Therapeutic Art-Making

An adaptation of the Pennebaker expressive writing model to assess the effectiveness of art-making as a therapeutic intervention.

Jessica Henry

Master of Arts

2012

Therapeutic Art-Making

An adaptation of the Pennebaker expressive writing model to assess the effectiveness of art-making as a therapeutic intervention.

Jessica Henry

A thesis submitted to Auckland University of Technology in partial fulfilment of the requirements for the degree of Master of Arts (MA)

2012

School of Social Sciences

Supervised by Dr Erik Landhuis

Table of Contents

List of Figures

List of Tables

Attestation of Authorship

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or any other institution of higher learning.

Signed _____ Date: 14th December 2012

Jessica Henry

Acknowledgements

This project would not have been possible without the support of many people. Many thanks to my thesis supervisor, Dr Erik Landhuis, who read my numerous revisions, encouraged and advised. Thanks to the School of Social Sciences, for awarding me a Graduate Assistantship, which provided me with the financial means to complete this project. Thank you to Kay Switzer, for proofreading my drafts.

I would also like to thank all of my participants, who volunteered their time, and spent many hours with me completing the sessions and assessments in this study. I thank you for the use of your art-works to illustrate this thesis.

And finally, thanks to my family, James, and numerous friends who endured this long process with me, always offering support.

This study was granted ethical approval by AUTEC, reference number 11/270.

Abstract

Introduction: Expressive therapies are commonly thought to benefit psychological and physical wellbeing. Pennebaker and Beall (1986) first demonstrated that emotional expression through writing may alleviate the adverse effects of stress and trauma. Another form of expressive therapy commonly cited is expressive art-making. Some posit that the visual medium of expression might be suited to those people who find verbal (or written) expression difficult. However, research into the efficacy of art therapy is limited, both in terms of quality and quantity. This study adapted the methods commonly employed by the researchers investigating therapeutic writing.

Methods: Sixty university students were randomly assigned to one of three groups: an expressive-drawing group; a still-life comparison group; and a no-contact control group. Six drawing sessions were conducted over three weeks. Measures of physical and psychological wellbeing were completed at regular intervals over a university semester.

Results: No differences were found between groups on any of the measures of psychological wellbeing, with trends indicating that the expressive drawing group had higher levels of distress than those in the comparison groups. However, participants in the expressive-drawing group reported more days sick than those in the two comparison groups. These findings provide little evidence to suggest that the adapted 'Pennebaker Paradigm' benefitted the participants in this study. Furthermore, attrition was highest in the expressive-drawing group.

Conclusions: Results from this study suggest that the benefits of expressive therapies may be medium specific, and that the mechanisms for change differ depending on the medium. It is proposed that future research in art-making should include a focused reflection task, or be combined with expressive-writing tasks.

"I found I could say things with colour and shapes that I couldn't say any other way – things I had no words for" Georgia O'Keeffe *(Iconic American artist*)

Psychotherapy is the attempt to heal the mind through psychological methods such as communication and behavioural change, and a range of therapies are used to treat clients, including psychodynamic, humanistic, gestalt, behavioural, and cognitive therapy (Nelson-Jones, 2000). More recently a technique known as art therapy has been introduced to the therapeutic domain (Case & Dalley, 1992), which is one of the mediums used in expressive therapy, a group of therapies which use non-verbal methods to facilitate therapeutic change in clients (Malchiodi, 2005).

Art Therapy is a discipline in mental health that has rapidly grown since the 1950's (Rubin, 1999), and is a therapeutic technique that can include art forms such as drawing or painting (Malchiodi, 2010), with the supposition that expression through a visual form can have therapeutic benefit. The 'International Networking Group of Art Therapists' includes members from 80 different countries, and there are professional associations for art therapists in New Zealand, Australia, Britain, Germany, Ireland, the United States of America and Canada (Campbell, 2009). Art Therapists practice in hospitals (Bar-Sela, Atid, Danos, Gabay, & Epelbaum, 2007; Wood, Molassiotis, & Payne, 2010), universities (Curry & Kasser, 2005), prisons (Gussak, 2009) and private practices (Case & Dalley, 1992), with children (Regev & Guttmann, 2005), students (Mercer, Warson, & Zhao, 2010), and the elderly (Rusted, Sheppard, & Waller, 2006) as well as the general adult population (Australian and New Zealand Association of Art Therapy (ANZATA, 2012)).

Expression through art-making is not limited to psychology or therapeutic intervention. 'Expressionism' was a prominent art movement in the early twentieth century, originating in Germany and influenced by the works of Munch and Van Gogh (Bassie, 2008). For these artists, the subject of their painting was inner emotion rather than any representation of the

external world, or exaggerated and distorted images of an outside world as representation of emotion (Bassie, 2008). Mexican artist Frida Kahlo (1907-1954) created masterful works that exposed her life-long suffering resulting from an accident in her youth that left her crippled (Herrera, 2003). Whether painting her feelings improved her psychological or physical wellbeing is unknown, but she did claim that she had a 'need' to express, and that "her paintings formed a visual diary, an outward manifestation of her inner dialog" (Souter, 2011, p. 7).

According to Carnes (1979), Einstein claimed that he thought visually, and that writing theories in words was a secondary activity to sketching. Carnes also reminds readers that many academic disciplines rely on diagrams to convey meaning when describing abstract ideas - particularly mathematics, physics and economics. Day-to-day and ordinary tasks such as assembling a new piece of furniture are also generally accompanied by visual diagrammatic instructions. It seems the more complicated or abstract an idea is, the more we need to visually explain, as written words cannot adequately describe interactions between multiple concepts. Engaging in art-making to aid understanding is one theory used to explain how art therapy methods might help individuals to resolve personal issues (Rubin, 1999).

Art-making lacks the structure and organisation of verbal or written expression, as there are few rules such as spelling, grammar or syntax to adhere to, and art-making does not need to involve language processes, as it is a representation of ideas, whether literal or abstract (Arnheim, 1970). There are some claims that certain memories, (particularly traumatic) are processed and stored visually, which means that a visual form of therapy may better access this memory store (Appleton, 2001).

To be employed as an Art Therapist in New Zealand and Australia, practitioners are required to have completed specialist qualifications at post-graduate level. There are at least 200 registered Art Therapists in Australasia (ANZATA, 2012). However, many other professions use

methods of art for expression in their interactions with clients – for example teachers, nurses, social workers and lawyers in court (Campbell, 2009). Children who are admitted as patients to Starship Hospital in Auckland are encouraged to engage with play specialists, who use art-making to help children understand their illnesses (Erb, 2008), and the New Zealand court system recently allowed victims of crime to present artworks as part of their impact statement to help the victim explain and understand the effects of the crime on their wellbeing (Cabinet Domestic Policy Committee, 2011; Levy, 2011).

There are various definitions for art therapy. Most include the use of participatory art-making as a method of facilitating therapeutic reflection by the client. For example, the Australia and New Zealand Art Therapy Association (ANZATA, 2012, p. 1) states that:

> Arts therapy is based on the **belief** that the process of engaging creatively in drama, movement or art-making, within a therapeutic relationship, supports changes in the client's inner world, and helps them to develop a more integrated sense of self, with increased self-awareness and acceptance. *(Emphasis placed by author of this thesis).*

Similarly, a definition offered by Art Therapy New Zealand (2012, p. 1) states:

> Art Therapy is a safe, supportive therapy aimed at building, restoring and maintaining the mental, emotional, physical and spiritual well-being of people. Based on the **belief** that the creative processes involved in self-expression through the arts are healing and life-enhancing, art therapy combines psychotherapeutic support from a therapist with the exploration of issues using art materials and practices. *(Emphasis placed by author of this thesis).*

Note that both organisations define art therapy as a practice is based on belief. This is an issue because art therapy is considered to be a healthcare, and there are ethical concerns over

providing healthcare treatments that have no proven benefit. It is important to find if the assertion that art-making is therapeutic is valid, because if not, at best, it is a misuse of time and resources, and at worst, it cannot yet be ruled out as harmful. Carolan (2001) discusses this issue, and argues that "it is not enough to say that 'art heals'… there is a naiveté in these statements when they are presented as absolutes, which reflects negatively on the profession" (p 193).

A recent survey of 1,000 active American Psychological Association members found that they did not support art therapy as a treatment (Bellmer, Hoshino, Schrader, Strong, & Hutzler, 2003). The respondents did not see it as a credible form of psychology, did not think that it would experience much growth in the future, and would not personally utilize services in the field. Bellmer et al. (2003) did not ask respondents to give reasons for their opinions toward art therapy, but suggested that many academics may be unaware of the discipline as it is a relatively recent form of therapeutic method.

In 2000, Reynolds, Nabors and Quinlan conducted a meta-analysis of all published art-making studies meeting the following criteria: to have assessed the impact of art therapy on a measurable outcome (i.e. changes in score on a psychometric scale or physical measures rather than anecdotal evidence); and to have assessed a group (rather than a case study). Although two journals, 'Art Therapy: Journal of the American Art Therapy Association' and 'Arts and Psychotherapy', dedicated to art therapy had been in publication for 30 years, they found just 17 empirical studies. Instead of experiments, most of the published articles found in this field were concerned with theoretical concepts or case studies (Alvares, 1998; Anderson, 1995; Landy, 1991), which generate hypotheses for the field, but do not test them to an adequate degree. Ten years on, Slayton, D'Archer and Kaplan (2010) conducted another meta-analysis, and found another 11 studies published with a randomised group experimental

design since Reynolds, Nabors and Quinlan's (2000) study. Both meta-analyses commented on methodology in the experimental studies, and found that:

> There is a lack of standardised reporting and a tendency to use anecdotal case material to demonstrate treatment outcomes rather than measured results. Often, poor or only vague descriptions of the treatment interventions are provided, which makes it difficult or impossible to determine the study procedures (Slayton et al., 2010, p. 116).

This makes adaptation and replication of previous art therapy experiments challenging, as the field lacks established guidelines. Other forms of arts therapy – e.g. music and drama, have even less experimental research. One form that falls within the general realm of 'expressive therapies', that has generated a large body of evidence, is writing as a medium of emotional expression. First formally examined by Pennebaker and Beall in 1986, a model for experimental research in this field has developed as hundreds of variations on the original study have followed (Frattaroli, 2006).

The so called 'Pennebaker Paradigm' (Honos-Webb, Harrick, Stiles, & Park, 2000; Schmidt, Bone, Hems, Lessem, & Treasure, 2002; Wright & Chung, 2001) directs participants to write freely about a traumatic or stressful event, including facts and related emotions (although there are many variations on this task), with a control group writing about a neutral topic. Participants generally attend three or more sessions of 15-20 minutes in duration, often held on consecutive days (Frattaroli, 2006). Benefits found are wide-ranging, including measurable changes in a range of physical and psychological health outcomes from fewer doctors' visits (Pennebaker, Colder, & Sharp, 1990), changes in markers of immune assays (Pennebaker, Kiecolt-Glaser, & Glaser, 1988), improved university grades (Pennebaker & Francis, 1996), helping unemployed engineers find jobs faster (Spera, Buhrfeind, & Pennebaker, 1994), and

self-reported improvements in asthma symptoms (Greenberg, Wortman, & Stone, 1996) and rheumatoid arthritis (Smyth, Stone, Hurewitz, & Kaell, 1999).

As such, the Pennebaker Paradigm provides a good prototype or model for research into art therapy. The research that follows is an adaptation of the established model of methods commonly employed by the expressive writing research, in an attempt to assess the potential of art making as a therapeutic method.

Therapeutic Art-Making

An adaptation of the Pennebaker expressive writing model to assess the effectiveness of art-making as a therapeutic intervention.

The Efficacy of Psychotherapy

It has been claimed that "if the Food and Drug Administration (FDA) was responsible for the evaluation of psychotherapy, then no current psychotherapy would be approvable" (Klein, 1996, p. 84), arguing that no true clinical benefits have been found in research, and the validity of therapy is questionable.

Psychotherapy is the process of addressing emotional or mental issues through interaction with and/or guidance by a therapist (Hill, 2009). The term 'psychotherapy' comes from the Greek words 'therapia' which means 'healing or treatment' and 'psyche' which translates into 'spirit or soul' (Nelson-Jones, 2000). While the term 'therapy' is often used to describe the process of psychotherapy, and the two are generally interchangeable in psychology literature; 'therapy' is also a term used in the medical community to describe any kind of treatment – including drug or chemical treatments. Psychotherapy specifically refers to the process of addressing personal issues through expression, communication, interaction and various non-medicinal activities (VandenBos, 2007). What actually happens when a client visits a psychotherapist is as diverse as the range of therapies practiced, and as a result, treatments and methods are often vague, but psychotherapy generally means the application of psychological methods for the purpose of healing (Nelson-Jones, 2000).

