music played live to them, whilst in a relaxed state and one improvisation session also followed by a focus group. In addition to completing the UWIST-MACL pre and post the music therapy sessions, the participants of stage two were also invited to provide a sample of their saliva pre and post each music therapy session, for the analysis of sIgA and salivary cortisol.

A strict protocol was followed for the collection of the saliva samples for the analysis of sIgA and cortisol in both the listening to music and improvisation interventions. Each intervention pre-test saliva sampling took place one and a half hours following the study participants' meals at the CHC. Each intervention post-test collection of saliva samples was conducted immediately following the conclusion of each of the two music therapy interventions. In addition to no food being eaten one and a half hours prior to sampling, the participants were also instructed to take no fluids (including water) for at least

thirty minutes prior to both the pre-test and post-test saliva samples being taken.

The participants were instructed to remove the cotton wool swab from its salivette and place the cotton wool swab under their tongue for two minutes, which was timed by the researcher. The participants were requested not to swallow or chew whilst the pad was in their mouth. Following the collection of the saliva in this way, each participant replaced their pad in its salivette. The salivettes were then immediately stored at 2-8C in a designated fridge at the CHC.

A total of 36 saliva samples were collected for analysis. The first pre/post-test intervention samples were collected at 7pm and 9pm respectively on the first day of the study and the second pre/post-test samples were collected at 3pm and 5pm respectively on the second day of the study. Following each of the two music therapy interventions, the saliva samples were removed from the designated fridge at the CHC, placed on ice in a container and immediately transported to the medical school research laboratories of Bristol University, a few minutes away from the CHC for analysis.

### **3.2.7 Ethics and Funding**

All research at the CHC is subjected to independent review by the CHC Board of Trustees. Approval was obtained from the Board of Trustees to carry out the pilot study with the aid of a grant from the Trustees of the Paul Jenkins Fund.

## **3.3 Results**

### **3.3.1 Participants**

A total of twenty-nine residents (eight men and twenty-one women predominantly of British/European background) took part in the study, which was conducted in two stages over a period of three months.

Twelve different primary types of cancer, at varying stages were present in the participants. Breast cancer was the most predominant cancer (with twelve participants diagnosed). In addition, three participants had brain cancer, three lung cancer, two melanoma, one bladder cancer, one ovarian cancer, one uterus cancer and one prostate cancer. Two participants had lymphoma, one leukaemia, one oesophagus cancer, and one participant had cancer of the adrenal glands. Ten of the participants also had varying secondary cancers - of the brain, liver, lung, bone and bone marrow.

All of the participants had either undergone or were in the process of undergoing surgery, radiotherapy, chemotherapy, hormone therapy, immunotherapy, or a combination of these therapies.

### **3.3.2 Quantitative Psychological Mood Data**

Descriptive statistics and a series of paired t-tests were utilized to analyse the Stage One and Stage Two pre/post data. This analysis was conducted by a colleague from the University of Queensland, Australia.

#### **3.3.2.1 Stage One**

##### *Listening to Recorded Music in a Relaxed State*

At the commencement of the week one (study day one) evening session the participants' state of well being (hedonic tone) had a mean score of 24.6, which increased by the end of the session to a mean score of 26.4. The participants state of tension (tense arousal) pre session had a mean score of 13.25, which decreased significantly to 9.75 ( $p < 0.014$ ) at the conclusion of the session. This state of relaxation was reflected in the participants' level of energy, which pre session had a mean score of 16.0 and which by the end of the session had significantly dropped to 13.25 ( $p < 0.011$ ).

### *Improvisation*

At the commencement of the week one (study day two) afternoon session the participants' hedonic tone had a mean score of 23.33, which by the end of the improvisation session had increased significantly to 27.67 ( $p < 0.001$ ). This was reflected in their level of energy, which at the outset of the session had a mean score of 20.5 and significantly increased to 26.8 ( $p < 0.043$ ) by the end of the session. The participants' levels of tension increased from a mean score of 15.25 to 16.25 by the conclusion of the session. See Figure 3.1.

All standard deviations for these results can be located in Appendix 3.

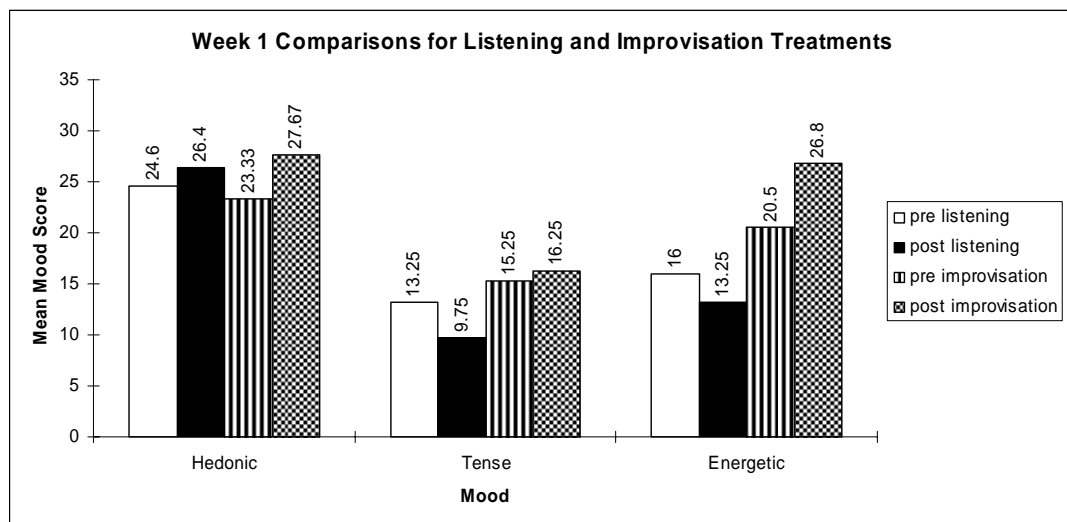


Figure 3.1 Week 1 recorded listening and improvisation

#### **3.3.2.2 Weeks One to Three Combined**

As this pattern was generally replicated in weeks two and three of the study, with the exception of the hedonic tone in weeks two and three listening, and tense arousal in weeks two and three improvisation, all data from weeks one to three were combined for further analysis.

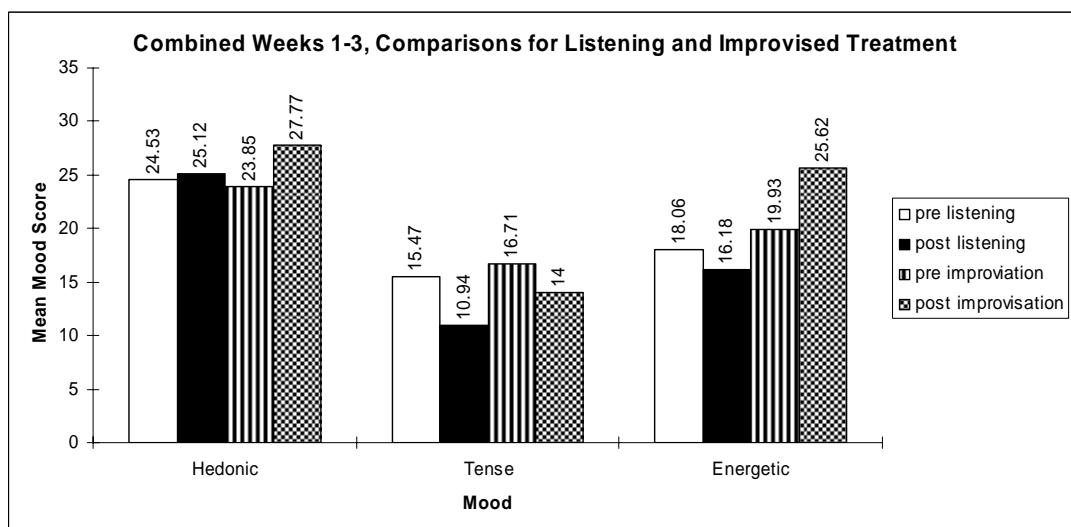
### *Listening*

The combined weeks one to three results of the psychological testing revealed that the participants' state of well-being (hedonic tone) increased from a pre mean score of 24.53 to a post mean score of 25.12. The participants' level of tension (tense arousal) decreased significantly from a pre mean score of 15.47 to a post mean score of 10.94 ( $p<0.001$ ) and their level of energy (energetic arousal) also decreased significantly from a pre mean score of 18.6 to a post mean score of 16.18 ( $p<0.012$ ).

### *Improvisation*

The combined weeks one to three results of the psychological testing revealed that the participants' state of well-being (hedonic tone) increased significantly from a pre mean score of 23.85 to a post mean score of 27.77 ( $p<0.001$ ). The participants' level of tension (tense arousal) decreased significantly from a pre mean score of 16.71 to a post mean score of 14.0 ( $p<0.018$ ) and their level of energy (energetic arousal) also increased significantly from a pre mean score of 19.93 to a post mean score of 25.62 ( $p<0.001$ ). See Figure 3.2.

All standard deviations for these results can be located in Appendix 3.



**Figure 3.2 Combined weeks 1-3 recorded listening and improvisation**

The directions of our hypothesised shifts were supported.

All Stage One tables and graphs for the listening and improvisation sessions appear in Appendix 3.

### **3.3.2.3 Stage Two**

#### *Listening to Live Music in a Relaxed State*

At the outset of the week four (study day one) evening session of listening to live music performed to the participants whilst in a relaxed state, their state of well-being (hedonic tone) mean score was 25.33. This mean score increased by the end of the session to 27.00. This was again reflected in the participants' level of energy which at the beginning of the session had a mean score of 18.43 and which had decreased to a mean score of 17.07 by the conclusion of the session.

The participants' level of tension also reflected the same pattern as with listening to recorded music in weeks one to three, with a mean score of 13.71 decreasing significantly to 9.0 ( $p < 0.010$ ) by the conclusion of the session.

#### *Improvisation*

At the commencement of the week four (study day two) afternoon session, the participants' hedonic tone mean score was 28.22. This mean score increased to a mean score of 30.22 by the conclusion of the session. Again this was reflected in the participants' level of energy, which increased significantly from a mean score of 19.56 to a mean score of 24.56 ( $p < 0.049$ ) by the conclusion of the session. The participants' level of tension at the outset of the session had a mean score of 10.89 which decreased to a post mean score of 10.00 by the conclusion of the session. See Figure 3.3.

All standard deviations for these results can be located in Appendix 4.



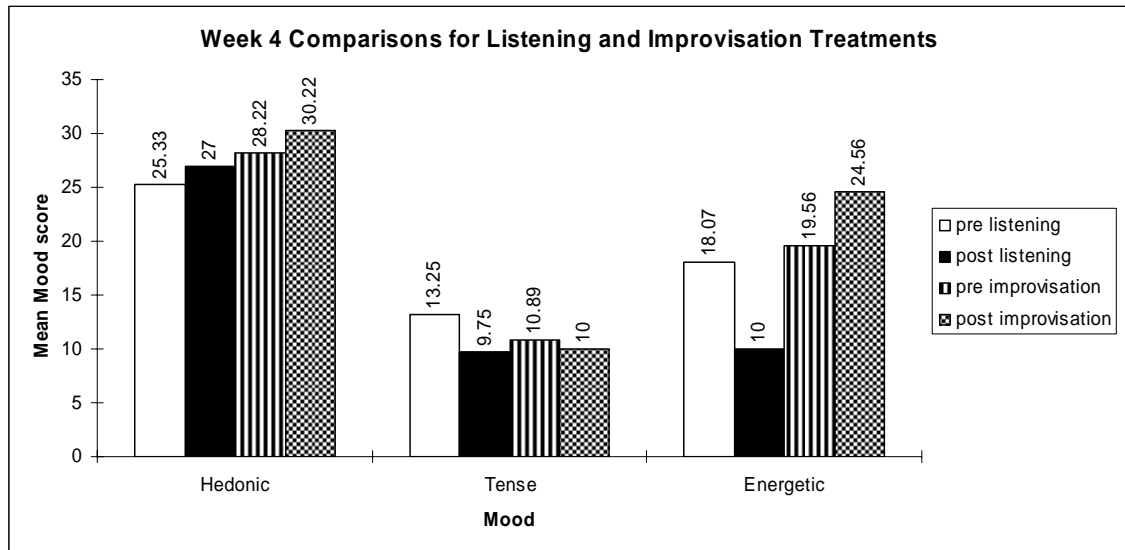


Figure 3.3 Week 4 live listening and improvisation

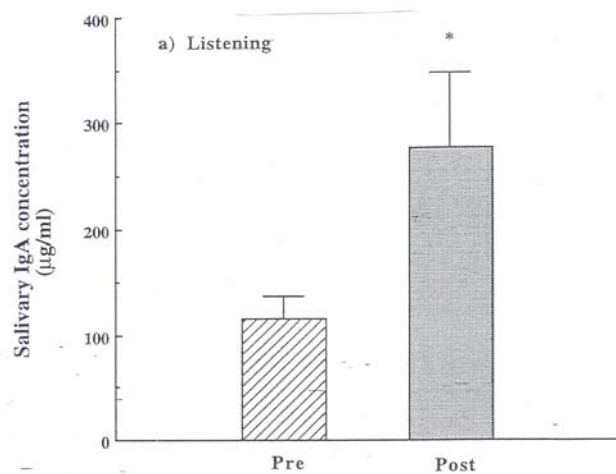
### 3.3.3 Quantitative Physiological sIgA/Cortisol Data

Descriptive statistics and a series of paired t-tests were used to analyse both the sIgA and cortisol pre/post data. These analyses were conducted by one of the scientific researchers.

#### *SIgA*

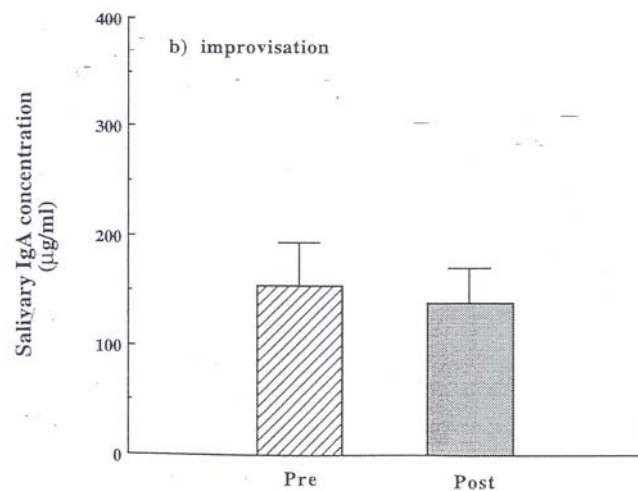
Eight of the nine participants' successfully produced saliva for assay, with the one participant who failed to produce saliva for assay being excluded from the analysis.

Listening to live music in a relaxed state resulted in a significant ( $p < 0.02$ ) increase in levels of sIgA from the outset to the completion of the session, indicating a possible increase in immune function. See Figure 3.4.



**Figure 3.4 sIgA concentration live listening**

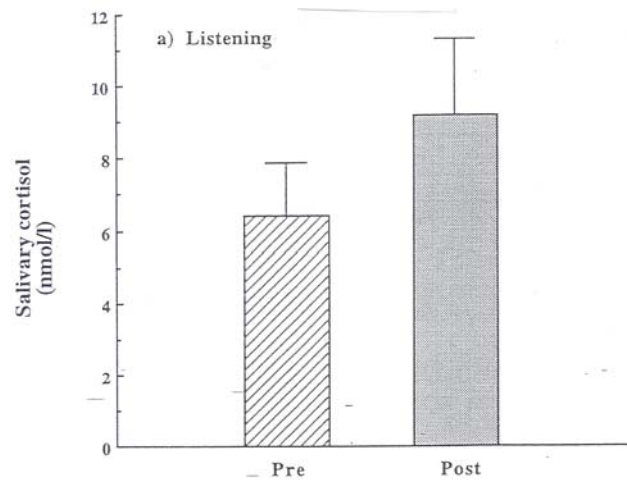
Levels of sIgA pre and post the improvisation session were not significantly altered and decreased. See Figure 3.5.



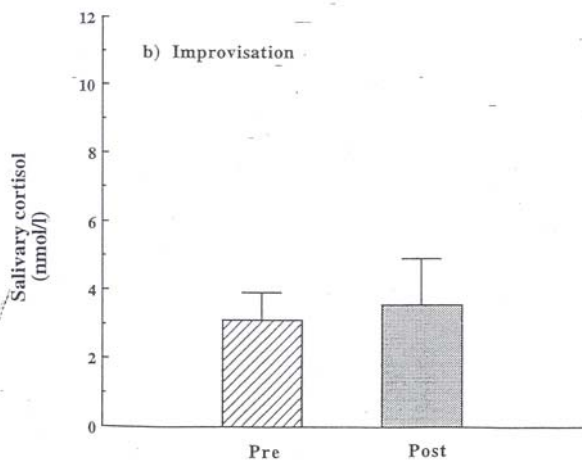
**Figure 3.5 sIgA concentration improvisation**

### *Cortisol*

Salivary cortisol was not significantly affected by either the listening or the improvisation experiences. In both instances cortisol had increased from the beginning to the conclusion of the sessions. However, cortisol had significantly reduced ( $p < 0.05$ ) from the outset of the listening session to the conclusion of the improvisation session, indicating a reduction in physiological stress over the two day period. See Figure 3.6 and 3.7.



**Figure 3.6 Cortisol concentration live listening**

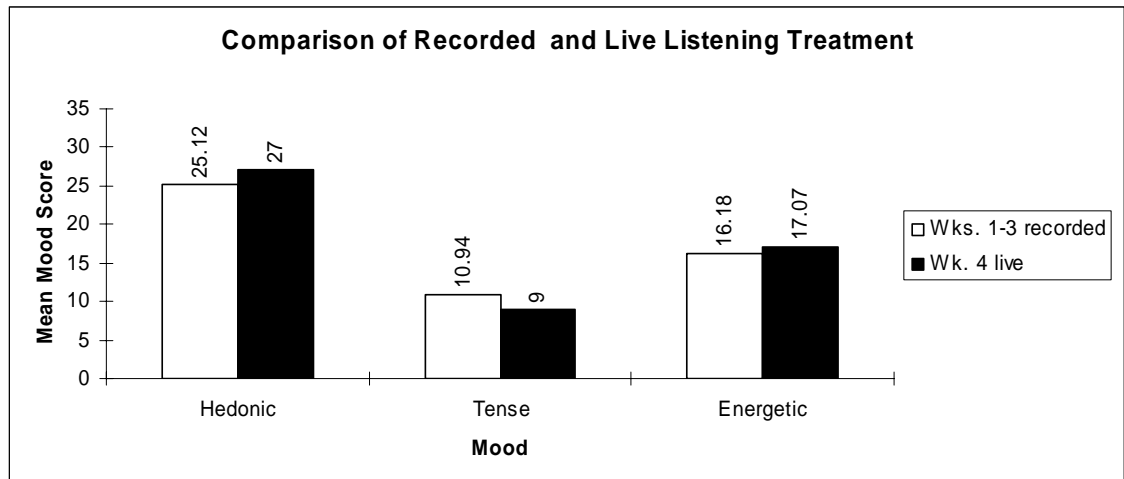


**Figure 3.7 Cortisol concentration improvisation**

No significant correlations were detected between the psychological and physiological measures.

#### *Live v Recorded Music*

A further analysis of listening to recorded and to live music was carried out. Although there was an increase in hedonic tone, a decrease in tension and an increase in energy levels, none were significant. See Figure 3.8.



**Figure 3.8 Weeks 1-3 recorded music v Week 4 live listening to music**

All Stage Two tables and graphs appear in Appendix 4, with the exception of the physiological data tables, which the music therapist/researcher was unable to access as this data was destroyed after seven years, in accordance with the research storage protocol of the university.

### **3.3.4 Qualitative Combined Stages One and Two Focus Group**

The focus group meetings were audio taped and later transcribed verbatim by the principal researcher. A thematic analysis was conducted on all of the data collected from the four focus group meetings. Recurrent themes present in each of the four focus group sessions supported both the psychological and physiological findings and are presented in Tables 3-1 and 3-2. Table 3-3 contrasts and compares the two different music therapy techniques of listening and improvisation.

**Table 3-1 Participants' comments on listening to music in a relaxed state**

<b>Hedonic</b> The qualities of the music were familiar, nostalgic and reminiscent of happier times. Felt more harmonious and whole The power of the music uplifted the spirit Felt special because it was personal - in the live setting The visual impact was wonderful - in the live setting
<b>Tense arousal</b> Felt more relaxed and uplifted towards the end of the session The meditation piece of music was soothing and relaxing Calming of my nerves The whole experience had a calming effect Felt calm and happy
<b>Energetic arousal</b> Felt tired so it (the music) didn't lift my energy The music sent me to sleep I felt totally at peace I was immersed in the sound and went off somewhere

**Table 3-2 Participants' comments on improvisation**

<b>Hedonic</b> Felt better for the session Fun Felt playful Felt good not to have to conform Seeing the smiles on other peoples faces made me feel happy Laughter gives you a buzz
<b>Tense arousal</b> Good feeling of release of tension Release of inhibitions, frustrations and freeing up Good release of anger and emotions which just pass out of you Could get rid of tension and frustration A good way to 'let go' Felt relaxing
<b>Energetic arousal</b> Gained great energy Felt tired at the outset but more alert by the end of the session There was lots of shared energy A stimulating experience Felt fresher after playing

**Table 3-3 Participants' comparisons of the listening and improvisation experience**

Like chalk and cheese
Equal but different
Two completely different functions - both experiences were lovely in their own way but you just can't compare the two as one was passive and calming and the other active and energising
Listening a more meditative experience - passive - playing a release-active.
Listening a private experience - playing a sharing experience
Question of likes and dislikes of types of music in the listening experience
A live performance may have had a different effect?
I felt moved that the artists gave their time freely to us and appreciated being able to listen to live music
Playing gave physical release
Playing felt so positive and made you feel good
Playing more fun, elicited lots of laughter.
I was able to interact and exchange ideas with others in the playing experience
Felt energised and creative in the playing experience
Felt a boost to the immune system in the playing experience

## 3.4 Discussion

### *Stage One*

The increase in tense arousal from a pre mean score of 15.25 to a post mean score of 16.25 (Figure 3.1) in the week one improvisation session could possibly be explained by some of the study participants commenting that they preferred and enjoyed the more structured music in the listening experience and found improvisation quite challenging.

The hedonic tone in the week two listening session decreased from a pre mean score of 28.4 to a post mean score of 26.6 (Table in Appendix 3) and could be explained by cultural differences with one Asian participant's complete dislike of the Western art music played, having a marked effect on the statistical analysis.

### *Stage Two*

The psychological findings in Stage Two of this study were consistent with the findings in Stage One. They supported *Hypothesis 1*: that during the participants' experiences of listening to music in a relaxed state they would become more relaxed, less tense and have an increased sense of well-being. During the improvisation experience, the participants experienced a release of

emotion. A range of different feelings were articulated through their active participation in the playing of the percussion instruments thus resulting in less tension, an increase in energy levels and an overall increased sense of well-being. This supported *Hypothesis 3*.

These psychological findings were supported physiologically by the results of the sIgA and cortisol measures. Although there were no significant correlations between the psychological and physiological measures taken in either the listening or improvisation experiences, there was a significant increase in levels of sIgA in the listening experience. This could suggest that the increase in the participants' psychological state of well-being and the decrease in their level of tension was reflected and supported by their increased levels of sIgA.

The decreased level of sIgA in the improvisation experience may be explained by a possible confounding effect on the production of sIgA due to the nature of the physical exercise which the participants were engaged in during their active playing improvisation session. The effects of exercise on sIgA levels in cancer patients remain to be determined. It is likely that these effects will differ from those in the general population due to the relative weakness experienced by patients following chemo and/or radio-therapy.

A decrease in the level of cortisol can be considered a marker of relaxation and improved mood (McKinney, Antoni et al. 1997), hence the decrease in the participants' levels of cortisol over the two day period could provide a further indication of physiological change linked to the psychological changes reported.

The psychological and physiological findings were also supported by the qualitative data collected on each of the study day three focus group sessions. Although the qualitative section of the pilot was brief and fairly limited in its

scope, it does however provide some insight and exploratory data to underpin and guide the project outlined later in this thesis.

### **3.4.1 General Discussion**

The pilot study research team monitored psychological changes in both the listening and improvisation experiences through administering the mood adjective checklist pre and post each of the music therapy sessions attended by the participants.

In both stages of the study the participants' levels of energy decreased during the listening to music in a relaxed state, whilst their energy levels increased during the improvisation intervention supporting both of the study hypotheses.

The participants' levels of energy were predicted to decrease due to the timing of the session which was held at 8pm when the participants' levels of energy were low following their first complete day at the CHC. The music purposefully chosen to play to the participants was of a sedative nature in order to enhance their relaxation.

Improvisation on the other hand, elicited increased energy through the active nature of the intervention, which required physical involvement and exertion to play the percussion instruments which it was predicted would invigorate the study participants.

Both techniques have valuable implications for cancer patients as listening to music in a relaxed state can assist with improvements in mood, pain control, anxiety and quality of life (Bailey 1983; Curtis 1986; Pfaff 1989; Whittal 1989; Beck 1991; Calovini 1993; Boldt 1996; Burns 2001; Burns, Harbuz et al. 2001; Barrera, Rykov et al. 2002; Hilliard 2002; Hilliard 2003; Burns, Sledge et al. 2005), whilst improvisation has the potential to increase energy level helping with general fatigue which is known to be a major and often a persistent



symptom of cancer and its treatment (Irvine and Vincent 1998; Stone and Richards 2000; Bower, Ganz et al. 2005; Byar, Berger et al. 2006; Reuter, Classen et al. 2006; Ganz and Bower 2007).

Subtle changes were also discovered through comparing the recorded and live listening experiences of the participants. During the live listening experience the participants' state of well-being (hedonic tone) post mean score of 27 was more elevated than in the recorded listening experience which had a post mean score of 25.12 (Figure 3.6). The participants' level of tension (tense arousal) in the live setting had a post mean score of 9 which was lower than their recorded post mean score of 10.94 (Figure 3.6). The participants' level of energy (energetic arousal) experienced an elevation in the live setting with a post mean score of 17.07 in comparison to the post mean score of 16.18 in the recorded listening experience (Figure 3.6). This would suggest that listening to live music (as opposed to recorded music) had a more positive effect on the participants' levels of well-being, tension and energy. With a larger sample size this may become even more apparent and significant.

The pilot research team were satisfied with the physiological testing component of the this study but disappointed that it was not possible to carry out the further two scheduled Stage Two research weeks. This was due to a lack of availability of musicians to perform live at the two remaining weeks of the study. This resulted in an imbalance of participant numbers between Stages One and Two of the pilot study.

### **3.5 Conclusion**

Statistical evidence supporting both the psychological and physiological measures taken throughout this pilot study strongly indicate that there is a link between the effects of music therapy on positive emotions and the immune

system of cancer patients. This evidence was further reinforced by the qualitative data collected at the focus group sessions.

The results of this study provide further understanding of the potential benefits of music therapy for cancer patients – benefits that may be passed on to patients via practitioners reading the publication or at conferences and seminar presentations produced from the pilot study research (Burns, Harbuz et al. 2001).

The ability to draw firm conclusions based on the physiological parameters reported in this chapter is challenging due to the small sample number of participants involved.

### **3.5.1 Recommendations**

At the conclusion of the pilot study the following recommendations were defined:

1. If this study were to be replicated or further developed, investigation is needed to discover the possible reasons for the absence of any notable changes in sIgA levels in the improvisation experience particularly as the improvisation experience elicited the most positive quantitative psychological and qualitative data.
2. The statistical analysis of the psychological testing did provide evidence of replicating patterns over successive weeks, indicating evidence of sufficient positive mood changes during each session. This supported our hypotheses and suggests that further investigation is warranted in a major study.
3. The use of the further anger/frustration mood tone component of the UWIST Mood Adjective Checklist would be useful to utilize in any further major study, particularly in the improvisation experience.

4. Investigate whether the same responses occur when listening in a relaxed state to a variety of different styles of pre composed music including the cancer patients' personal preferences.
5. To further investigate any statistical differences between listening in a relaxed state to the same music either performed live or recorded, to a larger sample size of cancer patients.
6. Use the same measures with a regular on-going music therapy group of cancer patients in order to gauge the on-going therapeutic effects over a period of at least 12 months.

Due to resources available for the further study described in this thesis, recommendations one, two and three above were able to be further investigated. Recommendation six was refined, again due to the available resources, to investigate two regular on-going improvisation music therapy groups of women recently diagnosed with breast cancer over a period of eight consecutive weeks.

## **Chapter 4 Methodology**

### **Overview**

This chapter presents the study background, the design of the study and a brief discussion of mixed methods research. The research questions, generated hypotheses and research tools are presented and data analysis is described, in addition to the sample, recruitment protocol and the materials used in the group improvisation music therapy intervention.

The study procedure presents the group structure, the data collection protocol and the research venue. The pre session procedure, the session procedure, the session format and ethics are also outlined in this chapter.

### **4.1 Background**

The results of the pilot (consisting of pre/post-test quantitative psychological/physiological measures and qualitative focus group) reported in the previous chapter (3) of this thesis informed and underpinned this doctoral research study.

This study recruited a homogenous group of women recently diagnosed with breast cancer into an eight week on-going music therapy intervention. The intervention investigated in this current study was the active music therapy technique of group improvisation, one of the two music therapy techniques previously researched in the pilot study (see Chapter 3.1.1).

The quantitative component of this study consisted of the psychological mood measure UWIST-MACL (Matthews, Jones et al. 1990) which was successfully used in the pilot study with the addition of the anger/frustration component of the measure. The same physiological (sIgA and cortisol) sampling was also

adopted for this study as this area of enquiry remains under researched in music therapy. As Aldridge highlights:

While influence on heart rate and breathing is evident, it is difficult to find any work referring to the influence of music therapy on immunological parameters.....such research would bring a realm of clinical information to complement musical analyses such that therapeutic correlations can be attempted, and would provide a link with current initiatives being made in psychoneuroimmunology (p 84) (Aldridge 1996).

In addition to the psychological and physiological measures, four psychosocial measures were used in the study. These four measures were: (i) the Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith 1983); (ii) mini Mental Adjustment to Cancer (MAC) (Watson, Law et al. 1994); (iii) European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-30) (Aaronson, Ahmedzai et al. 1993); and (iv) the Quality of Life Questionnaire – Breast Cancer) QLQ-BR23 (Sprangers, Groenvold et al. 1996).

Additional qualitative methods of semi-structured interviews, focus group methods and reflective experience work were adopted for the study. To the best of the music therapist/researchers' knowledge, no such in depth group improvisational music therapy (GIMT) research, at the time of this current research study, has been carried out with women recently diagnosed with breast cancer.

## **4.2 Study Design**

A mixed methods design consisting of longitudinal quantitative psychosocial/psychological/ physiological repeated measures, and qualitative semi-structured interviews, focus group and reflective experience work was employed in this study.

## 4.3 Mixed Methods

Mixed methods design has become widely recognized as the third major research approach (Johnson, Onwuegbuzie et al. 2007; Lingard, Albert et al. 2008; Sosulski 2008). This research approach, a combination of qualitative and quantitative research methods, often integrates more than one qualitative technique (e.g. interviews, focus group) and quantitative techniques (e.g. surveys, questionnaires) for data collection and/or analysis (Borkin 2004). A mixed methods design was chosen for this study to gather multiple data, facilitating data triangulation (Nastasi, Hitchcock et al. 2007) in order to comprehensively investigate the psychosocial, psychological and physiological effects of an eight week GIMT intervention with women recently diagnosed with breast cancer. The study further investigates the women's perceptions and lived experience of GIMT. Qualitative techniques have the advantage of providing insight into a person's lived experience of any given situation (Hoff and Witt 2000). In contrast, quantitative research allows the researcher to infer by the testing of hypotheses. However, by integrating both qualitative and quantitative techniques the researcher is able to view his or her research from both narratives and numbers (Borkin 2004).

Discussion as to when the mixing of qualitative and quantitative methods is carried out during a research project varies. Some researchers suggest mixing should occur at the initial data collection phase, while other researchers suggest data should be mixed at the data analysis phase of research (Johnson and Christensen 2004). However, Johnson et al postulate that regardless of when the process of mixing qualitative and quantitative data takes place, the overall purpose of mixed methods research is to be able to provide all of the information that is potentially relevant to the research project in the most informative, balanced and complete way (Johnson, Onwuegbuzie et al. 2007).

In the area of CAM, whole systems research (WSR) methodology has become increasingly adopted due to the complex nature of CAM research. Difficulties arise in CAM research due to the wide range of modalities which are generally tailored to suit individual clients and are therefore potentially unsuitable for conventional randomised controlled trial designs (Broom 2005; Verhoef, Lewith et al. 2005; Broom and Adams 2007). Through the use of qualitative and quantitative methods WSR intends to study not only the effectiveness but also the philosophy, context, outcomes and the process of the studied intervention (Rittenbaugh, Verhoef et al. 2003; Verhoef, Lewith et al. 2005; Verhoef, Vanderheyden et al. 2006).

With an increasing number of cancer patients (between approximately 30% to 50%) in Western developed countries now using some form/s of CAM alongside orthodox medical treatment, it has become evident to many CAM cancer care researchers that there is a need for a research design that can capture the essence of CAM (Jonas, Becker et al. 2006; Verhoef, Vanderheyden et al. 2006).

Since the emergence of the music therapy profession last century, research methodology has been a constant source of discussion and debate amongst music therapy researchers and academics (Davis, Gfeller et al. 1992; Aigen 1995; Wheeler 1995; Aldridge 1996; Smeijsters 1997; Ruud 1998). A problem music therapists' often face is that in order to have their music therapy work funded within the health system, there is a need to justify the use of music therapy. Music therapists therefore need to be able to provide evidence that music therapy works. In this respect, although music therapists evaluate their own work with clients, they also need to be able to rely on the outcome of quality research within the field of music therapy.

The past fifteen years have seen the emergence of Evidence Based Medicine (EBM) “a specific form of Evidence Based Practice; a general framework for interpreting and presenting findings from best practice research in most professional fields and for applying these rigorously” (p31) (Edwards 2002). Considered the gold standard of medical and scientific research, the randomized controlled trial (RCT), a quantitative research design is primarily used to test the efficacy of a specific treatment upon a large population of people, so that the results of the trial sample can be generalized to the general population (Edwards 2002) .

The dilemma facing music therapy research (and many other complementary and alternative therapies and medicines), is that music therapists work with either individual clients or only small numbers of clients within group therapy. For the purpose of power (the amount of participants needed in a study in order to detect any significant outcomes) this then makes RCTs within music therapy difficult to conduct. In addition to which, music by its very nature and element has the potential to elicit both physical and subjective responses. The latter simply cannot be measured by quantitative methods alone and thus requires the use of qualitative research methodology in order to be able to analyse the subjective elements of response. As such, it is therefore reasonable to argue that music therapy research requires the use of both quantitative and qualitative approaches in a mixed methods design.

However, this in turn leads to another dilemma within the field of music therapy, as many researchers within this field of research postulate that positivistic (quantitative) and non-positivistic (qualitative) philosophical paradigms are different ways of thinking and therefore cannot be utilized together in the same study (Bruscia 1995). To overcome this dilemma Bruscia suggests that researchers look at different aspects of the same phenomena in



different and independent studies, or combine different procedures and kinds of data in the same study (Bruscia 1995). The pilot study (Burns, Harbuz et al. 2001) used a combined quantitative and qualitative research approach to explore different aspects of the two phenomena being studied; listening to music for relaxation and improvisation. The positivist paradigm has been used to investigate areas of GIMT which lend themselves to quantification such as the quantifiable measurement of the participants' psychological and physiological responses to GIMT pre/post each GIMT session and the nonpositivist paradigm to explore the participants' perceptions and lived experience of GIMT. As Bruscia (p73) has stated:

It bears repeating that the primary mission of music therapy, as both discipline and profession, is to help clients to achieve health through music. To limit music therapy research in any way is to limit this mission in a corresponding way. If the client's health is conceived only in physical or behavioural terms, then quantitative research might be sufficient; conversely, if the client's health is conceived only in internal, covert, or experiential terms, then qualitative research might be sufficient. The problem is that to define health in such either-or terms, and to limit the goals of music therapy practice to either covert goals, physical or social realities, or objective or subjective phenomena is essentially a violation of the rights of our clients to comprehensive treatment, and thus to complete health (p73) (Bruscia 1995).

In response to Bruscia's statement the researcher acknowledges that both positivist and nonpositivist paradigms can be successfully used in the same study to address different aspects of the research phenomena.

## **4.4 Research Question and Sub Questions**

The pilot study (see Chapter 3) in which an open range of questions was created in order to investigate the therapeutic effects of music therapy with a general cancer population informed the research questions in this study which were refined to address a breast cancer specific population.

#### **4.4.1 Main Research Question**

What are the effects and experience of group improvisational music therapy amongst women recently diagnosed with breast cancer?

#### **4.4.2 Sub Research Questions**

Will the women participating (participants) in group improvisation music therapy experience:

- Better psychosocial outcomes?
- Improved mood states?
- Increased levels of sIgA, one component of immunological functioning?
- Decreased levels of stress?

### **4.5 Generated Hypotheses**

In order to answer the research questions, the following hypotheses were tested:

- 1) Participants will report decreased anxiety at end study time point compared with baseline measure;
- 2) Participants will report decreased depression at end study time point compared with baseline measure;
- 3) Participants will report decreased anxious preoccupation at end study time point compared with baseline measure;
- 4) Participants will report decreased cognitive avoidance at end study time point compared with baseline measure;
- 5) Participants will report increased fighting spirit at end study time point compared with baseline measure;

- 6) Participants will report decreased fatalism at end study time point compared with baseline measure;
- 7) Participants will report decreased hopelessness/helplessness at end study time point compared with baseline measure;
- 8) Participants will report increased cognitive functioning at end study time point compared with baseline measure;
- 9) Participants will report increased emotional functioning at end study time point compared with baseline measure;
- 10) Participants will report decreased fatigue at end study time point compared with baseline measure;
- 11) Participants will report decreased nausea and vomiting at end study time point compared with baseline measure;
- 12) Participants will report increased physical functioning at end study time point compared with baseline measure;
- 13) Participants will report increased overall quality of life at end study time point compared with baseline measure;
- 14) Participants will report decreased body image at end study time point compared with baseline measure;
- 15) Participants will report increased social functioning at end study time point compared with baseline measure;
- 16) Participants will report increased future perspectives at end study time point compared with baseline measure;
- 17) Participants will report decreased systematic therapy effects at end study time point compared with baseline measure;

- 18) Participants will report increased energy over the eight week period of the intervention;
- 19) Participants will report increased well being (hedonic) over the eight week period of the intervention;
- 20) Participants will report decreased tension over the eight week period of the intervention;
- 21) Participants will report decreased anger/frustration over the eight week period of the intervention;
- 22) Participants immune function (sIgA) will increase over the eight week period of the intervention;
- 23) Participants stress levels (cortisol) will decrease over the eight week period of the intervention.

## **4.6 Research Tools**

To answer the research questions and test the hypotheses quantitative measures were used. Qualitative measures were used to explore the participants' perceptions and experiences of GIMT.

### **4.6.1 Quantitative Measures**

The quantitative measures used in this music therapy research study consisted of four psychosocial measures; the HADS, miniMAC, EORTC QLQ-30 and the QLQ-BR23. One psychological measure, the UWIST-MACL and two physiological measures of sIgA and cortisol were also administered in the study. See section 4.14 for details of the administration of all of the quantitative measurement tools used in this study.

#### **4.6.1.1 Psychosocial Measures**

Four psychosocial measures, the HADS, miniMAC, EORTC-QLQ30 and QLQ-BR23 were used in this study. They were administered at three time points in the study, at baseline, at mid study point and at end study point.

##### **HADS**

The HADS is a self-report questionnaire developed to detect adverse anxiety and depressive states in non-psychiatric populations (Zigmond and Snaith 1983). It is a present-state instrument that may be administered at weekly or more prolonged intervals. The questionnaire includes 14 questions focusing on mood. Two domains are addressed (in every second question): Anxiety (questions 1-3-5-7-9-11-13) and Depression (questions 2-4-6-8-10-12-14). Anxiety covers the general state of anxious mood, thoughts, and restlessness. Depression covers the state of loss of interest and diminished pleasure response.

Participants answer the questions on a 4-point Likert scale within a spectrum from 'Definitely' to 'Not at all' and 'Often' to 'Very seldom' for each of the two domains. The interpreted scores are defined in the manual as: Normal (0-7); Mild (8-10); Moderate (11-14); and Severe (15-21). All scores for each of the two scales are summed to give a final value. Internal consistencies are 0.80-0.93 for anxiety and 0.81-0.90 for depression scales, and discriminant and concurrent validity have been established (Hermann 1997).

The use of the HADS with cancer patients as a measurement of psychological distress has been validated and is recommended as it contains no somatic symptoms, thus ensuring that scores are independent of any physical illness (Moorey, Greer et al. 1991). This scale has been proved to be reliable, is easy to administer and evaluate by clinicians, and is easily understood by patients to

complete domains. This scale is regularly administered in the area of Quality of Life studies with cancer patients (Watson, Haviland et al. 1999).

### *miniMAC*

The miniMAC scale was designed to measure cancer patients' cognitive and behavioural adjustment to a cancer diagnosis and its treatment (Watson, Law et al. 1994). This scale, which comprises 29 items, is rated on a 4-point Likert-type scale from 'Definitely does NOT apply to me' to 'Definitely applies to me'. For analysis, all items contributing to each scale are averaged to obtain a raw score, which is then subjected to linear transformation to standardise the raw score.

The miniMac profiles cancer patients on five coping style categories of (a) fighting spirit, (b) anxious preoccupation, (c) fatalism, (d) helplessness-hopelessness and (d) positive avoidance and has been widely used with cancer patients to examine the mediating influence of coping style on psychological distress and quality of life. Recently used in an intervention study in primary breast cancer patients, internal reliability was examined by using Cronbach's alpha which yielded 0.52 for fighting spirit, 0.62 for fatalism, 0.70 for cognitive avoidance, 0.86 for anxious preoccupation and 0.87 for helplessness/hopelessness (Reuter, Classen et al. 2006). Comparison was shown with an earlier non-intervention study for women recently diagnosed with primary breast cancer using the same instrument and which showed no consistent difference in mean levels of coping styles (Koopman, Angell et al. 2001). The miniMAC has also been found to correlate with measure of the HADS.

### *EORTC QLQ-30 and QLQ-BR23*

The health related quality of life EORTC QLQ-30 (Aaronson, Ahmedzai et al. 1993) contains 30 questions addressing five functional domains of (i) physical health (PH), (ii) role functioning (RF), (iii) cognitive functioning (CF), (iv) emotional functioning (EF) and (v) social functioning (SF). There are three

symptom scales: (i) fatigue (FAT), (ii) pain (PA) and (iii) nausea/vomiting (NV) and one global QOL item. In addition, six single items of (i) dyspnoea, (ii) insomnia, (iii) appetite loss, (iv) constipation, (v) diarrhoea and (vi) financial difficulties are also assessed. A 4-point Likert-type scale from 'Not at all' to 'Very much' is used as a rating. The QLQ-BR23 consists of 23 items. For analysis, all items contributing to each scale are averaged to obtain a raw score, which is then subjected to linear transformation to standardise the raw score. The QLQ-BR23 (Sprangers, Groenvold et al. 1996) also contains three symptom scales and three single items. The psychometric properties of the EORTC QLQ-30 and the QLQ-BR23 have been long established with excellent validity and reliability and have previously been used with breast cancer patients (Jordhoy, Fayers et al. 2001; Kerr, Engel et al. 2003). The four measurement tools appear in Appendix 5.

#### **4.6.1.2 Psychological Measures**

The UWIST-MACL (Matthews, Jones et al. 1990) was administered pre/post the music therapy sessions.

The validity of the UWIST-MACL research tool has been established by showing that correlations between UWIST-MACL scales and demographic and personality variables were small in magnitude, though of theoretical importance (Matthews, Jones et al. 1990). The 29-item checklist is a subjective indicator of mood and evaluates changes in four mood tones of (i) energetic arousal (EA), (ii) tense arousal (TA), (iii) hedonic tone (HT), and (iv) anger/frustration (A/F). Study participants answered questions on a 4-point Likert-type scale from '1 = Definitely' to '4 = Definitely Not' for each of the four mood tones.

Adjectives selected indicate positive (+) or negative (-) aspects of each of the four tones. A factor analysis (N=388) carried out by Matthews et al, suggested

that the UWIST-MACL may be a useful tool to use in clinical research, “because of its apparent ability to discriminate between depressed (low hedonic tone) and anxious (high tense arousal) mood states” (p39) (Matthews, Jones et al. 1990).

This measurement tool was successfully used in a doctoral thesis music therapy study by Wigram (1996) and was also successfully used in the pilot study which forms the basis of this current doctoral research study (Wigram 1996; Bunt, Burns et al. 2000; Burns, Harbuz et al. 2001). The UWIST-MACL measurement tool appears in Appendix 6.

#### **4.6.1.3 Physiological Measures**

Saliva sample collection for physiological testing was chosen as the least invasive procedure. This was particularly important for the participants in this study as they had already undergone a number of invasive procedures e.g. invasive surgery and/or radiotherapy and/or chemotherapy treatments.

The two physiological measures of sIgA and cortisol, previously used in the pilot study (Chapter 3), were adopted for this study. The reason for adopting these two measures was to further explore whether any changes found in the participants’ psychological measures were reflected in their physiological immune functioning and their levels of stress over the eight week period of the GIMT intervention.

##### ***sIgA***

sIgA a B-cell product, is an important parameter of immune status and is the main immunological defence of the mucosal surfaces. It is thought that levels measured in saliva are indicative of the functional status of the mucosal immune system (Mystecy 1993). Salivary IgA has consistently demonstrated



sensitivity to psychological mood state variables (Hucklebridge, Lambert et al. 2000).

#### *Salivary Cortisol*

Cortisol is an important glucocorticoid and is synthesised by the adrenal cortex. Synthesis is regulated by the secretion of ACTH from the pituitary which, in turn, is controlled by the secretion of hypothalamic ACTH-releasing hormones (Orion 2005).

The release of cortisol from the adrenal cortex represents the end-point activation of the physiologically important stress neuroendocrine pathway. In addition, this glucocorticoid steroid has a major anti-inflammatory role and analogues of these steroids are widely used in this regard. Measurement of salivary cortisol is an accepted and validated measure of stress-axis activity (Mystecy 1993; Aardal and Holm 1995).

### **4.6.2 Processing of Saliva Samples**

The saliva samples were collected using salivette devices (Sarstedt) and transported on ice to the commercial VRI laboratories, Newcastle, NSW, Australia, where they were stored at 2-8°C until the time of processing by the laboratory assistant.

#### **4.6.2.1 sIgA ELISA assay protocol**

The absorbent pads were centrifuged in the salivette tubes in a Heraeus Centrifuge at 3000rpm for 10 minutes and the saliva recovered. The saliva volume was recorded. Saliva was aliquoted into 3x100 microliter aliquots and the remainder put into a fourth tube. Aliquots were stored frozen at -20°C until thawed at the time of assay.

sIgA in saliva was measured by ELISA. The assays were performed by VRI Pty Ltd, Newcastle, NSW, Australia, as per standard laboratory procedure

(IMM08). ELISA plates (Greiner microlin 200 SB 705070 ELISA plates from Interpath) were coated with capture antibody (Silenus sheep anti-human IgA antibody, catalogue number: 981020020), sealed with Linbro microplate sealer product number 764105 (supplier: ICN), and placed for 2 hours at 37°C. The capture antibody solution was then flicked out and the plate 'blocked' with 0.5% casein (BDH) for 45 minutes at 37°C. The casein solution was then flicked out and the plate dried in the incubator for 20 minutes. The dried plates were stored dry and wrapped in aluminium foil at 4°C until required.

For assay of samples, standards (prepared from Nordic human standard serum NOR-04) and dilutions of test saliva samples were loaded on the plate in duplicate and incubated at room temperature for 20 minutes. The samples were then flicked out of the plates and the plates were washed four times with PBS-1% TWEEN 20 (PBS-T). The detector antibody (Silenus peroxidase-conjugated sheep anti-human IgA, catalogue number: 981033020) solution was added and the plate incubated for 15 minutes at room temperature. The detector antibody was then flicked out and the plate washed 4 times with PBS-T. TMB substrate solution (KPL brand microwell peroxidase substrate system 2C) was added and the plate incubated for 10 minutes at room temperature. The reaction was stopped by addition of H3P04 and the plate read on an ELISA plate reader at 450nm with a reference filter of 620nm. The IgA concentration of the test samples was determined by comparison with the standard curve (ELISA).

#### **4.6.2.2 Orion Diagnostica SPECTRIA Salivary Cortisol Assay Protocol**

The frozen saliva samples were transported by courier on ice from the VRI laboratories to the HAPS laboratories, Newcastle, NSW, Australia for cortisol radioimmunoassay.

Using the 2000nmol/l calibrator the following dilutions were prepared in buffer (0.1 M Tris-HCl, pH 7.4, 0.2% BSA): 0, 1.0, 4.0, 20 and 100nmol/l. Coated tubes

in duplicate for calibrators and participant samples were labelled. Normal and total uncoated test tubes for total counts were set up. 150µl of calibrators and patient samples were pipetted into appropriate tubes. Total tubes remained empty. 500µl of cortisol tracer (red) was added to all tubes, which were then briefly mixed on a vortex mixer. The tubes were covered with paraffin film and incubated for 30 minutes in a 37°C water bath. Each tube (except the totals) was decanted and the head of each tube tapped firmly against absorbent paper. The tubes were washed once with 1 ml of distilled water and the rack shaken by hand. The tubes (excluding the totals) were decanted and the head of each tube again tapped firmly against the absorbent paper. The tubes were then left standing upside down for at least 5 minutes and tapped again until they were empty. Each tube was counted using a gamma counter for at least 1 minute or until 10,000 counts per tube had accumulated (Orion 2005).

A known amount of labelled cortisol and an unknown amount of unlabelled cortisol in the sample compete for the limited number of binding sites of the antibodies coated on the Spectria tube. After washing away the unbound antigen, the amount of labelled cortisol in the Spectria tube is inversely proportional to the amount of cortisol in the sample. The concentrations in unknown samples are obtained from a calibration curve (Orion 2005).

#### **4.6.3 Statistical Data Analysis**

SPSS V15 statistical package was used to analyse all of the quantitative data. Linear Mixed Models (LMM) was chosen over ANOVA for the analysis of the data in this longitudinal study (Brown and Prescott 2006). LMM allows for data analysis of continuous variables over time as there is no loss of observations per participant due to missing data as a result of missed sessions, as all observations available are used. The likelihood based methods used in LMM are unbiased under the assumption that the missingness mechanism is Missing

At Random (MAR). This approach to data analysis is compatible with the Intention to Treat principle (Molenberghs and Kenward 2007).

#### ***4.6.3.1 Psychosocial 3-time-point analysis***

LMM were used in order to carry out a repeated measures analysis of the four psychosocial measures of HADS, miniMAC, EORTC QLQ-30 and QLQ-BR23 over the three time point period of the study. An unstructured covariance structure was used and the group that each of the participants attended (group 1 and group 2) for their music therapy intervention was included in the model to check in case there was a difference in performance by group.

The subscales of each of the four psychosocial scales were analysed using a model with effects time, group and time\*group interaction – see Chapter 6 – Quantitative Results.

#### ***4.6.3.2 Psychological and Physiological pre/post data analysis***

As baseline measures were available for all of the participants who attended each week of the music therapy intervention, they were able to act as their own control. This enabled each of the participants post score at the end of the sessions they attended, to be compared with the baseline score at the beginning of each of the sessions they attended. To simplify the analysis, it was decided to use the difference scores (pre minus post) for each session in each week of the study. These differences were then used as the outcome variable. In addition, means plots were prepared with 95% confidence intervals for each week of the study.

LMM were carried out with week as the repeated measure with a compound symmetry, the covariance structure for the residuals.

#### **4.6.4 Qualitative Methods**

A qualitative triangulation methodology of semi-structured interviews, focus group and reflective experience work were used in this study. Triangulation is a means by which more than one method of enquiry is used to enhance the validity of the phenomenon being investigated (Johnson, Onwuegbuzie et al. 2007).

##### **4.6.4.1 *Semi-Structured Interviews***

Semi-structured interviews were chosen for this study as they allow flexibility accommodating predetermined questions but also allowing questions to be modified in response to the interviewee and fieldwork process. Questions can be re-phrased or asked in a different order, with certain questions being omitted and additional questions asked, if appropriate for the particular person being interviewed (Robson 2002). The semi-structured interviews were held with each participant between two to four weeks after they had completed their eight week music therapy intervention. The interviews were audio tape recorded and conducted in the home of each participant and lasted for approximately two hours.

Prior to the semi-structured interviews being conducted, a theme list was constructed by the music therapist/researcher in order to ensure that all relevant issues were discussed and that the interviewer was free to concentrate on the ongoing interaction (McCracken 1988). In accordance with Rice and Ezzy, the theme list was kept to one page in order to minimize as much distraction as possible (Rice and Ezzy 2001). The theme list appears in Appendix 7. Each participant was interviewed in a flexible manner with answers to questions often further explored in order to gain more depth of understanding and clarification if needed (Higginbotham, Albrecht et al. 2001).

#### **4.6.4.2 Focus Group**

One focus group meeting was conducted with thirteen of the fifteen study participants four weeks following the completion of the music therapy study. This was four weeks after Group 2 had completed their eight week group music improvisation intervention.

This form of qualitative enquiry was chosen alongside semi-structured interviews, because focus groups offer an efficient way in which to collect data from several people at the same time. The dynamics of the group help to keep focussed on the topic in question and make it easier for the researcher to assess the extent to which there is a consistent and shared view. Most importantly, it can be an enjoyable experience for the participants (Robson 2002), which was the aim of this focus group meeting, as it marked the completion of the participants' active group involvement in the music therapy study.

The music therapist/researcher ran the focus group as they had had previous experience in the role of moderator (Broom and Adams 2007) and were therefore able to facilitate and run the group efficiently and generate interest in the topic to be focussed on (Robson 2002). The participants were asked only open questions – not leading questions, and that wherever possible the study design allowed the music therapist/researcher to follow the conversation and topics as introduced by the participants themselves.

The focus group meeting was conducted in a room provided by The University of Newcastle at its Wallsend Campus. A whiteboard was set up and a tape recorder strategically placed in order to record the focus group meeting. The purpose of this focus group meeting was to focus on the study participants' experience of the active music therapy technique of improvisation. The study participants were invited and encouraged to brainstorm, giving words, phrases or sentences (Morgan 1997) which best described their experience of

improvisation. Words and phrases were initially written on to the whiteboard and then placed into various categories under different theme headings, which were then further explored.

At the conclusion of the focus group meeting a 'celebration of life' party was held to symbolize the completion of the music therapy study.

#### **4.6.4.3 Reflective Experience Work**

Reflective experience work was the third method of qualitative data collection used in this study (a method previously developed and used by the music therapist/researcher for evaluating music therapy programmes). Reflective experience work, within the context of this study, was a process by which the women were invited to reflect upon their own individual experience of their eight week music therapy intervention. This could be done at a time of their choosing and in the comfort of their own home environment.

Each study participant attending the focus group meeting was invited to participate in the reflective experience work component of the study. An A4 sheet of paper with the following question asked:

Upon reflection, were there any specific ways (e.g. physical/emotional/ psychological/ spiritual) in which you felt the music therapy technique of improvisation helped you with regards to your diagnosis and treatment of breast cancer?

This sheet of paper was left on a table in the room where the focus group meeting was held along with stamped envelopes addressed to the music therapist/ researcher. The women were able to choose whether or not they wanted to participate.

The participants who chose to take part in the reflective experience work were instructed to return their written work to the music therapist/researcher in the stamped addressed envelope provided to them. The participants were

requested not to identify themselves on any of the work they chose to submit. This was to encourage them to write in an open and honest manner about their experience of GIMT, which may or may not have been a positive experience for them.

All of the women in attendance at the focus group meeting participated in the reflective experience work and returned their work in the envelopes provided within two weeks of the focus group meeting.

#### ***4.6.4.4 Semi-Structured Interviews, Focus Group and Reflective Experience Work Data Analysis***

The semi-structured interviews and the focus group meeting were audio tape recorded and later transcribed verbatim by the music therapist/researcher. The participants' reflective experience work was added to the interview and focus group data.

All of the data were subjected to a thematic analysis in order to elicit recurring themes. (Pope and Mays 2000; Higginbotham, Albrecht et al. 2001; Rice and Ezzy 2001; Robson 2002; Johnson and Christensen 2004).

The researcher followed the five stages of (i) familiarisation, (ii) identifying a thematic framework, (iii) indexing, (iv) charting and, (v) mapping and interpretation of data analysis of the Framework Approach developed by Pope and Mays (2000) for qualitative health research (Pope and Mays 2000).

The researcher initially immersed themselves in the raw data by reading the interview, focus group and reflective experience work transcripts to obtain a first impression and then re-reading all of the transcripts many times in order to list key ideas and recurrent themes. Secondly, key issues were identified. Concepts and recurrent themes were then labelled for further exploration. Thirdly, the data were indexed and given codes, with each code being recorded



in the margin of the transcripts. Fourthly, the data was rearranged under headings and sub-headings in order to start to build up a picture of the data as a whole. Finally, concepts were defined, associations between themes clarified and explanations then worked towards.

The emergent themes and sub themes formed the basis of the narrative - see the qualitative results chapter (5). Overlapping themes supporting the quantitative psychological measure, the UWIST-MACL, are presented in the combined results chapter (7) of this thesis.

## **4.7 Sample**

A homogenous sample of participants, women recently diagnosed with breast cancer, was selected for this study. This specific sample was selected in order to evaluate the psychosocial, psychological and physiological effects of group music improvisation over an on-going time period of eight consecutive weeks. In addition to the quantitative evaluation, qualitative investigation was carried out in order to discover and describe the experience of group music improvisation amongst this specific population. (Higginbotham, Albrecht et al. 2001; Rice and Ezzy 2001; Robson 2002).

### **4.7.1 Recruitment**

The participants were recruited through Hunter Breast Screen, NBN Telethon Mater Institute, Waratah, New South Wales. This source of recruitment was chosen as it provided a diverse sample of women from the Newcastle and the Hunter Region who had all recently been diagnosed with breast cancer through the breast screening process.

A series of three information sessions was organised by the Hunter Breast Screen nurse counsellors. The music therapist/researcher was invited to talk to potential participants attending these sessions.

Upon arrival a nurse counsellor distributed a study information statement (Appendix 8) to each woman. At these sessions the music therapist/researcher briefly outlined the research study and the data collection requirements that each participant would be required to consent to. The music therapy technique of music improvisation, the intervention to be employed in this research was described. Finally, the general format that each music therapy session would take was explained to the women after which the potential participants were encouraged to ask any questions.

Consent forms (Appendix 9) plus a stamped envelope addressed to the music therapist/researcher were available from the nurse counsellor by women interested in joining the study at the end of each information session.

#### **4.7.2 Participants Selection Criteria**

Participants were selected for inclusion into the study if they had been i) diagnosed with breast cancer and were at least one month after diagnosis and not more than twelve months, ii) had no pre-existing or concurrent malignancy disorder, iii) had no immunological challenging disorder, iv) had no psychiatric disorder requiring medication, v) had no drug or alcohol dependency, and vi) were able to give informed consent in English.

Twenty five female participants were recruited to the study through this process. Attrition was as follows: seven participants withdrew from the study prior to commencement and three participants left the study after the study had commenced. Data collected from the three participants who left the study after commencement was not used in any of the analyses.

### **4.8 Materials**

In accordance with the active music therapy technique of improvisation (the playing of tuned and untuned percussion instruments), an extensive range of

percussion instruments was made available at each session for the participants to choose from and play. Larger instruments included a number of different sized and musically pitched drums, metallaphones, xylophones, glockenspiels, a large crash cymbal and temple blocks. Smaller instruments included a Tibetan singing bowl, tone bars, wind chimes, finger pianos, hand and finger cymbals, triangles, a variety of different musically pitched bells, wooden clave, castanets, maracas, bongos, cabassas, tambourines and one large and several small rain sticks.

## **4.9 Procedure**

The structure of each of the two music improvisation music therapy intervention groups and the quantitative and qualitative data collection protocol are outlined below. A description of session venues is provided and the pre session and session procedures are described. Finally, the group improvisation session format is presented.

### **4.9.1 Group Structure**

Following the receipt of signed consent forms from eligible study participants and due to the slow recruitment phase, two music therapy groups took part in the study over a period of eight consecutive months.

The first group consisted of seven participants and was held between June – August 2004. The second group, held in between October – December 2004, involved eight participants. Each of the two groups received a one and half hour GIMT session, once a week for eight consecutive weeks. The music therapist/researcher facilitated each of the two group improvisation music therapy interventions.

### **4.9.2 Data Collection Protocol**

The baseline quantitative psychosocial, psychological and physiological data collection took place over a seven month time period. The qualitative semi-structured interviews, focus group meeting and the reflective experience work data collection, were conducted over a period of eight months.

#### **4.9.2.1 Quantitative**

##### *Psychosocial – Groups 1 and 2*

Four psychosocial questionnaires; the HADS, the miniMAC, the EORTC – QLQ30 and the QLQ-BR23 were completed by all participants of the music therapy study at three time points. The first time point measures were taken two weeks prior to the commencement of each of the two group improvisation music therapy interventions for baseline measures. The second measures were taken at week four, the mid study point and finally at week eight, the end study point.

##### *Physiological – Group 1*

The pre/post session saliva samples were provided by each study participant in order to measure sIgA and cortisol at five time points. The first measure, the baseline measure, was taken two weeks prior to commencement of the first group eight week music therapy intervention. The second measure was taken at week two, and the subsequent three measures taken at weeks four, six and week eight, the final week of the music therapy intervention.

##### *Psychological – Group 1*

The psychological mood questionnaire, the UWIST-MACL, was completed pre/post sessions by each study participant at five time points. The first measure was taken at week one and the four subsequent measures taken at weeks two, four, six and eight, the final week of the music therapy intervention.

In the light of experience gained with Group 1 the study design was modified to collect data more frequently with Group 2. This was due to the large amount of missing data generated by Group 1 as a result of poor attendance due to the mid winter timing of the first group intervention and the nature of the illness and its treatment. It was therefore decided to collect data at each week of the second group, eight week music therapy intervention.

#### *Physiological – Group 2*

The pre/post session saliva samples were provided by each study participant at nine time points. The first measure, the baseline measure was taken two weeks prior to the commencement of the second group improvisation music therapy intervention. The second measure was taken at week one and the subsequent eight measures taken at weeks two, three, four, five, six, seven and week eight, the final week of the second group improvisation music therapy intervention.

#### *Psychological – Group 2*

A psychological 'mood' questionnaire was completed pre/post sessions by each of the eight study participants at eight time points. The first measure was taken at week one and the seven subsequent measures taken at weeks two, three, four, five, six, seven and week eight, the final week of the second group improvisation music therapy intervention.

### **4.9.2.2 Qualitative Data Collection**

#### *Semi-Structured Interviews*

Individual semi-structured interviews were conducted with each of the fifteen study participants by the music therapist/researcher over a four week period following the completion of the two eight week music therapy interventions.

### *Focus Group*

At the end of the study (approximately eight months after the study had commenced with Group 1) the Group 1 and Group 2 study participants attended a focus group meeting in order that further qualitative data could be collected from them.

### *Reflective Experience Work*

Participants were invited to conduct their own reflective experience work over a two week period following the focus group meeting.

## **4.9.3 Venue**

The group improvisation music therapy intervention sessions took place at two different venues. Venue one was provided by The University of Newcastle at its Wallsend Campus with the second venue provided by Hunter Breast Screen at its Waratah premises. The rooms at both venues were conducive to a therapeutic environment. They gave privacy, were fully carpeted with blinds at the windows and provided comfortable chairs. Tea and coffee making facilities were made available.

## **4.9.4 Pre Session Procedure**

Each group improvisation session took place once a week between 6pm and 7.30pm at two different venues. At sessions where quantitative measures were to be taken, the participants were requested to arrive fifteen minutes prior to the commencement of the music therapy session.

Prior to collection of samples of saliva, the study participants were requested not to eat any food within one hour or drink any fluids (including water) for 30 minutes prior to giving a sample of their saliva. Upon arrival at these sessions the participants were asked to provide a sample of their saliva by placing a cotton wool swab underneath their tongue and allowing it to stay there for a

period of three minutes in order to saturate the cotton wool swab with a sample of their saliva. The swab was then placed inside an airtight container, a salivette, coded and placed in a refrigerator for the duration of the session. A further saliva sample was then collected and coded in the same way at the conclusion of the session. The researcher/music therapist then placed all the collected samples into a large airtight ice filled container and transported them at the conclusion of the session directly to the laboratory. They were placed in a designated fridge at the laboratory where they remained in storage until the analysis of the samples commenced. The analyses of the sIgA samples were completed three months post study and the cortisol sample analyses were carried out six months after the completion of the study.

**NB** The release of sIgA and salivary cortisol is circadian, with a marked decline in sIgA during the morning, which stabilizes mid afternoon. There is a gradual decline in cortisol at night time (Cruess, Antoni et al. 2000; Dimitriou, Sharp et al. 2003; Carlsson, Campbell et al. 2007; Jensen, Mouridsen et al. 2008). For this reason, the collection of saliva sampling for the analysis of sIgA and cortisol was conducted at precisely the same time both pre and post the weekly music therapy interventions to specifically control for circadian rhythm. The pre and post measures in this study were consistently taken two hours apart throughout the study.

Following the collection of the pre music therapy intervention saliva samples, the study participants were asked to complete the UWIST-MACL, a pen and paper test. Instructions were given to the participants regarding how to complete the test. Briefly, the study participants were instructed to complete the UWIST-MACL by reading each word (an adjective) which described a mood and to then place a circle around one of the numbers 1 to 4. Number 1 meaning 'Definitely', number 2 'Slightly', number 3 'Slightly Not' and number 4

‘Definitely Not’. The participants were instructed to do this as soon as they had read each word and not to think or linger over which answer to circle, but to just circle the answer which best corresponded with how they were feeling at that moment in time. The completed UWIST-MACL was then collected and coded by the music therapist/researcher. The same procedure, as with the collection of the saliva samples, was repeated at the end of the music therapy session, after which light refreshments were served.

#### **4.9.5 Session Procedure**

At the commencement of the first music therapy session of each of the two groups, guidelines for the music therapy sessions were explained to the group and were as follows:

- That each group participant had permission to play the percussion instruments not for performance but to use the instruments to make sounds, as a way to express their feelings and emotions non verbally.
- It was reinforced by the music therapist/researcher that there was no right or wrong way of playing the instruments.
- The group participants were told that they could choose to play or stop playing at any time and could change percussion instruments during an improvisation as many times as they wished.
- The participants were told that no expectations to perform musically would be placed on them by the music therapist/researcher.
- At the conclusion of each improvisation, each group participant would be given the opportunity to verbally share their experience of playing in the improvisation. They would be invited to share any thoughts, feelings and/or emotions thus giving them the choice about what and how much they wished to reveal, or they may remain silent.



#### **4.9.6 Session Format**

All of the sessions followed the same format and were structured to encourage freedom to self express within a safe and supportive environment. Session goals were flexible and dependent upon the immediate needs of the group. The room in which the sessions took place was set up with chairs in a circle formation, with the instruments placed in the middle of the circle for easy access.

Each session was divided in to five segments of:

- Welcome (15 minutes). During this time each group participant was encouraged to briefly share and express their immediate feelings either verbally or non-verbally. This allowed the group to begin to self express and communicate with each other in a non threatening way. In addition, it also allowed the music therapist/researcher to gauge the group feeling at the outset of each session.
- Group awareness (10 minutes). Based on the feelings expressed by the group participants during the welcome, the therapist/researcher instigated the first improvisation, inviting the group participants to join in with instruments of their choice if and when they felt comfortable to do so.
- Exploration of emotions (30 minutes). Following further discussion, the group participants would decide upon the goals they wished to pursue during the session and would decide which type of improvisation they wished to create. Improvisations could be either a themed or non themed. During this segment (the exploration of emotions) of the music therapy session, three to four different improvisations lasting approximately 4-6 minutes each were performed. At the conclusion of each different improvisation the participants were encouraged to verbally discuss their experience.

- The group participants were encouraged to relax and reflect upon the improvisations they had created whilst the therapist/researcher played an instrument of the group's choice to them (15 minutes).
- Verbal processing and closure (20 minutes). The group participants were encouraged to share and process any thoughts, feelings or insights they may have experienced during the relaxation and reflection part of the session, leading to closure of the session.

**NB** All times given above were approximate for each segment of the group improvisation music therapy sessions, which could vary from session to session.

## **4.10 Ethics**

The primary ethical consideration of this study was the duty of care to the participants involved. It was possible that as a result of engaging in the process of music therapy, participants may have experienced temporary distress as a result of issues relating to the diagnosed illness. Should any distress have occurred it would be addressed with the aim towards resolution within the group. This would have been resolved with the support of other group members before the session closed. If the participant/s chose not to enter into a process of resolution within the group setting, their autonomy would be respected. The participant/s would then be afforded the opportunity to enter into a process of resolution with the therapist after other group members had left. However, should this have been rejected, then the participant/s, with their consent, would be encouraged to attend a health professional of their choice.