In the past, and in current non-industrialised societies, people have been more likely to seek emotional support and guidance from family members or religious leaders (Frank & Frank,

1991; Georges, 1995), but increasingly, people in western societies are requesting the services of therapists. Many people are avoiding pharmacological treatments because of a perception of even slight negative impacts of these on health – for example Hughes and da Silva (2011) found that women struggling with conception preferred psychotherapeutic treatments over medical drugs for treatment of depressive symptoms. It has also been found that those who have pessimistic views toward their health prognosis are more likely to use complementary or alternative treatments such as psychotherapy alongside conventional treatments (Hlubocky, Ratain, Wen, & Daugherty, 2007).

Anxiety, stress, and depression are common diagnoses in the western world, and levels have increased over the last 50 years (Twenge, 2000). In an international study of rates of depression, New Zealand was among the top 25% of western countries on all measures of depression (Newton, 2011). While these numbers may be increasing because more people seek help or can afford to seek help than previously, for an increasing proportion of the population depression is a serious issue.

Assessing the efficacy of psychological therapies in research is difficult, and is often very subjective, as it is hard to determine whether a client has improved in health as a result of therapy, or if they have simply improved with time. There are many different kinds of therapy, and many different kinds of problems (or combinations of problems) that people seek to change, and evidence to support the effectiveness of therapy is limited (Eysenck, 1952; Luborsky et al., 2002; Wampold et al., 1997). Eysenck's (1952) hugely influential work included a review of 19 studies assessing psychotherapy with a total of 7,000 cases. Results were inconclusive and it was unclear whether any treatment resulted in measurable improvement for clients. In fact, results showed that those receiving psychotherapeutic treatment improved 45% of the time, compared to 62% for eclectic forms of treatment (i.e. combinations of psychotherapies) and 72% for no treatment:

> Roughly two-thirds of a group of neurotic patients will recover or improve to a marked extent within about two years of the onset of their illness, whether they are treated by means of psychotherapy or not. This figure appears to be remarkably stable from one investigation to another, regardless of type of patient treated, standard of recovery employed, or method of therapy used. From the point of view of the neurotic, these figures are encouraging; from the point of view of the psychotherapist, they can hardly be called favourable to his claims (Eysenck, 1952, p. 321).

In other words, many patients will get better with time, irrespective of treatment. Much of this is likely due to regression to the mean. However, Eysenck (1952) concedes that the comparisons made were ad hoc – e.g. one study compared to another, and that definitions and measures varied with studies. There were queries about the use of controls, as often the control groups had less severe symptoms and were perhaps an inadequate comparison. Those in the control conditions were generally treated by their general medical practitioner rather than a psychotherapist, which may mean that there were differing standards of agreement of improvement. Eysenck called for further experiments with comparable control groups to further explore this issue.

Forty-five years later, Wampold et al., (1997) conducted a similar analysis and found that findings were parallel to those previously found (Eysenck, 1952), and this was again supported by Luborsky et al. (2002). Luborsky et al. attempted to overcome the issue of non-comparable control groups by only assessing studies which compared an active treatment against another active treatment – such as cognitive vs behavioural, but found small and non-significant differences between treatment types. Interestingly, Wampold et al., (1997) did not find a statistically significant effect between effect size and publication date, meaning that as quality of research increased (assumed with time), increased effects were not being found.

It is perhaps important to note that all studies included only 'bona fide' psychotherapies, defined as: behavioural therapy; cognitive therapy; cognitive-behavioural therapy; psychodynamic therapy; rational-emotive therapy; and drug therapy (as comparison groups)(Luborsky et al., 2002; Wampold et al., 1997). This means that alternative forms of therapy such as the emerging 'expressive therapies' were not included in analysis. Another issue in these studies is that some forms of therapy are difficult to compare. For example, psychodynamic therapies are usually much longer in duration than behavioural type treatments, and certain techniques are generally only used to treat certain disorders, such as exposure therapy for the treatment of phobias (Luborsky et al., 2002).

Despite these difficulties, all therapies had very similar levels of efficacy. Explanations offered for this effect were that: the researcher's allegiance can bias results; the procedural difficulties in comparing different groups were too difficult to overcome; and that different treatments are better for different patients (Luborsky et al., 2002; Smith, Glass, & Miller, 1980; Wampold et al., 1997). It may also be that different treatments do not really differ in their 'main' components, which was first proposed in Rosenzweig's (1936/2002) seminal article. Rosenzweig (1936/2002) thought that it did not matter which approach of psychotherapy was used to treat a client, as any change was likely to be the result of interacting factors and cause overall psychological change. He claimed "it would matter relatively little whether the approach was made from the right or the left, at the top or the bottom, so to speak, since a change in the total organisation would follow regardless" (Rosenzweig, 1936/2002, p. 8). This explanation was named 'The dodo verdict', after a passage from Lewis Carroll's book 'Alice's Adventures in Wonderland' where the dodo bird character announces at the end of a disorganised race that 'everybody has won, and all must have prizes'.

Frank and Frank (1991) identified six factors that are common across most psychotherapies: the therapeutic relationship; instillation of hope in the client for positive change; emotional

arousal; new learning experiences, increased self-efficacy; and opportunity to practice. These six elements interact in psychotherapy and create change. The therapeutic relationship is thought to be a 'safe' relationship where the therapist is trained to interact and react to the client's needs in a warm and open manner. This may encourage self-acceptance and expectations or hope for change which can stimulate openness to new experiences, and optimism toward the treatment which may promote healing. The therapeutic relationship also allows the client to practice new behaviours in a socially acceptable environment so that confidence can be gained for real-life situations (Frank & Frank, 1991). This means that the specific type of psychotherapeutic treatment may not matter, as it could be the development of these six factors during therapy sessions that leads to change. Certain clients may prefer certain treatments, leading to greater hope for change and belief in the treatment method, possibly explaining why all treatments have similar rates of efficacy (Hill, 2009).

Given that different therapies produce similar outcomes, and the number of people seeking psychotherapy services is increasing, it seems logical to investigate forms of therapy which are cost effective, and can be made available and accessible to a wide population. While almost all 'traditional' forms of therapy require a client to talk face to face with a trained counsellor, therapist or psychologist, there is growing support for other forms of therapy. Over the last 25 years, attention has focused on forms of expression in therapy other than verbal – e.g. disclosure through writing, drawing or movement such as dance (Malchiodi, 2005). While traditional forms of verbal therapy are usually conducted in a private one-on-one setting, expressive therapies can be conducted in a group setting (Darley & Heath, 2008). All group members are able to participate simultaneously, making the treatment more economical, and possibly more effective, as socialisation occurs (Campbell, 2009).

Expressive therapy

Expressive therapy, also known as 'expressive arts therapy' and 'creative arts therapy', is the use of creative arts in a therapeutic setting. Instead of verbal conversation between client and therapist, these therapies introduce non-verbal action into the traditional forms of psychotherapy (McNiff, 1981). Methods can include story-telling, dance, drama, poetry, movement, sand trays and visual arts, with the common link being that the participant is actively involved in creation (Case & Dalley, 1992). It is a growing field within psychotherapy, with more than 30,000 trained at graduate level in various forms of expressive therapies in the United States (Malchiodi, 2005).

The creative arts have long been associated with psychological healing (Rubin, 1999). Some have suggested that art-making was an activity in which the insane were encouraged to engage in Ancient Egypt (Fleshman & Fryrear, 1981). In more recent times, arts for healing emerged alongside psychiatry (Brooke, 2006) with both Jung and Freud attributed as primary forerunners, particularly for patients who were unable to use the 'taking cure' for practical reasons – i.e. children, those who had suffered severe trauma, or those with limited speech (Malchiodi, 2005).

Freud was interested in unconscious thoughts, and proposed that creative acts were the result of unresolved material which had been repressed (Thurschwell, 2009). One of the activities Freud used in psychoanalysis was to ask clients to participate in drawings though free association as a way to access their hidden desires and reveal repressed emotions (Freud, Strachey, & Richards, 1915/1991), and he also analysed the imagery in client's dreams which were thought to be symbolic of unconscious thoughts.

Jung utilised the ancient Sanskrit art-making technique of 'mandala', where symbols are drawn inside a circle, and reflected or meditated upon (Henderson, Rosen, & Mascaro, 2007; Slegelis, 1987). Like Freud, Jung thought that the barrier between conscious and unconscious thoughts

could be transcended by images, and those images drawn in a therapy sessions could be interpreted as symbols of the unconscious. Jung is also known for his personal paintings, and he documented his use of art-making as a medium to explore his own issues (Darley & Heath, 2008; St John, 2006).

While Jung and Freud analysed their clients' creations, this is less common in expressive therapy today. Some expressive therapists have developed methods of assessment through the medium of creation – i.e. the formal elements art therapy scale (Gantt & Tabone 1998, as citied in Gussak (2009)). This scale can be used to evaluate drawings of clients in terms of measures such as prominence of colour, colour fit (whether colours chosen relate to those that occur in nature), integration and logic (such as whether or not the art-work contains bizarre elements), but for obvious reasons has limitations in assessing abstract artworks (Gantt, 2009). While the reliability of the scale has been tested with social workers, art therapists and recreational therapists (Gantt, 2009), the use of the scale requires subjective interpretations of the art-works made, causing issues with validity. For these reasons, most practitioners of expressive arts therapies do not evaluate the product of creation, and instead emphasise the process of creation (Malchiodi, 2005).

Expression through non-verbal media may be different to talking because it is more detached and structured. That is, a client can stand back and reflect on an art work created or listen to a recording of music, compared to talking, which is thought to be repetitive and fragmented (Clark, 1993). Conversations are difficult to edit, while a piece of music, a dance routine or an artwork can be changed and evolve upon reflection. Creative expression is also thought to be therapeutic in that it mimics self-soothing childhood activities (Malchiodi, 2005), and this may help a client to be more open with a therapist during sessions. Yet another possible explanation is that because expressive therapies require the client to actively participate, a placebo effect is stimulated (Tinnin, 1994). As the client is engaged in an activity, and the

therapist takes an authority role, the client may expect to improve in their symptoms and perceive efficacy in the treatment used.

However, not all creative expression is necessarily therapeutic; Kennedy-More and Watson (2001) wrote about the paradox where the expression of negative emotion is both a sign of distress and a sign of coping. Rumination or the repetition of negative expression can intensify feelings and interfere with coping strategies (Carver, Scheier, & Weintraub, 1989), while articulating feelings in a controlled environment can lead to greater clarity and organisation (Stanton, Kirk, Cameron, & Danoff-Burg, 2000). In creative expressive therapy, people learn to express feelings in a time and manner of their choosing, which may lead to greater feelings of self-control and efficacy, and they may also see that the feelings are "painful but bearable" (Kennedy-Moore & Watson, 2001, p. 209). This could be likened to exposure therapy that is used with people who have phobias – i.e. by exposing them gradually to their object of fear, they learn to desensitise themselves from this (Mowrer, 1960).

An interesting limitation of expressive therapies can be reluctance by clients to engage in the activities. It has been reported that in initial sessions individuals can be very hesitant and say/think that they are not creative (Brooke, 2006; Malchiodi, 2005), and also, ironically, those who are experienced artists or engage in art-making frequently may find it hard to 'let go' and also struggle. This self-consciousness is perhaps related to the unfamiliarity of the tasks, as clients may not have engaged in art-making or dance since childhood, or the fear of being judged on the quality of output.

Like psychotherapy generally, expressive therapies have proved difficult to assess. While non-verbal elements are used, it is common for expressive therapy sessions to be multi-modal – i.e. dance and drama combined, as well as including verbal discussion – "verbal communication of thoughts and feelings is a central part of (expressive) therapy in most

situations" (Malchiodi, 2005, p. 4), making it difficult to isolate and measure effects and determine efficacy because of confounding variables.

While there are few experimental studies in expressive therapy methods, case studies are prevalent. A typical example is the study by Zwerling (1989) who describes music sessions with prison inmates and how it helped them to understand their motivations for committing violent crime. Zwerling admits: "I make a kind of intuitive, and experimentally unsupportable comparison between this quality of the creative arts therapies" p 25, commenting that the effect is difficult to isolate and measure.

An example of an experimental study in the expressive therapies field is Leste and Ruste (1990), who were concerned that 'hard evidence' is lacking in support of expressive therapies, and designed a controlled study to test the effects of dance. They found a significant decrease in anxiety (measured on a self-report STAI (State Trait Anxiety) scale) for the group who participated in dance (and no effect for the music, sport or mathematics control groups). However, as had been criticised in many expressive therapy studies, the session design was not reported in enough detail to allow replication (Slayton et al., 2010), and so it is unclear what the activities involved and what the mechanism was behind the therapeutic effect.

While the field of expressive therapies is lacking in experimental studies and empirical support for the use of music, dance, drama and art-making, one form on expression has received much attention – expressive writing.

Expressive Writing

Writing as a form of therapeutic expression is an area which has received much attention and now has a solid evidence base (Frattaroli, 2006). In 1986, Pennebaker and Beall designed an experiment to study the effects of emotional expression. They chose writing as a method to assess this rather than traditional verbal therapy, as it is an activity which tests the effects of emotional expression without relying on feedback from or interaction with a therapist. That is,

they wanted to test the hypothesised therapeutic effect of emotional expression without the potential confounding influence of a therapist common in many expressive therapies (Pennebaker & Beall, 1986). While writing as therapy was not an entirely new concept – writing had been used by therapists as a form of 'homework' activity in decades prior (Lepore & Smyth, 2002) — this was the first time that writing had been studied as a stand-alone treatment using the RCT model required in medical research.