Ethical approval for this study was obtained from both the Human Research Ethics Committee of The University of Newcastle (HREC H-718-1203) and

Hunter Area Research Ethics Committee, Hunter Health (HAREC  
03/111/12/3.14) prior to the commencement of the study.

# **Chapter 5 Qualitative Findings**

## **Introduction**

This chapter presents the results of the qualitative component of the study. Semi-structured interviews and reflective experience work were undertaken with each individual participant in the study. In addition, a one-off focus group was conducted with fourteen of the participants. These qualitative methods were chosen to explore the study participants' perceptions and experiences of the eight week group improvisational (GIMT) music therapy intervention.

Thematic analysis was carried out on all data collected in order to elicit any emergent recurring themes and sub themes (Rice and Ezzy 2001; Robson 2002). This process revealed three main themes, which inform the narrative: music therapy as a safe haven; music therapy as a gift of empowerment and experiencing the difference between conventional medical care and music therapy.

All women whose quotes appear in this chapter have been given a pseudonym in order to protect their identity.

During the process of analysis, data also emerged supporting the quantitative pre/post test psychological and physiological results of this study. These supportive outcomes will be reported in the Combined Quantitative/Qualitative Results Chapter (7) of this thesis.

## **5.1 Music Therapy as a Safe Haven**

One theme that emerged from the data centres upon the participants' explanation of music therapy as able to provide them with a place away from their everyday concerns, of living with a diagnosis of cancer, and the side effects of their treatment - a safe haven. Several sub themes within this

overarching theme emerged of which *identity* is the first to be presented. The women in this study spoke of how their experience of music therapy had given them the opportunity to be with other women with whom they could identify, women who were in a similar situation to themselves. They spoke of how their experience of the active music therapy technique of improvisation enabled them to be creatively reconnected with their own self identity. Many of the women felt they had lost their self identity since being diagnosed with breast cancer. Self identity for some of the women meant accessing their inner child through their active involvement in group improvisation and for others it meant discovering new parts of themselves.

Secondly, a sub theme of *support* was identified. The women spoke of the ways in which they had experienced support, either by the giving of support or receiving support from the other women in their group. They experienced this support by both sharing musically and verbally with each other.

The women reported how they had experienced a greater sense of belonging and bonding with the other women leading to cohesion within the group as the weeks of music therapy progressed. From these data a third sub theme of *bonding and group cohesion* was identified. Through their sense of belonging and bonding they also reported experiencing improved communication, which for some of the women had a flow on effect of enhancing their relationships with family members.

*Distraction*, the final sub theme to be identified was a recurring description of how the women reported they were able to lose themselves in the music they were creating. They described how they would often become totally immersed in their playing and expressing their emotions on the percussion instruments. Whilst being absorbed in their playing the women said that they didn't think about their illness and/or their everyday concerns and worries.

### **5.1.1 Identity**

There were many ways in which the participants spoke of their identity within the context of this study. Identity was described by the women as being able to identify with other women who had breast cancer, by sharing the experience of illness and the medical treatment of that illness. Others identified themselves as being survivors, thus not directly identifying themselves as breast cancer patients. These women explained how it was important for them to identify with other women who were also survivors of breast cancer. Acceptance into the group through shared identity was also acknowledged. Through their involvement in music therapy the women explained how they were able to revisit or reconnect with their identity prior to their breast cancer diagnosis, an identity of being neither cancer patients nor cancer survivors but simply normal women.

The way in which the participants experienced their own individuality and uniqueness had changed for many of the women as a result of their breast cancer diagnosis. Many of the women spoke of how they had lost touch with their inner child, a part of their self identity which had experienced fun and joy prior to becoming ill. The women spoke of how music therapy helped them to reconnect with this part of their self identity. Some of the women spoke of how improvisation helped them gain insight into their fear of death, thus facing their own mortality for the first time since their breast cancer diagnosis, whilst others were able to rediscover and build upon parts of their pre breast cancer self identity.

Through their active involvement in the music therapy study many of the women described how they were able to identify with and have their feelings and their experiences of being women with breast cancer, validated by the other women in their group. As Kate explained in her interview – a point reiterated

by many of the other women - "What I got out of it [music therapy], was the knowledge that other women were going through this too. I mean, I already knew that, but it was good to have that reassurance that it wasn't just me".

As Kate suggests above, this could have meant that any sense of isolation she or indeed any of the other women in her group had felt due to their breast cancer diagnosis was reduced by being with and sharing time with other women who were going through the same thing.

Whilst women such as Kate identified themselves and others in the music therapy sessions as women who were going through a shared breast cancer diagnosis, some of the women identified themselves in a different way - as being survivors of breast cancer. Sharing a common bond of survival was important for many of the women as it gave them first hand knowledge that women did survive breast cancer. For Isabella, this was of particular importance as she had only very recently been diagnosed with breast cancer and as she said, "You realise you're not the only person that's got it - well you know that but - well, also seeing that other people have survived it - yes- when you're new into it". By identifying herself with the other women with breast cancer in her group, Isabella was able to see that women did survive breast cancer and that she was a part of a group of women who were survivors. For other women, being with survivors was an added bonus for them as it meant they didn't have to keep explaining their condition to other women, as Clara said:

I just really enjoyed spending time with people who were all breast cancer survivors, it was good that you don't have to explain anything - well I don't have to do that with most women who have been through breast cancer (Clara).

This statement was further reinforced when during the focus group a number of the women spoke again of how it was a relief for them to be with other breast cancer survivors because they didn't need to continually explain themselves.

A number of the women expressed in their interviews how being accepted into their group played a major role in their identifying with other group members. This was of particular importance to Ruth who felt that her age may have been a negative factor which may have excluded her from identifying with the women in her group. The other women in her group were many years younger and she felt this would be a problem. Ruth thought she would have little in common with the younger women. This was because, even though they were all women with breast cancer, she perceived that the other women's outlook on life and their life experiences would be very different from her own. However, in her interview she reported:

I felt quite comfortable and I felt that I had been accepted by the other women as I think I was the eldest one there and by quite a few years and sometimes when you go to groups you think to yourself 'Oh God, they're in their 20s 30s and just making 40 um...you feel a little hesitant as to whether you still speak the same language, if you know what I mean. You know they have different outlooks on various aspects of life and experiences but everything fell into place very nicely (Ruth).

Ruth's prior concerns about not being accepted by the group were unfounded. Her acceptance into her group was validated when during the focus group meeting the women in her group talked of how they really enjoyed her input at the music therapy sessions. They particularly enjoyed it when she sometimes sang during the improvisations. They said that her voice added to the depth of the music being created and that they truly valued her physical input. In contrast, Lara, a much younger participant, described her acceptance and feeling of support within her group in a more spiritual way:



It was joyous because it was a special group that came together. I'd come together with a group of souls and we helped each other. We have helped one another, an understanding. I suppose sometimes that the love needed to go out into that space we created because there must be people who are suffering by themselves. I felt I was a part of a group that was not judging, that I was supported and accepted (Lara).

It would appear that Lara's experience of being accepted and supported was associated with her feeling that she had identified with and come together with a group of likeminded women, and on a spiritual level with a group of souls. She described how they all had an understanding and had helped each other in a non judgmental way. She further perceived that through their improvisation the group created a space - an environment of love – which she philosophized could be felt on an unconscious level by others suffering the same illness but who were suffering their illness alone (Bonvecchi 1999).

Through music therapy the women spoke of how they were able to experience normality again. They described their feelings of normality as being those of not feeling like women with breast cancer but just ordinary women; the way they had felt prior to being given a breast cancer diagnosis. For many of the women, regaining normality through music therapy was associated with identifying and relating to the other women in their group as they would with a normal group of friends. The women said they were able to talk to each other openly and honestly. As one of the women said during the focus group, "Yes, we got to talk but we didn't feel like we were cancer patients, it just felt like we were normal women who could say honestly how we were feeling". This statement was reinforced by some of the other women who described in their interviews how music therapy was a place where they could come each week to not only talk with each other but have fun with a group of friends:

It was great because the word cancer was never mentioned but we all knew we had cancer because we'd have our little chats about where we were up to but you [the

therapist] didn't focus on our cancer – it was just like going out and having fun with a group of friends, which was very special (Ellen).

As earlier identified, by being with a group of other women with whom Ellen had a shared identify through her illness, music therapy allowed her, as it did many of the other women, to experience a period of normality, through shared fun and friendship. Music therapy was also able to offer the women time out from home and any family pressures. This time away from home was very important for many of the women, who collectively identified with one of the women who during the focus group spoke of how her family were all “doom and gloom” about her illness and how:

It was great to be away from my family.... yes, just great to be with others who are going through the same thing....we did so much sharing – that was so good that you could come here and just say whatever you like, you could say things which you may not necessarily want the family to know, about how you were feeling – especially if it was about them!.

By coming to music therapy the women were presented with the opportunity of being able to say things to each other that they often felt they were unable to say or discuss with their families. In addition the women were able to vent any feelings of frustration they may have felt towards their family members and have those feelings validated by the other women in their group. This is an experience that the women may have been able to realise through attending a cancer support group. However, being able to express and vent their emotions on and through the percussion instruments, gave the women a very physical outlet for the release of their pent up emotions, an outlet which cancer support groups do not provide, nor indeed do other psychosocial support groups which focus on verbal techniques.

Many of the women spoke of how improvisation helped them discover more about themselves as a result of becoming more personally aware of their

feelings and their ability to express their emotions through the playing of the percussion instruments. As Clara said, “It was more about development of myself, a building on top, discovering new things about myself, learning things”. Her comment was generally reflective of many of the women.

Associating the gaining of insight through the actual process of improvisation, Suzanne described in a more detailed way how she had gained a realisation merely through the specific sound of the gong. The actual sound of the gong had brought to the surface awareness for her, an awareness of how she had perceived other people had wanted to see her, and how they expected her to behave – like a perfect cancer patient who was going to be able to heal herself. She realised that she had placed unrealistic expectations upon herself – that she had a duty to heal herself so that she could demonstrate to others and prove that she was the perfect cancer patient who could heal herself.

I thought I was handling things really well – I think I was trying to do this whole thing perfectly – I think that’s the right word. I was trying to do this cancer thing perfectly and I wanted to make sure that I healed myself so that I could be a symbol to everyone else to say ‘you can do it’. And the gong actually brought that to the surface for me. Made me realize that that is such a ridiculous concept and to stop thinking about everyone else and to start feeling (Suzanne).

Suzanne’s insight gained through improvisation enabled her to stop thinking of how others saw her. It allowed her to finally think about and focus on herself. She was able to explore her own feelings about herself as a person with breast cancer and how it was affecting her. This ultimately led her to realise that she didn’t have to live up to other peoples expectations. Insight gained through the improvisation process also brought to the surface an awareness of fear for many of the women. Fear was associated with their illness and its outcome which many of the women reported they had either consciously or unconsciously

suppressed. Helen spoke of how her experience of improvisation had allowed her to face her fear, which for her became a positive experience as she describes:

After one particular session, it was my first ever night of having nightmares throughout my whole journey, but maybe they were sitting way back there and they came out to the fore through the music therapy..... life and death type things and I had never had such issues before because everything else had been so positive that those issues weren't really concerning me at all, so I don't know why it happened that night because we weren't talking about life and death. It was very confronting as it made me realise that I really hadn't dealt with the possibility of my own death from this illness, that I had blocked that out but I realised that in order to be able to move on from my illness I had to do this – that I needed to face my own mortality, so that I can get on with my life and live it to its' fullest so in a funny way, it was a positive experience (Helen).

By facing her own mortality, a part of her existential self, Helen was able to let go of her fear of death and begin to enjoy living each day of her life to its fullest.

The women also reported that through the improvisation process they were able to directly reconnect with their inner child. This was often described as the innocent fun part of themselves which they perceived to have lost since their breast cancer diagnosis. Annabel reported that whilst identifying herself with a group of women who all had breast cancer, she was still her own self. She spoke of how she enjoyed being able to spend her time with the other women in her group and also talked of how she felt younger and carefree once again, as a direct result of improvisation. As she said:

Giving women an enjoyable time which even as a group, although we've all had the breast cancer, we're still people ourselves you know and we're enjoying having a chat and playing with the instruments and feeling young – you know, I felt younger – yes, some of the times yes, I felt younger - sometimes I felt like a child when I was playing the instruments which was nice, being carefree once more. That's important isn't it (Annabel).

It would appear that Annabel was able to reconnect with her carefree feelings of being young again as a result of playing the percussion instruments. She had rediscovered a part of herself which she implied she had lost touch with.

As these quotes above illustrate music therapy, through the process of improvisation, enabled all of the women to not only identify with each other as women with breast cancer, as survivors and as normal women but it also presented them with the opportunity to reconnect with and build upon parts of their own self identity.

### **5.1.2 Support**

The women perceived support, as being support they had both received and given to each other – an act of reciprocity. The women experienced this support in a number of different ways. Support was accessed through shared musical interaction which often led to shared laughter and fun and through verbal communication - the sharing of conversation. Being able to relax together through the women's shared music making and having their feelings validated were all perceived as being supportive by the women. The quality of support they experienced was perceived to be through their mutual caring of each other and willingness to openly share with each other both musically and verbally.

As Suzanne said:

I really enjoyed being with the women I was with, I really enjoyed the experience that I had with them and the beauty of each of those women and their willingness to share – not just in words, but in feelings through the instruments (Suzanne).

Many of the women described their music therapy experience in similar ways to Suzanne, who spoke of how she enjoyed spending time with the women in her group. She saw the inner beauty of each of the women and acknowledged how they were able to share their feelings both music and verbally with each other. The women also spoke of the enjoyment they gained through sharing the

percussion instruments with each other, a more physical activity, which as Ruth explained:

We were having a lot of laughter trying out the various instruments, handing them to one another saying 'have you tried this, no I haven't, do you want to have a go at that' – it brought in a sharing between all of us, as although they weren't ours, [the instruments] we were trying an instrument and then sharing it with someone else and saying things like 'I think you might like this because I noticed you were playing so and so, try this one and they were doing that to me and I was handing things back to other people and that was just great (Ruth).

It was interesting to note how Ruth described that she had noticed the various percussion instruments which the other women were playing and how they would pass the instruments around between them to try. By sharing the percussion instruments in this manner the women were able to explore and discover the array of different percussion instruments through a shared activity and have fun. Linking in with this, many of the women described their feelings of support in a more direct way. They unanimously agreed that through their shared music therapy experience they had felt comradeship with the other women. As Rose explained:

There was the comradeship – I think that's what it was, you know, a group of ladies who were in a similar situation and were there to support each other and I thought that was a really nice feeling – to be supported (Rose).

This feeling of comradeship, the women perceived to have come directly from being with a group of other women who were in a similar situation to themselves. Through their shared breast cancer diagnosis they were able to experience a sense of camaraderie with each other, which they described as being supportive for them. Annabel described her experience in a slightly different way when she said:

It [music therapy] felt very supportive and just to be there with other people who had gone through the same things as me and just being able to relax and doing things with the music made you feel that there was other people there to support you (Annabel).

In addition to Annabel feeling supported by being with a group of women who had gone through the same thing as her, she directly talked of how support came through the music created together with the other women during improvisation. She also spoke of being able to relax, which could have either reflected that she felt comfortable with the women, or because of the type of music the group created or possibly a combination of both.

In contrast to the acknowledgment of support and enjoyment that the majority of the women stated they had received through music therapy, Kate, inspired by her perceived support and enjoyment from her group wanted to give support the other women:

I think the support from the group and the enjoyment from it was such that I always wanted to give something, so I guess that was it – that I was there to support the other women too (Kate).

It would appear that it was the support Kate received from her group that was the catalyst for her wanting to reciprocate and support the other women, as she felt that was what she was there to do. The support the women acknowledged they gained by attending music therapy was very evident. Many women talked of how it sometimes was a huge effort to attend music therapy, particularly if they felt too ill. However, they felt motivated enough to make the effort because they knew, that when they attended they would be supported, have fun and enjoy themselves through improvisation and go home feeling better at the end of the sessions. Mary exemplified the feeling of the majority of the women when in her interview she reported:

I think the support from the group and the enjoyment from it, I mean it's good to have fun and it was fun. Like sometimes I'd have to drag myself to come but it was fun to be with intelligent women, sharing time and fun and laughter (Mary).

Support for some of the women was experienced through their actual playing of the percussion instruments which they described as making them feel safe and protected, an internal process and response. As Emily explained, "It made me feel like nothing can hurt me – protected – like when I was playing my instrument that nothing could touch me – nothing could hurt me".

The verbal sharing that followed each improvisation was perceived to be helpful by the women who reported they felt supported by being able to share their feelings verbally as well as musically and having those feelings validated by the other women. As Mary explained in her interview:

I think each of us responded individually to what we did and how it helped each of us. So as we went around to each person after an improvisation and they explained how they felt at the time, I thought – well that's good because that's how I'm feeling or well, I'm not feeling that, but because I'm not feeling that it doesn't mean that it's not right, it's just okay to feel like that (Mary).

In other words, Mary experienced having her feelings validated by the other women, even if her feelings were different from the other women in her group. This sharing often had a positive flow on effect in to the women's families as Emily described:

When I'd come home it was nice to speak to the family about what had happened at music therapy and to relate to them what was going on – so it was like that was something special going on in my life which I could share with them (Emily).

Music therapy was a positive experience for Emily that in turn gave her the opportunity to share her positive outcome of her illness with her family members as opposed to the negativity often associated with breast cancer and its treatment.



Upon reflection some of the women reported how the effects of music therapy lasted far beyond the sessions they had attended, reporting how they were able to still call upon certain strategies they had learnt through music therapy to help them as and when needed. One woman specifically referred to the support she had experienced during music therapy, which for her came at a crucial time point during her illness journey. She further stated that even though she had now adjusted to her illness and knew that it was time for her to rely on herself, that she still used strategies she had learnt during music therapy to help her when needed:

I felt that although I had already adjusted to my illness, but as time goes on you are on your own, and I think that's where I'm at now, leaning more on the music therapy so the support was very, very much there and it would be if I'd called on it but now it's time for me to rely on my own resources and to bring into use the strategies I learnt through music therapy (Ellen).

Another woman reflected more specifically that since completing her music therapy intervention if and when she experienced periods of depression, she was able to remember the support she had felt during her music therapy. Remembering the support she had felt from the other woman during a difficult period in her life had helped her cope with her depression and feel better once again:

Later on, when I felt heavy depression, I remembered all my techniques and the support I felt and it helped me to cope and to feel better. I was very pleased to feel better again.

Through the women's experience of support it would suggest they perceived this support as an act of reciprocity – a mutual exchange. The quality of the support the women experienced appeared to become stronger as the weekly music therapy intervention progressed and the women became more familiar with each other.

### **5.1.3 Bonding and Group Cohesion**

Bonding by the women was experienced as feelings of becoming closer, more comfortable and connected with each other through their active involvement and verbal communications in music improvisation. This was further reflected by the women making friendships and by displaying affection towards each other.

As the weeks of the music therapy intervention progressed, the women reported how they had become closer to each other. They spoke of feeling more comfortable and freer within themselves and with each other. The women said they felt comfortable displaying physical affection and spoke of how valued friendships had been formed and developed over the period of their eight week GIMT intervention. The women also explained how they felt more connected, often at a deeper level, through the music therapy intervention.

This general feeling amongst the women was expressed by Rose, who spoke of how she perceived it was easier to talk about things in more depth, as the women in her group became more familiar with each other.

I just think that everybody started to obviously get to know one another and it became a nice little group, a nice friendly group of women...what I'm trying to say is that people were able to share different things as we got to know each other and we were able to talk more deeply (Rose).

In the course of their interviews many of the women talked of how being involved in music therapy had reconfigured their breast cancer status into an enjoyable and positive experience. They attributed this to being with a group of women, with whom they identified, were able to bond with, show physical affection towards and form lasting friendships with. Being able to show physical affection by hugging the other women in her group was of particular

importance for Kate who had reported that hugging was something she didn't normally do with most of her other friends:

The bond that was built between the lot of us was really nice um and I really enjoyed it and I think the one positive thing I've got out of having breast cancer and music therapy is all the lovely women that I've met and all the lovely friendships that I've made, we even hug each other, which is something I haven't done with most of my other female friends (Kate).

Kate's statement would suggest that by bonding with the other women in her group she was able to lower any barriers she may have had towards displaying physical affection towards others. As a result of bonding through music therapy she was also able to form firm friendships, which ultimately became a positive experience for her. Bonding for Kate was also a more physical experience, by making friendships and physically giving hugs. For Frances it was the experience of becoming more familiar with playing the percussion instruments within the group, which enabled her to feel more a part of her group and which she perceived became easier for her as the music therapy sessions progressed. "I did feel I was able to get more into it as it went on and we became more of a group - it got a lot easier".

In contrast to the physical aspect of hugging each other and the physical playing of the instruments as an experience of bonding, some of the women perceived their experience of bonding as more emotional one. As Hannah described in her interview, it was her perception that the group participants went from being shy at the outset of music therapy to becoming more familiar and warming towards each other as weeks progressed. As a result of this she experienced the group becoming emotionally freer with each other, "Emotionally, I felt we all just went from being a bit shy to just getting more to know everybody, we just got freer as the weeks went by...we warmed more towards each other". Hannah's experience suggests that as a result of getting to

know each other more intimately the women were able to share more emotionally with each other.

In more depth, Lara described her own experience of being able to bond with the other women also through her shared identity of breast cancer, and her involvement in group improvisation:

I think coming each week, as you got to know people, just being able to go and sit down together and make music as a group was great but I think the common bond is cancer and that there is a whole range of emotions and garbage and energy that's going on amongst everybody – and I think as time went on and we spoke about those emotions I think people felt more comfortable within themselves and that opened up doors to bond on a different level...but with the group, as the group went on and as people spoke more, being able to talk and share their emotions by playing the instruments and how they felt by playing the instruments and why they chose that instrument, I think it slowly broke down the barriers – it helped them to become more comfortable with each other and I think too that at the end, being able to physically hug and I think that group had a good sense of humour...we could laugh and I think that laughing helped so much, to be able to laugh at yourself and with others, and to be able to laugh at things that they may have just been so terrible at the time, but I suppose that being able to laugh at tragedy, to be able to still see the humour – because you can get too dark...we all started out in kindergarten with percussion, with triangles and cymbals and bells and drums and I remember that everybody would nearly race to get the triangle...there wasn't enough for us all so we could tap in to being childlike – you feel more loose, not as tight (Lara)

In the first part of her quote Lara made reference to the range of different emotions people with cancer experience, inferring that there is an amount of negativity attached to those emotions and people's energy. She perceived that it was through the process of playing out those emotions on the percussion instruments and then being able to verbally share the experience of playing with each other, that any perceived barriers between the women were gradually broken down, both within the women individually and within the group as a whole. It would appear that Lara perceived this breaking down of

barriers as enabling the women to become more comfortable and feel closer with each other as time progressed, to the point of being able to hug one another, thus taking their bonding to a deeper level. Lara further spoke of how she felt her group had a good sense of humour. She explained this by saying that by still being able to laugh at herself and with others over things that may have been terrible at the time she could still find humour in her situation – dark humour. Lara likened her experience of playing the percussion instruments to that of being at kindergarten, thus being able to revisit her childhood and tap into past feelings, which she experienced as being looser and not as tight, a similar experience to Hannah's experience of becoming freer. This would possibly suggest that through the playing of the percussion instruments the women were able to access a part of themselves with which they could reconnect and through this re-connection they were able to more easily gain access to and release their emotions.

The women further described how on one level they would become deeply immersed in their own playing during an improvisation, whilst on another level, a subconscious level, they were aware of what the other women were doing musically. Suzanne described her experience of this awareness with clarity when she spoke of how she was involved in the study primarily, to get out of it whatever benefit she could for herself. However, she further described that when she did sit back and listen to what the remainder of her group were doing, she noticed they were all playing off of each other, in an almost tribal way. She associated this with feeling the vibrations of the music being created, as a result of which she said she felt a connection between the women:

I was there for me – even though it was nice being a part of the group – I was there to get as much for me as I could and I did, and I know that the majority of people in the group were the same because they all seemed to say, at different times that 'I didn't hear anyone else's instrument' - yet when you did sit back and listen to the group, everyone was

playing off each other – almost like on a subconscious level – even though you're in yourself playing what you are playing – somewhere in you is picking up the vibration of everything else – almost tribal – like deep inside – connecting with each other (Suzanne).

Other women also spoke of the vibrations they felt within their bodies which they associated directly with the percussion instruments they were playing themselves, or from picking up the vibrations from the instruments the other women were playing. Lara described her experience in a slightly different way when she spoke of the resonance of the instruments, particularly the cymbal, when she reflected upon her own experience of feeling the resonance of the cymbal go straight through her body:

I think when the lady played the cymbal, and it would resonate, there was one time when it went straight through me – and it seemed to effect the rest of the group so I wondered if the energy from the group can actually have a positive flow on to each individual – if the group is on a high – that, that can harmonise to lift that one, that may be lower at that stage? (Lara).

In her quote directly above, Lara contemplated that if she and the other group members were able to experience a form of energy from the resonance of the percussion instruments, it was possible that this form of energy could have a positive flow on effect for the whole group, bringing the group in to harmony with each other and raising the level of group energy.

During the latter stage of the music therapy intervention the participants were invited to both send and receive musical messages to and from each other.

Many of the women said how surprised they were with the ease at which they were able to pick up on the thoughts and feelings of the person playing to them. A quote from Isabella exemplifies this when she described her own experience:

It was surprising how when we were saying things to people with music that other people could know what you were thinking –yes, that really surprised me. Yes, I could

often pick up what other people were thinking by how they were playing – that was funny - just being able to pick up other peoples feelings by hearing them play (Isabella).

Isabella's statement was reinforced by Annabel who described her experience in a slightly different way:

I think it was really good when we were trying to get messages through to each other through our music, without talking, that was interesting because you could pick up what messages were being sent to you musically and that was really interesting – how you could feel the message without having to speak the words – it was fascinating (Annabel).

Isabella's experience was suggestive that through playing to each other the women were able to feel a connection by picking up on the thoughts and feelings of the women in the group, whilst Annabel specifically spoke of how she could pick up messages being sent to her by emotionally feeling those messages. This would suggest that when receiving and listening to a musical message being sent to her Annabel was able to experience a deep emotional response to the musical element of the message. Lara further called the women friends, when she recalled how she enjoyed sending musical messages and also spoke of how she was able to pick up the subtle characters of the women through this form of message sending:

I enjoyed playing the music – playing messages to friends, yes I say friends, because we all became friends. I enjoyed that because we were picking out subtle characters, not flaws, but we've all got funny things about us (Lara).

Lara's experience would suggest that the women were becoming closer to each other through revealing more of their inner selves and characters through this process. For the women who had been shy at the outset of the GIMT intervention it became apparent that as they bonded more within the group they also gained confidence. They were able to step out of their comfort zone, an expression which Clara used when she spoke of her observation in one of the sessions when the women were sending musical messages to each other:

Sending a message to someone in the room through an instrument was a stimulant for people to do things and say, through music, things that they probably wouldn't normally say or get the opportunity to say or feel that it's okay to say because too many times we don't do that, we just don't but it made it okay and it said it was okay to do it - so again I think that was very rewarding when people took the time to actually play and then verbally say how much they thought of other people in the group so I think that was probably one of the sessions that I'll always remember because people stepped out of their comfort zone and I thought that was pretty amazing (Clara).

As Clara correctly observed, the extent to which the women were able to musically and verbally express to each other what were often very painful emotions for them, was an indication of how closely the women had connected within the group and bonded with each other through this music therapy process. As one woman positively summed up in the focus group meeting:

I think it's when something like this happens that you realise that perhaps if we'd never been diagnosed with breast cancer we would never ever have come together and so we've formed some really close friendships and a support system – so there's always something good comes out of something bad.

Not only had the women formed really close friendships through their involvement and experience of group improvisation, but they had also developed a new social support system for themselves which they would be able to call upon following the completion of the music therapy intervention.

#### **5.1.4 Distraction**

The participants' experience of distraction whilst actively engaged in group improvisation was perceived to be through their thoughts, feelings, memories, imagery and by association.

When actively improvising, the women talked of how they became focused on and absorbed in their playing of the percussion instruments. They said that when they were immersed in their playing they were distracted from their



problems because as it took their minds away from any invading negative thoughts and feelings.

As Ruth and many of the other women reported, when she concentrated on her playing, which required her to use imagination she didn't have time to think of anything else as her mind was focussed on her music making. Hence, improvising for Ruth distracted her thought processes away from her troubles:

It took a lot of imagination and I think the main thing is that you had to concentrate on what you were doing and when you concentrate on one thing, you haven't got time think of the other things. So, if you are concentrating on your music and maybe making a tune or getting a certain rhythm while you are singing a song to yourself and then beating out the rhythm on the drums to go with it – the song you are singing to yourself – you haven't got time to think of anything else, so if you're angry or upset or anything you just don't have time to be angry or upset – if you know what I mean, because you are concentrating, you are focussing on singing a song to yourself so it takes your mind off things (Ruth).

Ruth talked in depth of all the various musical ways in which she was involved in improvisation, her own creative processes. She spoke about making a tune or singing a song to herself and accompanying herself by playing the rhythm on the percussion instruments. Becoming engaged in this creative process Ruth said her mind was taken away from things such as her anger or being upset which were possibly associated with her illness. This was affirmed by another woman, who in her interview spoke of how when concentrating on her playing she was distracted from her everyday thoughts, in addition to which, she felt physically calmer, even though she said she didn't think she'd released a lot of emotion:

I don't know that I released a lot of emotion, I guess I got more calming feelings but not necessarily because of bashing the drums but just by concentrating on what you were playing rather than what else was going on in your life at the time at home or work so more of a distraction (Rose).

It is possible that in addition to her concentration on playing that Rose released a lot of physical energy when she played the drums which resulted in her feeling calmer.

In a more direct way many of the women reported that improvisation did distract them from their breast cancer and that it was fun and had enhanced their quality of life. As one of the women said during the focus group meeting:

I guess that whilst you are doing it, it's light hearted and it takes lots of peoples minds off the problem of cancer and I think that anything that does that is good especially if people don't have support, then something like this would be ideal because it takes your mind off that and it gives you two hours of time to have a bit of fun and I think that's very important because it's all about quality of life isn't it?.

In addition to being a distraction this woman also suggested that if people with cancer didn't have support, then music therapy would be able to provide them with that support, which in turn she perceived to be an important way of improving quality of life. During the focus group meeting the women also discussed how, when they'd arrive for a music therapy session they were sometimes in physical pain but that within a very short space of time, once they had started to play the percussion instruments, their pain had gone. As one of the women said:

You know you even forget the pain. Sometimes when I come I'm in a lot of pain but the pain is gone within minutes once we start to play the instruments – so it does give instant relief to pain.

Another form of distraction for many of the women was their experience of evoked memories and imagery whilst engaged in improvisation. Sometimes these memories and images were evoked directly by the sound of a particular instrument being played or by the music being created within the group. Isabella described how music being created on a specific combination of

instruments evoked feelings of her time in Bali, “I liked the wind chimes and the bells and the temple blocks – they used to make me feel like I was in Bali”. Whereas when she actually played the rain stick herself it created imagery for her as she imagined, “I was on a cruise and getting on an island and walking on a beach”, so by simply playing one specific instrument pleasant imagery was evoked for her. Another woman described her experience of playing as creating a combination of both imagery and feelings. She reported how much she loved the rain stick, which reminded her of many different things, from the ripple of a brook to the colour green and how the xylophone would evoke a feeling of sadness within her:

I loved the Mexican rain stick, just love it. It just reminded me so much of a forest, the ripple of the brook and the leaves, dead leaves, little rocks, it was so peaceful, just beautiful and it was lovely and green. I loved the xylophone too, that’s the one which would make me feel sad, it would make me feel quite sad. I liked that Oriental thing we did, the oriental sound - yes, I really enjoyed that and I really enjoyed playing that on the xylophone and it felt good singing and I could visualise Madam Butterfly. I could visualize me walking over the bridge as Madam Butterfly and things like that – that’s what I find with music, I visualize so when I was playing those oriental sounds I could visualise myself as Madam Butterfly walking over the bridge in to the Japanese gardens so I really enjoyed it (Hannah).

In the second part of her quote Hannah refers to the oriental sound of the improvisation which the group were creating. This particular improvisation was based on the pentatonic scale, a scale which consists of five notes making up the octave, and of which most Asian music is composed. Through the playing of music in the pentatonic Hannah visualized herself in a scene from Madam Butterfly, a Puccini opera. She described her experience as enjoyable and that when playing her instrument and singing at the same time she actually visualized herself *as* Madam Butterfly walking over the bridge into the Japanese gardens. Many of the other women experienced a direct association between

playing specific percussion instruments and the feelings the instruments evoked for them. A further example of this is when Lara described her experience of playing the bells of which there were several different types. She reported that the bells were the instruments she was always drawn to, particularly in the earlier sessions of music therapy. She talked of how they evoked feelings of cleansing and that they had a spiritual association for her:

I liked the bells – it was like – how can I describe the sound – what’s the word – like a cleansing, like a clean, it was a cleaning sound, a pure sound and it was nurturing too because I think bells do play roles in peoples lives, you know like Sunday School, school bells um and church bells – more spiritual (Lara).

Lara’s feelings of association directly by the playing of the instruments was exemplified when during the focus group meeting many of the women talked of how the different instruments had evoked associations for them. One woman talked of how she “liked playing the cymbals – I wanted to put them down my top because they looked perfect they did – nice and whole”. This participant had undergone a double mastectomy and had associated the hand cymbals as representing complete and perfect breasts. This would possibly suggest that by placing the cymbals during an improvisation in the area where her breasts had once been, she was able to experience becoming a whole woman once more.

Memories of a positive nature were also evoked for another woman who believed that her experience was shared by the other women in her group:

I think it often took everybody back to their childhood and they were all good memories for me which came out, none of them were really horrible negative things and I think a lot of positive came out of each session – positive thoughts, there was never any negativity there which was great (Mary).

As another of the participants simply reported, during her reflective experience work, “It [music therapy] helped me to forget the stresses of everyday life and

become totally in the moment". This simple statement demonstrates how being actively involved in improvisation can allow the person involved to become temporarily transported away from thoughts and feelings of their illness and be in the present.

As a result of her experience of improvisation, Mary bought herself a Tibetan singing bowl, in order for her to continue to practise her own music therapy on herself after her involvement in the study had finished

Since the music therapy I actually bought one of those beautiful bowls [Tibetan singing bowl] that make that lovely sound and I usually play that in the morning for just a couple of minutes and I say a little prayer before I do it – to ask the vibrations to go through me in a loving way and to let the love flow freely through me – I do that every morning.....yes, I use my music bowl for meditation every day – just to feel the vibrations and the sound which brings me to balance and I know that I'm listening to music more. I know that if I've got a frustrating situation in the house that if I play my music bowl it changes my whole physiology (Mary).

In her quote above, Mary talked of how she uses her bowl each day in a spiritual way whilst she meditates, asking for the vibrations from the bowl to go through her body, as she feels the vibrations change her whole physiology, by allowing her to release frustration and find balance within herself – a state of homeostasis.

## **5.2 Music Therapy as a Gift of Empowerment**

All of the women in the study spoke of how they had felt disempowered, as a result of being presented with a diagnosis of breast cancer, and their subsequent treatment regimes which for many of the women had been disabling both physically and emotionally. As two of the women revealed in their quotations below following their breast cancer diagnosis, they felt that they didn't have choice and felt out of control and powerless:

### *Quote One*

I didn't have any choice in the matter because it was taken right out of my hands. I didn't have any control and normally that bothers me because I like to be in control myself but the first couple of weeks, when I came home from hospital it bothered me and then I realised there was nothing I could do about it, that my life had changed dramatically and I had lost total control of my life and so I just gave in to it (Lorna).

### *Quote Two*

I felt powerless it was happening and there was nothing I could do about it and I think that's one of the hardest things to handle in this journey is the fact that you have to sit back and let other people do things for you and to you rather than you being in control (Sally).

Two major themes of choice and gained confidence emerged from the qualitative data. It was through choice and gained confidence that the women in this study perceived they were able to regain control over their lives and experience empowerment through music therapy.

## **5.2.1 Choice**

Choice as perceived by the women encompassed both musical and verbal freedom. It took the form of being able to choose whether or not they wanted to actively play during an improvisation and if they did choose to improvise, what instruments they would play. As a result of having choice, the women reported that they were able to experience the release of their emotions upon and through the percussion instruments they chose to play. Choice was further experienced by the women during the verbal processing phase which followed each improvisation, when they were given the choice to speak or remain silent. The women reported how they felt under no pressure and that no expectations were ever placed upon them during the course of their music therapy

intervention. They said that they were always free to choose whatever they wanted to do and when they wanted to do it. As Isabella said in her interview:

I think it was good that no one was putting any expectations on me so it was okay that you didn't have to produce anything at the end of the session and that it was purely for your own self that you were there. I guess the other thing was that there was no pressure at all to participate because I felt I could have just sat there and quietly listened which was good (Isabella).

As reported by Isabella, she felt good that she wasn't put under any pressure to play and that no expectations were placed on her. She acknowledged that she chose to be there for herself and that she felt comfortable enough within the group to not participate. If Isabella did choose, which sometimes she did, not to participate in an improvisation, she was not made to feel excluded as she was still made to feel an important part of the group. Isabella's experience was reflected by Lorna who explained that although she didn't feel comfortable with improvisation she was able to choose what she wanted to do and when she wanted to do it. Initially she said that she chose to just listen but implied that later on in music therapy she was able to either play or not play but that choice still remained hers.

Although I didn't feel comfortable there I did do what I wanted to do, and I did pass on things I didn't want to do. I did like to sit back and just listen to start with – I didn't really want to get too involved – so that's just me – putting up a bit of a barrier (Lorna).

Although Lorna explained that putting up barriers was a part of her nature, the fact that she did sometimes choose to play during the improvisations suggested that she was able to move beyond those barriers at times. Whereas Lorna implied that her barriers were associated with the physical playing of the percussion instruments, many of the women reported that by having a wide range of percussion instruments from which they were able to choose to play, they were able to break down their internal emotional barriers and blockages.

As Frances said, “I block my emotions a lot I think and so with improvisation I was able to make those feelings instead of blocking them out”. This resulted with Frances, as with the other women, being able to release her blocked emotions in a creative and constructive way. Other participants explained how being blocked was more of a physical experience for them. As one of the women explained in the focus group meeting:

I felt free, every time I left there [music therapy] I felt like I’d been unwound – it was great. Whereas usually, at the end of the day I would have had a [chemotherapy] treatment so I would feel blocked but by the time I left I was balanced and free.

It would appear from this particular woman’s quote that she felt blocked as a direct result of her chemotherapy treatment which she regularly received in the afternoon prior to her evening music therapy session. She perceived that it was through improvisation that she experienced a release of her blockage, which resulted in her feeling physically less tense and more relaxed.

The women talked of how music therapy was a different process to other therapies they had tried. They spoke of how music therapy was an external process as opposed to an internal process, which had been their experience of some therapies such as massage and art therapy. They explained how they were able to externalise their feelings, through the playing of whatever percussion instruments they chose during an improvisation. Many of the women explained their experiences in a similar way to Suzanne who described her own experience of improvisation as a way of both being able to explore her emotions and physically externalise them through her playing:

It was a physical way for me to explore and release my emotions, rather than internalize them because a lot of the treatment I’ve done on myself was internalizing. Even though you were doing art therapy, and you were getting it out on paper, it was still an internal process whereas with the instruments and the vibrations as well as the sounds it brings it out – physicalizes the process.....It was interesting that when I would come home, for a



couple of days after, I would feel the vibration through dreams. I would get pictures of playing music or hearing music in my dreams and then I'd analyse them and then that would bring up what emotions were just sitting under the surface (Suzanne).

As Suzanne said, through the process of improvisation, she was able to explore and release her emotions, thus externalising her blocked emotions in a physical way through her own choice of percussion instruments. In contrast, she compared her experience of art therapy as being an internal process, even though she said she was able to "get it out on paper". Her statement would suggest that the difference for her with improvisation was the physical aspect of the process, particularly the actual vibrations which she felt from the instruments when she was playing them and which enabled her to release physically, thereby externalising her emotions in an active way. She further described how the vibrations of the instruments stayed with her for a couple of days following a music therapy session. She spoke of how she would feel the vibrations in her dreams, which she would then further explore and analyse for herself. Her experience demonstrated that the effects of improvisation were ongoing and that it proved to be a process for her, through which she was able to access her subconscious and then explore, analyse and release deep seated blocked emotions, for a period of days after attending music therapy sessions.

During the focus group meeting the women again reinforced how GIMT had given them the experience of choice:

Sometimes it was difficult to choose the right ones [instruments] but it was always easy to change and keep changing the instruments until you did find the right instrument to express how you were feeling.

As this woman affirmed, she was able to have choice which she accessed through chopping and changing instruments until she was able to find the right instrument upon which to express how she was feeling at the time.

### 5.1.5 Confidence Building

Empowerment through confidence building was experienced by the participants in a number of ways. Becoming less shy and timid, resolving work issues, becoming the class clown and being able to openly talk about their illness, were the different ways in which the women perceived music therapy to have enabled them to become empowered through gained confidence.

Rose's experience at the outset of music therapy was also reflected by many of the women. Rose spoke of how she had initially held back from both playing and talking at the outset of music therapy and/but noticeably became more confident within her group as the weeks progressed. Her gained confidence initially revealed itself in her playing, which she also acknowledged when she reported:

Initially I would only go for instruments which didn't stand out so as not to be sort of standing out or noticed, you know, keep a low profile and then I think I became more comfortable with the people and then I thought what the heck and then I went on those little bongos and the cymbal because I thought it doesn't matter because everyone was having fun (Rose).

From playing quiet percussion instruments that were generally unnoticeable when playing in a group improvisation, Rose was able to progress to louder, more noticeable instruments such as the bongos and the cymbals, instruments that stand out in improvisation, as her confidence grew.

Rose's experience was reflected by Helen, who also described that at the outset of music therapy, she would only choose percussion instruments which didn't make her stand out in the improvisations, as she did not want anyone to specifically notice her or her playing. She then explained that as she began to feel more comfortable with the other women in her group, she felt able to move on to instruments which did stand out when playing in the improvisations. This

suggested that as Helen became more familiar with the other women in her group and the percussion instruments that her confidence grew. The researcher also observed that as the music therapy sessions progressed and Helen's confidence grew, she made herself very well heard on the drums, an instrument she had not previously played. During one particular music therapy session, when the women were asked if any of them would like to conduct the group in a music improvisation, Helen, who had been playing the drums at the time, took up the challenge almost instantaneously and conducted the group with bravado, which resulted in collective laughter. Helen described this experience as, "I felt like the class clown, the outspoken one, which just isn't me, but I guess sometimes it was something I felt I needed to do". This was also an observation made by the researcher who witnessed that as Helen gained confidence musically, there was a flow on effect with her beginning to talk more freely and openly within the group about her experience of improvisation, her breast cancer and her personal life.

In a more direct way Annabel talked of her shyness when she simply said, "I was a bit shy to begin with and it took me a while to sort of come out of myself, which I started to do towards the end". This again would suggest that as the music therapy sessions progressed Annabel became less shy and gained more confidence. This was further confirmed by the women when during the focus group meeting when they spoke of how "It [music therapy] gave you more confidence as you came along each week and you got to know the people you became more adventurous and lost your timidity".

Resolving work issues through confidence perceived to have been gained through the music therapy process was of particular importance for Rose. She spoke of how she was able to finally confront and resolve a long standing perceived problem she had with a work colleague. Resolving this problem she

perceived to be directly attributed to her music therapy experience, which she described in depth in a quote taken from her interview:

Something interesting has happened very recently –since starting music therapy - not really an ‘insight’ but I did something I would never ever have done before. There was a certain person who I’ve really got on well with and I liked the person but I thought this person thought I was being awkward because there was a specific thing I had to do for my job and I sort of got this distinct impression that he just thought I was being awkward about it and then I thought to myself I think you’re avoiding me now you know and all these different things were going on in my head so I decided that I’ve have to talk to him about it and I’d have never done that before - ever. So anyway a couple of days later I got the opportunity – so I said How about we go into your room and he said Have you got a lot of signing for me to do and I said Oh yes...so anyway we went into his room and I said I’ve just got this feeling that perhaps you think I’m being awkward over certain things in this job – I’m not - I just sort of feel that I don’t know if you’re avoiding me or whether it’s all in my imagination but I don’t want to end up being bad friends because I really like you and I’d hate for that to happen. He said definitely not because I know you have to do da da da da so it ended up and it was really good and I thought Well that’s good because I would have never ever done that before music therapy (Rose).

It would appear from Rose’s quote above that through her gained confidence, she was able finally able to confront a difficult work situation which had been bothering her for a long time. Through her gained confidence, she was able to verbally communicate her problem, as she perceived it, with her work colleague, something which she said she would never have done prior to her music therapy experience. Confronting a difficult perceived situation was also something Helen talked of in her interview and which she felt she’d only been able to do as a result of her music therapy experience. Helen, spoke of how she felt she was finally able to reveal and talk about her breast cancer within her workplace situation. This was something she had put off doing for a long time but which she finally felt she had the confidence to do, which she attributed to her music therapy experience:

It's interesting as I'd been putting off telling the parents and the children at the childcare centre what had happened to me. I'd always intended to do it but had never found the right time and had asked my teachers to cover for me if any of the children or parents asked where I was, when I wasn't there. It was the week following this particular music therapy session that I had three evenings of parent interviews and it was on those three nights that I did tell them [the parents] of my illness (Helen).

The particular music therapy session referred to by Helen in her statement above was the session following which she had experienced nightmares in which she described she had faced her own mortality. As a result of her confronting her own mortality she was able to let go of her fear of death and begin to enjoy living each day of her life – as reported in Identity – section 5.1.1.1 of this chapter. It is possible that it was through Helen's facing her fear of death, which she reported to be a positive experience for her, that she gained her inner confidence.

Other women perceived they had gained confidence by being able to complete certain tasks which they had experienced difficulty with, prior to music therapy through their lack of confidence. One such task was described by Emily who associated her gained confidence as being attributed to her feelings of calmness and relaxation which she experienced by the end of each music therapy session, which in turn made her less nervous when driving at night time as she described in her interview:

What I found initially driving home, I don't like driving at night time, and I found that I used to drive home and be home before I realised I'd been driving. Um, quite safely but what I'm trying to say is that I wasn't as nervous as I would normally be driving at night – especially a couple of nights when it was raining because I hate driving in the rain at night so driving home didn't bother me at all as I was aware of feeling much more calm, relaxed and confident behind the wheel (Emily).

As Emily described, as a result of feeling calmer and more relaxed, she was less nervous as she drove home after each music therapy session she attended.

Gained confidence for some of the women appeared to be the result of a combination of both being given choice and becoming more comfortable within the group. As one of the women described her experience during the focus group meeting:

I think it was lack of self confidence and um I find I sit back, I don't come forward, and I let others come forward. I think with the music therapy, with being able to play the percussion instruments and having that choice, to be able to play for emotion or to offer to play as a gift for somebody um I think that brought me forward into the group as time progressed too um to participate.

As this particular woman described, it was due to her lack of confidence that she initially stayed in the background of her group. However, it would appear that as the weeks of the music therapy intervention progressed, she began to feel more comfortable within the group and through being given choice, she gained confidence and became more proactive.

As demonstrated by the women's perception, empowerment was achieved through their experience of music therapy and was concisely summed up by two of the women during their personal time of reflective experience work when they wrote:

It's [music therapy] enabling – it enables you to express things through making music that you can't say in words. I'm a pretty good talker but even so there were a lot of things I couldn't say and The thought of being able to release the emotions of the challenges I am facing was an enormous physical and emotional relief. I felt I was making a difference and being proactive not reactive.

By having choices and becoming more confident the women described how they were able to regain control over certain aspects of their lives thus allowing them to experience empowerment once more.

## **5.2 Experiencing the Differences between Conventional Medical Care and Group Improvisational Music Therapy (Music Therapy)**

GIMT as provided in this study was a first time experience for all of the study participants. The perceptions of the women's experience of conventional medical care differed from their music therapy experience. This was a particular area of interest for the researcher as no music therapy research to date has explored these differences with women recently diagnosed with breast cancer to the best of the researcher's knowledge.

Two main recurring themes became apparent as the qualitative data were analysed. The themes were those of i) Clinical/Physical versus (v) Personal/Emotional and ii) Disempowerment v Empowerment.

### **5.2.1 Clinical/Physical (Conventional Medical Care) v Personal/Emotional (Music Therapy)**

All of the women without exception reported that they had perceived their conventional medical care to be clinical, primarily treating their physical body. The women spoke of how the medical profession tended to see things in black and white and that they were told what medical treatment they were going to receive and were rarely included in any decision making. The women talked of how they were made to feel like a number - just another object on a conveyor belt - and how some of their treating medical professionals were cold towards them. In contrast, the women experienced music therapy as being personal and primarily focussed on treating and meeting the needs of their emotional side. The women described their experience of music therapy as being "comforting, nurturing, loving, fun and humane". The women further reported that they felt they were a part of a team and many of the women perceived that music therapy was holistic, treating their body, mind and spirit thus bringing balance

to their whole self. Sally's statement in which she described her personal experiences of conventional medical care and music therapy was reflected by many of the women:

Nurses and doctors are focused on the physical side whereas I think of you [music therapy] as nurturing my psyche and I think my psyche was pretty bruised and battered by the time I got to music therapy and it was ready to be massaged back into shape and the only thing I was disappointed was the group finished before I had my mammogram in December and I wasn't able to tell the rest of the group that I got a clear mammogram (Sally).

Sally acknowledged in her statement above that she felt her psyche had taken a battering as a result of her illness and she spoke of how music therapy nurtured her mind. In fact, she was able to share the good news of her clear mammogram when she met again with the women for the focus group meeting, which was held some time after the music therapy intervention had been completed.

Many of the women talked of how the medical profession in general, saw things purely in black and white with no room for manoeuvre and often behaved in a cold manner towards them. Rose reinforced these points in her interview when she described her experiences of conventional medical care and music therapy as follows:

Doctors, physiotherapists, that type of profession, they tend to see things more black and white like, 'this is what's going to happen – bang, bang, bang – see you later', whereas the music therapy works on your emotional level and brings out some of those deep seated emotions that you are able to let go of so that you are not holding on to them um and it's a more personal approach instead of a cold clinical approach, more humane, you're not one of a number (Rose).

As Rose explained, it was her opinion that the medical profession were very much black and white and dismissive of her by taking a cold, clinical approach and treating her like a number. In contrast, she talked of how she experienced



music therapy as a more humane modality which had enabled her to access her emotional side and which had allowed deep seated emotions to be brought to the surface and then released. Isabella's experience of music therapy was very similar when she explained:

It [music therapy] was more humane because you [the music therapist] weren't there to give advice on the illness because that's not your role so you didn't encroach upon that, so it was very light-hearted and fun in comparison to my dealings with other medical people – yes, you didn't inflict any pain – it was fun and I'm glad I did it (Isabella).

In addition to music therapy being perceived as humane and a fun experience which didn't cause pain, Isabella made a clear distinction between her experience of conventional medical care and music therapy, by pointing out that both were very different and that neither encroached upon the other. For another of the women who reported her experience of music therapy as being personal, she also described conventional medical care as being treated as one of a number. She implied that the reason for being treated in that manner was because the medical professionals saw so many people with the same illness:

More like one on one whereas with the medical profession they probably don't want to prattle on, they just want to tell you what's happening as I guess they see so many people, just one after the other with the same thing so you do feel a bit like you are just a number so music therapy was a lot more personal (Frances).

From her statement above it would also appear that Frances was possibly implying that by seeing so many people one after the other with the same illness, that the treating medical professionals had become desensitized and dismissive.

Many of the women reported how their experience of music therapy had allowed them to feel and be a part of a team, in contrast to just being treated like a number. As Ellen described:

You know, you are just one of a number and they do try very, very hard to be caring of you but you are still one of a number but with music therapy, it started on time, we were part of a team, we knew exactly where we were going and what we were going to do – yes – much, much more of a team. I feel very confident with the breast surgeon, I feel like the oncologist knows pretty much what he's doing, but I'm not part of the team with them (Ellen).

As Ellen said in her quote above, it was her experience that although the medical profession tried to be very caring she was still made to feel one of a number. She talked of how music therapy started on time, that she was a part of a team and that she knew what was going to be happening. From Ellen's statement it would appear that structure and feeling a part of the team in her treatment was of utmost importance to her and that she was able to experience that through music therapy, implying that she didn't experience this same structure with her conventional medical care.

Being involved in a group was also important for Frances whose experiences of music therapy and conventional medical care were also representative of many of the women:

It was good because it felt like I was going to see someone who was part of a group instead of someone who was an individual who I had to make an appointment with and so it felt comforting to go rather than to have to go to another appointment – it was more therapeutic. Even if you go for a massage, you're still approaching someone one on one so this didn't feel like that (Frances).

Frances spoke of how it felt good for her to go along and see someone [the music therapist] who was a part of a group. She said she felt doing that was more comforting and therapeutic for her as opposed to attending a one on one appointment with either her treating medical physicians or other complementary therapists, such as a massage therapist. It was interesting that Frances associated her one on one appointment with a complementary therapist

as being a similar experience to a one on one appointment with a medical professional, as it would imply that it was the group approach with which she felt the most comfortable. In addition to the women differentiating between conventional medical care as being physical and music therapy as being emotional interventions some of the women spoke more exclusively of music therapy being a holistic intervention, which as Suzanne said:

It's allowed me a mind/body/spirit connection and the rest of orthodox treatment just doesn't allow for that. It allows for body connection and in some ways for a mind connection but it doesn't allow you the balance – the holistic thing (Suzanne).

From her statement Suzanne implied that music therapy allows the mind, body and spirit to be connected allowing the human organism to become balanced as opposed to just making an emotional/mind connection. In a more light hearted description, Annabel simply stated, “one is serious, one was fun – one fixed my body and the other was mental – my mind”. Rose also described her experience of music therapy as being fun as opposed to her conventional medical care which she experienced as interacting with people who were “long faced”:

You know, going to doctors appointments everyone is so long faced because it's a serious occasion, then to walk into a room where you can almost leave that behind and look at the instruments and think you know, ‘come on and let's get on and have a bit of fun’ and um I think you know, seeing Helen on the drums and conducting or you know there was just a few times when you wanted to just sit back and have a good laugh and I think a good laugh is the best kind of medicine of all and doing the percussion side of it is much less serious than perhaps doing something like imagery so yes I think you need and have to have a bit of fun in your life (Rose).

It would appear for Rose that it was the fun element of music therapy as opposed to the “long faces” of her conventional medical care that she appreciated, as was apparent for many of the women in the study. She reported that she was almost able to leave the seriousness [of her illness] behind her

when she attended music therapy at which she was able to experience fun and laughter, which she perceived along with many of the other women to be “the best kind of medicine of all”.

Many of the women also spoke of how music therapy created a loving environment and that it was more supportive and compassionate than conventional medical care. This was reinforced by Mary who said she experienced being treated as a person when she came to music therapy, not just a number. Most importantly she said she felt nurtured, whereas her experience of conventional medical care was perceived as being “a clinical cold cut and dried environment which had a hold over you”, leading to disempowerment. Perhaps Lara’s description extends that of Mary’s in her poignant quotation, taken in full from her interview:

Music therapy - living – waiting at the clinic – dying. I think that if you’re not a very positive person, it can have a very negative effect on you and your body if you have got cancer, right from that very first step. I think that clinical side is like killing you because of people having such a strong overriding point of view, like within medical, you know – doctors and some of the medical staff, not all, because most nurses are still compassionate, but with the music therapy you’re not waiting for an outcome – you don’t have to have an outcome, it’s just a nurturing of the body and when you’ve got cancer, music can be very loving. Right from the start it was just a loving environment to be in – as long as the person running it has a loving and nurturing way, which was yourself. (Lara).

In her quote Lara’s description of music therapy is that of “living”, whilst she perceived conventional medical care as “dying”. She talks in depth of how if you have cancer and you are not a very positive person, then conventional medical care can be a very negative experience. She explains this by saying that some of the medical professionals can have strong overriding opinions implying that the medical profession can be more forceful in terms of medical treatment thus making it a negative experience for many people with cancer. In

contrast she perceived music therapy to be both loving and nurturing and not focussed on a medical outcome. As one of the women simply said during the focus group meeting when the women talked about their experiences of both conventional medical care and music therapy: "One was pain the other gain."

### **5.2.2 Disempowerment (Conventional Medical Care) v Empowerment (Music Therapy)**

Disempowerment was experienced in many different ways by the participants. It took the form of poor or even bad communication skills by the medical professionals from whom the women were receiving their conventional medical care. Communication either referred to verbal or non verbal cues as experienced by the women in their dealings with their treating medical professionals. Loss of control and lack of choice were also identified as being disempowering. In contrast, empowerment through music therapy was identified as taking back control by being given choice and gaining confidence as previously presented in section 5.2 of this chapter.

For many of the participants, the diagnosis of breast cancer and the way in which it was presented had a far reaching and often long lasting negative effect. As recounted by Frances in her interview (nine months post her breast cancer diagnosis) and in which she sobbed uncontrollably when she spoke of the way in which her doctor had presented her diagnosis of breast cancer: "Well dear, you've got the Big C" to which Frances's immediate response thought was that "There is no way I would let anyone touch me, there was no way I was going to have any chemo". As demonstrated, the way in which Frances received her diagnosis had a negative effect on her, which resulted in her putting up barriers and in fact delaying her treatment protocol.

Some of the women spoke of how they not only were faced with poor verbal communication from their treating medical professionals, but how they were

also subjected to non verbal negative cues. Ellen spoke of her experience when she went for her mammogram as she explained in her interview:

When I went for the mammogram and the scan I found that devastating. It was a dark room and the girl came in and she went out and then a tall gentleman came in and went out and then they both came in and went out and it was all very quiet and no one looked at me or said anything and then they brought in this little man with a bow tie and I thought Oh God, the bow tie – you've had it – that's it, bow tie comes in and they say Good Morning to the ceiling.....yes, they were shockers, it was like the morgue and I didn't know if I'd make it out of there to the car (Ellen).

Ellen picked up on non verbal negative cues she was inadvertently being given, when she described her experience of being in a dark room. Other people walked in and out and didn't look at her or speak to her. Eventually, when another person did enter the room, they avoided eye contact with her by talking to the ceiling. She described her reaction as being as if she were in the morgue and which left her feeling devastated. Her feeling of being in a morgue could possibly imply that she felt she had been given a death sentence, even before anyone had actually spoken to her about the results of her mammogram and scan.

Many of the participants described their conventional medical care experience as feeling out of control, as they often didn't understand what was being said to them or how to ask questions. This often resulted in their feeling they were not being given any choice or control over their medical treatment protocols. The women spoke of how they were often just told what treatment they would be getting, where they had to go for their treatment and when it would start. As Lara described her experience:

I didn't know how to ask the doctors questions, it was almost like you were being carried by this huge big process. It was like it was in little boxes, it was like we do this one, or we

do that one or this one. I had no choice, I was just in a cloud – it was stormy and I just couldn't see through the fog (Lara).

Lara talked of how she felt she was being carried along or driven through her treatment process by the doctors, who simply just told her what was going to be done to her and that she didn't have any choice. She said she didn't know how to ask her treating medical physicians questions and that the process she found herself in, made her feel as though she was in a fog. Her description could possibly imply that she felt confused and didn't know what was happening to her and that she didn't know what questions to ask, or should ask, because she was unable to think properly.

All of Lara's experiences of conventional medical care for her breast cancer were disempowering for her, as they were for many of the women in this study. Lorna's experience of conventional medical care appeared to be even more forceful, when she reported that "with conventional medical care, you simply had to have the treatment - you didn't have any control over it", whereas "music therapy was an option", which she chose to have. She further explained that she felt empowered simply by the act of being able to play the bongos when she felt like it:

I did feel empowered by it as I could pick up the bongos and give them a bash when I felt like it – well where else could I have done that? – not in the doctor's surgery (Lorna).

Sally similarly reported, as many of the women in the focus group meeting agreed with, that she was simply *told* what was going to happen to her:

I was never actually asked what I wanted, it was just said – 'this is what we need to do' - and because they weren't talking of cutting the whole breast off, I didn't ask that many questions (Sally).

In hindsight, she said that had she had another person with her, someone she trusted and who had at least some medical knowledge, it would have greatly

helped her. Although she believed herself to be an intelligent woman, she said that she often didn't understand what was being said to her and the questions she was being asked to answer, leading her to feelings of loss of control. In Emily's experience, her feelings of lack of control were as a direct result of the fact that even when she felt confident enough to be able to ask and did ask questions:

No-one had answers – like going to the oncologist because they'd say things like 'everyone reacts differently' ... they just want to give you statistics.....so there was never a straight answer (Emily).

By contrast she felt her music therapy experience was very much controlled by herself. It was enjoyable and fun:

It [music therapy] was very much controlled by yourself, in that you actually went there and if you took the time to participate and to enjoy, to laugh, have fun and listen to what you were producing, I think it was there that you had control, whereas with the medical profession and your treatment you don't – so music therapy gave choice which gave me control (Emily).

Rose described her experience in a similar way to Emily when she spoke of conventional medical care as being passive and music therapy as proactive. She described how with conventional medical "you just sit back or lay back and let somebody else do it for you", whereas with music therapy:

It's something you can do for yourself, so you can really prescribe your whole course for yourself so something you can be positively in charge of yourself – so being more proactive in the course of your treatment (Rose).

By being proactive Rose was able to take charge of herself and prescribe her own treatment, therefore being able to make her own decisions about what she wanted to do in contrast to letting someone else do it [her treatment] for her. This gave her back control.



In addition to often dealing with the negativity of their conventional medical care some of the women spoke of the added pressure they also had placed upon them by their own families and loved ones. In Lara's case this led to her being confused and not understanding what she was actually signing for [her operation] when she reported:

It felt as though they were holding on to me and I was being marched to the cooking pot you know. Emotionally they [her family] were just raking off and I wasn't really given the chance to come to terms with things and henceforth when I did sign the papers I really didn't know what I was signing (Lara).

Lara's comment would suggest that her family were also fearful for her and were pressuring her into having treatment when she didn't even understand or know what treatment she was signing for, as she was confused and hadn't been allowed time to adjust to her diagnosis of breast cancer.

As the participants all agreed during the focus group meeting:

It was great just to be able to come here to music therapy and do what you like – 'cos with medical treatment, you have to do what *they* say so you just don't have any control so that's what was great about music therapy, that nobody could tell you what to do, when to do it or how to do it and so that was very special.

In conclusion, as another of the women during the focus group meeting summed up her experience of empowerment through choice:

Loss of control is so disabling so music [group improvisation] was empowering, because it gave me choice - it gave us something back because when you go for treatment [medical] they are trying to make you better but you just don't feel like it, even though it is supposed to make you feel better – I mean I wasn't even sick until they decided to make me feel better.

## **5.3 Discussion**

The findings of the qualitative component of this study revealed the fifteen women participants' lived experience and perceptions of GIMT.

Through the analysis of the qualitative data three major themes were identified, those of music therapy as a safe haven; as a gift of empowerment and of the women's perceived differences between their conventional medical care and music therapy experience.

Within these three major themes, sub themes were identified and will be discussed in the order in which they have appeared in this chapter. As there is an overlap in the theme of empowerment, with the theme of disempowerment versus empowerment in the women's perceived differences between their conventional medical care and music therapy experience, these will be discussed together. The discussion will then be followed by a conclusion of these findings.

### **5.3.1 Music Therapy as a Safe Haven**

GIMT was shown to provide the women involved in this study with a place of safety away from their home and medical environment, a place in which they were able to musically and verbally express themselves – a safe haven. Within this safe haven, the women were able to, experience a release, and express their emotions through the playing of tuned and untuned percussion instruments.

It is interesting to note from the literature, that early investigation in the area of personality traits suggest that cancer patients, displaying a Type C personality, the cancer prone personality, demonstrate emotional suppression which has been suggested as being directly associated with both the onset and prognosis of cancer (Temoshok 1987; Gross 1989; Eysenck 1994). However, although a recent 13 year follow-up study dismissed this theory (Bleiker, Hendriks et al.

2008), it has been demonstrated that breast cancer patients displaying a Type C personality, do have difficulty with the expression of their emotions. This suppression of emotions has been shown to result in high levels of anxiety which are directly associated with psychological distress, leading to poor psychological adjustment following a diagnosis and the medical treatment of breast cancer (Iwamitsu, Shimoda et al. 2005).

As a result of research in the area of psychological distress and psychological adjustment following a cancer diagnosis, many cancer patients are offered and directed towards psychological and group psychosocial interventions, in order to help them adjust to their diagnosis and treatment of cancer (Spiegel 1991; Greer, Moorey et al. 1992; Fallowfield 1995; Greer and Moorey 1997; Fawzy, Fawzy et al. 1998; Edelman, Bell et al. 1999; McCaul, Sandgren et al. 1999; Sheard and Maquire 1999; Spiegel and Classen 2000; Antoni, Lehman et al. 2001; Boesen 2002; Ross, Boesen et al. 2002; Kruse, Grinschgl et al. 2003; Antoni, Lechner et al. 2006; Fekete, Antoni et al. 2007; Greer 2008). These interventions have been demonstrated to be effective in the reduction of anxiety, depression, pain and stress and have been shown to improve coping skills and mood disturbance, all of which can positively impact on the quality of life for many cancer patients (Cain, Kohorn et al. 1986; Berglund, Gustafsson et al. 1994; Fawzy, Fawzy et al. 1995; Cunningham, Edmonds et al. 1998; Edelman and Kidman 1999; Edelman, Lemon et al. 1999; Cunningham, Edmonds et al. 2000; Antoni, Lehman et al. 2001; Cunningham, Phillips et al. 2002; Fawzy, Canada et al. 2003; Korstjens, Mesters et al. 2006).

One widely used psychosocial intervention with breast cancer patients is the group supportive-expressive model of psychosocial support. This therapy is a verbal therapy in which women with breast cancer are encouraged to express their full range of emotions (Spiegel and Classen 2000). GIMT is distinguished

from this particular intervention and other forms of verbal psychological and psychosocial therapeutic interventions, as GIMT primarily focuses on the non-verbal expression of emotions through their release by the spontaneous playing of percussion instruments.

GIMT demonstrated that the participants involved in this study were able to express and release their suppressed emotions, which many of the women described as their “blocked emotions”, a major Type C personality trait as reported in the literature. GIMT further demonstrated itself to be a safe modality through which the women were able to access and process their emotions in an unthreatened and creative way.

Through GIMT the study participants were able to experience improved mood states in addition to their perceived lower levels of anxiety, depression and stress, all of which positively impacted upon their overall quality of life. This finding is supported by the group psychosocial intervention literature. As such GIMT has demonstrated itself to be a psychosocial intervention which complements conventional medical care.

### *Identity*

Within the safe haven of the GIMT sessions the women shared a sense of identity with the other women in their group who shared the same recent diagnosis of breast cancer, thus acknowledging and having their experience of daily living with the ordeal of breast cancer validated. The women further experienced the maintenance of their existing pre cancer identity as a direct result of being involved in the GIMT intervention which as one woman said, “We didn’t feel like we were cancer patients, it just felt like we were normal women” and as another woman said, “it was just like going out and having fun with a group of friends which was very special”.

Through being creative musically the women experienced once again the fun side of their identity which often resulted in contagious laughter. Fun and laughter, prior to the women's involvement in GIMT was an experience many of them had not been able to access from within themselves or share with others since their breast cancer diagnosis. GIMT provided the women with the experience of reinstating the fun part of their identity, which they perceived to have been damaged and lost as a result of their cancer experience.

At the outset of the study the women had the shared identity as women with breast cancer. Whilst also maintaining parts of their existing self identity, many of the women experienced adjustment to a new identity of being a breast cancer survivor. For some of the women this experience was achieved by just being with other women who were still alive post-breast cancer diagnosis, whilst for others it was more about confronting their own mortality and thus adapting to the challenge of an uncertain future. When moving from an identity of a healthy person to a person with breast cancer, the challenge of confronting the actual cancer experience whilst also trying to reconcile with having to often deal with many physical, existential, emotional and social changes can become an overwhelming ordeal (Zebrack 2000). Thus adjusting to a new identity of a cancer survivor, which ideally still incorporates an existing identity, can be a slow and painful process which is continually challenged throughout the remainder of the person's life (Zebrack 2000).

The relatively short eight week period of GIMT proved to be the catalyst for some of the women towards a positive change from seeing themselves as women with breast cancer to becoming breast cancer survivors. Having faced their own mortality they were then able to move on in to an uncertain future with renewed vigour and survivorship conviction.

By the completion of the eight week GIMT intervention, as a result of their GIMT experience, the women viewed themselves as being whole people again, people who after the turmoil of their breast cancer diagnosis and treatment were once more able to feel physically, emotionally and psychologically complete. The women further spoke of how they no longer worried about how others viewed them or how others thought they should behave. This was suggestive of the women experiencing adjustment to an identity of living with breast cancer, as a survivor, through their active involvement in GIMT. Interestingly, this experience of a perception of becoming whole again amongst cancer survivors, has been highlighted in previous research findings which suggest that long-term cancer survivors do see themselves as being a whole person, not fragmented by their illness, and are not concerned about how others view them. This in turn is associated with better psychological outcomes and enhanced quality of life (Deimling, Bowman et al. 2007).