In Pennebaker and Beall's (1986) seminal study, 46 undergraduate students were assigned to one of three conditions. One group was asked to write about the facts only, relating to a traumatic event, the second group wrote only about emotions associated with a trauma, and the third group wrote about both emotions and facts relating to a trauma. Each group wrote for 15 minutes on four consecutive days. Those who wrote about both facts and emotion made significantly fewer doctors' visits in the six month follow-up period to the experiment.

The findings that writing could lead to physical health improvements resulted in hundreds of variations on this study, and the development of the 'Pennebaker Paradigm'. In this model for the study of expressive wiring therapy, participants are asked to sit in silence, and write about an issue that is stressful or traumatic to them (although this task varies with adaptations of the model). Participants write for a relatively short amount of time – around twenty minutes, and repeat this activity several times (often on consecutive days). Meta-analyses (Frattaroli, 2006; Frisina, Borod, & Lepore, 2004; Smyth, 1998) have found effects equivalent to those found in psychotherapy (Luborsky et al., 2002; Wampold et al., 1997).

Benefits found are wide-ranging, including: measurable changes in a range of physical and psychological health outcomes from fewer doctors' visits (Pennebaker et al., 1990); changes in markers of immune assays (Pennebaker et al., 1988); improved university grades (Pennebaker & Francis, 1996); helping unemployed engineers find jobs faster (Spera et al., 1994); self-

reported improvements in asthma symptoms (Greenberg et al., 1996) and rheumatoid arthritis (Smyth et al., 1999).

The fact that such benefits can be found after relatively short treatment times, few resources and no need for a therapist, is compelling. Anyone with the ability to write is able to participate in this form of therapeutic expression, making it a highly accessible treatment intervention. An editorial in the Journal of the American Medical Association commented that if a new drug intervention was found to have the same effect sizes as the writing paradigm, it would be considered to be a major medical advance – "had the authors provided similar outcome evidence about a new drug, it likely would be in widespread use within a short time" (Spiegel, 1999). However, writing studies have not been subjected to as rigorous testing as medicinal treatments have, so this claim should be taken with caution.

While there is evidence supporting the use of expressive writing for therapy, the reasons as to why and how it is therapeutic are not yet fully understood. Theories that are most commonly proposed in the literature include: 'inhibition' (Pennebaker & Beall, 1986) – the idea that writing enables people to release emotions and the activity is cathartic; 'cognitive processing' (Pennebaker, 1993), where the act of writing enables an individual to make new connections or organise information about the trauma in a new way; 'exposure' (Lepore & Smyth, 2002), where repeated examination of the traumatic experience in the safe environment of writing allows an individual to accept it as tolerable; and 'self-regulation' (Cameron & Nicholls, 1998; King, 2001), where people describe ways of coping or write about the best possible versions of themselves and develop a better sense of self-efficacy toward regulation of emotions. These theories will be further discussed in later sections of the chapter.

Expressive writing evidence is interesting in that benefits have been found for its use despite the lack of therapeutic relationship between a trained practitioner and an individual. However, while there may be less emphasis on the therapist/client relationship, other factors considered

important in psychotherapy, as stated by Frank and Frank (1991), can be seen to occur in writing therapy sessions, for example a new learning experience, a safe environment to conduct this new technique and the opportunity for practice new skills across several sessions.

Alternatives to expressive writing

Some have argued that traumatic memories are more emotional and may not be linguistically coded in memory stores (Arnheim, 1970; van der Kolk & van der Hart, 1989); that is, traumatic memories may be stored as images rather than language. If that is true, then writing may not be the best or ideal form of expression. While expressive writing removes the confounding factor of therapist feedback in therapy, writing still requires that memories and thoughts related to a trauma are expressed in language, and language may limit or confine the development of new schemas (Carnes, 1979). Other forms of previously mentioned expressive therapy do not require language at all – such as dance, music and art-making, and the exploration of these mediums as therapy could be useful in future research.

While there is a clear evidence base for writing, many manuals on expressive arts therapy do not include writing as a medium of expression, or consider only poetry to be 'creative' enough (see Atkins & Williams (2007), and Brooke (2006)). Although the client is engaged in a non-verbal activity, writing has arguably fewer expressive capabilities than body movement, music or visual art. Arnheim (1970) discusses the merits and problems of language in therapy, and argues that discussion – either verbal or written, is linear, and so things can only be described in sequence. This compares to music or dance where several instruments can play at the same time, different body parts move simultaneously in dance, or components in a sand tray or drawing can interact. This may make it easier for individuals to express complex ideas than in writing or talking.

In some respects, if somewhat superficially, drawing is the expressive therapy most similar in activity to writing. Both require similar equipment, and can be conducted alone or in a group

setting. On the other hand, drawing does not require language, may better express relationships between several objects or concepts and is arguably more expressive with the use of colour. It seems logical then, to look consider art-making as an alternative medium of expressive therapy to see if such effects are found.

Art Therapy

A popular, but far less researched form of expressive therapy, is art therapy – a simple internet search [1] using phrase "art therapy" returns four million results, compared to 71,000 results for the term "writing therapy". Although there are conflicting definitions of art therapy, it usually involves the use of art materials such as paints or pencils to create artworks for therapeutic benefit (Malchiodi, 2007).

Art therapy as a profession first emerged in the 1950's (Rubin, 1987), and its identity is still evolving as an interdisciplinary field combining artistic, scientific, mental health and educational components (Metzl, 2008). Rubin states that art therapy is "the combination of genuine expressive activity, with some kind of thoughtful reflection on that process" (Rubin, 1999, p. xxi) and argued that this is what makes art therapy different from other kinds of verbal therapy.

There are many suggestions as to why art making might be beneficial in a therapy, including the fact that art making seems to be universal, with all cultures engaging in some form of creative outlet (Campbell, 2009), and that art is evidenced much earlier than writing (Aiken, 1998). It is believed that art making occurred as many as 800,000 years ago, and that the first forms of found art are at least 200,000 years old (Camic, 2008).

[1] It should be noted that the terms 'creative therapies' and 'art therapy' are sometimes interchangeable, so the 'art therapy' search may include articles relating to music and dance therapy etc.

It is interesting that the activity of art-making has persisted in society, even after the advent of written language. Dissanayake (1980), while exploring the purpose of art, posed the question "art would not exist universally if it did not possess positive selective value, and we must ask ourselves what it could be about art that is essential to the survival of the human species?" (Dissanayake, 1980, p. 399).

Dissanayake held that the purpose of the arts is about making the ordinary special, and that art is a complex cycle of creating, observing and responding. Dissanayake (1980) thought that the primary purpose of the arts is about meaning-making, which comes from a need to understand the unknown. This makes the use of art-making ideal for therapy, as the focus of psychotherapy is to help clients to understand and change their problems in their lives (Hill, 2009).

Campbell (2009) wrote about how art therapy and the act of drawing is about objectifying or externalising the 'problem', which many therapists try to do through verbal discussion – particularly for anxiety. Campbell also posited that when the client describes the completed work to the practitioner, they are made to 'take ownership' of not just the work but also their feelings and thoughts. Others disagree with the need to verbalise reflection on art-works – "the completion of a picture is also the solution of a thought problem, although there may be no words to tell about the findings" (Arnheim, 1970, p. 120).

Children generally draw before they learn to write, and one thought is that drawing may be effective as therapy because it mimics self-soothing childhood activities (Malchiodi, 2005). Camic (2008) wrote about how inclusive art-making is, particularly for people who can't talk, those who struggle with language or children, who may prefer it as a medium of communication with a therapist instead of talking.

While suggestions have been offered to explain why and how art-making as an expressive therapy might 'work', but as such, there is no clear overriding theory. Much of the literature in

this field appears to assume that the process is therapeutic, with little discussion of the mechanism behind it. It seems common for published studies (Symons, Clark, Williams, Hansen, & Orpin, 2011; Walsh, Radcliffe, Castillo, Kumar, & Broschard, 2007) to simply state that the client or participant engaged in an art therapy session, without giving details of how the sessions were structured, and what theory or approach was used. However, there are some similarities in theories used to describe how art making might be effective compared to writing, and these are discussed below.

Inhibition and Catharsis

Inhibition (and the release of negative emotion through catharsis) was originally thought to be the reason why emotional expression through writing was effective (Pennebaker & Beall, 1986). Ideas of catharsis existed long before current forms of therapy, and in Ancient Greece, it was thought that attending dramatic tragedies resulted in catharsis for the audience (Gladding, 1992), as the play evoked strong emotion in those watching, and allowed the audience to feel fear, anxiety and disgust in a socially acceptable way. The inhibition theory used for the expressive writing model came from the Freudian concept of catharsis (Freud et al., 1915/1991), where it is thought socially unacceptable emotions are inhibited in everyday life, and release of these emotions in therapy is cathartic, resulting in health benefits to the body and mind. Freud attempted to access the repressed emotions and thoughts in clients through the process of 'free association', where clients are asked to speak freely, without interruption from the therapist, and without censoring their thoughts (Freud et al., 1915/1991).

In this inhibition model, writing is essentially viewed as an emotional outlet causing catharsis, with writing an alternative medium to the Freudian tradition of talking. Writing may be even more beneficial because people who are uncomfortable talking about a traumatic event may find that writing about it is less confronting (Sloan & Marx, 2004). Despite the development of these ideas, there has been little evidence found to support writing as disinhibition (Lepore &

Smyth, 2002). Greenberg and Stone (1992) conducted an experiment where some participants were asked to write about an experience they had already disclosed, while others were asked to write about an experience they had not previously disclosed. It was found that those who had already discussed the traumatic event had a greater reduction in symptoms of distress than those who had not. This does not support catharsis, as those who had not previously disclosed should theoretically have more inhibited emotion, and benefit more from disclosure through writing.

Frattaroli (2006) also found little support for the disinhibition theory in her meta-analysis, which included 146 studies, finding that those high in dispositional constraint (i.e. those who 'hold back' on disclosure) benefited less from writing than those who were low in dispositional constraint. It was also found that when participants are asked to write about current traumas, they have significantly higher levels of improvement in psychological wellbeing compared to those who write about past traumas (Smyth, 1998), yet if disinhibition explains how writing is therapeutic, past traumas should have the greatest psychological load and should therefore benefit the most from release.

While it has been argued that the discussions participants had regarding their chosen traumas prior to participating in these experiments may have been very superficial (Sloan & Marx, 2004), and the number of sessions in some studies may be too few to successfully 'release' past trauma, it seems that the release of inhibited emotions through writing may not fully explain the therapeutic writing paradigm.

In art-making, it is thought that the different medium (instead of traditional verbal therapy or writing) allows individuals to give better expression to thoughts and feelings which they find hard to verbalise, and so experience catharsis on the release of these emotions through art making (Grodner, Braff, Janowsky, & Clopton, 1982). Appleton (2001) thought that art is a more powerful form of catharsis than words, claiming that trauma is 'locked' in memory as

images, and the use of visual imagery in therapy will result in greater release (similar to the views mentioned earlier of both Freud (Freud et al., 1915/1991) and Jung (St John, 2006)). Grodner et al. (1982) studied this effect in a combined art and dance study, and found that those who were given directed instruction had a significant improvement in mood compared to non-directed group and control group.

While catharsis generally assumes the release of negative emotions, Curl (2008) wrote that in her study, those who were asked to focus on positive thoughts while drawing were able to release positive emotion through catharsis and receive stress reduction benefits from this. This is interesting, given that the negative focus group did not show signs of improvement which is generally associated with more traditional cathartic activities (Bushman, 2002), and Curl's idea of a release of positive emotion goes against other definitions of catharsis.

Terminology relating to catharsis is widely used in non-academic literature to describe art therapy – i.e. the newspaper article entitled 'Using Crayons to Exorcise Katrina' (Dewan, 2007), about the encouragement of children affected by Hurricane Katrina to draw about it, in the belief that venting through drawing would help them to deal with the tragedy. A newspaper article in New Zealand entitled 'Art draws out youngsters feelings' (Williams, 2011) assumed a similar therapeutic effect.

Cognitive Processing

There are several different explanations or versions of cognitive adaptation in expressive writing theory, but all require the modification of existing schemas related to the stress or trauma (Sloan & Marx, 2004). A schema is defined as a cognitive structure, consisting of prior knowledge that has been abstracted from specific examples, creating a template which guides interpretations of and storage of new memories (Fiske & Linville, 1980). It is thought that we develop schema to help us organise and categorize new information, and that we are more

likely to notice and remember information which fits with our established schema (Janoff-Bulman, 1989).