The experience of the women in this study both supports and adds a new dimension to this finding. It demonstrates that even a relatively short eight week GIMT intervention has the potential to enable women recently diagnosed with breast cancer to experience a sense of becoming their whole self once more, not a fragmented self, even though they are not yet long term survivors.

### *Support*

The women in this study were able to access and experience support from the other women in their group through their involvement in an intervention which encouraged socialisation. The women perceived this support to be either received or given, an act of reciprocity, through both the making of music creatively together and by their verbal communication with each other.

Some women experienced support from the actual instruments they were playing which made them feel, as one woman said, “like nothing can hurt me –

protected – like when I was playing my instrument that nothing could touch me”. The women experienced a feeling of protection from the actual instruments they were playing, whilst playing those instruments in an environment which they perceived to be a place of safety, a safe haven.

The very nature of GIMT facilitated social interaction amongst the women, many of whom experienced a sense of belonging, thus drawing them out of social isolation which some of the women had experienced as a result of their breast cancer diagnosis. Literature has postulated that social support is a necessity for the maintenance of health and well being as it can provide a buffer against stress as a result of chronic illness (Sarason, Sarason et al. 1990).

Social support provides the opportunity for social integration (a sense of belonging to a group of people with similar concerns and/or interests) and reassurance of worth (Lethborg, Aranda et al. 2008). Social support also provides an opportunity for attachment (a relationship with others that provides security and safety) and nurturing can also be experienced in this way (Caplan 1974; Cobb 1976).

Interestingly, a study investigating the experience of social support amongst women being treated for breast cancer noted that if women perceived they had good social support, they were able to adjust and adapt to an uncertain future. They were further able to experience enriched relationships with family and others and return to their normal work environment, a sign of rehabilitation (Lugton 1997).

Bruscia defines rehabilitative music therapy as that of being:

The use of musical experiences and the relationships that develop through them as a means of helping clients who have been debilitated by illness, injury or trauma to regain previous levels of functioning or adjustment to the extent possible (p 141) (Bruscia 1989).

In this study GIMT has been shown to aid in the early rehabilitation of women recently diagnosed with breast cancer by facilitating musical, verbal and social interaction and drawing the women out of any perceived isolation and into a shared experience.

### *Bonding and Group Cohesion*

The depth of support the women both received and gave to each other both musically and verbally, enabled them to develop and experience a greater sense of bonding with each other as the weeks of the intervention progressed, leading towards cohesiveness within the group. The bonding the women experienced through GIMT was as a result of becoming more familiar with each other and with the instruments they played.

Improvisations noticeably became more cohesive as the weeks of the intervention progressed. This musical cohesiveness was experienced as a result of the women becoming more in-tune with each other, by gaining awareness through listening to each others playing and then responding by either reflecting and/or imitating the other women's playing. Reflecting and imitating in this musical sense was experienced in relationship to the pulse and rhythm of the music being created – (e.g., listen to tracks 4 and 5 of the CD in Appendix 1). Becoming more aware of the musical needs of each other by reflecting and imitating musically, is suggestive of a deepening musical bond developing between the women and a sense of group cohesion. Music draws people together within a group, providing them with a sense of belonging, and the group with a sense of cohesion (Bunt 1994; Bunt and Marston Wyld 1995). Bonding on a verbal level deepened as the women became more familiar and trusting of each other, revealing sometimes their innermost private thoughts. While on a physical and emotional level the women experienced nurturing



through hugging each other often during and at the conclusion of the group improvisation sessions.

Bonding and group cohesion are characterised by high levels of group participation, positive mutual feelings of trust, understanding and acceptance amongst group members which encourage group members to take risks and self-disclose (James and Freed 1989). GIMT enabled the women in this study to experience bonding through their musical, verbal and physical interaction with each other. Through GIMT the women experienced mutual trust, understanding and acceptance and they took risks by often stepping out of their comfort zone to share musically and verbally with each other, suggesting that a strong level of cohesion had developed within the group. In the area of cancer care Singer believes this to be, "The most powerful curative factor because it allows the [group] members to lower their customary prohibitions or inhibitions against being more spontaneous with their emotions" (p217) as cited in Waldon (Waldon 2001). GIMT by its very nature encourages spontaneity and emotional expression and has been demonstrated to do so in this study.

### *Distraction*

Whether it was personal memories elicited through, the sound of the music being created in the moment by the women through improvisation, or in some cases, the actual sound the various different instruments produced or the depth of concentration it took the women to play their instruments, the effect was unanimously the same. The women experienced distraction from their everyday experience of living with the life threatening illness of breast cancer.

The women said over and over again that GIMT took their minds away from the physical and emotional pain of their illness and that it enabled them to experience a time of light relief through their shared fun and laughter. It was interesting how just the mere sound of an instrument, such as the rain stick,

could elicit either positive imagery, such as walking through a rainforest, hearing the ripple of a brook or the sound of dead leaves being walked upon. A combination of instruments could bring back happy memories for other women, such as a happy holiday that one of the women had spent in Bali prior to her breast cancer diagnosis.

It is of interest to note in a previous group improvisation study with cancer patients that the participants were able to escape their, “preoccupations and problems, ameliorate their physical and emotional pain, relax, laugh, and possibly have some fun for a while” (p50) (Bunt and Marston Wyld 1995). This study further reported that the participants were able to connect with feelings they had not previously been able to access and/or express. This resulted in gained awareness (Bunt and Marston Wyld 1995).

By making music collectively or, as in this current study, by hearing the single sound of an instrument, a past memory could easily be evoked and drawn to the surface (Bunt and Marston Wyld 1995). Music therapy research literature has reported how listening to music, preferably music selected by the person with cancer, and even more potently music played live, can act as a distraction from cancer pain in addition to reducing levels of stress and anxiety in palliative care patients (O’Callaghan 1996; Dileo 1999; Chlan, Evans et al. 2000; McCaffrey and Good 2000; Evans 2002; Kwekkeboom 2003; Pelletier 2004; Kemper 2005; Ferrer 2007; Krout 2007).

It is interesting to note from this study that music created spontaneously by the women themselves through GIMT had a similar, if not a more powerful effect than the music therapy passive technique of listening to music. The therapist/researcher suggests the reason for this to be that listening to music played live or recorded often already has an associated memory for the client, particularly when the preferred music of the client is played to them. Music is

emotive and has the power to evoke musical memory with ease – both pleasant memories and painful memories, such as music that was being played when one first fell in love, or music perhaps played at a loved one's funeral service, one eliciting a happy, the other a sad memory. Trained music therapists are aware of musical response when listening to pre recorded music and use this technique with caution when working with vulnerable clients, such as non-verbal clients.

GIMT on the other hand holds no such direct musical memory, but it does have the power to elicit suppressed emotions, memory, imagery and physiological response, through direct association of sound, and the visual aspect and vibrations of the different percussion instruments.

The drums and cymbals provided an outlet for the release of anger and frustration and in some instances rage - emotions suppressed by many of the women. For some women the rain stick reminded them of dry leaves crushing beneath their feet (sound) as they walked through a rainforest (imagery), whilst for others the same instrument reminded them of lying in bed (imagery) listening to the rain fall on the tin roof of their house (sound).

The visual aspect of an instrument can be associated with symbolism. For one woman the hand cymbals visually reminded her of her two lost breasts (memory and imagery) and for another woman the gourd reminded her of her past foetal scan which had revealed a healthy foetus in her womb (memory and imagery). The vibrations emanating from the Tibetan singing bowl were felt by one woman in the area of her lost breast whilst for another woman the same vibration filled her whole body with energy – both physiological responses. Whilst engaged in GIMT the women experienced several unique forms of distraction taking their minds away from their illness and their everyday living concerns and worries.

GIMT is not universally used in the area of cancer care, particularly with women recently diagnosed with cancer. This study is the first comprehensive study to be carried out using solely this active music therapy technique with this population. Only one other study (see Chapter 2 - 2.7.3 and 5.3.2.1 below) has reported this sole technique used with a group of five women diagnosed with breast cancer. As previously discussed in Chapter 2 (2.7.3), most music therapists work with individual clients in the area of palliative care and use pre recorded music to reduce levels of anxiety and stress, to assist with relaxation, pain control and with spiritual issues.

GIMT, as demonstrated in this study, is a powerful therapeutic tool which also has the potential to be so for other music therapists working with groups of women who have recently been diagnosed with breast cancer, as it offers many different creative forms of distraction for those involved.

### **5.3.2 Experiencing the Difference Between Conventional Medical Care and Group Improvisational Music Therapy (Music Therapy)**

#### ***Clinical/Physical (Conventional Medical Care) v Personal/Emotional (Music Therapy)***

##### ***Clinical/Physical***

The women in this study experienced their conventional medical care and music therapy as two quite separate entities. Conventional medical care was experienced by the women as “impersonal” and as a, “clinical cold cut and dried environment which had a hold over you”. The women said conventional medical care treated their physical body and that their treating physicians only saw things in, “black and white....tell you what’s going to happen” and, “treat you like a number”.

The women commented that although they felt confident with their surgeons and oncologists, they felt unable to ask their physicians questions because they

believed their treating physicians to have, “strong overriding points of view”, implying that whatever questions they did ask, would be treated with indifference, as their treatment was a foregone conclusion.

The women felt they were not a part of a team, as a result of which, they felt excluded from any decision making with regards to their treatment options. This is an interesting perception of the women, as their reported experiences of their dealings with their treating physicians, appear to fit the paternal model of conventional medical care in which the physician is the authoritative figure who is in control and who shouldn't be questioned by their patients about their medical decisions (Murdoch 1995).

A recent qualitative study investigating the interactions of women with breast cancer, with their doctors, reported their experiences as being negative with comments of, “You don't want to upset your consultant...obviously if he picks up that you're arrogant, he can treat you any way he wants....he has the power” (p3), which often resulted in the women reporting that they were reluctant to talk about their distress or ask their doctors questions (Burkitt Wright, Holcombe et al. 2008).

Conventional medical care originates from the 20<sup>th</sup> century biomedical model which views all symptoms and illness as underlying abnormalities of either the functioning or structure of specific organs within the body which results in disease. The biomedical model also views the body and mind as two separate entities, with emotional disturbances as unrelated to bodily function. The patient is treated as the victim of their illness and as such is expected to be co-operative with their treating physicians, not ask any questions and be a passive recipient of a set treatment regime according to their diagnosis (Wade 2004; Brazier, Cooke et al. 2008). This is a role which all of the women in this study experienced.

The women associated their conventional medical care with distressing side effects, “Chemo had a really bad effect, I needed more tablets to stop the nausea and I was crawling on my hands and knees and was sick for ten days”. All of the women experienced pain and discomfort as a result of their treatment regimen, when many of the women had experienced no pain or any sign of illness prior to their breast cancer diagnosis, “I’ve never been sick until they’ve been trying to make me better”. Compounding the distressing physical aspects of the women’s conventional medical care was the waiting and uncertainty of not knowing whether their treatment regimes were working and what the outcome of their illness would be:

I think you’re waiting for the results and that can be very stressful in itself, it can have a very negative effect on you and your body if you have got cancer, right from that very first step – I think that clinical side is like killing you.

### *Personal/Emotional*

In contrast to the women’s experience of conventional medical care, the women unanimously said that music therapy was a personal experience and that it treated their emotional side. Many of the women perceived music therapy being a holistic therapy allowing them a “mind/body/spirit connection”. Music therapy as such, sits comfortably within the mind-body medicine category of CAM, which aims to use the interaction between the mind and body to complement conventional medical care and aid well being (Cassileth and Vickers 2003; Cassileth and Deng 2004).

The women described their music therapy experience as, “Comforting, loving, nurturing, fun, enjoyable and humane”. They relayed how they appreciated being listened to, valued and really felt they were a part of a team that included the music therapist, and about which the women said, “We knew exactly where we were going and what we were going to do – yes – much, much more of a

team". The women unanimously said they felt they were helping themselves by being "proactive" and that with music therapy "you're not waiting for an outcome, it's just a nurturing of your body".

CAM literature postulates that the primary reason people seek out and use CAM is in order to take responsibility for their own health and well being. By becoming actively involved and making decisions about their own health care and management strategies for illness, the majority of CAM users do not seek a cure, but the control of symptoms in order to enhance their well being and quality of life (Sparber, Bauer et al. 2000; Barnes, Powell-Griner et al. 2004; Carlsson, Arman et al. 2004; Lee, Charn et al. 2004; Davidson, Geoghegan et al. 2005; Pagan and Pauly 2005; Brazier, Cooke et al. 2008).

One very important difference between music therapy and conventional medical care which all of the women acknowledged was that both were very different and that neither encroached upon the other. This last observation is a very important finding, particularly for the medical profession who can often view CAM interventions as a threat to conventional medical care and to the safety of the patients themselves.

The literature suggests that much research conducted within the area of CAM is flawed in design and has methodological weaknesses (Bagenal, Easton et al. 1990; Ernst and Cassileth 1999; Caspi, Millen et al. 2000; Lewith and Holgate 2000; Linde, Jonas et al. 2001; Zappa and Cassileth 2003; Cassileth and Deng 2004; Kelly 2004; Lowenthal 2005). In spite of flawed research, CAM is increasingly becoming acknowledged as a valuable asset alongside conventional medical care, particularly within the area of cancer care with integrative cancer care now offered to many cancer patients. The Memorial Sloan-Kettering Integrative Medicine Center, which has become an advocate of what has now been adopted as the integrative cancer care model, offers

patients, their families, their staff and community members access to safe and effective therapies, including music therapy, to improve quality of life, through symptom management and stress reduction (Zappa and Cassileth 2003).

A study was recently undertaken at the Centre for Integrated Healing in Canada. This Centre has adopted the integrative cancer care model and is the first Centre of its kind in Canada to receive government funding for general practitioners to provide complementary care to patients. This study demonstrated that patients valued their person centred holistic approach to cancer care “which encouraged patients to take an active role in decision making and self-care” (p5) (Brazier, Cooke et al. 2008).

#### *Disempowerment (Conventional Medical Care) versus Empowerment (GIMT)*

##### *Disempowerment*

Loss of control was experienced by all of the women in this study who said they found it to be one of the most distressing aspects of their disease which Burish et al (1983) postulate is the major source of stress experienced by cancer patients (Burish and Bradley 1983; Burish 1991). Hislop further postulates that by losing control of one’s life, not knowing how things will turn out in the future, personal insecurity is intensified (Hislop 1991). The women all felt their control had been taken away from them as a result of their breast cancer diagnosis and that their lives had changed dramatically – forever. The women felt powerless by having to rely on other people to help them and do things for them and powerless in regards to the medical treatment of their disease. As one woman expressed – “One of the hardest things to handle in this journey is the fact that you have to sit back and let other people do things for you and to you, rather than you being in control”. Interestingly, this was also a major finding in the Furioso study, where the researcher reported that “coping with a life-threatening disease shattered any illusion of being in control for the women in



the study” (p52) and that for the women in the study “the most difficult aspect of the disease was giving up control, facing losses associated with the diagnosis and being placed in the position to rely upon others” (p53) (Furioso 2002).

Disempowerment was primarily associated with and experienced by the women in this study as being the direct result of feeling powerless and out of control upon being presented with their breast cancer diagnosis. One of the women in this study was told, “Well dear, you’ve got the Big C”. The woman who was presented with her diagnosis in this way was still visibly distressed during her interview with the researcher. As a result of the way in which this woman received her breast cancer diagnosis she delayed commencement of her treatment as – “I would not let anyone touch me, there was no way I was going to have any chemo”. This particular woman has since died.

The literature suggests that poor and/or inadequate communication may cause great distress for cancer patients and their families, which can result in negative consequences. Whereas, “good communication has many positive effects on the patients’ adjustment to cancer and its treatment” (p1592) (Fallowfield and Jenkins 1999). Other women in this study described their experiences of negative body language and poor communication skills from their treating physicians. As one of the women said - “I thought – oh God – the bow tie – you’ve had it - that’s it. Bow tie comes in and they say good morning to the ceiling”. “Bow tie” later in the consultation with this particular woman told her she had breast cancer.

Many of the women in this study described similar experiences as a result of which they said they felt out of control and disempowered. A recent qualitative study investigating how cancer patients experience consultations with their physicians revealed that cancer patients spontaneously commented that their treating physicians had a lack of communication skills with comments such as:

He [medical doctor] sits and looks down into his papers. I wish the physician had asked more about how are you, how are your moods and your family? Then I would feel he cared for me (p 195) (Steinsbekk and Launso 2005).

The experience of this cancer patient and her comment is a further example of the negative body language and poor communication skills the women in this study experienced.

All of the women in this study suffered shock as a result of their breast cancer diagnosis – “I was in shock when I got the diagnosis, it was such a shock.... I just went through the motion as though I wasn’t really there when it was all happening”. Other women spoke of delayed shock – “I sat there and I just sort of looked and thought I should be crying but I just kept on talking and didn’t burst in to tears until I got home”.

The literature suggests that many physicians lack effective communication skills which can result in profound difficulties when presenting a patient with a diagnosis of cancer (Kaplan, Greenfield et al. 1989; Fallowfield and Jenkins 1999). In addition to which, physicians who communicate poorly with their patients can cause unnecessary trauma for them (Fallowfield and Jenkins 1999; Maguire 1999; Fallowfield, Jenkins et al. 2002). It would appear that the severity of initial shock, loss of control and feelings of disempowerment the women in this study experienced, were associated with the way in which they were presented with their breast cancer diagnosis.

Many of the women in this study further experienced disempowerment as a result of not being included in any decision making process with their treating physicians. They said that they were not given enough information about their disease by their treating physicians and were unable to make informed decisions with regards to their treatment. This often resulted in many of the women in this study feeling that they had no choice or control over their

treatment and they just had to accept the treatment they were told they were going to have, “It was almost like you were being carried by this huge big process...it was like we do this one, or we do that one. I had no choice”.

Murdoch suggests that cancer patients do not experience empowerment within medical consultations, due to the imbalanced relationship between the patient and the health care professional (Murdoch 1995). A systematic review within the area of palliative care also revealed that only one third of cancer patients were involved in any decision making process with their treating physicians in regards to their cancer treatment (Gaston and Mitchell 2005). Murdoch suggests that if health care professionals provide information, establish trust, provide comfort and inspire positiveness, then cancer patients would be able to experience empowerment (Murdoch 1995).

In Steinbekk’s (2005) recent study cancer patients reported that they felt cared for and encouraged to remain hopeful and optimistic by their CAM practitioners who they perceived to be more focussed on empowering them (Steinsbekk and Launso 2005). It could be speculated that patients’ perceptions of their conventional medical care are influenced by their pessimism of conventional medicine, whilst they may have unrealistic expectations of the success of CAM.

### *Empowerment*

The women in this study perceived that they gained empowerment through their involvement in music therapy which gave them choice, and through participating in an unfamiliar therapy their self confidence was fostered. It was clearly evident from analysis of the qualitative study data that group improvisation provided the women with many opportunities for choice. They consistently reported how they had choice, felt under no pressure and that no expectations were placed upon them.

Women were free to choose whether or not they wanted to participate in the group improvisations. If they chose to participate they were free to choose whichever instruments they wanted to play, and the way in which they played those instruments. It was further evident that through the process of GIMT the women were able to get in touch with their “blocked” emotions. If the women chose to explore and work through their “blocked” emotions they were given the opportunity to do so with the support of both the therapist and the other women in their group. Although the women were always encouraged to talk about their GIMT experiences, they said they felt under no pressure to do so and that they could ultimately choose whether or not to share their experiences verbally with the other women.

It was observed by the researcher that through the process of GIMT the women talked more freely about their experiences of improvisation and engaged in deeper, more emotionally meaningful conversations with each other. GIMT appears to have had an enhancing effect upon verbal communication between the women, a finding which supports Bruscia’s statement that, “improvisation serves to intensify, elaborate or stimulate verbal communication”(p561) (Bruscia 1987). The effect of enhanced verbal communication appeared to have a flow on effect for some of the women, who reported that their communication skills had improved between themselves with their families and friends, as a result of their involvement in GIMT.

Many of the women perceived they had gained confidence through their active involvement in GIMT. The women spoke of how they had initially been timid when playing the percussion instruments and that as they became more familiar with each other and GIMT their confidence grew. As one woman said of GIMT, “It gave you more confidence as you came along each week and as you got to know the people you became more adventurous and lost your

timidity". For some women as their confidence grew they would stop holding back, "Initially I would only go for instruments which didn't stand out or get noticed...you know, keep a low profile" – and come more forward in to the group in respect of their playing – "I thought – what the heck – and then I went on those little bongos and the cymbal", instruments which stand out loudly during improvisation.

For some other women, their gained confidence revealed itself with their taking charge and being in control of music improvisations by taking up the baton, (a drum stick) and conducting the other women in the group in their playing. The women invariably reported after this GIMT experience phrases such as, "That felt great – so empowering" and, "It feels so good to have control", statements suggestive of the women experiencing a regaining of their sense of control.

Maintaining and regaining a sense of control over mental and physical health has been postulated as the reason why many people diagnosed with cancer use CAM (Van de Creek, Rogers et al. 1999; Burstein 2000; Henderson and Donatelle 2004). The majority of cancer patients who use CAM do so to help control the symptoms of their disease (Cassileth and Chapman 1995) and to have more control over the actual management of their disease (Davidson, Geoghegan et al. 2005). By using CAM, cancer patients can become active participants in their own treatment, thus enabling them to experience more input and control over their treatment for cancer (Davidson, Geoghegan et al. 2005). It is suggested that women with breast cancer use CAM in order to feel better and have greater control over their destiny (Burstein, Gelber et al. 1999) and that they tend to seek body-mind therapies such as relaxation, imagery and support groups (Henderson and Donatelle 2004). Being in control is further associated with better emotional well-being and immune functioning ultimately leading to a better quality of life (Henderson and Donatelle 2004), whilst cancer

patients perceptions of being out of control are associated with psychiatric morbidity, cancer recurrence and even death (Watson, Haviland et al. 1999).

A recent longitudinal study investigating perceived sense of control and adaptation to illness in women with stage I and II breast cancer, found that women who perceived they had a higher sense of control demonstrated better adaptation to their illness. The authors recommended that women recently diagnosed with breast cancer receive psychological interventions which emphasize a sense of personal control as an effective way of enhancing their well-being (Barez, Blasco et al. 2007).

Many cancer patients seek out CAM interventions to aid symptom control and gain psychological support, so that they feel more in control of their situation (Daykin, Bunt et al. 2006). Music therapy shares these same features with CAM in this respect, as it addresses the person as a whole and does not seek to cure cancer but to alleviate the psychological and physiological symptoms of the disease.

It has been demonstrated in this study that GIMT was able to provide the women with the experience of connectedness and a sense of self. The women experienced this through their maintained self identities, and the ability to take action and be proactive. This was demonstrated by many of the women in their playing, and by being able to take action in certain areas of their lives as a result of their gained confidence. Increased confidence, a sense of control in relation to self, providing a safe space and supportive environment for the expression of emotions and experiencing a sense of belonging, have further been postulated to foster empowerment for cancer patients (Ussher, Kirsten et al. 2006), all things which the women in this study experienced.

Group improvisational music therapy has been demonstrated in this study to be an effective intervention in assisting women recently diagnosed with breast cancer to regain a sense of control over their illness and their lives. Having choice and gaining confidence enabled them to feel empowered and provided a completely different experience from their conventional medical care.

### **5.3.3 Conclusion**

The findings of the qualitative component of this study have provided clear evidence that GIMT had a positive effect on women recently diagnosed with breast cancer and helped them through their initial journey with breast cancer. No negative outcomes were demonstrated as a result of being involved in an eight week GIMT intervention.

It appears from the participants' explanations and perceptions that GIMT was able to provide a means of release and the expression of emotions in a safe and loving environment. GIMT gave women recently diagnosed with breast cancer an opportunity to maintain their self identity whilst adjusting to the new identity of a cancer survivor.

As a result of the qualitative data analysis, it can be identified that GIMT further provided the women with quality support which they experienced as nurturing, being listened to and having their feelings validated by others. The women established new friendships thus expanding their social network and were able to leave their troubles behind them for a couple of hours, through being distracted whilst actively engaged in GIMT.

Finally, the women all experienced a regaining of what they perceived to be their loss of control as a result of their breast cancer diagnosis. They regained their control through their experience of choice and a gaining of confidence which led to a renewed sense of empowerment.

The women experienced ongoing positive effects of GIMT through continuing to use some of the musical techniques they had acquired through their experience, such as investing in certain percussion instruments to which the women had responded positively, in order to continue their own music therapy in the comfort of their own homes. The women also valued the opportunity they had been given to experience the difference between their conventional medical care and music therapy which they experienced as a holistic therapy which treated their mind, body and spirit.

Perhaps the most satisfying finding for the music therapist/researcher in this study was that through their involvement in GIMT, the women experienced a renewed sense of humour, which was evident in their playing and often resulted in hilarity and uncontrollable laughter (CD track 8 in Appendix 1). The women unanimously agreed that GIMT was the best possible form of medicine for them.



## **Chapter 6 Results – Quantitative**

### **Introduction**

This chapter presents the study participants' demographic characteristics as well as the statistical analyses of the psychosocial, psychological and physiological data collected in the study. The SPSS V15 statistical package was used to carry out the analyses on all quantitative data collected in this study in association with Mr Kim Colyvas, Statistical Support Service, Department of Mathematical and Physical Sciences, The University of Newcastle – see report in Appendix 10.

### **6.1 Participants**

Fifteen female participants with breast cancer aged between thirty-one and eighty years completed the study. Full details of recruitment and retention appear in the methodology chapter (4.1). The demographic characteristics of the participants are presented in Table 6-1.

The majority of participants were between forty-one to sixty years of age. All had been diagnosed with breast cancer between one to twelve months prior to participation in the study and had undergone either a mastectomy or a lumpectomy or a combination of both. Seven of the participants were post menopausal and eleven participants had completed their follow up adjunctive treatment of either radiotherapy and/or chemotherapy and/or hormone therapy prior to their participation in the study. Two participants were undergoing adjunctive chemotherapy treatment during their group music therapy intervention.

The majority of the participants were either married or living in a de facto relationship, were tertiary educated and from a wide spectrum of socio

economic status. All were predominantly from an Australian/British/European cultural background.

**Table 6-1 Demographics**

<b>Age</b>	<b>Total</b>	
	<b>N</b>	<b>%</b>
31-40	1	7
41-50	7	47
51-60	5	33
61-80	2	13
<b>Diagnosis</b>		
1-3 months	2	13
3-6 months	5	33
6-9 months	3	21
9-12 months	5	33
<b>Menopause</b>		
Pre	3	20
Post	8	53
Peri (based on age)	4	27
<b>Treatment</b>		
Lumpectomy	9	60
Mastectomy	8	53
Lumpectomy + Mastectomy	2	13
Chemo/Radio/Hormone (Tamoxifen) therapy	13	87
<b>Marital status</b>		
Married/De facto	9	60
Separated/Divorced/Widowed	6	40
<b>Education</b>		
Secondary	6	40
Tertiary	9	60
<b>Employment</b>		
Fulltime/Part time	9	60
Home Duties/Retired	6	40
<b>Gross Weekly Income</b>		
Less than \$300	5	33
\$300 - \$799	7	47
Over \$800	3	20

## 6.2 Psychosocial (HADS, miniMAC, EORTC-QLQ30 and QLQ-BR23) Three Time Period Data Analysis

LMM were employed to provide repeated measures analysis of the three time period data in order to identify whether there were any changes over the three time periods of the study.

**Table 6-2,**

Table 6-3 and Table 6-5, below display the marginal\* mean scores, the mean difference, the upper and lower confidence intervals and the p values of time, group and group/time at baseline, mid and end points of the study for each of the subscales.

\*The LMM procedure takes into account missing data and estimates the marginal means.

**Table 6-2 Marginal mean scores for the HADS subscales at each time point, mean difference (baseline – end point), 95% confidence interval and significance of effects in full model**

Marginal Means				(Baseline – End Point)		P values for factorial model effects		
	Baseline	Mid Point	End point	Mean Difference	95% CI	Time	Group	Group *Time
<b>Anxiety</b>	8.0	7.5	6.9	1.1	-.75, 3.0	.45	.007	.762
<b>Depression</b>	4.5	4.9	4.1	.35	-1.8, 2.5	.40	.34	.69

**Table 6-3 Marginal mean scores for miniMAC subscales at each time point, mean difference (baseline – end point), 95% confidence interval and significance of effects in full model**

Marginal Means				(Baseline – End Point)		P values for factorial model effects		
	Baseline	Mid Point	End point	Mean Difference	95% CI	Time	Group	Group *Time
<b>HH</b>	16.0	12.1	13.3	2.8	-7.1, 12.7	.424	.015	.222
<b>AP</b>	43.0	37.5	35.8	7.1	1.2, 13.0	.071	.102	.122
<b>FS</b>	75.6	76.0	75.3	.30	-2.4, 19.4	.169	.039	.498
<b>CA</b>	62.2	53.7	53.7	8.5	-2.4, 19.4	.169	.039	.498
<b>FT</b>	67.6	63.5	65.8	1.8	-4.0, 7.7	.104	.740	.425

HH = Hopelessness/helplessness

AP= Anxious preoccupation

FS = Fighting Spirit

CA = Cognitive Avoidance

FT = Fatalism

**Table 6-4 Marginal Mean scores for each EORTC-QLQ30 subscales at each time point and significance of the time effect**

Marginal Means				(Baseline – End Point)		P values for factorial model effects		
	Baseline	Mid Point	End point	Mean Difference	95% CI	Time	Group	Group*Time
<b>QL2</b>	71.7	67.7	70.7	.977	-9.1, 11.0	.744	.954	.673
<b>PF</b>	80.7	80.5	83.3	-2.6	-10.5, 5.2	.499	.270	.971
<b>EF</b>	64.2	70.1	68.9	-4.7	-14.5, 5.1	.514	.179	.704
<b>CF</b>	58.5	62.5	64.3	-5.8	-18.1, 6.5	.570	.477	.110
<b>SF</b>	80.1	73.2	80.5	-.447	-13.5, 12.6	.295	.050	.199
<b>FA</b>	42.7	41.8	40.6	2.14	-12.0, 16.3	.810	.370	.308
<b>NV</b>	4.5	4.5	3.1	1.3	-4.0, 6.7	.810	.370	.308

QL2 = Global Health Status  
 PF = Physical Functioning  
 EF = Emotional Functioning  
 CF = Cognitive Functioning  
 SF = Social Functioning  
 FA = Fatigue  
 NV = Nausea/Vomiting

Three QLQ-BR23 subscales of body image (BRBI), future perspectives (BRFU) and systematic therapy side effects (BRST) were analysed.

**Table 6-5 Marginal Mean scores for each QLQ-BR23 subscales at each time point and significance of the time effect**

Marginal Means				(Baseline – End Point)		P values for factorial model effects		
	Baseline	Mid Point	End point	Mean Difference	95% CI	Time	Group	Group*Time
<b>BRBI</b>	72.0	66.8	72.0	.07	13.0, 13.1	.305	.186	.346
<b>BRFU</b>	56.9	61.2	63.4	-6.5	-23.2, 10.1	.696	.011	.541
<b>BRST</b>	23.4	24.5	20.6	2.8	-5.6, 11.2	.235	.519	.094

BRBI = Body Image  
 BRFU = Future Perspectives  
 BRST = Systematic Therapy Side Effects

The HADS, miniMAC and EORTC-QLQ30 and QLQ-BR23 revealed no significant interaction between each of the two therapy groups and time. Further more, no statistical significant change in scores over time was found thus not supporting any of the generated hypotheses.

However, positive trends were found from baseline to end study point in all but four (FS; SF; QLT2; BRBI) of the seventeen subscales, indicating that the study participants did experience improvement in their psychosocial outcomes.

Figure 6.1, Figure 6.2, Figure 6.3 and Figure 6.4 display the mean graphs, which average the data collected and which illustrate the positive trends from baseline to end study time point in thirteen of the seventeen subscales.

### 6.2.1 HADS

The participants experienced a decrease (non significant) in anxiety (8.3>7.07) and depression (4.53>4.13) from baseline to end study time point as displayed in Figure 6.1.

**NB** X-axis 'time' (Figures 6.1 – 6.4) refers to the three study time point collection of the psychosocial measures at baseline, mid and end study time points.

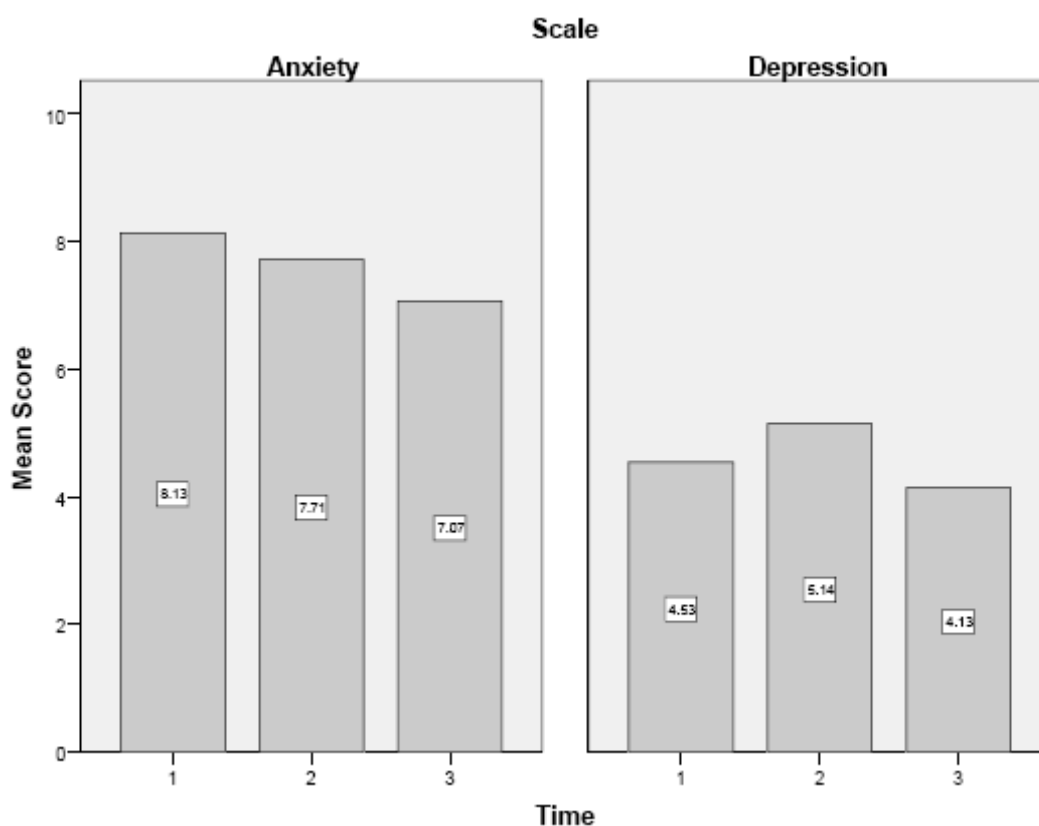


Figure 6.1 Anxiety and Depression Mean Scores

### 6.2.2 miniMAC

The participants experienced a decrease (non significant) in anxious preoccupation (43.3>36.7) and cognitive avoidance (63.4>54.5). Fighting spirit decreased, non significantly, (75.6>75.0) and both fatalism (67.7>65.8) and helplessness/ hopelessness (15.4>13.7) decreased, non significantly, from baseline to end study time point as displayed in Figure 6.2.

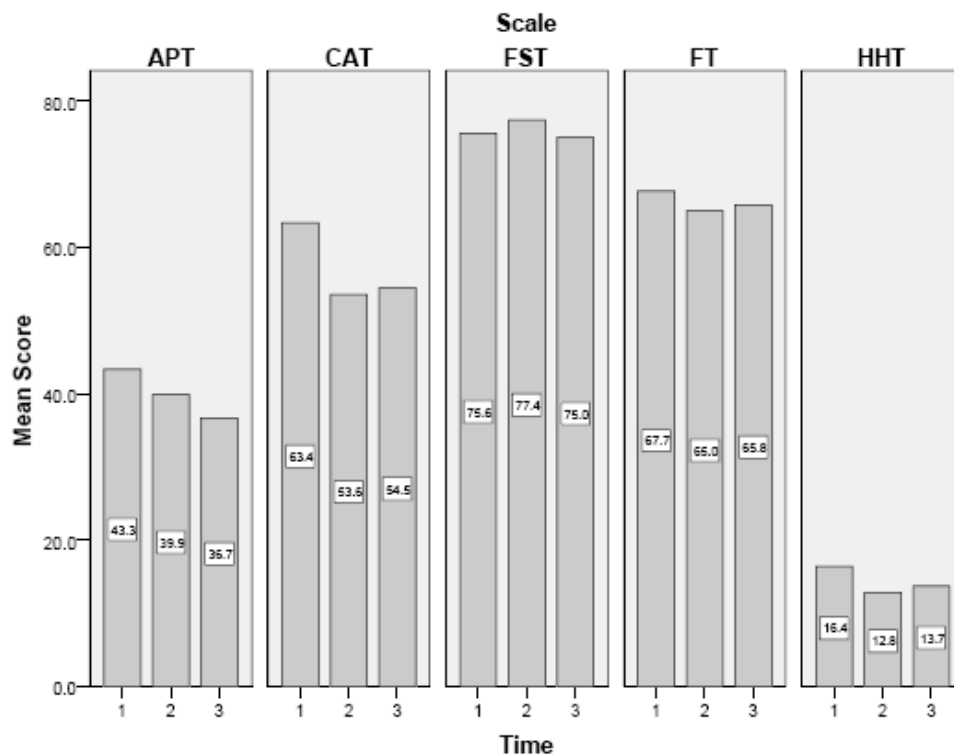


Figure 6.2 miniMAC Mean Score

### 6.2.3 EORTC-QLQ30

The participants experienced an increase (non significant) in cognitive (57.8<64.5), emotional (63.9<68.3) and physical (80.9<83.6) functioning with social functioning remaining stable (81.1-81.1) as displayed in the functional subscales of the EORTC-QLQ30. They experienced a decrease (non significant) in fatigue (42.6>40.7) and nausea/vomiting (4.5>3.3) in the two symptom subscales and the participants' overall quality of life subscale was shown to

decrease, non significantly, (71.7>70.6) from baseline to the study end time point. See Figure 6.3.

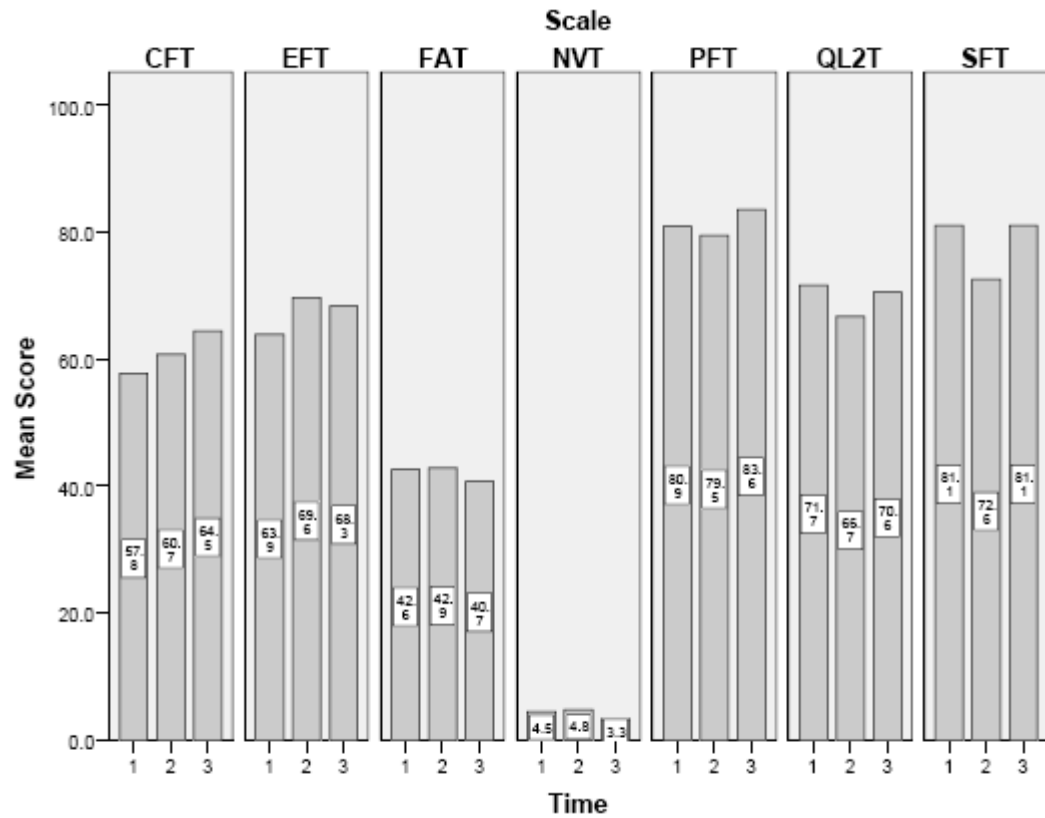


Figure 6.3 EORTC-QLQ30 Mean Scores

#### 6.2.4 QLQ-BR23

The study participants' body image remained stable (71.7-71.7). Participants experienced increased (non significant) improvement in their future perspectives (55.6<62.2) and experienced a decrease (non significant) in systemic therapy side effects (23.2>20.6) from baseline to end study time point as displayed in Figure 6.4.

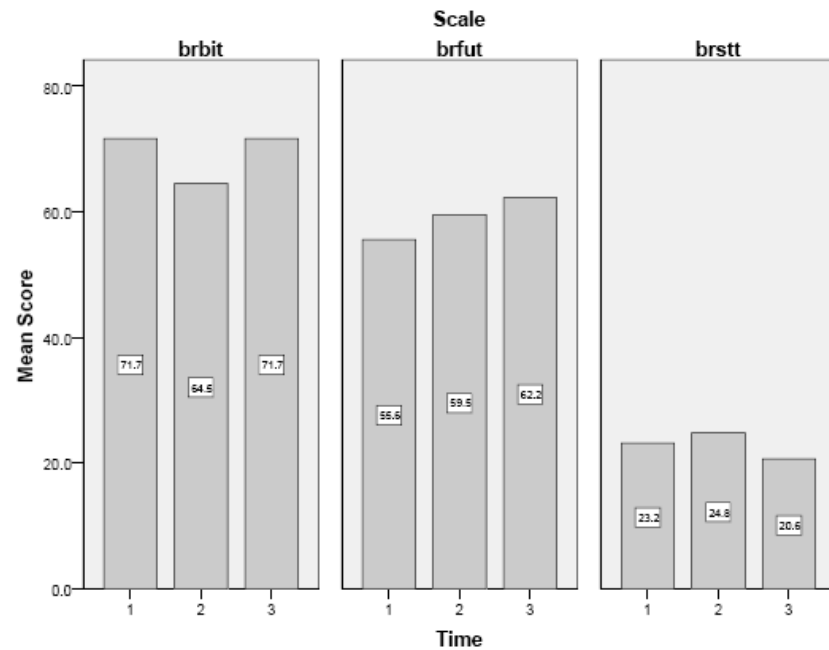


Figure 6.4 QLQ-BR23 Mean Scores

## 6.3 Psychological (UWIST-MACL) and Physiological (slgA/cortisol) Pre/Post Session Data

Descriptive statistics and LMM analysis were used with the dependent variable (for example tense arousal) and the difference between pre and post scores and any differences by week were tested. Analysis identified no differences in any of the dependent variables between weeks. In response to this finding, the model was then simplified so that only the intercept term remained, which was the estimate of the mean (average) pre minus post difference.

### 6.3.1 UWIST-MACL Marginal Means Plots

Marginal means plots for each of the means with 95% confidence intervals were generated in order to visually demonstrate the general pattern over time of the four mood subscales of, energetic arousal, hedonic tone, tense arousal and anger/frustration. The 0.00 line in each plot represents a no treatment effect. A significant weekly effect is demonstrated when both the upper and lower



confidence intervals appear together either above or below the 0.00 no effect line.

### 6.3.1.1 Energetic Arousal

Pre minus post difference scores for energetic arousal resulted in a **negative** number indicating an **increase** in energy levels.

As displayed in Figure 6.5, the study participants' levels of energetic arousal significantly increased pre/post weeks one, four, five, six and eight of the study intervention. In weeks two and three, the data demonstrated a slight decrease in energy which was possibly due to a negative incident which occurred in the week two music therapy session and was further reflected in the week three session. The negative incident is described in the discussion section of this chapter.

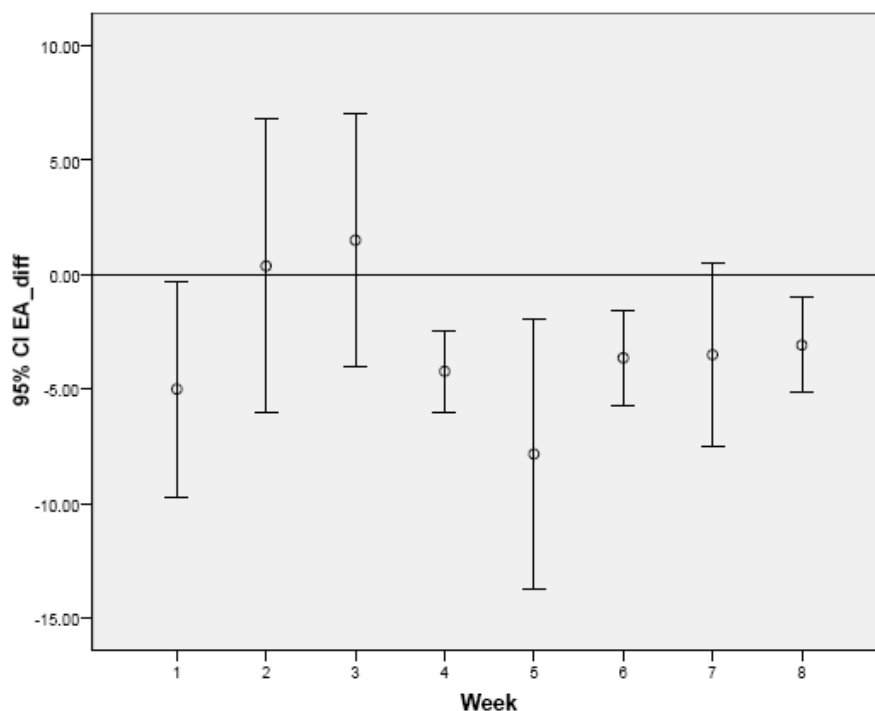


Figure 6.5 Energetic Arousal Means Plot with 95% Confidence Intervals

### 6.3.1.2 Hedonic Tone (Well-being)

Pre minus post difference scores for hedonic tone resulted in a **negative** number indicating an **increase** in level of well being.

As displayed in Figure 6.6, the participants' levels of well-being consistently increased pre/post each week of the study intervention, with a significant increase demonstrated in weeks one, three, four, six and eight of the study.

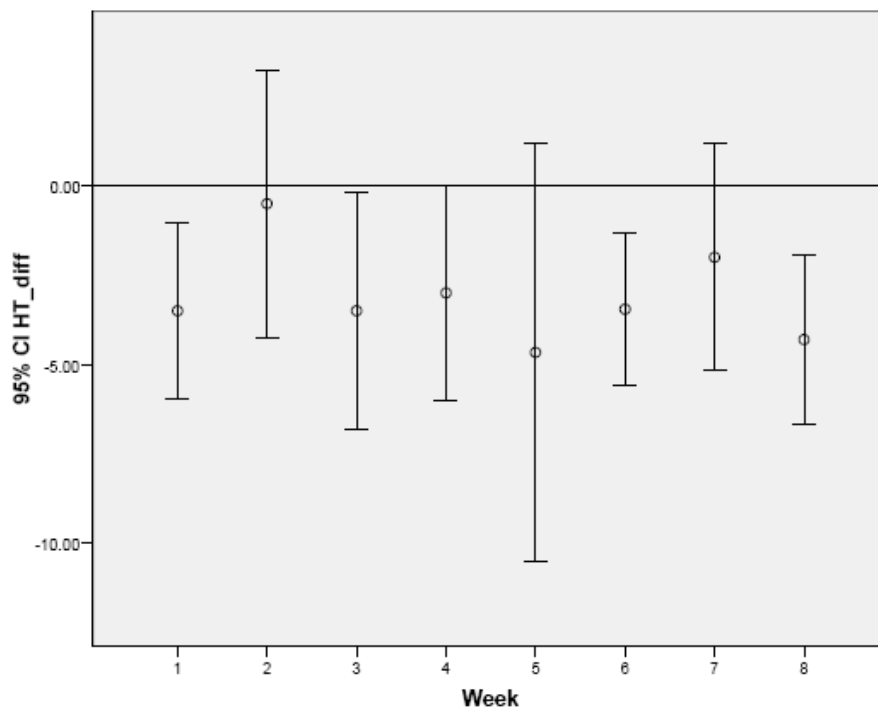


Figure 6.6 Hedonic Tone Means Plot with 95% Confidence Intervals

### 6.3.1.3 Tense Arousal

Pre minus post difference scores of tense arousal resulted in a **positive** number indicating a **decrease** in tension.

As displayed in Figure 6.7, the participants' levels of tense arousal consistently decreased pre/post each week of the study intervention, with a significant decrease demonstrated in weeks one, four, five, six and eight of the study.

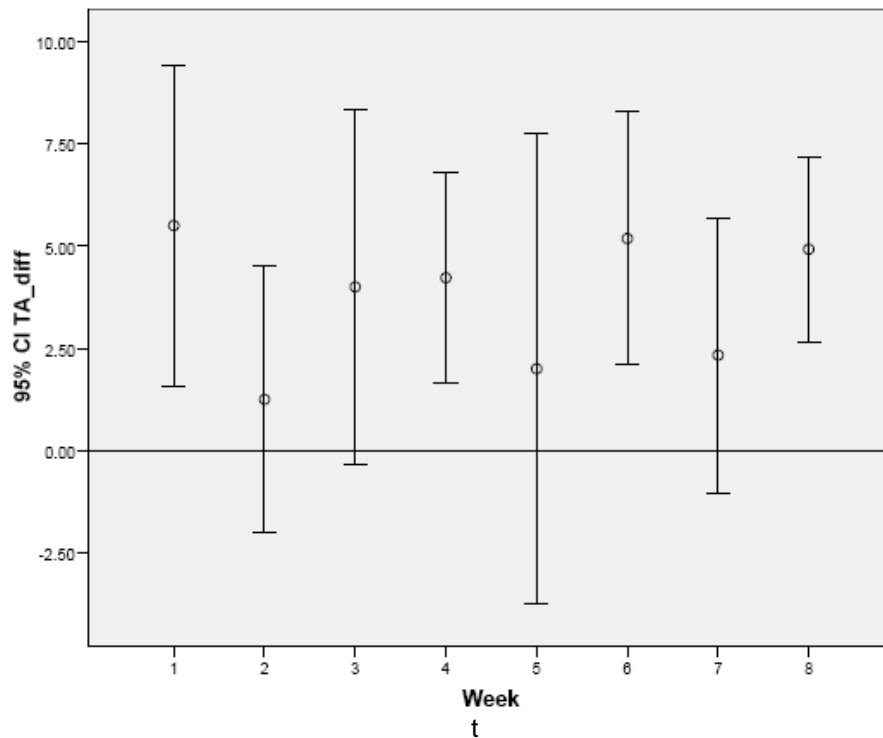


Figure 6.7 Tense Arousal Means Plot with 95% Confidence Intervals

#### 6.3.1.4 Anger/Frustration

Pre minus post difference scores of anger/frustration resulted in a **positive** number which indicates a **decrease** in anger/frustration.

As displayed in Figure 6.8, the participants' levels of anger and frustration consistently decreased pre/post each week of the study intervention, with a significant decrease demonstrated in weeks one, four, five, six and eight of the study.

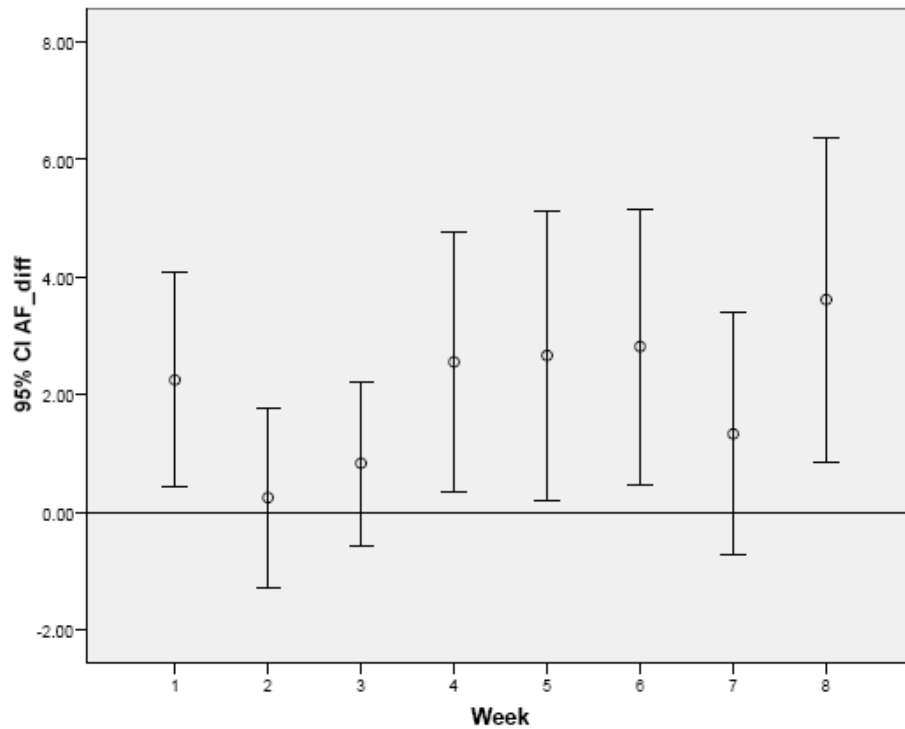


Figure 6.8 Anger/Frustration Means Plot with 95% Confidence Intervals

## 6.3.2 Physiological sIgA and Cortisol Means Plots

### 6.3.2.1 sIgA

Pre minus post difference levels of sIgA resulted in a **negative** number indicating a positive **increase** in sIgA.

The participants' levels of sIgA increased (non significantly) pre/post weeks two, five, six and seven of the study intervention. No treatment effect was demonstrated in weeks three, four and eight of the study. See Figure 6.9.

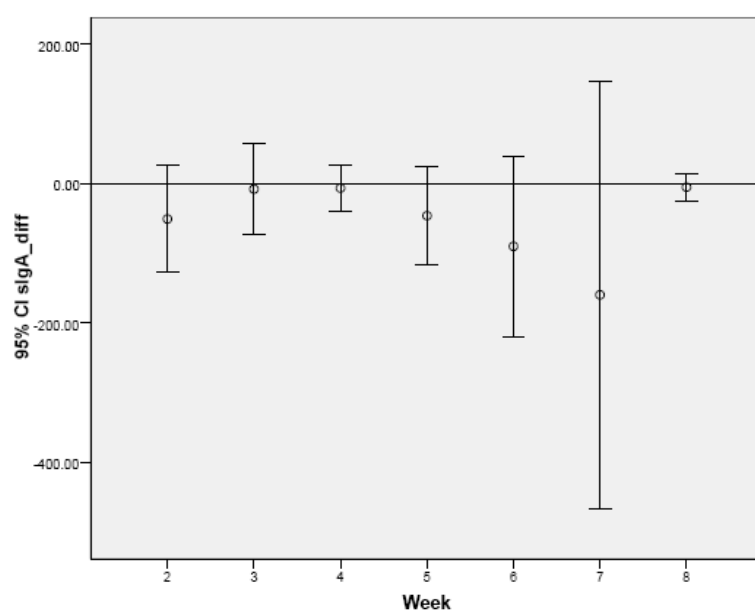


Figure 6.9 sIgA Means Plot with 95% Confidence Intervals

### 6.3.2.2 Cortisol

Pre minus post difference levels of cortisol result in a positive number which indicates a positive decrease in cortisol.

As displayed in Figure 6.10, the participants' levels of cortisol consistently decreased pre/post each week of the study intervention, with a significant decrease demonstrated in weeks two and eight of the study. See Figure 6.10.

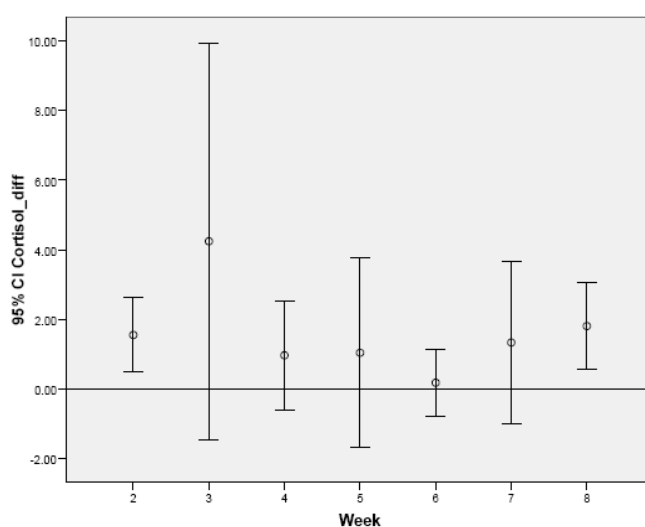


Figure 6.10 Cortisol Means Plot with 95% Confidence Intervals

## **6.4 LMM Analysis of Pre-Post UWIST-MACL Psychological Difference Scores**

Analysis revealed no differences between weeks and in response, the model was simplified so that only the intercept term remained, which was the estimate of the mean (average) pre minus post difference over each of the eight weekly interventions.

**NB** Each observation of each individual participant was pooled.

### **6.4.1 Energetic Arousal**

Over the full eight week study period there was a significant increase in the participants' levels of energy by a mean difference of 3.4 points on the energy arousal subscale of the UWIST-MACL,  $p < 0.001$ ; 95% CI (1.7, 5.1) thus supporting the generated hypothesis.

### **6.4.2 Hedonic Tone**

Over the full eight week study period there was a significant increase in the participants' levels of well-being by a mean difference of 3.4 points on the hedonic tone subscale of the UWIST-MACL,  $p < 0.000$ ; 95% CI (2.0, 4.9) thus supporting the generated hypothesis.

### **6.4.3 Tense Arousal**

Over the full eight week study period there was a significant decrease in the participants' levels of tension by a mean difference of 4.4 points on the tense arousal subscale of the UWIST-MACL,  $p < 0.000$ ; 95% CI (2.6, 4.4) thus supporting the generated hypothesis.

### **6.4.4 Anger/Frustration**

Over the full eight week study period there was a significant decrease in the participants' levels of anger/frustration by a mean difference of 2.5 points on the

anger/frustration subscale of the UWIST-MACL,  $p < 0.001$ ; 95% CI (1.3, 3.7) thus supporting the generated hypothesis. See Table 6-6.

**Table 6-6 Result of (Pre-Post) analysis for UWIST-MACL**

<b>Subscale</b>	<b>Mean Difference (Pre-Post)</b>	<b>P*</b>	<b>95%CI*</b>	<b>Week** P</b>
<b>Energy</b>	-3.4	.001	-5.1, -1.7	.026
<b>Hedonic</b>	-3.4	.000	-4.9, -2.0	.367
<b>Tension</b>	4.4	.000	2.6, 6.2	.652
<b>Anger/Frustration</b>	2.5	.001	1.3, 3.7	.026

\* The mean differences and CI's were reported for the model without the main effect of week.

\*\* The week P value was from the model with week as a fixed effect.

## **6.5 LMM Analysis of Pre-Post Physiological sIgA and Cortisol Difference Scores**

Analysis revealed no differences between weeks and in response, the model was simplified so that only the intercept term remained, which was the estimate of the mean (average) pre minus post difference over each of the eight weekly interventions. As some of the study participants' levels of sIgA concentration revealed extreme differences in the range of 300 – 700ug/ml, they were removed from the final analysis in order to keep the differences below 200ug/ml.

**NB** Each observation of each individual participant was pooled.

### **6.5.1 sIgA**

Over the full eight week study period, although there was an increase in the participants' levels of sIgA, a mean difference of 10.9 units, this was not significant,  $p < 0.213$ ; 95% CI (7.0, 29) thus not supporting the generated hypothesis.

### 6.5.2 Cortisol

Over the full eight week study period there was a significant decrease in the participants' levels of cortisol by a mean difference of 1.4 units,  $p < 0.005$ ; 95% CI (.50, 2.3) thus supporting the generated hypothesis. See Table 6-7.

Table 6-7 Result of (Pre-Post) analysis for sIgA and cortisol

Subscale	Mean* Difference (Pre-Post)	P*	95%CI*	Week** P
sIgA	-10.9	.213	-29, 7.0	.410
Cortisol	1.4	.005	.50, 2.3	.043

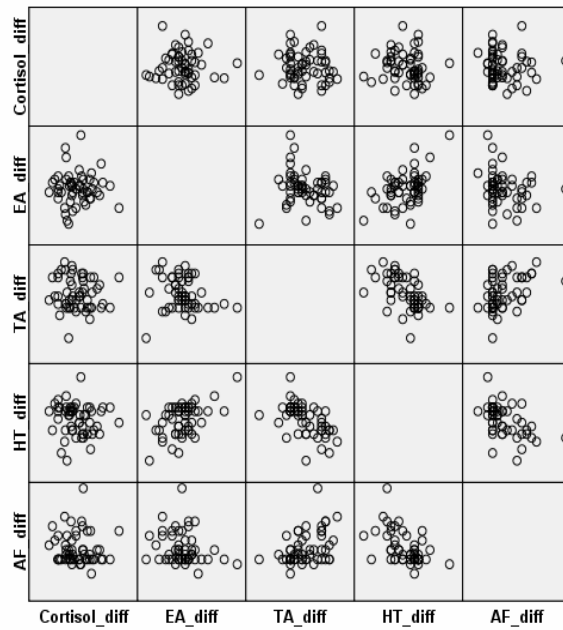
\* The mean differences and CI's were reported for the model without the main effect of week.

\*\* The week P value was from the model with week as a fixed effect.

## 6.6 Correlation between the UWIST-MACL Psychological and Cortisol Physiological Measures

Both Pearson and Spearman correlations between the mood subscale difference scores and the cortisol difference scores were completed. No correlations were identified between the mood subscales and cortisol levels, indicating there was no significant relationship between the change in any of the four mood subscales and the change in cortisol within a session. None of the correlations were above an absolute value of 0.10 and none of the p values were significant, with the smallest being 0.48. The generated scatter plot matrix provided no evidence of any non-linear relationships. See Figure 6.11.





**Figure 6.11 Scatter plot matrix of relationship between cortisol and UWIST-MACL difference scores**

Although no relationship was found between mood and cortisol, strong correlations are evident among each of the four UWIST-MACL mood subscales, indicating that the participants' positive mood changes were consistent throughout the eight weeks of the study. See Table 6-8.

Significant correlations were evident between Energetic Arousal and Tense Arousal ( $-.346^{**}$ ), between Energetic Arousal and Hedonic Tone ( $.496^{**}$ ) and also between Energetic Arousal and Anger/Frustration ( $-.270^{*}$ ).

Tense Arousal significantly correlated with the Hedonic Tone ( $-.556^{**}$ ) and with Anger/Frustration ( $.423^{**}$ ). A significant correlation was also evident between the Hedonic Tone and Anger/Frustration ( $-.565^{**}$ ).

**Table 6-8 Pearson Correlation coefficients for cortisol difference scores vs UWIST-MACL subscale difference scores**

		<b>Cortisol_diff</b>	<b>EA_diff</b>	<b>TA_diff</b>	<b>HT_diff</b>	<b>AF_diff</b>
<b>Cortisol_diff</b>	Pearson Correlation	1	.003	-.075	-.099	-.058
	Sig. (2-tailed)		.985	.592	.475	.678
	N	54	54	54	54	54
<b>EA_diff</b>	Pearson Correlation	.003	1	-.346(**)	.496(**)	-.270(*)
	Sig. (2-tailed)	.985		.003	.000	.024
	N	54	70	70	70	70
<b>TA_diff</b>	Pearson Correlation	-.075	-.346(**)	1	-.556(**)	.423(**)
	Sig. (2-tailed)	.592	.003		.000	.000
	N	54	70	70	70	70
<b>HT_diff</b>	Pearson Correlation	-.099	.496(**)	-.556(**)	1	-.565(**)
	Sig. (2-tailed)	.475	.000	.000		.000
	N	54	70	70	70	70
<b>AF_diff</b>	Pearson Correlation	-.058	-.270(*)	.423(**)	-.565(**)	1
	Sig. (2-tailed)	.678	.024	.000	.000	
	N	54	70	70	70	70

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

## 6.7 Discussion

The psychosocial measures of the HADS; miniMAC; EORTC-QLQ30 and QLQ-BR23, three time period data analysis provided no evidence of statistical significance.

However, positive trends were found in the HADS with the reduction in anxiety by a mean difference of 1.1 from baseline to end study time point, thus supporting *Hypothesis 1*, that participants will report decreased anxiety at end study time point compared with baseline measure. A small mean difference of 0.35 points reduction in depression supported *Hypothesis 2*, that participants will report decreased depression at end study time point compared with baseline measure.

Positive trends were found in all but one (FS) of the five subscales of the miniMAC. There was a 2.8 point mean difference in reduction of hopelessness/helplessness. This supported *Hypothesis 3*, that participants will report decreased helplessness-hopelessness at the end of study time point compared with the baseline measure. Anxious preoccupation decreased by a mean score of 7.1 points. *Hypothesis 4* was supported, that the participants will report decreased anxious preoccupation at end study time point compared with baseline measure. Cognitive avoidance was decreased by the largest mean score of 8.5 points. This again supported *Hypothesis 5*, that the participants will report decreased avoidance at end study time point compared with baseline measure. The participants mean score of a 1.8 point in their reduction of fatalism supported *Hypothesis 6*, that the participants will report decreased fatalism at end study time point compared with baseline measure. Only fighting spirit did not decrease and in fact increased very slightly by a mean score of 0.30 point difference. Therefore *Hypothesis 7* - that the participants will report increased fighting spirit at end study time point compared with baseline measure – was not supported.

A major systematic review of twenty six studies investigated psychological coping on survival and recurrence of people with cancer (Petticrew, Bell et al. 2002). The systematic review revealed that there was little medical evidence that the five coping strategies (fighting spirit, helplessness/hopelessness, anxious preoccupation, cognitive avoidance and fatalism) had any significant effect of psychological coping on survival and recurrence of cancer. This finding was further supported in a recent study, which did however suggest that good coping skills can impact on the overall quality of the life of the cancer patient (Phillips 2008).

The EORTC-QLQ30 and BR23 produced similar positive trend results to those of HADS and mini MAC in all but three (SF; QLT2; BRBI) of the ten subscales. Interestingly, one of the subscales which produced a slightly negative (71.7>70.6) trend was the global quality of life. Two questions were asked in this subscale; 1) "How do you rate your overall health this past week?" and 2) "How would you rate your overall quality of life during the past week?" Both of these questions are capable of different interpretations as one person's perception of their own health and quality of life can differ vastly from another person's. However, seven of the EORTC-QLQ30 and QLQ-BR23 subscales of cognitive, emotional and physical functioning and fatigue, nausea/vomiting, systemic therapy side effects and future perspectives all produced an improvement in the *means*. This highlights that there was an improvement in the overall quality of life of the participants in this study and as such supported *Hypothesis 8* - that the participants will report better quality of life at end study time point compared with baseline measure.

At the mid study point, a majority of the psychosocial subscales produced a slightly negative score. This questionnaire was given to participants to complete at home instead of at the conclusion of the session. This was necessary because of the adverse winter weather at the time which meant participants could not stay for the time taken to complete the questionnaire. The participants were requested to complete the questionnaire as soon as they arrived home and to then return it by mail to the researcher the following day. This resulted in the researcher having no control over when the study participants actually did complete their questionnaires. Also of note was that many of the women in the study reported that they found it difficult to answer a lot of the questions as they considered they were not relevant to them at their stage of their illness.

It was decided not to run any correlation statistical analyses between the psychosocial measures as none of the subscales produced any statistically significant results.

The pre/post intervention psychological UWIST-MACL and physiological sIgA and salivary cortisol testing of the first intervention group was conducted at baseline and then at two week intervals. Winter ailments in these women with breast cancer meant that attendance of the first group was irregular. This resulted in a smaller number of participants attending on the weeks of the data collection as compared to those when no data were collected. As a result of this, a variation to the research protocol was sought and granted by both the HAREC and HREC ethics committees to collect the pre/post intervention data weekly with the second group of study participants to maximise data collection.

LMM analysis was initially conducted on each of the two groups and as no significant differences were found between each group, all data were able to be combined for the final analysis to be conducted. The four mood tones of the UWIST-MACL all produced highly statistically significant results; energetic arousal ( $p<0.001$ ); hedonic tone ( $p<0.000$ ); tense arousal ( $p<0.000$ ) and anger/frustration ( $p<0.001$ ) thus replicating the initial pilot study – see Chapter 3 of this thesis. These results supported *Hypothesis 18 to 21* – that participants will report increased energy and well-being (hedonic tone) and decreased tension, anger and frustration over the eight week period of the intervention.