Janoff-Bulman (1989) argued that most people have a positive view of the world, and expect misfortunes to be rare events. When a trauma does occur, people then ruminate on these events that do not fit with their schemas and inner model of the world, and are unable to process them, causing negative effects on health. The goal of cognitive adaptation in therapy is to enable people to assimilate the traumatic experience with their world view, by changing the schemas associated with it. Pennebaker (1997) suggested that expressive writing can help people to create order and structure of traumatic events, allowing for better cognitive processing. Another suggestion is that traumas are stored differently in memory, often as sensory perceptions rather than narratives (Arnheim, 1970), and that these types of memories are more difficult to process and can result in rumination (van der Kolk & van der Hart, 1989). Again, it is thought the process of writing allows the traumatic memories to be more easily processed and integrated.

The measurement of cognitive adaptation in writing studies is generally through analyses into changes in causation, insight and affect related words (Pennebaker & Francis, 1996; Sloan & Marx, 2004), which suggests processing of schema. Pennebaker and Francis (1996) found that the use of insight and causation related words were associated with improved physical health at follow-up. However, they also found that while being part of the experimental group was linked to higher grades, the use of causation and insight related words was not at all linked to academic grades in students. Other studies such as Batten, Follette, Hall and Palm (2002) found that some participants increased their use of insight related words during sessions, but had no health improvements. This suggests that other psychological processes may also explain the effect. Written expression may free psychological resources used for rumination,

and Klein and Boals (2001) found that expressive writing tasks resulted in increased working memory abilities in experimental participants, which indicates a decrease in intrusive thoughts.

Sloan and Marx (2004) found inconsistent support for the cognitive adaptation model in the studies they reviewed, but argued that this may be due to poor study design in many cases, as well as the issue of 'crossing over' with other theoretical models such as exposure (discussed in following section). Writing about a traumatic event re-exposes the participant, so it may be that their symptoms improve from successful exposure rather than cognitive adaptation. Interestingly, Frattaroli (2006) found that cognitive theory-driven designed studies did not have any higher effects than the traditional inhibition model.

Like expressive writing, another of the most common suggestions for how art therapy may affect wellbeing is through cognitive restructuring. Grodner, Braff, Janowsky and Clopton (1982) thought that using a different mode of expression might be beneficial for people experiencing psychological or mental set, as a change in medium may encourage a change in thought processes (Hand, 2006).

Carnes (1979) compared traditional forms of cognitive therapy with art therapy, and suggested that the basis of cognitive therapy is the observation and analysis one's thoughts, and that art making was suited to this type of therapy, as the art-maker first creates and then observes their own thoughts through the art work. Carnes also discussed the fact that many theorists - i.e. those in physics and economics, use diagrams to illustrate complex ideas, arguing that thinking or cognition is not always verbal, but is also visual, supporting the earlier ideas of Arnheim (1970). It is thought that drawing aids cognitive integration by developing a narrative around the issue, resulting in a schema which can be summarised and stored instead of being ruminated on (Henderson et al., 2007).

Exposure

Exposure, a model examined by Sloan and Marx (2004) is an adaption of behaviourist anxiety treatments (Mowrer, 1960) where it is thought that when faced with an aversive unconditioned stimulus, people's response is one of fear and arousal, but this response can be conditioned with repeated exposure. Writing is thought to encourage the processing of the traumatic event by exposing the participant to the trauma in a 'safe' environment (on paper rather than in real life) which allows the event to be properly processed, so that it is no longer unknown or fear inducing (Nishith, Resick, & Griffin, 2002; Resick & Schnike, 1992). There are some crossovers with cognitive restructuring theory which makes it difficult to measure the effects of the models in isolation from each other.

Exposure is most often measured by changes in post-traumatic symptoms, and tested on clinical populations (Frattaroli, 2006). Results are very mixed, but insufficient sample sizes, single writing sessions and very variable follow-up periods may explain lack of support (Sloan & Marx, 2004). There are also more potential confounding factors with clinical populations as many are on psychotropic medication. Frattaroli (2006) found that exposure was the most supported theory in her findings – Post Traumatic Stress Disorder (PTSD) symptoms decreased particularly in studies with at least three sessions, and if each session was at least 15 minutes long, suggesting that exposure may take time to have an effect.

However, there are also findings which do not support the exposure model. For example Kloss and Lisman (2002) measured levels of state anxiety before and after each writing session, expecting it to increase in the first few sessions and then start to decrease if exposure effects were occurring, but they did not find any decrease in anxiety over the course of the study. Sloan and Marx (2004) suggested that the state anxiety scale was not the right measure to use, as it is not intended for measurement of fear activation and extinction, and suggested physiological measures in future studies.

Unlike expressive writing literature, there was limited discussion of exposure theory in art-making studies. Henderson, Rosen and Mascaro (2007), wrote about exposure and the idea that bringing up issues in art therapy was a way of repeatedly exposing the client or participants to the traumatic event, but in a safe environment, similar to extinction in cognitive behavioural therapy (Mowrer, 1960).

Self-regulation

While cognitive processing and exposure perhaps goes a long way to explain why writing is therapeutic, a finding of interest occurred in a study where participants who wrote about a make-believe trauma experienced benefit from writing, even though they had never experienced the trauma (Greenberg et al., 1996). Changes to schemas cannot explain this finding because the participants would not have had schemas regarding the traumatic event. The theory of self-regulation was instead proposed, where participants 'learn' about trauma and how to deal with it through writing, gaining a better sense of self-efficacy, resulting in improvements in psychological wellbeing. Studies on self-regulation through writing are generally designed where participants write about a trauma and describe ways to cope with it (Cameron & Nicholls, 1998), or participants write about the 'best possible' versions of themselves – where all problems are 'fixed' and all goals are met (King, 2001). It is thought that experiencing a trauma meant that people's natural ability to experience emotion when attaining goals was diminished, and this writing process helped them realise this – i.e. to internally signal when they are on the right path to attaining their goals (King, 2001)

Frattaroli's (2006) meta-analysis found small but mixed results to support self-regulation - depression was a symptom that decreased in many writing studies, perhaps indicating that self-efficacy had increased. Interestingly, self-regulation was not discussed in any of the art-making studies reviewed; however, some similarities can be drawn. Although a newspaper article which describes an interview with a practicing art therapist rather than a published

study, the reporter Dewan (2007) described a process where children would draw a problem i.e. swimming in a sea with sharks, and then a therapist would encourage the child to 'add' in solutions to the drawing – i.e. a lifeboat with a rescuer. The author considered this to be a cathartic activity, but there is also clearly a problem solving element too, which may have benefits if children were ruminating on the disaster, and coping with feelings of helplessness.

Empowerment/self-validation

Carnes (1979) also argued that the creation of art in itself is problem solving. Participating in art-making allows an individual to create and make decisions in a 'safe' environment, and this may explain a therapeutic effect. Foster (1992) argued that art-making was related to increased self-esteem in the vulnerable, and Wikstrom's (2005) study found results to support this, where hospitalised children had increased health outcomes after participating in art-making activities. Wikstrom found that these children had no choice over the treatments they received, nor were they involved in medical decisions, but the hospital playroom provided an arena where they could have complete control over their decisions and actions. For example, they were able to choose which medium they would like to use, and the colours, shape, size and subject of their creations. This was thought to increase their self-efficacy, which has some similarities to the self-regulation theory in writing literature.

Appleton (2001) noted that participants in her case studies (burns victims in a hospital) would engage in art making while medical procedures such as bandaging and inserting IV drips were happening, and found that that clients engaged in this type of activity in an effort to feel less helpless. Appleton thought that by mastery of art-making, participants felt less vulnerable in other areas of their life. This idea was also discussed by Wood, Molassiotis and Payne (2010) who studied cancer patients and thought that the basis of art therapy is empowerment.

Art-making may also help the chronically sick by helping to objectify the problem and creating distance. Beebe, Gelfand and Bender (2010) found that drawing helped to improve wellbeing

in children dealing with the effects of chronic asthma, who often become very anxious and develop a sense of identity related to suffering from asthma. Change in wellbeing was measured through assessment of the artwork using the Formal Art Elements Scale (Gantt, 2009), and the self-report Beck Youth Inventory (Beck, Beck, & Jolly, 2001). It is thought that drawing the problem and gaining a sense of mastery over it helps children to maintain an identity outside of their illness (Malchiodi, 2005; Symons et al., 2011), and allows them to view themselves as something other than a sick person.

Art making is non-verbal

The fact that drawing doesn't have to involve writing or talking could be one of the most compelling reasons as to why art making might be therapeutic. Arnheim (1970) wrote about visual thinking and visual memory, arguing that we store certain things – particularly traumatic events, visually, and so it might be better to access them and deal with them in a visual rather than verbal medium. This position was further supported by Appleton (2001) in work with clients suffering from Post-Traumatic Stress Disorder, and Curl (2008), who argued that a lot of processing happens during perception, so things visually seen are perhaps processed in a different way to things verbally spoken.

Some evidence to support this theory is in the findings of Driessnack (2005), who found that children remember significantly more details about an event if they are asked to first draw what they remember and then describe it, compared to verbally describing alone. While this study was not in a therapeutic setting (the children witnessed a non-traumatic scene and were then asked to recall details), it supports the concept that visual imagery may be better accessed via a visual outlet. Driessnack (2005) argued that children's lack of adequate verbal response in interviews is more related to their verbal ability than their actual memory, knowledge or concept formation, and that when given the opportunity to draw they are able overcome this better. Art-making is more active than verbalising, which might be better for

problem solving (Carnes, 1979). Also, concrete images are available afterwards for reflection, while a conversation is based on memory.

While adults may have better verbal abilities than children, people often become self-conscious when they know that their words are being analysed (i.e. by a therapist) and 'choke' (Schlenker & Leary, 1982). This was examined by Christenfeld and Creager (1996), who thought that non-talking therapies may be suited to people suffering from social anxiety because it helps them to avoid the self-consciousness of talking. Talking is more difficult when anxious than when calm. Another population that may benefit are abuse victims who are often shamed into secrecy or may be scared to talk about the trauma (Henderson et al., 2007), particularly if the abuse happened during childhood, when the abuser may have made threats to the child if they spoke of the abuse.

A group who may benefit from non-verbal therapy are those who have the condition alexithymia, which describes people who have difficulty in describing feelings, and determining difference between emotions and body sensations (Bagby, Parker, & Taylor, 1994; Zech, Luminet, Rime, & Wagner, 1999). Carnes (1979) argued that some people are better visualisers and some people better verbalisers, and so different modes of therapy might be suited to those who articulate differently, but this has yet to be empirically researched. Riley (1996) thought that drawing might be easier because clients have to make choices when using words, whereas art making or drawing simply 'is'.

It may also be helpful for a therapist to interact with the client in a non-verbal mode. Rubin (1999) described as case study where a mother and her young girl were both involved in therapeutic treatments. The girl would have an art session with Rubin, while the mother spoke to a child psychiatrist, then mother and child would switch places. Rubin (1999) collaborated with the child psychiatrist and noted that issues would appear in drawings weeks before they

were spoken of, and the psychiatrist thought that the art-making was interesting as "a preview of coming attractions" (Rubin, 1999, p. 5).

Evidence for art as therapy

Unlike writing as therapy, art in therapy has little supporting empirical evidence –"It is a common supposition that the production of art can have stress reducing or relaxing effects. However, this basic claim has yet to be empirically supported in a controlled trial" (Bell & Robbins, 2007, p. 72).

There seems to be a reluctance by art therapists to engage in research (Deaver, 2002), as scientific methods of research are viewed as being in opposition to the art therapy session goals of spontaneity and creative control by the client. Traditional forms of quantitative research are thought by some to be ill-suited to the discipline of art therapy - Henzell (1995) discusses "how the straitjackets of orthodox empirical methodology and the refereed journal can be avoided" (p. 190). It has also been claimed that some art therapists deal with tensions in the field regarding appropriate methods of research by avoiding it altogether, and that not many art therapists study toward a PhD, which may explain why research is limited (Metzl, 2008).

Case studies are the most common form of research (Metzl, 2008), accounting for around 20% of published studies, with other forms including self-studies, questionnaires, interviews and less than 8% using an experimental design with tests or formal assessments such as psychometric scales, and of those, almost all studies are of a single group pre-post design. However, perceptions in the field are changing, with Frances Kaplan (past editor of 'Art Therapy' journal) first stating that art therapy was not suited to traditional methodology (Kaplan, 2000), but then later supporting the increase in controlled experimental studies in order to validate the field (Kaplan, 2005).

Reynolds, Nabors and Quinlan (2000) conducted a meta-analysis of all published art-making studies meeting the following criteria: the study had to have assessed the impact of art therapy on a measurable outcome (i.e. changes in score on a psychometric scale rather than anecdotal evidence); and the researchers had to have assessed a group (rather than a case study). Altogether, they uncovered 17 studies. This is perhaps remarkable considering the journals 'Art Therapy: Journal of the American Art Therapy Association' and 'Arts and Psychotherapy' have been in publication since the 1970's. Instead of experiments, most of the published articles found in this field were concerned with theoretical concepts or case studies, which generate hypotheses for the field, but do not test them to an adequate degree. Ten years on, Slayton, D'Archer and Kaplan (2010) conducted another meta-analysis and found 11 studies since published with randomised groups.