Weekly means plots display the positive effect of each week of each mood tone, with the exception of energetic arousal. Weeks two and three demonstrated a slight decrease in the energy levels of the participants. This effect is believed to be associated with an incident which took place during week two of the intervention with the second intervention group. One group participant consistently verbally attacked another group participant with regards to her

playing of the percussion instruments. This participant further displayed inappropriate verbal behaviour of a sexual nature. Both the verbal attack and verbal sexual behaviour were totally unprovoked and resulted with the perpetrator being removed from the group when it was discovered that the participant had not completed the inclusion/exclusion criteria of the study truthfully. This unfortunate action was taken following consultation with the researcher's supervisors and the Ethics Committees. As a result of this participant leaving the study, all of her data was removed and was not included in any of the data analysis. The decrease in energetic arousal in week two was shown to flow on to week three of the intervention.

As a result of the week two incident, two study participants withdrew from the study and their data were not used in the analysis. Full details of the results of the four mood tones are discussed in the combined quantitative/qualitative Chapter 7 of this thesis.

The physiological results of this study revealed a significant decrease in cortisol ( $p < 0.005$ ) in the overall eight week study period thus supporting *Hypothesis 22*, that participants' stress levels (cortisol) will decrease over the eight week period of the intervention. Although not significant, the participants' levels of sIgA did increase in four of the eight week period of the intervention as a result of which *Hypothesis 23* is not supported, that participants will experience an increase in immune function (sIgA) over the eight week period of the intervention. The physiological results are further discussed in the general discussion chapter (8) of the thesis.

The psychological findings were supported physiologically by the results of the sIgA and cortisol measures. However, although no significant correlations were found between the psychological and the physiological measure of cortisol, significant correlations were demonstrated between each of the four

psychological UWIST-MACL mood subscales. This demonstrated that when the participants experienced increased energy, they also experienced an increased state of well-being, experienced less tension and less anger/frustration.

Although caution must be exercised with respect to these results, due to the small sample size and missing data, the results are encouraging. They would appear to suggest that the active music therapy technique group improvisation does have a positive effect for the participants, pre to post each session, even though no clear escalating effect was demonstrated over the eight week intervention.

## **Chapter 7 Combined Quantitative/ Qualitative Results**

### **Introduction**

In line with the research aim and the design of this mixed method project this chapter presents the combined quantitative results and supporting qualitative results of the study. A thematic analysis of the qualitative data collected from semi structured interviews, a one off focus group meeting, and reflective experience work was conducted. Some of the recurrent themes present in the qualitative data overlapped and supported one of the quantitative components of this study, the UWIST-MACL. This quantitative component, a measure of mood questionnaire, was completed both immediately before (pre) and at the conclusion (post) of the music therapy intervention. Full details of the UWIST-MACL and its application are presented in the methods chapter of this thesis (Chapter 4).

Although the project aim included the opportunity to discover whether data from the qualitative component of the study would support the UWIST-MACL, this was a side question and the study was not primarily designed to address this topic. Nevertheless, recurring themes did emerge from the interpretation of the participants' experience of the active music therapy technique of improvisation which supported the UWIST-MACL and this chapter provides an overview of such findings.

Each of the four mood tones of the UWIST-MACL (energetic arousal; hedonic tone; tense arousal and anger/frustration) have been adopted in the same format of presentation in this thesis. The quantitative results for each of the four mood tones are initially presented. This is followed by the corresponding marginal means plot. The marginal means plot with 95% confidence intervals,



visually demonstrates the week by week effect of the music therapy intervention. The marginal means for each week were determined by the pre minus post difference scores. The 0.00 line in the plot represents a no treatment effect. A significant weekly effect is demonstrated when both the upper and lower confidence intervals appear together either above or below the 0.00 no treatment effect line.

The marginal means plots are followed by the supportive qualitative data from the interviews and the reflective experience work. Finally, short quotes elicited from the focus group meeting data directly supporting each of the four mood tones are presented.

## **7.1 Mood (UWIST-MACL)**

Mood is defined as an 'emotion-like experience lasting for at least several minutes' (Matthews, Jones et al. 1990). The UWIST-MACL measurement tool used in the pilot study was chosen for this doctoral research study, with the addition of the anger/ frustration tone, as it was shown to be particularly sensitive in detecting mood changes amongst participants engaged in the active music therapy technique of music improvisation. The UWIST-MACL contains four mood tones, those of energetic arousal; hedonic tone; tense arousal and anger/frustration. A full description of this measurement tool and its administration is given in the methods chapter of the thesis (see Chapter 4 for more details).

The UWIST-MACL was completed by all participants both immediately prior to and following the GIMT intervention.

### 7.1.1 Energetic Arousal

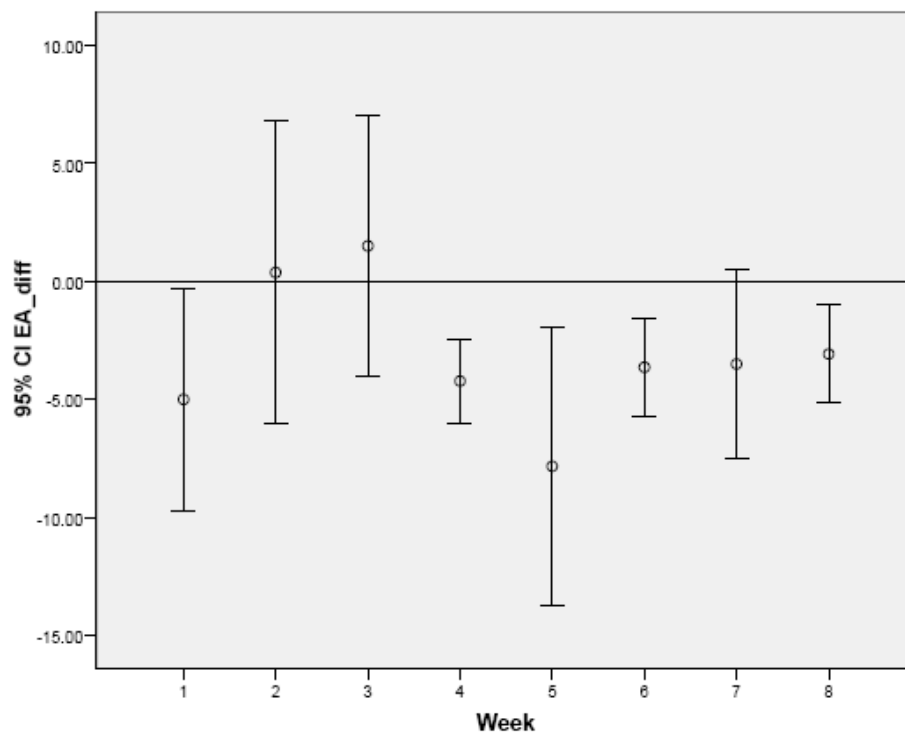
The energetic arousal tone of the UWIST-MACL is a subjective measure of energy level. Energetic arousal is defined in the UWIST-MACL as feelings of being energetic, alert, vigorous and active (Matthews, Jones et al. 1990).

Employing this definition and the UWIST-MACL tool of measurement, the energy levels of the participants in the study were shown to significantly increase  $p < 0.001$ ; 95% CI (1.7, 5.1) by a mean difference of 3.4 points on the energetic arousal subscale over the eight week period of the music therapy intervention.

#### 7.1.1.1 *Energetic Arousal Marginal Means Plot*

The pre minus post difference scores for energetic arousal resulted in a **negative** number, which indicated an **increase** in energy levels. A significant weekly effect is demonstrated when both the upper and lower confidence intervals appear together below the 0.00 no treatment effect line.

As displayed in Figure 7.1, the participants' levels of energetic arousal significantly increased pre/post weeks one, four, five, six and eight of the study intervention. Weeks two and three demonstrated a slight decrease in energy which was possibly due to a negative incident which occurred in the week two music therapy session and was further reflected in the week three session. This incident has been previously discussed (see Chapter 6 of the thesis).



**Figure 7.1 Energetic Arousal Means Plot with 95% Confidence Intervals**

### ***7.1.1.2 Interviews and Reflective Experience***

Recurrent themes elicited from the interviews and reflective experiences of the participants in this study supported the quantitative result of increased energy. All study participants reported experiencing an increase in their levels of energy during the music therapy sessions. There were several different ways in which the women spoke of energy. Some described energy as feeling more energised, rejuvenated, lively, creative and positive. For other women, energy was a physical response which they described in terms of experiencing actual bursts of energy and a change in sleep patterns. Other women described their experience of energy as a change in mood, from feeling tired, worried and down, to becoming more alert and feeling better. The women associated their feelings of increased energy and mood change with their participation in the active music therapy technique of music improvisation. Some women attributed their increase in energy and their change of mood as being directly

the result of playing a specific percussion instrument. Emily exemplified mood change and feeling lively with her observation that:

It really surprised me how each instrument made you feel differently. I was really surprised how quickly your mood could change and how little of a piece you needed to play before – a lively piece before you felt that way yourself and in some cases as a direct result of the playing of specific instruments (Emily).

Clara, who was undergoing active chemotherapy treatment for the eight week period of her music therapy intervention, reported how she would often feel guilty coming to music therapy because she thought she was sapping the energy she perceived to be held within the group. She felt this to be the case as she described how she always felt more energised by the end of each music therapy session and questioned where her energy came from. She explained how she would arrive for her music therapy intervention feeling very tired as a result of her chemotherapy treatment, which she received on the same day as she attended music therapy in the evening. By the end of each session she reported how she had actually felt “bursts of energy” which she believed had come from the music she made and not from any verbal interaction with the other women. Verbal interaction would follow each music improvisation as a means of enabling the women to share verbally their music improvisation experience with the other women. This was in order to process any thoughts, feelings or emotions which had surfaced for them during the music improvisation experience. Therefore, from arriving for music therapy tired, Clara attributed her feelings of increased energy at the end of each session with her active involvement in music improvisation:

I’d arrive very, very tired and I’d feel guilty that I was taking energy away from the other women because sometimes at the end of the sessions I’d be feeling fine and quite energetic so that had to come from somewhere because it wasn’t in me and so a different way of gaining energy is obviously through music and not through talking with the other

women because at the time I would feel bursts of energy it would be when we were playing and not when we were talking (Clara).

Feeling less down, becoming less worried and more energised resulting in a heightened sense of positiveness was a recurring theme for many of the women who associated these feelings with their experience of music improvisation. Annabel used the metaphor of drink to describe her experience of music improvisation. She spoke of how if she arrived at music therapy feeling down, once she started to play the instruments she would experience a change of mood:

If you came in feeling pretty down by the time you'd played a few things you'd really get stuck in to it and then you would feel rejuvenated and instead of being worried all the time it did put you in a different frame of mind – like I felt a bit more positive about things - like I'd had a nice little drink or something – but without having to have that drink (Annabel).

Annabel was describing how when she was involved in music improvisation she experienced feeling more light headed which in turn allowed her to forget her worries and feel more positive. She associated this experience with the same feelings she would get when she had been having a nice drink.

Linked to this imagery, Hannah focussed on her feeling of being high, a term she used to describe her experience of heightened energy following music improvisation. She reported how she thought she would find it difficult to get to sleep at night. Her statement was in contrast to many of the other women who reported that they had experienced improved sleep as a result of music therapy. Returning to Hannah's statement she described her experience as:

I used to go home feeling quite revitalized, a bit of energy in me and I used to think 'God I'll never get to sleep tonight now because I'm up there on a high', so if I was quiet or upset or anything, it used to perk me up and I'd come up on a high, a good level and so

that was pretty good because I'd drive all the way home having a little sing or a hum so was definitely good (Hannah).

It would appear that as a result of feeling revitalized, Hannah was able to use her increased level of energy in a positive and creative way, by singing to herself as she drove herself home following each music therapy session she attended. This was an added bonus for her as she had previously reported that she was normally nervous of night time driving, but that she didn't feel nervous driving home in the dark after a music therapy session.

### **7.1.1.3 Focus Group**

During the focus group meeting phrases and short sentences were brainstormed in order to explore the women's lived experience of music improvisation. The women described how they perceived their playing of the percussion instruments and how that had affected them. Quotes directly pertaining to energetic arousal are presented in Figure 7.2:

#### **Energetic Arousal**

I used to sometimes think – ugh – I'm too tired to go tonight, but by the time I left I was always energetic  
After each session I was always more energetic, it never took energy, but increased my energy  
You can come along to music therapy and increase your energy  
The vibrations sometimes energised you, you know especially the drums or the cymbals  
When 'x' played the cymbal, it would resonate and raise my energy  
I always felt so re-energised by the end of the sessions

**Figure 7.2 Energetic Arousal Quotes**

### **7.1.2 Hedonic Tone**

The hedonic tone of the UWIST-MACL is a subjective measure of well-being. Employing the definition of the UWIST-MACL well-being is identified as feeling happy, cheerful, satisfied and contented (Matthews, Jones et al. 1990).

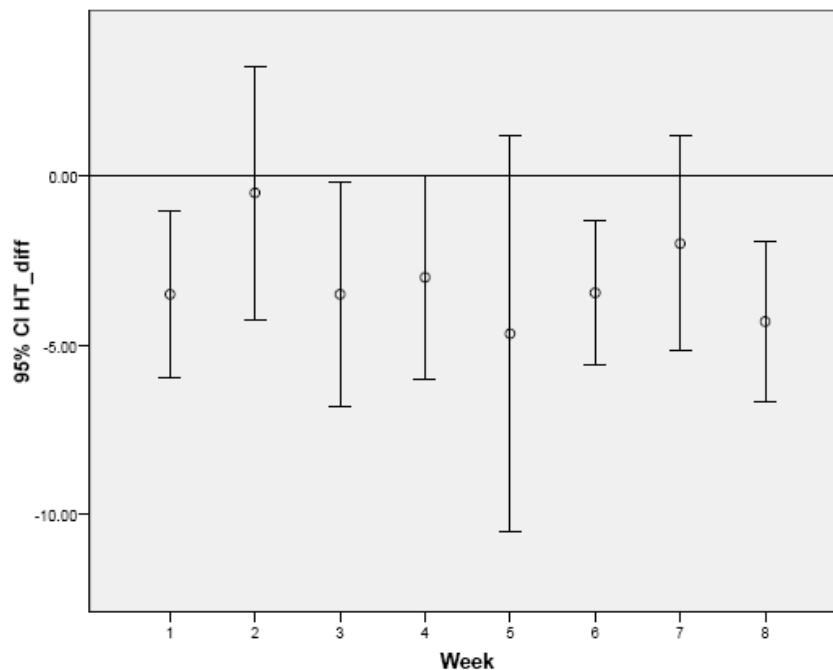
Employing this definition and the UWIST-MACL tool of measurement, the participants level of well-being (hedonic tone) significantly increased  $p < 0.000$ ;

95% CI (2.00, 4.9) by a mean difference of 3.4 points on the hedonic tone subscale over the eight week period of the music therapy intervention.

#### **7.1.2.1 Hedonic Tone Marginal Means Plot**

The pre minus post difference scores for hedonic tone arousal resulted in a **negative** number, which indicated an **increase** in hedonic tone. A significant weekly effect is demonstrated when both the upper and lower confidence intervals appear together below the 0.00 no treatment effect line.

As displayed in Figure 7.3, the participants' levels of well-being (hedonic tone) consistently increased pre/post each week of the study intervention, with a significant increase demonstrated in weeks one, three, four, six and eight of the study.



**Figure 7.3 Hedonic Tone Means Plot with 95% Confidence Intervals**

### **7.1.2.2 Interviews and Reflective Experience**

Recurrent themes elicited from the interviews and reflective experiences of the participants in this study supported the quantitative result of an increase in the well-being (hedonic tone) of the participants in the study.

Feelings of well-being as reported by the participants generally encompassed those of enjoyment, fun, laughter, being creative, happy, of generally feeling better and in a good mood; all positive emotional responses. Some women explained how as a result of their mood change they felt their body physiology also changed whilst actively involved in music improvisation. This was an interesting observation by the women, as a quantitative component of this study investigated whether there were any physiological changes, as a result of the music therapy intervention. The physiological results have been presented and discussed in Chapter 6 of this thesis.

Other women reported how they were able to call upon the new skills they had learnt through music therapy to use at home, in order to feel better when they were feeling down. As with energy, some of the women associated their feelings of well-being as a direct result of playing specific percussion instruments. Many of the women further associated their feelings of well-being with both the playing of music and with the social and supportive aspect of being with the other women in the group.

During the focus group meeting the women discussed the social aspect of music therapy and its impact upon the group. One of the women reported how she felt very happy because she was with a “lovely group of people who all seemed to get along well together”. In addition to her own feelings of happiness, she also observed the other women in her group saying “I feel much better now” periodically throughout the music therapy sessions.



Many of the women spoke of how they would often become so engaged and happy in music improvisation that they forgot about everything else going on in their lives. For Lorna this was a positive experience as she was going through a particularly difficult time at her place of work. She reported that although sometimes she really didn't feel like going to music therapy after a distressing day at work, she always made the effort to attend. She did this because she'd discovered at the outset of music therapy that she could leave her work troubles behind and "go home from music therapy in a good mood". Lorna consistently said that she found the actual music therapy technique of music improvisation very difficult. As a result of her difficulty she would often just sit in the group and listen to the other women improvising and not actively participate herself. This was interesting as although Lorna found music improvisation difficult she attended every music therapy session. It would appear that possibly for her it was the social aspect of being in and with the group which was of the most importance and help.

Unbeknown to Lorna, her experience was observed and reinforced by Ellen, another woman in her group who knew of Lorna's stressful work situation. She reported her observations of Lorna's mood change during the music therapy sessions:

I saw one lady who said 'I don't like music, and I'm not this and I can't do it' and I had spoken to her lots of times and I went and sat with her when we were waiting for radiotherapy and she was very stressed about going back to a very stressful job and it didn't prove to be anything else other than stressful when she did go back, and she sort of would come along from work angry and you know she'd say 'I can't play music and I don't get anything out of it' and yet I watched her and she did, she definitely did. Maybe she'll never admit to herself that she did but she did – just in the evening you could look at her and you could see her coming down and leaving in a much better mood than when she arrived (Lorna).

In contrast to Lorna's difficulty with music improvisation, Ellen found it very easy to improvise. She enjoyed exploring and playing as many different instruments as she was able to during an improvisation. Not only did she describe how she felt motivated when playing but also how she found her experience amusing and lots of fun. At the end of each session Ellen would often report "I felt so much better, so much better". For Ellen, the realisation of how music therapy had affected her so positively allowed her to draw upon her experiences after she had completed her eight week music therapy intervention. She did this particularly during periods of loneliness or when she was generally feeling a bit down:

I found it very, very enjoyable and it definitely changed the mood I went in with and since then, at different times when I'm feeling lonely or down or tired or whatever, I just think of how I was making the music and how it made me feel – so taking myself off in to that and picking myself up (Ellen).

Many of the women acknowledged that to be involved in music improvisation needed no musical skills in order to participate and receive benefit. Mary explained that although she had no musical skills she was still able to express her feelings on the different percussion instruments. She had noticed that some of the other women in her group also did not possess music skills and that it did not matter to them either. Mary particularly liked to play the drum at each session as she reported she could hit the drum loudly if she wanted to and that she could feel the beat. It would appear that Mary went home feeling good as a result of hitting the drum loudly and feeling the beat she had created on the instrument:

Being able to express how I felt through music even though I couldn't play it was good as well because I noticed there were other people who couldn't play musical instruments either and because of the instruments that were there, it didn't matter. If I wanted to hit

that drum loudly, I could and it didn't matter – it was just the beat as opposed to notes so I'd come home feeling good after the sessions (Mary).

Frances similarly associated her mood changes with her physical playing of the percussion instruments. She reported that, "When I was playing calmly or was playing happily I did get those feelings from playing the instruments in fact it made me feel quite creative". It would appear that Frances was able to experience different mood states by the way in which she was playing the instruments. Hence if she was playing calmly she would feel calm, similarly if she was playing happily, then she would feel happy. Through this process she was also able to access and experience her creative side. In a similar vein to Frances's experience, Emily reported that her mood could be changed by playing the instruments:

Sometimes I used to get there [music therapy] feeling a bit down and by the time you left you were better because when I played the instruments it made me feel happy – well that's how I felt (Emily).

In Emily's case she described that if she arrived at music therapy feeling down, by playing the percussion instruments she would feel happy by the time she left. This would suggest that for Emily the actual playing of the instruments made her feel happy even if she was feeling down upon arrival at music therapy.

In a more detailed way, some of the women reported how they felt specific instruments were able to create specific moods within them. Annabel reported that if she was feeling in a cheeky mood, she would play the bongos, and if she felt a little down, she would play the metallaphone. This would suggest that Annabel had discovered different instruments upon which she was able to express the mood she either felt herself to be in, or wanted to create for herself.

She also perceived this to be the case for the other women in her group when she said:

I'd think 'bongos' because I was feeling in a cheeky mood but if I was a little bit down I might get one of the metallaphones – the lower one [alto] but if you started off in a quite rundown mood by the end of the session you were over that – I found that that was the main thing, you were totally in a different mood – your mood certainly changed and I think that was something with all the women who went there that if you came in a bad mood or you were in a bad way, then you were different at the end of it (Annabel).

In addition to experiencing changes in mood by playing the percussion instruments, some of the women reported how they experienced a physiological response as they played the various instruments. This was as a result of both the vibrations and the sounds which the different instruments made. Mary talked of her personal experience of how she felt when she played the Tibetan singing bowl:

The singing bowl, that just lifts me up when I hear that – I don't know whether it's the vibration or the sound that tends to go right through me and it just makes me feel calm and yet alive at the same time – it's a beautiful instrument – I think that will stay with me forever (Mary).

She described her experience as lifting her, possibly implying that her spirits were lifted. She associated this feeling with either the vibration or the sound of the instrument going through her body. On one level she said it made her feel calm and on another level alive – both at the same time. This would suggest that her experience was of a more spiritual nature which was produced by the physiological vibrations she felt and her emotional response to the sound of the instrument. Expanding on Mary's experience another of the women in her group theorised that if music therapy could change your emotions from negative to positive, then the effect of that emotional change could possibly change your physiology at a cellular level:

I think music therapy can help the person to change, I suppose the emotion which then effects a chemical change within the body to help change that cell from a negative to a positive because if you feel more bright and positive, then it will change – it will change (Lara).

The Pearson and Spearman correlations found no statistically significant evidence of a relationship between the psychological mood and physiological measures taken in this study. However, the LMM results of the psychological and physiological pre/post intervention measures were suggestive of a link between positive emotions and the immune system as Lara theorised - see Chapters 6 (Quantitative Results) and Chapter 8 for discussion of the physiological measures.

Having fun was a major recurring theme for all of the women involved in the study. Participants reported that they looked forward to and enjoyed coming to music therapy each week because it gave them the opportunity to get away from being a cancer patient, thus enabling them to feel like normal women once more. The women explained that they knew they would have fun and share laughter with each other when they did come to music therapy. They talked of how they enjoyed playing the instruments as they were able to become creative and feel childlike and free once again. As Rose described:

I had a lot of fun – I just laughed and laughed and laughed but they do say laughter is the best medicine don't they?... yes I had a good laugh, all the time and um in fact a couple of times I thought you [the therapist] were going to ring me and tell me not to come back and then one day when you rang me up I thought Oh God, she's ringing me to tell me not to come back! So to be honest, I don't know whether it did help but actually I suppose it must have helped me because it was through the music that we were laughing and you don't get to laugh much when you've got cancer and you're having all the disgusting medical treatments (Rose).

Perhaps of all the experiences the women reported, the most positive aspect was that music therapy gave them fun and shared laughter with the other women in their group. Experiencing fun and laughter would appear to have been of paramount importance as it provided a time of enjoyment for the women as opposed to what they often described as their “disgusting medical treatments” and experiences.

### **7.1.2.3 Focus Group**

Short quotes brainstormed during the focus group meeting which directly support the women’s feelings of well-being as a result of their music improvisation experience are presented in Figure 7.4:

#### **Hedonic Tone**

Sharing fun and laughter together – I mean it’s good to have fun and it was fun  
After each session I felt happier and less stressed – this in itself can only mean a healthier well-being  
It was great – just so freeing – and so much fun  
I came along thinking I was in a really good mood and then I’d go home even feeling better  
I’d have a laugh and go away feeling a lot better  
Felt like being back in Kinder – playful  
Made me happy and childish  
Led to laughter and laughter gives you a buzz  
You could be serious or silly, so we were seriously silly and had lots of laughter

**Figure 7.4 Hedonic Arousal Quotes**

### **7.1.3 Tense Arousal Tone**

The tense arousal tone of the UWIST-MACL is a subjective measure of tension. and is defined in the UWIST-MACL as feeling nervous, tense, jittery and anxious (Matthews, Jones et al. 1990).

Employing this definition and the UWIST-MACL tool of measurement the participants’ levels of tension decreased significantly  $p < 0.000$ ; 95% CI (2.6, 4.4) by a mean difference of 4.4 points on the tense arousal subscale over the eight week period of the music therapy intervention.

### 7.1.3.1 Tense Arousal Marginal Means Plot

The pre minus post difference scores for tense arousal resulted in a **positive** number, which indicated a **decrease** in tense arousal. A significant weekly effect is demonstrated when both the upper and lower confidence intervals appear together above the 0.00 no treatment effect line.

As displayed in Figure 7.5, the participants' levels of tense arousal consistently decreased pre/post each week of the study intervention, with a significant decrease demonstrated in weeks one, four, six and eight of the study.

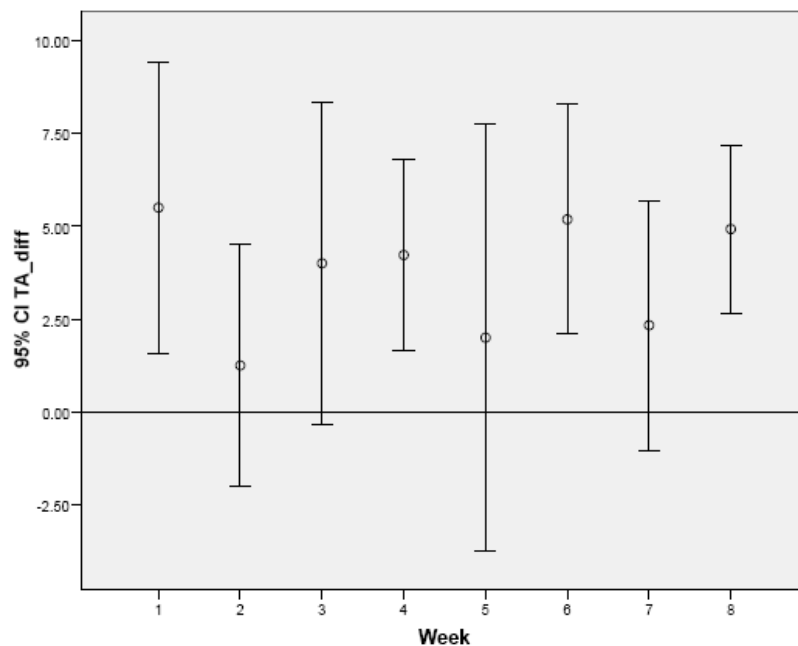


Figure 7.5 Tense Arousal Means Plot with 95% Confidence Intervals

### 7.1.3.2 Interviews and Reflective Experience

Being actively involved in music improvisation presented the participants with an outlet to release any physical tension they perceived themselves to have, on and/or through the percussion instruments. This opportunity enabled the participants to feel and become more relaxed. This was evident by the way in which the women would use the drums and other rhythmic instruments as a

means of releasing their tension. They reported how they felt calmer, more relaxed and that their sleep had improved following music therapy. As Anna described in her interview

It was just playing the different instruments, the instruments that you had there, some of those I'd never seen before or knew anything about so it was good to get used to those and play those, or make noises on them but it was surprising how you could relax to the music you made (Anna).

Anna exemplifies how even though some of the percussion instruments were unfamiliar to her, she was still able to play the instruments and that the music she created could make her feel relaxed. In a more contemplative vein Hannah described her experience of playing as:

I would go really quiet deep within, inside me, with the quiet music so it was very relaxing and that was very good and I loved the Mexican rain stick, just love it, because it always made me feel very relaxed (Hannah).

In her statement Hannah spoke of how when she played quiet music with the group she would feel relaxed and go "deep within". This latter comment may suggest that as well as making her feel relaxed, the music she was making with the group penetrated her at a more intimate and emotional level. She also referred to how playing of the rain stick made her feel relaxed. This again would suggest that certain percussion instruments can elicit different feelings. In order to understand more fully the active technique of improvisation, please listen to the CD tracks 4-10 in Appendix 1 which contains a sample of excerpts taken from the group sessions.

In a more direct way, Isabel recognised that her tension had built up on her long drive to attend music therapy and was able to associate her relaxed state with her music therapy experience, "I quite often felt a lot of the tension going,



the tension had built up because I had to drive a long way and by the time I left I was nice and relaxed so it worked – it was very relaxing”.

For many of the women releasing tension through music improvisation was able to facilitate improved sleep, with disturbed sleep being a symptom of tension and stress. Whether improved sleep was directly due to the physical exertion required when actively being involved in music improvisation or the music created is not clear. As Isabel reported:

When I was doing it [music therapy] I did sleep better, as when I got home I would just be able to put my head down on a cushion in the lounge and fall asleep, then wake up and go to bed and sleep all through the night – that’s something I’ve never ever been able to do or done before, so I think it improved my sleep pattern (Isabel).

Many of the women reported that they were able to use the techniques they had acquired through music therapy to help them relax at times when they were feeling tense and to improve their sleep. As one of the women said:

Sometimes I was almost sleepy by the time I went home, I was really settled to sleep and at a time when I wasn’t sleeping all that well so my sleep certainly improved and that was a gift. I also learnt techniques to relax myself and I don’t think I would have been able to do that without the reminders that came through music therapy (Sally).

Frances more specifically reported the actual technique she was able to use to release tension following her music therapy intervention. The technique which she said helped her was to remember the heart beat pulse which was set on the drum by the music therapist, for the initial opening music therapy improvisation each week. It was this improvisation which Frances associated with decreasing her tension, “I now find that if I’m a bit tense I think of the drum beat [heart beat pulse] given to us, I get that into my head and then I calm down”.

### 7.1.3.3 Focus Group

During the focus group meeting some of the women reported that when they played specific instruments they felt relaxed, soothed, serene and spiritual and were able to calm down and let go. Others simply reported generally feeling more relaxed and calmer as a result of their overall experience of music improvisation. The quotes are presented in Figure 7.6:

#### **Tense Arousal**

Getting rid of tension with the loud sounds  
Helped me relax and forget my daily worries  
The singing bowl made me feel very spiritual – going deep within myself and calm  
Playing the bells and the xylophone made me feel quite serene  
It was surprising how you could relax to the music your made  
I was almost sleepy by the time I went home  
Get rid of tension with loud sounds  
I was aware of feeling much more calm and relaxed  
I found the rain stick really soothing  
I was able to release tension  
I'd come to music therapy to calm down  
I block my emotions a lot and so with playing quiet music I could relax and sort of 'let go' a little bit

Figure 7.6 Tense Arousal Quotes

### 7.1.4 Anger and Frustration Arousal

The anger/frustration tone of the UWIST-MACL is a subjective measure of tension and is defined in the UWIST-MACL as feeling impatient, annoyed, angry, irritated and grouchy (Matthews, Jones et al. 1990).

Employing this definition and the UWIST-MACL tool of measurement the participants levels of anger/frustration decreased significantly  $p < 0.001$ ; 95% CI (1.3, 3.7) by a mean difference of 2.5 points on the anger/frustration arousal subscale over the eight week period of the music therapy intervention.

#### **7.1.4.1 Anger/Frustration Marginal Means Plot**

The pre minus post difference scores for anger/frustration arousal resulted in a **positive** number, which indicated a **decrease** in anger/frustration arousal. A

significant weekly effect is demonstrated when both the upper and lower confidence intervals appear together above the 0.00 no treatment effect line.

As displayed in Figure 7.7, the participants' levels of anger/frustration arousal consistently decreased pre/post each week of the study intervention, with a significant decrease demonstrated in weeks one, four, five, six and eight of the study.

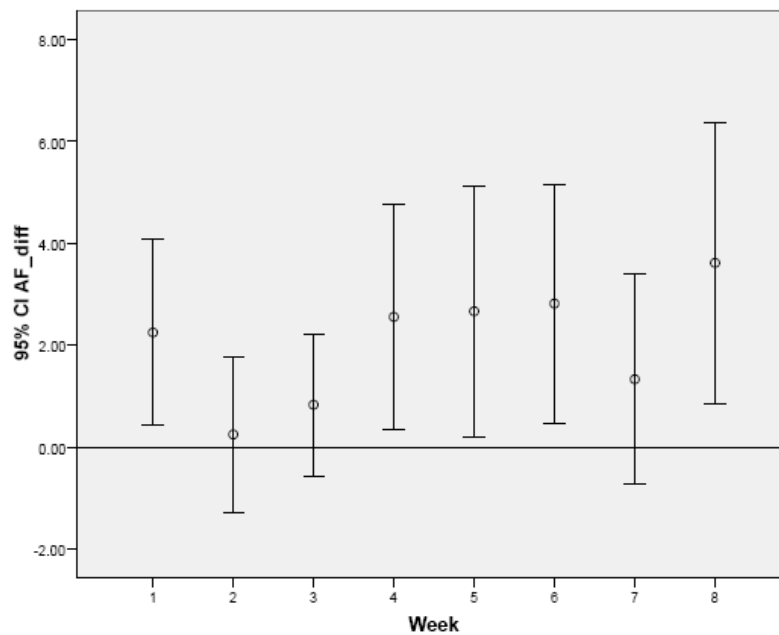


Figure 7.7 Anger/Frustration Means Plot with 95% Confidence Intervals

#### **7.1.4.2 Interviews and Reflective Experience**

Anger and frustration associated with having breast cancer was reported by all but one of the participants in the study. For many of the woman their anger and frustration was as a direct result of their breast cancer diagnosis and their treatment often left them feeling fatigued and generally not able to do the things they had been able to do prior to their diagnosis. Some women found themselves on a short fuse due to family pressures, whilst others described their anger and frustration as due to the fear of having been diagnosed with breast cancer. Fear encompassed fear of pain associated with the disease and its

treatment, fear of death and dying and fear of the unknown. The women reported how they were able to release their anger and frustration both on and through the percussion instruments during music improvisation. As Hannah simply stated, "I could really get in to instrument and take my feelings out on that instrument – just get in there and have a go and bang away and release anger was great". During the focus group meeting one of the women talked of how she had come to music therapy on one occasion having been very angry with her daughter, and that she was able to take out that anger on the drums, by physically hitting them in a frenzied way:

I felt the drums were really good for releasing my anger. I remember one day when I came here and I was so angry with my daughter and I think if I'd stayed near her, I would have done damage to her so I came here and tried to damage the drums instead

This woman's release of anger was supported musically by the therapist who used the 'iso principle'. This is the music therapy technique of matching the frenzied playing of the woman for a period of time, and then gradually slowing the tempo down, thus allowing the anger of the woman to be supported by the therapist in order to be safely released and to gradually subside.