Both meta-analyses (Reynolds et al., 2000; Slayton et al., 2010) commented on methodology in the experimental studies, and found that the lack of description meant that replicating these experiments would be difficult:

> There is a lack of standardised reporting and a tendency to use anecdotal case material to demonstrate treatment outcomes rather than measured results. Often, poor or only vague descriptions of the treatment interventions are provided, which makes it difficult or impossible to determine the study procedures' (Slayton et al., 2010, p. 116).

Campbell (2009) discussed problems with validity, as art therapy methods are often used in conjunction with other methods, such as verbal discussion, which means that it is very difficult to determine whether or not the art-making has any effect, and there are obvious confounding variables. A highly controlled environment needed for rigorous experimental research may not actually be right for the study of art therapy, as it is far removed from typical sessions, but it is difficult to 'prove' efficacy of a technique without controlled experiments.

There is need to design an experiment with a clear and explicit design and methodology so that it can be repeatable, and limit the therapist/participants interaction in order to study the effects of art itself.

Adapting the writing model for art-making

While there is no standardised method of studying therapeutic art-making, a small number have utilised the expressive writing model in a study of art-making: Pizarro (2004), Chan and Horneffer (2006) and Henderson et al., (2007) were the only studies found during the literature search which modelled their design on writing studies, producing inconclusive findings for the efficacy of art-making. None of the studies described the session design in adequate detail for replication, and it has been said that the problem found by those carrying out reviews in the topic area is the heterogeneity of session design (Wood et al., 2010).

The following section describes findings in the art making literature, and explanations of the adaptations to the writing model for the proposed study.

Art for arts' sake

Some researchers in art therapy assert that the act of creating art is inherently therapeutic, and the process of creation may increase feelings of self-efficacy and empowerment (Rubin, 1999; St John, 2006). An example of this type of study is by Bell and Robbins (2007) who studied the difference between producing and sorting art. Fifty adult participants were allocated to one of two groups, an art making intervention group and a control activity group for a single art-making session. Before the session began, all participants were asked to write a list of ten of their most pressing concerns or worries on a sheet of paper, to induce a negative mood. All participants then completed a mood measure (the profile of mood states - POMS(McNair, Lorr, & Droppleman, 1981)) and an anxiety measure (the State Trait Anxiety Inventory - STAI (Spielberger, 1983)) before beginning the art task. Those in the intervention group were given a range of materials, several sheets of paper and told to 'make some art' for

twenty minutes. Those in the control group were asked to categorize a series of famous paintings by their pictorial content for twenty minutes. On completion of the task, the two measures of POMS and STAI were administered. Participants in the art-production group had a greater reduction in negative mood and anxiety than those in the sorting-art group, who experienced minimal change.

There are a few concerns with Bell and Robbins (2007) study. Asking participants to write about their concerns could be a confounding variable, and as both groups were given vague instructions, it is not known whether they continued to think about stressors in their lives or simply drew/sorted. While this study is promising in that significant changes were found in participants, the effect could also be explained by boredom in the control condition, and/or the creation of art may have been more distracting from negative thoughts compared to sorting pictures.

Curry and Kasser (2005) asked their participants to colour in different patterns, with the hypothesis that colouring in a mandala (circular design influenced by Hindu spiritual art) would be more soothing that colouring in a plaid pattern (similar to a tartan or checkerboard pattern). It was thought that a mandala pattern would be more soothing because it contained more complex shapes and this would help participants to “suspend their inner dialogue” and disengage from their negative thoughts. 84 participants were allocated to one of three conditions; a mandala colouring group, a plaid colouring group and a ‘free’ colouring (blank sheet with no instructions given) group. All participants were asked to complete the STAI (Spielberger, 1983) measure before the session began, and then were asked to think about a time they felt fearful and write about this subject for four minutes, before taking a second STAI measure. All participants were then asked to colour for twenty minutes (on either blank paper or the mandala or plaid design) before a final STAI measure was taken. Baseline measures were equal between groups, and the anxiety inducement was also successful as a significant

difference was found between time one (baseline) and time two (after writing task). Results found that those in the mandala drawing group had lower anxiety levels at time three (after drawing) than baseline, and the plaid colouring group was borderline significant for this effect.

Again there are some concerns that should be noted in the above study – for example, the time spent writing before the session. While four minutes writing is much shorter than the twenty minutes spent drawing, it may be a confounding factor. What is perhaps most interesting in this study is the finding that colouring (regardless of pattern) is more effective in reducing anxiety than drawing, which could suggest that art-therapy is most effective as a distracting activity. More than one session and follow-ups could determine if the effects were lasting.

Non-directed sessions

Often studies lack enough detail in described methods to determine the purpose and hypothesis of the study e.g. "different tools, styles and techniques are explored with each client according to his or her abilities, interests or goals" (Symons et al., 2011, p. 46). Participants were then interviewed several times over the course of 11 months, with findings including improved concentration and social skills.

Some studies describe a mix of focused and non-directed art making sessions e.g. Walsh et al., (2007). In this study, 69 caregivers of an ill family member engaged in a range of activities. Some activities appeared to be 'neutral' such as decorating a jewellery box, and gluing ribbons to IV poles, while other activities seemed to be a little more intentionally therapeutic such as the creation of stress mandala drawings (an activity where participants were asked to draw a circle and fill the circle with symbols of their worries). Sessions were not described in detail, nor was the mechanism as to why they might be therapeutic, but a decrease in anxiety (measured on self-report Beck Anxiety Inventory – BAI (Beck & Steer, 1993)) was found. Salivary cortisol measures were also taken to measure levels of stress but no effect was found.

This study was a pre-test post-test design, with no control group, so it may be that as the patients they were caring for progressed in illness, caregivers increased their acceptance, which may explain change in anxiety. It also seems relevant to note the range of sessions available, meaning one participant may have attended a class where they stuck plastic jewels onto a wooden box, while another participant focused on drawing symbols of their stress. Each participant was measured pre/post just one session, and it seems that this study could have been improved by the measurement of several sessions, and by dividing participants into groups focusing on the stresses of caregiving while drawing or those engaged in more distraction-related art-making tasks.

Walsh, Chang, Schmidt and Yoepp (2005) conducted an 'art intervention' with nursing students in a classroom situation, to determine if art-making would have an effect on levels of anxiety and stress. Student participants either attended their normal lectures, or engaged in the art intervention tasks which ranged from making greeting cards, to making an artwork from a photograph of themselves and drawing details of their future self. While the number of sessions attended is unclear, all participants swapped groups after one week, and so had the experience of being both a control and an intervention participant. All participants completed the mini-POMS (McNair, Lorr, & Droppleman, 1992), BAI (Beck & Steer, 1993) and Affect Balance Scale (ABS) (Bradburn, 1969) before and after each session, and all three measures had significant decreases after the intervention week but not the control week for participants.

Despite these findings, there are some weaknesses in the experimental design. All measures were self–report, and because the student participants were active in the design of the experiment, they were fully aware of the hypothesis, meaning scores could have been manipulated, as both groups of participants experienced a week as controls and a week art-making. Again, as mentioned in the previous study (Walsh et al., 2007), the range of activities engaged in means it is difficult to determine what mechanism might have caused these effects.

Grodner et al., (1982), combined art and movement in a three group design: a no treatment; a non-directed group; and a directed intervention group. The study recruited volunteers from both staff and patients at a psychiatric in-patient ward, and 15 participants were allocated to each of the three groups (with 45 participants in total). Two-hour sessions were available daily for participation, but measures were recorded for only the first session. For the directed group, interaction between participants was encouraged, in activities such as the creation of a clay sculpture together as a group, or moving and shaping body movements of each other in pairs. The non-directed group were provided with materials such as paints, clay and music and were allowed to use these resources as they wished. Measures were taken pre and post session, including the POMS (McNair et al., 1981) and the Semantic Differential Scale (Osgood, Suci, & Tannenbaum, 1957). At the end of each session, time was allocated to the discussion of the experiences of the session with group members. The directed-activity group improved significantly on all measures, while the non-directed group improved marginally on the depression subscale of the POMS, and the no-treatment group did not improve on any of the measures.

This study was unlike most other studies because participants were encouraged to converse with each other through drawing or dancing, which is very different from the expressive writing studies; the original purpose of Pennebaker and Beall's (1986) was to study the effects of expression without feedback. Again as mentioned in other studies, it would have been preferred if several sessions could have been measured, and a follow-up could have determined if these effects were lasting. There was also an issue with the use of a clinical population, as some participants were unable to complete the self-report measures through lack of understanding.

While these studies provide little detail of session design for replication in further studies, and many potential confounding factors, they perhaps represent 'real world' art therapy sessions which change and adapt with clients' needs and mood (Case & Dalley, 1992; Malchiodi, 2005).

Focused art-making sessions

Curl (2008), conducted a four-group art-making study with 40 participants, with one group drawing about negative aspects of their lives, another drawing about positive aspects of their lives, the third creating a collage to represent negative aspects of their lives, and the final group creating a collage about positive aspects of their lives. Curl measured stress pre and post art-making session by asking participants to complete a copy of the STAI (Spielberger, 1983), and measured heart-rate for 30 seconds. Each participant was given one sheet of paper, some coloured pencils or a stack of magazine images, scissors and glue, and asked to create art for 25 minutes based on the positive or negative focus which was listed in their instruction pack. No effect was found for heart-rate, but both positive-focus groups (drawing and collage) had a significant decrease in anxiety. However, as measures were taken immediately, and after a single session, it is unknown if the effects lasted. Expressive writing studies have typically found that participants instructed to write about a negative topics have an increase in negative affect immediately after a session, but health benefits are found at later follow-up measures (Frattaroli, 2006).

Dalebroux, Goldstein and Winner (2008) had a similar study design with three groups– a positive focus, a negative focus and a control, who were asked to complete a neutral task in the form of a 'symbol search' (finding symbols on a grid). This study induced negative affect by asking participants to watch a short clip of a war film, and then draw about the emotions associated with the film (rather than real everyday stresses that the participants faced as in other studies). Again, as found by Curl, only the positive focus group improved, however no follow-up measure was taken to see if the effects lasted. This task of responding to a trauma

viewed in film is similar to the expressive writing study by Greenberg, Wortman and Stone (1996) who found that writing about imaginary trauma produced similar benefits to writing about real traumas.

Mercer, Warson and Zhao (2010) designed a single group pre-test post-test design, with ten participants. Over two sessions, participants were given a journal and art supplies and taken through a 'guided visualisation session', focusing on breathing and stress producing emotions (description of the session content was limited). Participants were then asked to draw the images they saw in visualisation, and reflect on their drawing. Participants were also told they could continue in their own time repeating the exercise for next two weeks – with no guidelines as to how many entries were expected, before the post-tests. Measures included the STAI (Spielberger, 1983) and the PANAS (Positive and Negative Affect Scale)(Watson, Clark, & Tellegen, 1988). No statistical significance was found, but with so few participants this would be expected. However, there was a trend of decline in anxiety and increase in mood from pre to post, and a control group would have been needed to validate the study. Importantly, 40% of participants said they would not use the art-making journal method again.

Hughes, Mann and da Silva (2011) claimed that art therapy combines psychodynamic, humanistic and educational psychology approaches. Participants in their study were women who were struggling to conceive, and engaged in art sessions related directly to this health issue. For example, in one session, participants drew an outline of their body, and expressed though drawing on the page their emotions towards their infertility. Each session lasted two hours, and participants attended weekly sessions over the course of eight weeks – giving feedback to the researchers that they would have liked to attend more. Measures on the Beck Depression Inventory (Beck, Steer, & Brown, 1996) had a significant decrease between pre-test and post-test, although the authors did discuss the need for a placebo group to validate treatment.

The writing-drawing comparison

Pizarro (2004) adapted the Pennebaker model used in expressive writing therapy to design a study to test the effects of art-making compared to writing. In this study, 45 participants were asked to write about a stressful event in their lives, draw about this event, or draw a still life over the course of two one-hour sessions. Measures of general health (The General Health Questionnaire – GHQ (Goldberg & Hillier, 1979)), perceived stress (Global Measure of Perceived Stress -GMPS(Cohen, Kamarck, & Mermelstein, 1983)), physical symptoms (Physical Symptoms Inventory – PSI (Wahler, 1968)), and mood (POMS (McNair et al., 1981)) were taken at baseline, after treatment and at a one month follow-up. Results found that the group who wrote about a stressful event improved in social functioning and mood, but neither art-making group benefited from the treatment. Interestingly however, the participant satisfaction questionnaire revealed that those who engaged in writing found the activity much less enjoyable that those who created art-works, and participants were more likely to recommend art-making to a friend or family member.

Chan and Horneffer (2006) conducted a similar study, including higher participant numbers and a higher proportion of males in their sample (35% male). Participants were assigned to a no contact control group (n=34), a drawing group (n=29), or a writing group (n=29), and asked to complete two 15 minute sessions, with the writing and drawing group seated together in a classroom during sessions. The Symptom Checklist 90-Revised (SCL-90-R (Derogatis, 1994)) was used as a measure, and covers symptoms relating to anxiety, depression, hostility, interpersonal sensitivity and obsessive compulsiveness, among others, through a self-report Likert-type scale.

Again, as with Pizarro's study, only the writing group benefited from treatment (with the entire scale as an overall measure); however there were limitations in the study design which should be considered. When participants were asked about their comfort level, 61% said they felt

comfortable journaling, compared to only 17% who said they felt comfortable drawing. This was in part due to the room layout, and art-makers reported that they felt self-conscious as the writers could view their work. Both writing and drawing participants were given a single sheet of paper and a pencil, which may not have provided enough stimulation for the art-makers (i.e. colourful materials may have been more engaging).

After finding that Pizarro's (2004) writing-drawing comparison didn't find an effect for art, and concerned by the claim that perhaps "generating art … may not provide sufficient cognitive organisation, and therefore may not be able to provide the same positive health benefits" (p. 10), Henderson et al (2007) designed a study to use Jung's mandala exercise for improvement in health outcomes. Undergraduate students who had signs of PTSD were specifically targeted for recruitment, and pre-screened using the Post-Traumatic Stress Disorder Scale (Foa, 1995). The experimental group included 19 participants and the control condition included 17 participants, and participants were instructed to draw either a 'still-life' arrangement or draw a large circle and fill the circle with representations of feelings or emotions related to trauma. Twenty minute sessions were held over the course of three consecutive days, and a follow-up assessment was taken one month after treatment. Statistically significant fewer symptoms of trauma were found for the intervention group; however, this effect only appeared at follow-up (no difference was found in scores immediately following treatment). Rates of depression and anxiety levels (measured on the Beck Depression Inventory (Beck et al., 1996) and STAI (Spielberger, 1983)) were not found to change. While the use of the circular mandala is different to the directions given in typical expressive writing sessions, the request to draw representations and feelings toward a trauma is very similar to being asked to write about the facts and emotions of a trauma.

Intervention drawing activity

As discussed previously, many studies do not detail the art-making activities in a way that could be replicated e.g. “the sessions included an opening activity, discussion of weekly topic and art intervention, art making, opportunity for patients to share their feelings related to the art they created, and the closing activity” (Beebe et al., 2010, p. 263).

Curry and Kasser (2005) found that those participants in the free form group (who were told to simply colour in a blank sheet of paper) said that they would have liked more direction, and were observed pausing and tapping their pencils, as if they were unsure of what to do next. Chan and Horneffer (2006) also thought that instructions in their experiment could have benefited from more detail, as the directions they gave participants were simply to either draw or write about their feelings (depending on condition), allowing participants 15 minutes. More detailed instructions and structured activities might help participants feel more comfortable.

Future research could direct participants to focus on something that is stressful in their lives, and create artworks in response to this stress. Because simply focusing on a stress may not be beneficial (Watson & Clark, 1984), participants could also be asked to consider their issue from others points of view. Campbell and Pennebaker (2003) analysed the writing samples collected during an expressive writing study and found that participants who changed their use of pronouns – from ‘I’ or ‘my’ to ‘her’, ‘his’ or ‘they’ during the course of several writing sessions, had greater improvements in health. This seems to suggest a shift in individual and social perspective. However, in a later study (Seih, Chung, & Pennebaker, 2011), participants who wrote from their own point of view multiple times had greater benefits than participants asked to switch perspectives from first, second or third person over the course of several sessions, but no long term follow-up measures were taken.

This change in pronoun use can be seen as evidence for a shift in attribution. Researchers who have studied attribution (Frank & Gilovich, 1989) have found that people are more likely to

initially remember their own behaviour as being situational (affected by environmental factors – i.e. having reactions in response to stimulus), while these memories change over time to be more dispositional (where people see their behaviour as a result of stable personality traits). It has also been found that people are more likely to view other people's actions as dispositional, while our own as situational (Nisbett, Caputo, Legant, & Marecek, 1973). Art-making could facilitate this cognitive shift, by directing participants to consider their stress from their own point of view, or from another's – such as a close family member (second-person point of view), to an all seeing omnipresent being (third person point of view).

Because repeated expression through art-making of a traumatic event may explain therapeutic effect (Henderson et al., 2007), it would be interesting to find if participants consider the same trauma in each session in future art-making research. Sloan and Marx (2004) commented that a problem in writing studies is that it is often unknown whether participants are writing about same or different stresses at each session, and this could be important to analyse. However, writing or drawing about the same topic each time does not necessarily indicate exposure, as people who write about the same topic each time could be avoiding dealing with serious issues by focusing on trivial ones.

As it is not feasible to direct participants to draw about the same stress each session in future art-making studies - i.e. one participant may be facing an on-going issue, another may find that an issue one week is resolved the next, and there is not established method of examining the content of artworks, participants in future studies should be asked to indicate on a post-session form whether they drew about the same or a different issue from the last art-making session, to monitor possible exposure.

Comparison group drawing activity

It is important to include the use of comparison and control groups in future studies on art-making in therapy. While single group pre/post tests may indicate a change in wellbeing, it is

entirely possible that this would also occur naturally with time. A comparison group can compare the effects of art-making while focusing on a neutral topic, while a no-contact control can minimise the effects of actively participating in a study. The activities given to placebo or control groups vary widely in art-making studies, but it is important that the group assigned to the non-intervention task are actively engaged in the study (Hughes & da Silva, 2011), as Domar et al., (2000) conducted a study where 60% of the control group dropped out because they realised they were a comparison group and were dissatisfied with their allocation.

Curry and Kasser (2005) thought that perhaps there was no difference between plaid and mandala colouring groups because both had a very structured activity to complete, compared to the 'free form' group who had a blank piece of paper to colour. Curl (2008) asked their control group to paste magazine images on paper as a collage, and Pizarro (2004) used a still life condition for their control, but gave participants photographs of still life arrangements to draw rather than physical objects. In future studies, it may be better to present a still-life comparison group with actual objects to draw (such as a hat, figurines, glass bottles and vases), which would more closely simulate an art-class experience. Because drawing neutral objects is a well-established activity in art classes, this type of activity may work well as a placebo for participants – compared to the typical comparison expressive writing task, which is to list plans for the day (Sloan & Marx, 2004), and participants may be less suspicious of the nature of the task they are completing.

Timing of sessions

Many art-making studies used a single session of art therapy (Chan & Horneffer, 2006; Curl, 2008; Slegelis, 1987), while other studies included weekly sessions for six months (Wood et al., 2010). Length of sessions also varied from two minutes of drawing time (Slegelis, 1987) through to sessions lasting two hours (Grodner et al., 1982). It is difficult to determine how long is necessary to gain benefits from art-making therapy, as many of the studies did not find

significant results, and, as already discussed earlier, the outcome variables and measurements differed.

Frattaroli's (2006) meta-analysis of expressive writing studies found that studies which included sessions that lasted for 15-30 minutes, and at least three sessions, were more likely find significant results. Sessions of fewer than 15 minutes, and less than three sessions, were thought to be potentially detrimental because the activity may evoke strong negative emotion, but not provide adequate opportunity to process or gain insight.

The spread of sessions in expressive writing studies was related to a higher effect size, and studies that held sessions on consecutive days found fewer benefits for participants (Smyth, 1998), possibly because a longer period allowed participants more opportunity to be exposed the trauma and adequately process it.

In future art-making studies, the findings of expressive writing studies could be applied to timing of sessions. However, unlike the expressive writing model where participants are instructed to spend the entire writing session on one activity, the art-making sessions could include several drawings, as Dalebroux et al (2008) found that participants who are allowed to 'free draw' take an average of eight minutes to complete a picture. Allowing participants a longer time to draw one picture may cause participants to focus on the quality of art works produced, rather than emotional expression.

Follow-up

Expressive writing studies indicate that levels of stress or negative affect may increase in comparison to controls immediately after sessions, but that these levels drop below that of the control group in the days and weeks afterward (Frattaroli, 2006; Pennebaker, 1993; Smyth, 1998). One explanation for this effect is that participants need to experience negative affect in order to process trauma, and once the trauma has been adequately processed, participants

are able to function at a higher level as they are no longer ruminating on past events, and experience health benefits (Pennebaker, 1993). This means that participants should be measured at follow-ups after the expressive sessions have completed.

A point that was noted in art-making studies is the lack of follow-up, and several researchers expressed a desire to redesign the study, including a follow-up after weeks or months of the art therapy activity. Curl (2008) noted the need for follow-up with participants, as those in the negative-focus condition had a significant increase in stress levels immediately after the art activity, but it was suggested that this may have reduced if checked days or weeks later, as is consistent with what has been found in writing studies. Sloan and Marx (2004) also commented on a lack on standardisation for follow-ups in expressive writing studies , noting that there was much variance and often no rationale as to why the researchers had chosen that time period. These findings suggest future research should schedule measurements both immediately after the expressive therapy sessions, and also after a period of time as a follow-up, an aspect which was missing from many of the art-making studies described above.

An issue with clinical studies or hospital trials is that patients may be at their very worst when they enter a study and improve with medication over time, and have improved health outcomes for reasons other than the therapy treatment (Bell & Robbins, 2007). By using a 'normal' population in future art-making studies, the efficacy of art-making as a therapy may be more easily determined, and recruiting university students as participants aids in the study design because they have a known pattern of stress (Gawrysiak, Nicholas, & Hopko, 2009), and the timing of follow-up measures could be adjusted to suit this pattern. Mercer et al (2010) used university student participants, but acknowledged that the timing of sessions could have been improved, with the baseline assessment taken during the break (generally a lower stress period), and final assessment during the exam week (generally a higher stress period).

Room set up

In expressive art-making studies, groups of participants often sit together in classrooms and complete the art-making activities at desks or tables (Chan & Horneffer, 2006; Slegelis, 1987). This may not be ideal, as Chan and Horneffer (2006) made a point that needs to be considered regarding privacy. In their study, the participants assigned to the drawing condition felt less comfortable than those writing – 17% compared to 61%, and they posited that this was because the art-makers felt more self-conscious that their work could be seen from a distance as they were all in classroom situation. Bar-Sela (2007), also found that participants in their study did not enjoy the group situation and would have preferred one-on-one sessions. In the literature on expressive writing, Frattaroli's (2006) meta-analysis found participants who disclosed in private had greater benefits than those who disclosed in a setting with other participants nearby.

Materials

Very few materials are needed in writing studies, with a pen and paper being adequate. However, one of the qualities that make art-making possibly more expressive than writing is the use of colour. This was noted by Chan and Horneffer (2006), who also suggested that the materials used in their study could have been more 'artistic' i.e. just a plain pencil and 'letter sized' paper might not be enough. Art studies reviewed used a range of materials including pastels and pencils (Bell & Robbins, 2007), magazines for cutting out and creating collages (Curl, 2008), and paints, beads, feathers and fabric (Walsh et al., 2007). Future studies in art-making should encourage artistic creation by providing a range of materials for use in session.

Participants

Participants in expressive art-making studies generally seemed to fall into two categories – undergraduate students e.g. Curl (2008), Slegelis (1987) and Henderson et al. (2007), or

clients/patients of medical facilities with specific diagnosed conditions such as cancer or depression e.g. Grodner et al. (1982), Sarid and Huss (2010) and Wood et al. (2010). While undergraduate participants were generally aged between 18-25, participants in clinical studies ranged from children aged 7-14 (Beebe et al., 2010) to adults with an average age of 53 (Symons et al., 2011).

Studies with clinical participants were overwhelmingly female (Hughes & da Silva, 2011; Wood et al., 2010), and while studies which used undergraduate participants were generally larger in sample, and more proportionate in terms of male/female balance, on average the balance was in favour of females (Curl, 2008; Dalebroux et al., 2008; Henderson et al., 2007). This seems to suggest that females are more easily recruited and/or more interested in participating in art-making activities. Most of the clinical studies were sampled from those already attending treatment facility art classes, and it seems that this class-attending section of the population from which they sampled was already overrepresented by females.

This gender imbalance is interesting to note because it has been found that males experience greater benefits from expressive writing (Frattaroli, 2006; Sloan & Marx, 2004), and perhaps the inclusion of more males in art-making research may result in similar findings. This might be because men are less likely to discuss problems than women, and so have less opportunity to discuss trauma, and writing provides an outlet for this to occur (Smyth, 1998). Ptacek et al. (1992) have also found that men are more focused on problems and possible solutions, and compared to women, may spend less cognitive energy on processing the related emotions. Being directed to write about both facts and emotions during sessions may explain why men gain more benefit, as it is something that may be lacking in their daily lives.