Lara also found playing the percussion instruments a way in which to release her anger, and again specifically mentions the drum in this way:

Percussion helped...if you'd had a disagreement and were angry with your family, it was good because you could have a good old 'whack' on the drums or whatever, whenever you wanted to (Lara).

This was also the experience of Helen, who was able to release her frustration on the drums and who reported being worried about what would have happened to her if she hadn't had music therapy as an outlet:

I worry about what would have happened if I hadn't had music therapy as an outlet. I worried about the skins on your poor drums when I was really frustrated and belted hell out of them so I'm glad none of them broke (Helen).

As a result of her no longer being able to work and her lack of stamina since her breast cancer, Sally talked of how she would sometimes come to music therapy feeling furious with her situation. She described how she was able to deal with her emotions not only through music therapy but also by creatively drawing. This was another medium through which she was able to release her emotions. She spoke of how music improvisation was able to empty her head of her troubles. After one particular session, she went home and drew a picture in quite a different vein from her usual angry pictures, which only took a short time to produce. She described how after this particular session she drew a picture which took a lot of concentration and a long time to draw. She attributed her different style of drawing directly to her experience of being able to release her anger and frustration, relating to her illness and its consequences, through music improvisation. By being able to release her emotions in this physical way, she was able to 'empty her head', feel calmer, and extend her concentration span and draw in a different style from her usual angry drawings. Creating her drawings following music therapy provided another way for Sally to creatively process her feelings when alone.

I was able to deal with my emotions that I was finding difficulty with doing any other way. I felt I was able to get rid of some of my anger, frustration – very much the frustration, frustration at not being able to work, not being able to have the stamina I was used to, it was very good at helping me deal with that because several times I would come to music therapy feeling really furious, almost like I could kill somebody and I left in a much more relaxed state having got the frustration out of my system and remember how I gave you a drawing one time after a session. It was a very detailed drawing with lots of dots and I can't do that unless I've got a very high level of concentration so I couldn't have done that under normal circumstances so music therapy had allowed me to

get things out of my head, to empty my head and allow the drawing to come out. If I'm angry I can't do that sort of drawing. I can draw but they are different, they're angry – lots of straight lines and corners whereas that one I gave you was all sweet, hearts and those sort of drawings take hours whereas the fast and furious ones take minutes (Sally).

Being able to physically bang on the drums and bang them as loud as she could was also Emily's way of releasing her frustration and anger about her illness in a safe place. She likened her fear, and the fear of others diagnosed with cancer, as experiencing post traumatic stress, so for her being able to release her anger as a result of her fear through improvisation was a positive experience:

Music therapy was able to bring out the emotions in people when they were frightened as it's like you've got post traumatic stress – you just can't not have that when you go through cancer, so what I felt was really good for me was being able to bang the drum and bang it as loud as I could getting out frustration – yes venting my frustration and anger about my illness on the instruments in a safe place – yes that was really good (Emily).

#### **7.1.4.3 Focus Group**

Short quotes brainstormed during the focus group meeting which directly support the women's release of anger/frustration as a result of their music improvisation experience are presented in Figure 7.8:

<p><b>Anger/Frustration</b></p> <p>An opportunity to release anger, frustration and shock</p> <p>If you're angry, you can beat on the drum and let it all out</p> <p>There was anger and frustration, so I could really get it out with music therapy</p> <p>It helped me with all the anger and pain I felt about my illness</p> <p>It was easy to bash out your frustration on the drums</p> <p>Freeing of anger</p> <p>I hit the drums hard to release my anger</p> <p>Music therapy gave release of pent up emotions - freed anger</p>
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**Figure 7.8 Anger/Frustration Arousal Quotes**

#### **7.1.5 Discussion**

This chapter has brought together the quantitative UWIST-MACL results and supportive qualitative data results from the study. As outlined in the

introduction to this chapter, the qualitative component of the study was not specifically designed to support the quantitative results. Nevertheless, it was interesting to discover from the analysis of the qualitative data, how the women talked of their experiences of music improvisation in ways which supported the four mood tones of the UWIST-MACL.

The statistically significant results in the energetic arousal, hedonic arousal, tense arousal and the additional anger/frustration mood tones of the UWIST-MACL both support and have replicated the findings of the pilot study conducted by this researcher – see Chapter 3. Each of the four mood tones will be discussed individually.

The change in participant's energy levels, which had been shown to increase significantly ( $p < 0.001$ ) over the duration of the eight week music therapy intervention, is a positive finding as fatigue is known to be a major and often a persistent symptom of cancer and its treatment. It is known to be more severe in cancer patients who have been newly diagnosed and are receiving adjuvant radio and/or chemotherapy treatment, as also is sleep disturbance (Irvine and Vincent 1998; Stone and Richards 2000; Bower, Ganz et al. 2005; Byar, Berger et al. 2006; Reuter, Classen et al. 2006; Ganz and Bower 2007).

A number of psychosocial, educational, exercise, relaxation and distraction interventions have been shown to alleviate fatigue, particularly among breast cancer patients, the population where the majority of fatigue research has been conducted. Some researchers recommend a combination of these different interventions as most likely to be significantly effective in the reduction of fatigue in this population (Kruse, Grunschgl et al. 2003; de Nijs, Ros et al. 2008).

It is very encouraging to note that the participants' energy levels increased significantly, suggesting that they did benefit both from improved energy and

sleep patterns as a direct result of being involved in an eight week group music improvisation intervention. It warrants questioning if this increase in energy and improved sleep was achieved as a direct result of music improvisation.

Of particular interest is how the participants in this study report experiencing different feelings when playing different percussion instruments. This would suggest that two of the five major elements in music, those of tone colour (the texture of the sound of each instrument and of the music being improvised by the group) and duration (the tempo and rhythm at which the instruments and the music was being played), had a positive role in the energy arousal outcome of this study (Alvin 1991). By the women's own descriptions of their experiences, it would suggest that they were responding to the tone colour of the instrument they were playing and the overall production of the music they were creating, as it is this element in music which is known to have the power to elicit a deep psychological response (Bunt 1994). Secondly, responding to duration, which determines the speed at which the music the women were creating, was being played, could have resulted in their feelings of increased energy, particularly if music was being played at a lively tempo.(Alvin 1991)

The participants' significant increase ( $p < 0.000$ ) in their hedonic arousal mood tone, demonstrated that music improvisation was able to assist the women in their feelings of social, emotional and physical well-being. This is an important aspect of psychosocial interventions, which primarily addresses the quality of life of cancer patients (Blake-Mortimer, Gore-Felton et al. 1999; Hilliard 2003; Kerr, Engel et al. 2003; Bardwell, Major et al. 2004; Gordon, Battistutta et al. 2005; Scheier, Helgeson et al. 2005; Bozcuk, Artac et al. 2006) (Korstjens, Mesters et al. 2006). Quality of life incorporates many dimensions, including those of physical, social and emotional functioning(Aaronson, Ahmedzai et al. 1993), which if improved, have the potential to enhance the quality of life of cancer



patients. Therefore this is an important finding for the positive therapeutic effect which group music improvisation has had on the participants in the study.

All of the women reported how they enjoyed themselves by having fun and shared laughter with the other women. Thus, by engaging in music therapy they had a social experience as well as an emotional and physical one. This social aspect became apparent, when one of the women attended each and every week of her eight week music therapy intervention, even though she rarely joined in any of the music improvisations. The participants also reported how they generally felt in a better mood. Some of the women reported how they felt physically better as a result of both making and playing music together and by the playing of specific instruments. Of particular interest were the descriptions by a few of the women, who reported how they felt the vibrations of certain instruments penetrate and go through their bodies, either whilst playing an instrument themselves or as a result of feeling the vibrations of an instrument someone else in the group was playing. For one woman it was more of a spiritual experience, whilst another woman philosophised as to whether her emotional state had a physiological flow on to her body, and whether this flow on was changing her body chemistry at a cellular level. This woman was very aware of the physical effect the vibrations from the instruments were having on her body. Intensity, which is the amplitude of vibrations which affect the volume of the music being played, is another known element in music which is known to elicit both emotional and physical responses (Alvin 1991).

Candice Pert, a neuroscientist and psycho pharmacologist, and a pioneer of mind-body work in the early 1970's, identified the connection between neuropeptides (nerve proteins), thoughts and emotional responses.

Neuropeptides, small peptides, which are released by the brain into the central

nervous system (which can also enter the blood supply and act as hormones) are messenger molecules which transport information to the receptor sites of cells around the body – hence the mind/body connection. (Pert 1997; Pert 2006). Pert's discovery has been an important factor in the evolving science of psychoneuroimmunology (PNI), the study of the interactions between psychological processes (mind) and neurological, endocrine and immune functioning (body). Much research has focussed on the scientific pathway of connection between the body and mind, and whether the mind does have the power to heal the body (Fife, Beasley et al. 1996; Lengacher, Bennett et al. 1998; Kiecolt-Glaser and Glaser 1999; Mailoo and Williams 2004; Langley, Fonseca et al. 2006). The quantitative results of this study have demonstrated that the women did experience an improvement in the four psychological mood states of: energetic arousal, hedonic tone (well-being), tense arousal and anger/frustration. There was also an improvement in their physiological levels of sIgA and cortisol as a result of GIMT, which is suggestive of a link between the positive emotions (the mind) and the immune system (body) of the women in this study.

Laughter, smiling, happiness, exercising, singing and listening to music are known to release endorphins in the brain. Endorphins, which have a similar chemical structure to morphine are one group of neuropeptides which have an opiate effect, so it is possible, though not scientifically proven, that a general feeling of well-being can positively affect and alter the physiology of the body (Barak 2006; Anderson 2007). The qualitative findings in this study have demonstrated that through GIMT the women experienced fun and laughter, of which the women repeatedly said "laughter is the best medicine". The women further experienced feelings of happiness. They sang during improvisations and physically exercised through the physical playing of the percussion instruments. Therefore, it is possible that the women in this study experienced a

release of endorphins to their brain as a result of GIMT, although there is no scientific evidence to support this.

The participants' levels of tension were demonstrated to have significantly ( $p < 0.000$ ) decreased over the duration of the eight week music therapy intervention, thus allowing them to feel more relaxed, which flowed on into better sleep patterns for some of the women. Many of the women described how they felt relaxed when either playing a specific instrument and/or by the relaxing nature of the music they sometimes created together during an improvisation. This was particularly the case with the rain stick. The Mexican rain stick is a dried out cactus with its exterior needles pressed to the interior of the stem of the cactus, through which the dried seeds of the cactus glide up and down the stick. If the tempo (speed) of the music being played was vivace (lively) prior to the rain stick being introduced in to the improvisation, as soon as the rain stick was introduced the improvisation would immediately change the whole structure of the improvisation into that of slower (adagio) more calming piece of music. The same effect could also be experienced when the metallaphones, xylophones, glockenspiels, wind chimes and various types of bells (all tuned percussion instruments) were played together, as they often produced melodic quiet music of a relaxing nature.

Many studies have investigated the effects of listening to pre composed music, both recorded and performed live, to different populations of study participants for relaxation, anxiety and stress. These studies have researched the effect of both selected music, by the researcher and the preferred music of the participants being studied. Listening to music has either stood alone, or been with the addition of various relaxation techniques (Presant, Presant et al. 1988; Davis and Thaut 1989; Guzzetta 1989; Pfaff 1989; Metzler 1991; Sloman 1995; McKinney, Tims et al. 1997; Robb 2000; Burns, Harbuz et al. 2001; Nicholson

2001; Zhong 2001; Walworth 2003; Ferrer 2007). In general these studies have been inconsistent in their findings. A medical music therapy meta-analysis conducted in 2005 (Dileo and Brant 2005) revealed no statistically significant difference of therapeutic effect between preferred music and music selected by music therapists in music therapy research. A reason for the meta-analysis findings could be, that in spite of the known elements in music which do elicit a relaxation response (played quietly at a heartbeat pulse, with a smooth melodic line i.e. no great leaps or troughs in pitch), music is emotive and as such can evoke many emotions. The same piece of music can therefore have the potential to be relaxing for one person, whereas for another person it can elicit distressing emotions through perhaps unhappy memories thus creating tension. It is therefore very rewarding and exciting to discover that music improvisation, the music therapy technique used in this study, has demonstrated that it reduced tension and thus possibly promoted relaxation and improved sleep for the participants involved in this study.

The participants' levels of anger and frustration were significantly ( $p < 0.001$ ) decreased over the duration of the eight week music therapy intervention, demonstrating that music improvisation was able to offer them a safe outlet upon which to release their anger and frustration.

All but one of the women expressed anger at their breast cancer diagnosis, a natural response when a person's life is threatened and they are frustrated at no longer being able to do many of the things they were able to do before their diagnosis, primarily due to their treatment regimes (Garrison 1995; Carpenter, Johnson et al. 2002; Edwards, Gibson et al. 2003; Hack and Degner 2004; Lee, Chung et al. 2004; Leiberman and Goldstein 2006). Many of the women chose to play the drums as a means of expressing and releasing their anger. They did this by playing the drums loudly and often in a frenzied manner after which the

women would often give a loud sigh of relief and say they felt better. The women explained that this was a physical way in which they were able to release their anger and frustration, a way of getting both of these emotions out of their system in an acceptable and safe way.

Much research in music therapy with cancer patients has been in the area of palliative care, where the passive music therapy technique of listening to music is the preferred music therapy intervention. This is the first study, to the best of the researcher's knowledge, to investigate the potential benefits of music improvisation with recently diagnosed breast cancer patients.

It is encouraging that in spite of a small sample size, the four measures of mood quantitatively demonstrated significant positive mood changes and that the qualitative data supported these quantitative measures. This suggests that the participants involved in this study did therapeutically benefit from their eight week group music improvisation intervention.

# **Chapter 8 Discussion and Conclusions**

## **Introduction**

This final chapter discusses the entire PhD study. It is structured around discussion of the pilot study, which informed and is an integral part of this current study. The main study qualitative and quantitative data analysis and results are drawn together for general discussion. The study limitations and conclusions are discussed. Finally, recommendations for the replication and/or extension of this study, future research and recommendation for the implementation of music therapy services are presented.

## **8.1 Pilot Study**

The pilot study which was successfully carried out in two stages and completed in the UK at the end of 1998, directly informed and underpinned this current doctoral study. The quantitative UWIST-MACL psychological results and qualitative focus group findings of stage one of the pilot study revealed altered mood states at the conclusion of both the music listening and improvisation music therapy sessions. These initial findings led to the addition of the quantitative physiological measures of sIgA and cortisol in stage two of the study. The reason for the addition of these two physiological measures in stage two was to investigate whether there was a possible link between the altered mood states of the participants' and their immune functioning.

Although no statistically significant correlations were found between the psychological and physiological measurements, the results did illustrate a positive link between the effects of both listening to music in a relaxed state and group music improvisation, on the positive emotions and the immune functioning of the cancer patients involved in the study. These results and

findings are discussed in full in Chapter 3. They were promising enough that the further work presented in this Thesis was required and justified.

## **8.2 Analysis and Results**

The study successfully carried out a mixed methods qualitative/quantitative research approach to address the objective of the research, to investigate an eight week group improvisational music therapy intervention, amongst women recently diagnosed with breast cancer. A general discussion of the study findings is presented.

### **8.2.1 Qualitative**

The qualitative data collected through semi structured interviews, focus group and reflective experience work were analysed and revealed the participants' lived experience and perception of group improvisational music therapy. The analyses produced three major themes, those of music therapy as a safe haven, music therapy as a gift of empowerment and experiencing the differences between conventional medical care and music therapy (GIMT) for women recently diagnosed with breast cancer.

The study revealed that GIMT provided the participants with a safe haven, enabling them to positively experience a shared identity with other women diagnosed with breast cancer. GMIT further enabled the participants to rediscover and maintain parts of their established self identity, whilst helping them to further adjust to an identity as a cancer survivor. To be able to come to music therapy and "let it all out", "be a child again" and "feel normal" gave the women a special time and place for themselves where they could just **be** themselves.

The participants positively experienced peer support, both given and received through musical and verbal interaction, which led to bonding on a deeper level with each other and cohesion within the group.

In the initial stages of the intervention, some of the women found it difficult to receive support from the other women, as they were mothers who were used to giving their own families support and nurturing, with little time for themselves. This was particularly true for two of the women who had physically and intellectually disabled children, for whom they were the sole supporter and nurturer. To feel supported and nurtured within the group for these particular women was a new experience which enriched their lives.

One woman found it difficult to play in many of the improvisations because she said, "I felt stupid and uncomfortable" and only liked to "listen to jazz".

Amazingly, she attended each and every one of her eight week GIMT intervention, where she laughed and joked with the other women, who acknowledged that even though she rarely actually did anything musically during the sessions, she was still an important part of the group. This woman was going through difficulties in her work situation, so for her it was a relief from work to come to music therapy, which she said always made her "happy and laugh". This was observed by the other women who often remarked that she always left at the end of the session happier than when she'd arrived. For this woman it was evident, that it was the social and emotional support the group offered her, that made her want to attend each week.

The depth of support and bonding was evident in many of the music improvisations, particularly on one occasion when one of the women couldn't talk about how she was feeling, when she arrived for a session deeply distressed. She just sat down and played how she was feeling to the group, who



very tentatively began to join in with her playing – supporting her musically. Please listen to track 6 of the CD in Appendix 1 in which this will be heard.

Music therapy as a gift for empowerment enabled the women to experience regained control over their lives. The feeling of loss of control, having been experienced by all of the women in the study due to their illness, had left many of them feeling powerless. GIMT gave these women back control, through having choice and being actively able to make their own decisions musically.

Music improvisation is an active form of therapy and as such the women were able to take active control over, the instruments they chose to play, the way they played their instruments and what type of music they created. The women often described this as feeling “enabled not disabled”.

The women’s confidence increasingly grew over the weeks of the intervention to the point where they were able to confront issues previously avoided. One woman was able to confront and face her own mortality whilst another woman was able to resolve a long standing difficulty with a work colleague. Some of the women experienced empowerment by taking control musically, either by leading an improvisation or by conducting it – which always ended up with raucous laughter.

Through the women’s active involvement in GIMT they were given the opportunity to experience the difference between their conventional medical care for breast cancer and music therapy, which they primarily described as therapeutically addressing their emotional side, as opposed to their conventional medical care, which they perceived as addressing their physical side.

Concern needs to be raised as a result of some of the women's experiences of how they were given their breast cancer diagnosis, and this aspect of the study warrants further investigation.

The women were all united in saying how they felt music therapy (and other complementary therapies) should be offered to all women with breast cancer, as an important part of their overall treatment care plan. They further suggested that music therapy should be made available at every stage of their breast cancer, including breast screening, which the women found distressing. All of them said they were anxious about their further follow up breast screening. The women's perceived anxiety is supported by the literature, which associates mammography recall and follow up with psychological distress (Lerman, Trock et al. 1991; Cockburn, Staples et al. 1994; Sandin, Chorot et al. 2002; Sofair and Lehlbach 2008).

The women suggested that listening to music programmes specifically created for them by a music therapist for relaxation during chemotherapy and radiotherapy procedures would have been really helpful for them. The women who had completed the active part of their conventional medical treatment unanimously said that as they no longer had to attend regular hospital and doctors appointments they felt they had been "deserted". They said that music therapy was a great source of comfort for them, and that it should be an ongoing form of support which they could access at times of need.

### **8.2.2 Quantitative**

The psychosocial (HADS; miniMAC; EORTC QLQ-30 and QLQ-BR23) measures administered in this study disclosed no statistically significant changes. However as reported in Chapter 6, positive trends were found in thirteen of the seventeen subscales of these measurements, indicating that the participants did experience improvement, in their levels of anxiety and

depression, in their coping skills (which could be reflected in their perceived empowerment, reported in the qualitative findings of this study) and in their quality of life over the eight week period of the GIMT intervention.

Many of the women stated that they were neither confident nor happy completing the psychosocial questionnaires, as they felt that many of the questions were irrelevant to them at their early stage of the cancer trajectory, so this may also have had an influence on the data analysis. Future research tools with this population of recently diagnosed women with breast cancer may therefore need to be either adjusted and/or new measurement tools developed.

Perhaps, with an increase in the overall length of the eight week study, to a ten or twelve week intervention, these trends would have been even stronger and with a larger sample size quite possibly significant. Follow up measures post the intervention may also have revealed any ongoing positive effects.

Psychosocial interventions have consistently been demonstrated to assist women with breast cancer in the areas of anxiety, depression and coping skills, leading to better quality of life and psychological adjustment. GIMT fits well within the fields of psycho-oncology and CAM as an intervention which can assist all of these areas and thus have a positive impact on the well-being and quality of life of women with breast cancer (Watson, Greer et al. 1991; Edelman, Bell et al. 1999; Antoni, Lehman et al. 2001; Cunningham, Phillips et al. 2002; Ross, Boesen et al. 2002; Antoni, Lechner et al. 2006).

The women experienced improved mood states in the areas of well-being, energy, tension, anger and frustration. The first three of these findings replicated the pilot study, with anger and frustration an added component in this study, which also detected a positive response. The qualitative findings of this study further supported these quantitative results demonstrating that

through the women's active involvement in GIMT they felt better, which they repeatedly said they did. They gained energy and felt less tense, angry and frustrated.

Many of the women would often arrive for music therapy feeling tired, with some women positively fatigued, as a result of their radio - and/or chemotherapy treatment. They invariably reported how their energy had somehow been "renewed" by the end of the sessions.

The active component of GIMT encourages and requires physical exercise to play the percussion instruments, particularly the drums. Physical exercise has been demonstrated to reduce symptoms of fatigue in women with breast cancer, as reported in a recent meta analysis conducted by McNelly, Campbell et al (2006), which analysed 136 studies of women with breast cancer. Their findings demonstrated that exercise not only impacts positively on the physical functioning of women with breast cancer, but most importantly that it reduces symptoms of fatigue (McNeely, Campbell et al. 2006).

Gaining energy through GIMT is a very important finding in this study as fatigue is known to be a major and often persistent symptom of cancer and its treatment. It is more severe in patients who have been newly diagnosed with cancer as a result of their adjunct radio and/or chemotherapy treatments (Irvine and Vincent 1998; Bower, Ganz et al. 2005) (Stone and Richards 2000; Bower, Ganz et al. 2005; Byar, Berger et al. 2006; Reuter, Classen et al. 2006; Ganz and Bower 2007).

When the women's levels of energy increased their tension decreased along with their anger and frustration, which can be directly associated with both their physical playing and the release of their anger and frustration on the actual instruments. As one of the women said, "What I felt was really good for

me was being able to bang the drum and bang it as loud as I could getting out frustration – yes venting my frustration and anger about my illness”.

Psychosocial interventions, specifically stress management strategies with women with breast cancer, have been shown to both improve their quality of life and decrease their levels of cortisol (Cruess, Antoni et al. 2000; Turner-Cobb, Sephton et al. 2000; McGregor, Antoni et al. 2004; Antoni, Lechner et al. 2006; Chan, Ho et al. 2006). In this study, the women’s levels of cortisol were also demonstrated to decrease pre/post each of the weekly sessions corresponding with a decrease in their levels of tension, anger and frustration thus demonstrating that GIMT could also be considered an effective stress management strategy for women recently diagnosed with breast cancer.

The results of the sIgA sampling were confusing, even with the removal from the final analysis of the extreme differences in sIgA concentration – see 6.5. The analyses demonstrated that the participants’ levels of sIgA did increase pre/post session in weeks two, five, six and seven of the study intervention, which could suggest that the participants experienced an increase in their immune functioning during these particular sessions. However, no effect was shown pre/post session in weeks three, four and eight. These results were in contrast to the pilot study where the level of sIgA was shown to decrease slightly pre/post the group improvisation music therapy session.

As previously discussed in Chapter 3, the results of the sIgA analysis may reflect the physical nature of the active music therapy technique of improvisation. Both the secretion rate and concentration levels of sIgA may have been impaired due to the physical exercise undertaken by the participants when actively playing the percussion instruments. Many of the participants would arrive for the evening sessions in a fatigued state, particularly those who were undergoing active radio and chemotherapy treatment, which may have

affected their levels of sIgA. Chemotherapy has been demonstrated to lower concentration levels of sIgA (Laine, Meurman et al. 1992; Jankovic, Jelic et al. 1995; Meurman, Laine et al. 1997; Harrison, Bigler et al. 1998; Jensen, Mouridsen et al. 2008).

The sports literature has demonstrated that the secretion rate and concentration of sIgA is inhibited following exercise, but is then normalised between one to six hours following the completion of exercise (McDowell, Hughes et al. 1992; Mackinnon and Hooper 1994; Reid, Drummond et al. 2001; Kimura, K. et al. 2007; Oliver, Laing et al. 2007). However, in this music therapy study it was considered inappropriate to ask the participants to wait for one hour following the completion of their music therapy intervention before producing their post saliva samples.

It is interesting to note in Kuhn's study (previously reviewed in Chapter 2) that even in healthy individuals there was extreme variance in concentration levels of sIgA between each of the three groups involved in the study, suggesting that there is a large variation in sIgA parameters within individuals (Kuhn 2002).

This aspect of the study warrants further investigation.

## **8.3 Limitations**

There were several limitations to this study and as such caution should be exercised with the interpretation of the study results and conclusions. The obvious limitation was the difficulty in recruitment into the study. This would appear to have been primarily due to a majority of women recently diagnosed with breast cancer having already been recruited into other clinical trials, either directly through Hunter Breast Screen or by their treating physicians.

Secondary to this, music therapy was not a regular therapy offered to oncology patients within any medical setting in Newcastle or within the Hunter Region

of NSW. As such, none of the women recruited into the study were either familiar with or had experienced music therapy prior to becoming study participants. This was in effect, a positive outcome for the study as potential participant bias was minimised.

As a result of the slow recruitment study phase, two GIMT interventions were conducted. The first GIMT intervention took place in the winter time and the second intervention in the summer time. No control group was recruited due to the slowness of recruitment with potential participants stating that they would not be interested or willing to consent to participate in the study if they were to be randomised into a control group.

The winter time GIMT intervention proved to be problematic with irregular attendance due to common winter ailments and the cold and dark winter evenings. In addition, some of the women said they often felt too ill to attend. This they further attributed to their general fatigue as a result of their breast cancer and its treatment. This resulted in missing quantitative data for many of the women in the first GIMT intervention. The study protocol was varied for the second GIMT intervention from fortnightly data collection to weekly collection of the data. This ultimately resulted in an imbalance of data between the two intervention groups which resulted in the data being far more difficult to analyse.

The incident (described in 6.7) which occurred during the second GIMT intervention appeared to have affected the UWIST-MACL mood measures taken pre/post the music therapy intervention that week, which also appeared to have a flow on effect into the third week of the study intervention. Three women withdrew from the study as a result of the incident and with a reduced sample size this could possibly have affected the overall results of the UWIST-MACL measure over the eight week period of the intervention. As a further

result of the incident, the venue at which the intervention was held was changed causing some upset and disruption to the women. This could also have possibly affected the overall psychosocial, psychological and physiological results of the study. Allowing the participants in the first group to take their psychosocial questionnaires home to complete (due to the winter time weather conditions) at the mid point of the study (week four) resulted in one woman's set of data going missing, which negatively affected the study data analyses.

## **8.4 Conclusions**

The pilot study carried out in the UK investigated one-off music therapy sessions of both listening to music in a relaxed state and improvisation, with groups of cancer patients with a variety of different cancers, at different stages of the cancer trajectory and treatment phase. The psychological, physiological and qualitative findings suggested a link between the positive emotions of cancer patients and their immune functioning.

The pilot study and its development informed and provided the foundation for this main doctoral research study. This current research study used an extended mixed methods research approach in order to investigate the effects of an on-going eight week group improvisation music therapy intervention amongst women recently diagnosed with breast cancer.

This research further revealed the participants' lived experience and perceptions of GIMT by conducting and thematically analysing, the semi-structured interviews carried out with each study participant, a one off focus group and the participants' own reflective experience work. The researcher monitored the participants' psychosocial changes by administering the HADS, miniMAC, EORTC QLQ-30 and QLQ-BR23 questionnaires at three time points throughout the study. The participants' psychological mood changes and their



physiological changes in sIgA and cortisol were also monitored by administering the UWIST-MACL and saliva testing pre and post the music therapy sessions.

LMM analyses of all the quantitative data proved to be the most appropriate analysis to conduct due to missing data and the small sample size. This method of statistical analysis could prove to be valuable to other researchers in the field of music therapy and other complementary therapies, researching a cancer population, as missing data are often a problem faced by researchers due to the nature of the illness and its treatment.

Statistical evidence supporting both the psychological and physiological measures taken in this study are suggestive of a positive link between the effects of GIMT on positive emotions and the immune system of women recently diagnosed with breast cancer. This is further supported by the qualitative data collected from the semi-structured interviews, the one off focus group and the reflective experience work, with one particular woman stating:

I use my music bowl [Tibetan music bowl] for meditation every day – just to feel the vibrations and the sound which brings me to balance...know that if I've got a frustrating situation in the house that if I play my music bowl it changes my whole physiology (Mary).

However, no statistically significant correlation was found between the psychological mood and physiological cortisol measures in this study. This is possibly due to the small sample size, resulting in the lack of power in the study. Therefore, no firm conclusions can be made.

Through the experience of GIMT the women in this study experienced, a shared breast cancer identity with other group participants and reconnection with and a building upon their existing self identity. The women further experienced adaptation to a cancer survivor identity. This was achieved through the

assimilation of their existing self identity, by reconciling their new experience of physical, emotional, existential and social changes as a result of their breast cancer experience.

The women experienced peer support both received and given through musical and verbal communication and a deep sense of bonding with each other leading to cohesiveness within the group. Through group improvisation, the women experienced distraction from their breast cancer diagnosis and its treatment. The women experienced a sense of empowerment through choice and confidence building and also gained an understanding of the differences they perceived to have experienced between their conventional medical care and music therapy intervention.

Increased levels of energy, well being and immune functioning were experienced by the participants who also experienced decreased levels of stress, tension, anger, frustration, anxiety and depression. The participants further experienced an improvement in their coping skills in respect of decreased anxious preoccupation, cognitive avoidance, fatalism and helplessness/hopelessness, in addition to increased cognitive, emotional and physical functioning. Physical symptoms of fatigue, nausea and vomiting were also diminished for the study participants.

Caution should be exercised when interpreting the findings of this study due to the small sample size, resulting in the lack of power in the quantitative component of the study. As a result of small sample size and the lack of power, the quantitative results should be generalised with caution to other populations of recently diagnosed women with breast cancer patients who are in receipt of GIMT. However, it would appear that the participants in this study did positively benefit from their involvement in an eight week GIMT intervention.

In conclusion, the study aim; to investigate the lived experience, perceptions and effects of an eight week group improvisation music therapy intervention with women recently diagnosed with breast cancer, was realised.

## **8.5 Recommendations for Future Research**

As a result of this mixed methods doctoral research study the following recommendations are firstly made for the replication and extension of this study and secondly recommendations for future research are discussed.

### **8.5.1 Study Replication and Extension**

In order to successfully replicate and/or extend this study it would be helpful to any potential researcher to be afforded easier access to participants via increased education and communication with treating medical facilities and treating physicians. This could also be enhanced by increased media coverage prior to and during the recruitment phase, in order to successfully recruit a larger sample size of women recently diagnosed with breast cancer. It is important to conduct any replication or extension of this research with a larger sample size, as it would then be possible to randomize participants to either an intervention or a wait list control group, in order to conduct more rigorous statistical analysis and generalisation of the results.

Extending the GIMT intervention from eight weeks to a time period of ten or possibly twelve weeks would optimise any effect of GIMT. Follow up of the quantitative measures and qualitative interviews at three months post intervention with the participants, would further capture any possible ongoing effects of GIMT.

Recruiting participants, who were not undergoing active radiotherapy or chemotherapy, would minimise any confounding effects on the physiological measurements of sIgA and cortisol. Multi baseline measures of sIgA and

cortisol need to be conducted, in order to obtain individual participants sIgA and cortisol parameters. Participants are requested to collect their own saliva sample at one hour post each GIMT intervention, possibly at their own home, which would then be stored overnight in a fridge, until collection the following day. The quantitative questionnaires should all be completed at the research venue and not taken home to complete to avoid any unnecessary missing data.

The session description, procedure and format of this study would need to be adhered to in any further replication study with a recommendation that the intervention and wait list control groups contain approximately eight to ten participants and to be run concurrently.

In addition, qualitative methods such as patient diaries may provide even more valuable insights into the women's perceptions and lived experience of GIMT.

### **8.5.2 Future Research Recommendations**

With the quality of life of cancer patients and their adjustment to cancer increasingly becoming of paramount importance, future research to identify other music therapy interventions in addition to GIMT that can offer benefit to cancer patients (at every stage of the cancer trajectory) and cancer survivors should be encouraged. In light of some of the inappropriate questions asked within the questionnaires used in this study, either current standardised measures need to be adapted and/or new measures developed for use in research in the area of women recently diagnosed with breast cancer.

Future music therapy interventions of ten to twelve weeks duration would possibly optimize the effects of music therapy. It is recommended that quantitative measures and qualitative interviews be administered at different time periods post intervention in order capture any ongoing effects of the music therapy intervention.

GIMT research conducted with homogenous groups of women diagnosed at different stages of breast cancer (Stages I-IV), and from different cultural backgrounds is needed in order to compare study outcomes, which would have the potential to design specific music therapy programmes to address any differences in cancer stage and cultural background.

In order to investigate gender differences, that GIMT and other music therapy interventions be researched with a homogenous population of men specifically with prostate cancer, which is now the most common cancer diagnosis in males in Australia and the second most common cause of death<sup>8</sup>.

## **8.6 Recommendations for Implementation of Music Therapy Services in Cancer Care**

GIMT was clearly therapeutically beneficial for the women who saw so much value in the way they were able to chose and use the percussion instruments to create and make music together and the fun and laughter they experienced doing it. The women's quality of life was enhanced. This would not have happened with conventional medical care alone.

Group improvisational music therapy should be widely implemented as a complementary therapy alongside conventional medical care and made available to everyone with breast cancer as it is an effective and inexpensive form of therapy.

## **8.7 Post Script**

An invitation was sent to the women involved in the study inviting them to take part in 'A Celebration of Life' music therapy workshop in December of

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<sup>8</sup> Australian Institute of Health and Welfare 2006

2007. Ten of the fifteen women study participants attended. One participant had since died, two participants were ill and unable to attend and two participants had moved to another state in Australia.

At the completion of the celebration workshop each woman in attendance was presented with the results of the study and with their own personal results. Results were mailed to the women who were unable to attend.

The workshop was made possible as a result of a small postgraduate grant being awarded to the researcher by The Greater Newcastle Community Forum on Health in order to conduct the celebration workshop.

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## Appendices