An interesting consideration in expressive therapy is the role of culture. Confessing emotions is considered a normal and valuable activity in western cultures, but this may not be true in other cultures, particularly Asian cultures such as the Balinese and Chinese, where it is thought

that emotional expression is potentially harmful and is discouraged (Georges, 1995). While western culture is individualistic, those in collectivist cultures place more importance on group harmony, and expression of negative emotions may be seen to be disruptive to this balance. Wellenkamp (1995) also wrote about the Toraja culture (in Indonesia) who prefer to use methods of distraction to deal with traumatic events rather than expression of negative emotion. Those from Pacific Island cultures may hold similar views regarding disclosure – particularly the Kwara'are and A'ara speakers in the Solomon Islands, Hawaiians and Nukulaelae Islanders in Polynesia (Wellenkamp, 1995). Frattaroli considered these issues of culture in her meta-analysis on expressive writing studies, but found insufficient evidence in the studies examined, as most participants were white Americans (Frattaroli, 2006).

In comparison to the general population, university students seem to suffer higher rates of stress (Gawrysiak et al., 2009). Because they are stressed by adjusting to demands of academic study, they may react more adversely to other stressors as their cognitive load increases and coping mechanisms are compromised (Misra, Crist, & Burant, 2003). The term 'academic stress' has come to mean the perceived imbalance of how much knowledge is needed to be gained and the lack of time in which to complete (Carveth, Gesse, & Moss, 1996), and as a result, there is a high prevalence of anxiety and depression in university students (Dyrbye, Thomas, & Shanafelt, 1996), which often increases over the course of the first year and continues for the rest of study. Student populations in expressive writing studies had greater improvements in psychological wellbeing than non-students (Smyth, 1998), particularly when writing about stress of study, although this was not found in a later meta-analysis of writing studies (Frattaroli, 2006).

Outcome measures

A wide range of outcome measures was used in the art-making studies considered. This made studies hard to compare as noted by authors of literature reviews (Reynolds et al., 2000;

Slayton et al., 2010). The most common effects tested for were changes or improvements in levels of anxiety, depression (including feelings of hopelessness), stress and post-traumatic stress. Some art-making researchers commented that improvements could be made in choice of outcome measures of future studies. For example, Curry and Kasser (2005) measured only anxiety, but commented that they would include other measures of overall health in future studies.

The relationships between health outcomes in expressive writing studies is thought to be dynamic (Smyth, 1998), as many outcomes are associated with each other – i.e. reemployment and higher grade point averages are also associated with improvements in physical and psychological health. This may be because students who are healthy enough to attend all of their scheduled classes might achieve higher grades, and people who are more pleasant (low levels of depression or anxiety symptoms) may perform better in interviews and be reemployed faster. Similarly to the views of Rosenzweig (1936/2002), it may be posited that a change in one aspect of health (such as reduction in the cognitive load of rumination) may result in overall improvement in health. By including a range of measures in future studies, such relationships between outcomes may be observed.

This range of outcomes measures used in art-making studies, and the lack of supporting theories to explain how it might be therapeutic as a medium, means that it is difficult to determine which measures to include when designing a study of this kind. For this reason, a variety of outcomes should be included in future studies, including depression symptoms, anxiety, stress and fatigue along with physical health, and academic grades if using student participants. A mood measure taken immediately prior and following each art-making session for those in the expressive drawing and still-life comparison groups could also measure levels of positive and negative affect.

Expressive writing researchers have found the measurement of doctors' visits to be problematic because as many as 50% of university student participants reported that they had not visited medical centre at all in the month prior to the experiment (Pennebaker & Francis, 1996). However, participants did report feeling sick and taking days off work or studies in greater numbers than doctor's visits (Sloan & Marx, 2004), so these may be better indicators of physical health in future studies.

Frattaroli (2006) found that level of optimism was a moderating variable in her meta-analysis of expressive writing studies, where those with a pessimistic disposition experienced greater benefit from the writing activities, as these participants could have more potential benefit from expression of emotion. For this reason, the Life Orientation Test (Scheier & Carver, 1985) should be included at the baseline assessment of future art-making studies as a potential moderating variable of dispositional optimism for expressive art-making.

While there are critiques about using self-report measures, in some cases, self-report is a better way to identify the extent of distress than objective measures. For example, Coyne, Aldwin and Lazarus (1981) suggested that it is the appraisal of life events or struggles, rather than the actual struggle, which predicts a person's depression, and that it doesn't matter so much about what happens, but more about how it is perceived, which effects emotional stability.

Objective measures could be included in future art-making studies, and could include physical measures such as heart-rate or cortisol levels for measures of stress, or improvement in academic grades as indicators of overall health in student participants - and a possible reduction in cognitive load – i.e. participants who spend less time ruminating will be able to concentrate on studies and achieve higher grades.

Measurement of artworks

A few researchers have attempted to measure the actual artworks, with varying methods and results. Slegelis (1987) gave participants a sheet of paper with either a circle or a square outlined on it, and asked them to draw a picture. She then counted the number of 'sharp' lines compared to the number of 'soft' lines in each artwork, as it was purported that hard or sharp lines were evidence of internal feelings of hostility and fear. A significant difference was not found between the two shapes, and while this is certainly a novel measurement, more evidence for this relationship between sharp lines and negative emotion would perhaps need to be established.

Beebe et al., (2010) used the 'person picking an apple from a tree' measure of art-works, where participants are instructed to draw this image, and the art-work is rated on a scale of 0 to 5 covering level of detail, line quality, rotation etc., which is thought to indicate a child's level of coping abilities and resourcefulness. A significant increase in score was found in the intervention group, particularly in the areas of colour, logic and line quality, and these results continued at six months following treatment.

Bar-Sela et al. (2007) involved therapist interaction with participants when reviewing artworks, but this process seemed to be very subjective. For example, if the therapists noticed that a participant was using many dark colours in their work, they would consider this to be 'depressive', and encourage the participants to include brighter colours in their work.

Drawings of brain-damaged patients have been used in assessment – such a patients who suffer from hemispatial neglect syndrome, where damage to one hemisphere of the brain causes patients to 'visually neglect' one half of their field of vision (Smith et al., 2007). Evidence for the syndrome can be seen in drawings, where only one half of an object is drawn - for example a clock, which has numbers drawn on one side only, and the other side is left blank. However, emotional problems are more difficult to identify in art-works (Larson, 2006).

While there may be potential in the assessment and measurement of artworks, the methods described above are very subjective. Expressive writing researchers have been able to measure writing samples (Pennebaker, 1993), for example the use of pronouns found in Pennebaker and Francis' (1996) study, provided some evidence to support cognitive change over sessions. However, it is arguably more difficult to decide what is a hard line compared to a soft, and what is a sad colour. For example, if a client is allowed to choose materials, and they create a picture using charcoal, it could be seen to be indicative of depression, but equally, they could simply prefer charcoal as a commonly used medium for drawing.

Summary

Art Therapy is a method of psychotherapy which is widely practised, but has little evidence to support its efficacy. While case studies have provided some insight into art-making in therapy, experimental research has found little support for the medium, and this raises issues of ethics for practitioners of art therapy (Larson, 2006). However, the experiments examined above in art therapy included issues in design such as small participant numbers, single session design, potential confounding variables and inadequate controls, which may explain the lack of effect found, and further research in this field is clearly needed.

The main issue with much of the previous research in art-making is that the session design is not expressly described. This makes replication very difficult, so previous results found are unable to be validated. However, the field of expressive writing provides a well-developed model which could be adapted for the study of art-making. Some attempts for the adaptation have already been made (Chan & Horneffer, 2006; Pizarro, 2004) but the design of these experiments did not include three or more sessions, or multiple follow-ups which has been suggested in meta-analyses of the expressive writing literature (Frattaroli, 2006).

The aim of this following study is to address the above issues in a three group experimental design. An intervention task will be described in detail, and a comparison group will be actively

involved in a neutral form of art-making. Because the comparison group will be active participants, a no-contact control group will also be included in the study design to control for the effects of participation. Active participants will be invited to attend six art-making sessions, and all participants will be asked to complete baseline measures and three follow-up measures (one immediately following the art-making sessions, one a month after sessions and the final assessment two months after art-making sessions). As there is conflicting evidence as to which facets of wellbeing are affected by therapy, a range of outcome measures will be assessed, including self-report scales on anxiety, depression, fatigue, stress and physical health, as well as academic grades.

Hypothesis

It is hypothesised that: (1) Those in the intervention group will significantly improve in self-reported outcomes of psychological and physical wellbeing at the second and third follow-up measure compared to the comparison and control group, because participants in this condition will be challenged to process their stress from various viewpoints; and (2) those in the still-life drawing group will have improved scores from a placebo-type effect in comparison with the no-contact control group, as they will be asked to engage in a drawing activity that may be a relaxing distraction.

Method

Participants

Participants in this study were all enrolled undergraduate students at AUT University. The researcher approached students at the start of lectures during the first week of classes in the first semester of the 2012 academic year, and gave a brief description of the study. Students from a range of disciplines were targeted, with students approached in Communication Studies, Computing, Graphic Design, Mathematics, Psychology and Social Sciences classes. All students who were interested in participating in the study were asked to provide contact details (email addresses and phone numbers) on sign-up slips which were deposited into a box and collected at the end of the lecture. The researcher then contacted and invited potential participants to an information and recruitment session. No exclusion criteria were used, and all who volunteered were eligible to participate in the study.

Of the students approached, 127 registered their interest in participating during the in-class presentations and provided the researcher with contact details. Of those, 64 attended a separate information session, during which the details of the study and participant activities were discussed. Of the 64 students who attended the information session (See Appendices A and B), three declined to participate after receiving more detailed information about the study, due to the time commitment involved. The remaining 61 volunteers were randomly assigned to one of two art-making groups (n = 45) or a no-contact control group (n = 16).

The study suffered from a high rate of attrition (45% across the study), with reasons for dropping out including time-management issues, and the perception that participation might negatively impact on their study due to workload. There was some further attrition during the assessment phases with 41 of the original 61 participants completing the second assessment, 38 completing the third assessment, and 35 completing the final assessment. The expressive

drawing group (details about the groups follow) had the highest attrition rate with 61% of participants leaving the study before completing the final assessment, while 36% of still-life comparison group and 25% of the no-contact control group failed to complete the study. A Chi-square test of independence showed that the difference in attrition between the three experimental groups was marginally significant (χ^2 (df,2 N=61) = 5.52, p = 0.063) Participant progress through the study, including details on attrition, is displayed in the Figure 3.1 below:

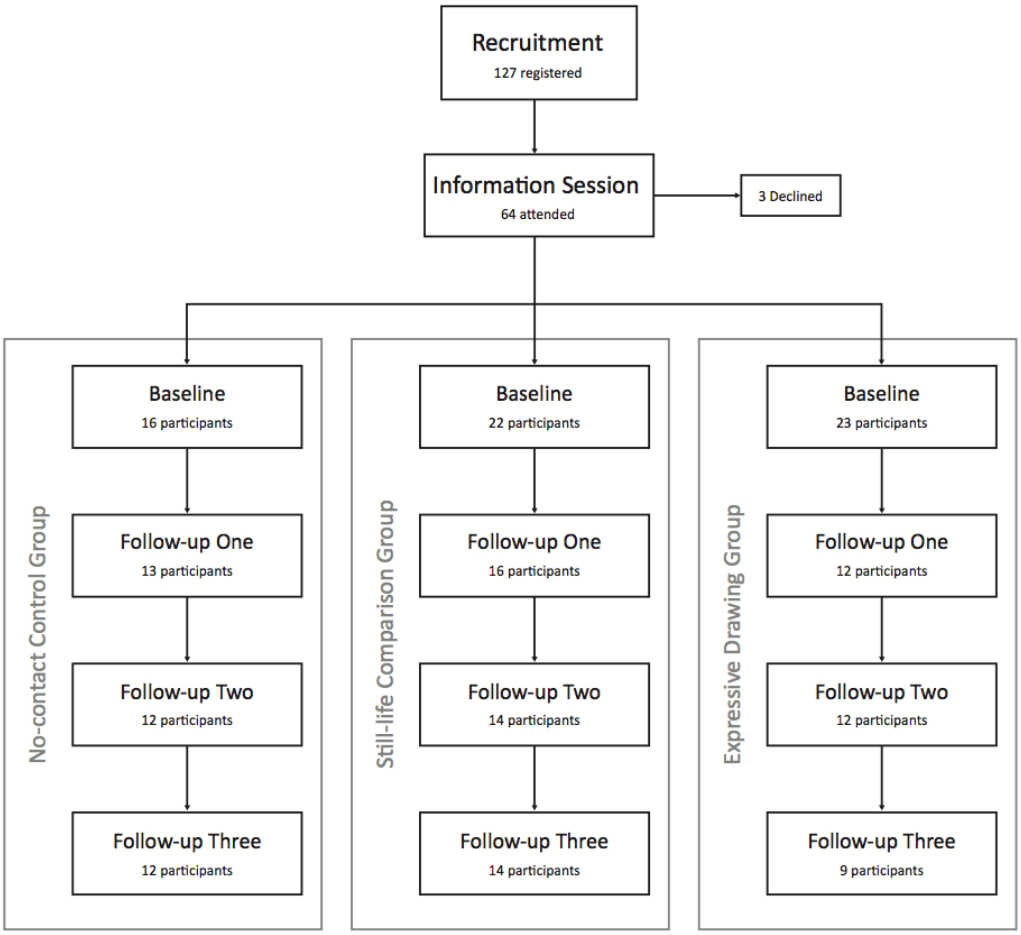


Figure 3.1: Consort diagram of participant numbers by group during the course of the experiment

Following the introductory sessions, one member originally assigned to the expressive drawing group asked to be transferred to the no-contact control group as they could not find the time to complete the art-making sessions. At this stage the participant had not yet attended any

art-making sessions, and the researchers allowed this transfer. Data from this participant were excluded from initial analyses but were found not to affect the final results of the study, and as such, data from this participant were included in the final analyses presented.

Participants self-identified their ethnicity on the demographics questionnaire (see Appendix C), with the majority New Zealand European (34%), Asian (20%), Maori (8%), Pasifika (8%), Indian (7%), and European (4%), with the remainder grouped as 'Other', which included ethnicities such as South African, Latin American, Belarusian, and those who had chosen multiple ethnicities (several participants chose two or more ethnicities).

Ages ranged from 18 years to 32 years with a median age of 19 years and a mean age of 19.9 years (SD = 2.83). The sample consisted of more female participants (n = 48) than male participants (n = 13). This was significantly different from the general population of New Zealand, based on the 2006 New Zealand Census data (Statistics New Zealand, 2006), of 51% female and 49% male, χ^2 (1, N = 61) = 18.71, p < .001, and the AUT student population of 61% female and 39% male students (AUT University, 2012), χ^2 (1, N = 61) = 8.023, p < .01.

All participants were students at AUT University, with most reporting that they were full-time students (93%), and most in their first year of study (78%). Students were enrolled in several different programmes, with 26 enrolled in the Bachelor of Arts, 17 enrolled in Bachelor of Communication Studies, nine enrolled in the Bachelor of Computer and Information Sciences, four in Bachelor of Graphic Design, two enrolled in the Bachelor of Health Sciences and two in the Certificate in Social Sciences. Most (85%) of the students reported that they had both assignments and exams during the semester in which the experiment ran, with the remainder having only assignments.

Study design

The study was designed as a three (group) by four (time) mixed model study. Participants were randomly assigned to one of the following three groups: a no-contact control group; a still-life

comparison group, where participants were asked to participate in 'neutral' still life art-making sessions; and an expressive drawing group, where participants were asked to complete art-making activities that related to feelings of stress.

The participants in all groups were asked to complete all of the four assessment measures, and the study ran over the course of one semester of university study (March-July 2012). Participants began with recruitment and the baseline assessment in weeks two and three, and completed the final psychological wellbeing assessment in the first week of holidays after exams were complete, and a debrief session followed. All the participants were also asked for permission to access their academic grades from the previous and current semester for further analysis, and 52 out of the 60 participants agreed.

Instruments

This study used several scales to measure psychological and physical wellbeing over the course of a semester to assess the efficacy of the intervention. Short forms of scales were used when available in an attempt to reduce the total length of the assessment.

The initial baseline assessment included a copy of all the wellbeing assessment as well as a demographic questionnaire (Appendix D). The life orientation scale (Scheier & Carver, 1985) was completed at baseline only, as optimism has been shown to moderate outcomes in expressive writing assessments (Cameron & Nicholls, 1998), and data was collected for use as a possible covariate. Participants completed the well-being assessments at four times over the academic semester: Baseline in week 2; follow-up 1 at 6 weeks; follow-up 2 at week 11; and follow-up three at week 16. Upon completion of the study, participants were given the opportunity to complete an open-ended feedback survey on the study (See Appendix F).

Both groups attending the art-making sessions were also asked to complete a short mood measure: the PANAS – Positive and Negative Affect Scale (Watson et al., 1988) immediately before and after each drawing session (See Appendix E).

Demographics

Participants were asked to self-report demographic information on age, gender, and ethnicity, programme of study, and how long they had been studying the particular programme that they were enrolled in. Participants were also asked if they participated in art-making, and if so how often. A copy of this form is in Appendix C.

Main outcome measures

Participants were asked to complete four well-being assessments. The assessment was comprised of several established psychological scales including a non-diagnostic depression symptomatology scale - Centre for Epidemiological Studies Depression Scale (Radloff, 1977); a multidimensional fatigue scale (Landhuis, 2008); a brief and commonly used self-reported stress measure - the Perceived Stress Scale (Cohen et al., 1983); and a short non-diagnostic anxiety measure: the short-version of the State Trait Anxiety Inventory: (Spielberger, 1983 as cited by Marteau and Bekker, 1992). All of the scales used Likert-style response options, and participants were asked to rate their own behaviour/affect/cognition over a specified time period.

Depression

The Centre for Epidemiological Studies Depression Scale (Radloff, 1977) was used to measure levels of self-reported depression symptomology in participants. Items for this scale were developed and combined from several previous depression scales, and measure three dimensions of depression: affective; behavioural; and cognitive. It is a non-diagnostic tool used to assess levels of depressive symptoms in non-clinical populations, and it is expected that most normal participants would report “a few” symptoms (Radloff, 1977). Participants are asked to respond to the items based on their experiences over the past week, and all 20 items used a four-point self-report Likert scale ranging from “rarely or none of the time (less than

one day)" (coded as 0), to "most or all of the time (5-7 days)" (coded as 3). There were 16 negatively worded items (e.g. "I was bothered by things that don't usually bother me") and four items were positively worded items (e.g. "I felt hopeful about the future") which were then reverse coded. Scores could range from 0 - 60, with a high total score indicating a higher level of depression symptoms. Scores for participants in this sample ranged from 23 to 57 at the baseline assessment.

A potential issue reported by Radloff was the use of colloquial wording when this scale is used by bilingual respondents. Items such as "I had crying spells", "I had the blues" and "I could not get going'' may be confusing for participants for whom English is not their first language. A reliability analysis was conducted on the scale, and these items were not found to be a problem in this current study, with a reliability coefficient of α = .86, which is consistent with Radloff's findings of α = .85.

Fatigue

A scale developed by Landhuis (2008) was used to measure fatigue. This scale utilised items from several validated clinical population scales. Factor analysis of this scale identified the three components of fatigue, including physical fatigue, mental fatigue and energy or vigour which were moderately correlated with each other, indicating that the components all measure different aspects of the underlying global fatigue construct. For this study the measure of global fatigue was used.

The scale consisted of 12 items, and participants were asked to respond to the items based on their experiences over the past week before the assessment. The items relating to mental and physical fatigue were negatively worded (e.g. "I felt drained") and items relating to energy and vigour were worded positively (e.g. "I felt inspired"), which were reverse coded. This scale used items measured on a five-point response scale ranging from "not at all" (coded as 0) to "extremely" (coded as 4), with a high total score indicating a higher level of fatigue. Scores

could range from 0 – 48, with a high score indicative of fatigue. Participants in this sample ranged from 6 to 39 at the baseline assessment. The reliability coefficient for the scale in this sample was α = .83 which was consistent with the α = 91 reported by Landhuis (2008).

Perceived Stress

The Perceived stress Scale (PSS) developed by Cohen, Kamarck and Mermelstein (1983) was used to measure global stress levels in participants. It has been found that self-reports of stress (perceived stress) are better indicators of health than measurement of stressful events in people's lives (Cohen et al., 1983). This scale has been validated in both student and general populations, and a range of age groups.

The 14 item version of the scale was used in the study, with five-point Likert response options ranging from "never" (coded as 0) to "very often" (coded as 4). The scale asks participants to consider their feelings and behaviours over the last month, and includes items such as "in the last month, how often have you felt nervous and 'stressed'?" to "In the last month, how often have you felt that things were going your way?". Scores could range from 0 - 56, with a high total score indicating higher level of perceived stress. Scores for participants in this sample ranged from 21 to 48 at the baseline assessment. The reliability coefficient for the scale in this sample was α = .82 which compared to α = .85 found by Cohen, Kamarck and Mermelstein.

Anxiety

Anxiety was measured using the non-diagnostic State Trait Anxiety Inventory (Spielberger, 1983, as cited by Marteau and Bekker, 1992), and is frequently used in psychological studies of mental health. For this study, the short-version of the State Trait Anxiety Inventory (STAI) developed by Marteau and Bekker (1992) was used, as it has only six of the original 20 items and has been found to be a reliable measure. Participants were asked to respond to the items based on how they feel "at this moment" on a four-point Likert scale ranging from "not at all"

(coded as 0) to "very much" (coded as 3). Three of the items are worded positively (e.g. "I am tense"), and three are worded positively (e.g. "I feel calm"). Positively worded items were reverse coded.

Scores could range from 0 - 18, with a high total score indicating higher level of perceived stress. Scores for participants in this sample ranged from 6 to 18 at the baseline assessment. The reliability coefficient for the scale in this sample was α = .83, which compares to α = .82 for the six item scale in Marteau and Bekker's study.

Physical symptoms

In addition to the psychological measures of wellbeing, five items were included to assess physical wellbeing. Participants were asked to consider the last four weeks when answering each of the items, and were asked to report on number of times they had visited a health centre or healthcare professional (excluding counselling), the reason for these visits, and how many of the visits were for follow-up reasons. Participants were also asked to report how many days in the last four weeks that they had been sick, and how many days they had taken off study or work because of this. Number of health visits ranged from 0 to 8 at the baseline assessment, and number of days sick and days off ranged from 0 – 30 and 0 – 2 days respectively.

Analyses included all days sick and days off, with follow-up medical visits subtracted from the total number of medical visits at each assessment.

Dispositional Optimism

The Life Orientation Test (Scheier & Carver, 1985) is an eight-item scale designed to measure dispositional optimism, which is described as the tendency to generally expect positive outcomes. Items are responded to on five-point Likert scales ranging from 'strongly agree' (coded as '0') to 'strongly disagree' (coded as '4'). Four of the items are positively worded (e.g.

'in uncertain times, I usually expect the best') and the remaining four are worded negatively (e.g. 'things never work out the way I want them to') and reverse coded. The original scale also included four filler items designed to disguise the intent of the scale's measurement (e.g. 'it's important for me to keep busy'), but these items were removed for the current study in an attempt to reduce the total item load.

The Life Orientation Test (Scheier & Carver, 1985) was developed using a participant sample of undergraduate students, who were measured several times during the course of a semester. Levels of optimism were found to be relatively stable – after a four week interval participants' test-retests showed a reliability of r_{tt} = .79.

Scheier and Carver listed the norms for undergraduates as being 21.03 for males and 21.41 for females, which compares to the participants of this study, where female participants had a mean of 19.81, and males 20.23 at baseline. The reliability coefficient for the scale in this sample was α = .79, compared to Scheier and Carver's finding of α = .76.

Positive and Negative Affect

The Positive and Negative Affect Scale (Watson et al., 1988) was used to assess the mood (affect) of participants in this experiment before and after the art-session phase of the experiment. Positive affect relates to feelings of enthusiasm and concentration, while low positive affect is related to lethargy and sadness. Negative affect includes feelings of anger, disgust and guilt, and low negative affect is related to feelings of calm.

High levels of negative affect have been linked to higher levels of stress and poor coping methods, while high levels of positive affect are related to feelings of satisfaction (Watson et al., 1988). However, it is thought that in order to experience a therapeutic effect from processing emotional traumas, people need to first experience high levels of negative affect –

'no pain, no gain'- (Pennebaker, 1993, p. 546) which result in beneficial health outcomes with time.

The PANAS is a 20 item scale, with 10 items related to positive affect, e.g. 'enthusiastic', and ten items related to negative affect, e.g. 'irritable'. Participants were asked to rate their agreement with each term on a five-point Likert scale ranging from 'very slightly or not at all' (coded as '1') to 'extremely' (coded as '5'). Participants were asked to complete a copy of this scale immediately before and after each art-making session.

Scores could range from 10 - 50 on each of the two scales, and participants in this sample ranged from 13 - 44 on positive affect and 10 - 38 on negative affect at the pre-test of the first art-making session. The reliability coefficients for the two scales in this sample were α = .90 and α = .86 for negative affect and positive affect respectively, which compares to α = .85 and α = .88 found by Watson et al.

Academic Results

Participants were asked for permission to access their academic results through the university services. Results from the semester prior to the study were to be compared to results of the semester in which the experiment took place. All grades were available as percentages (i.e., number grades rather than letter grades) to the researchers. Most participants allowed the researchers access to their grades (52 of the 60 participants). However, 40 of these participants were in their first semester of study, so this limited analyses as they could not be compared pre-post study. Participant mean grades ranged from 25 to 84 in Semester one, 2012.

Feedback survey

Participants were also asked to complete an open ended feedback survey at debrief, as the researchers wished to gain feedback on the art-making experience. All questions were open-

ended and covered topics such as enjoyment of experiment, whether or not they would participate in a similar study and why, any benefits or losses found, satisfaction with procedures and suggestions for improvement in study design (Appendix F).

Procedure

Recruitment

Participants were recruited during the first week of Semester one, 2012. The researcher gained access to scheduled lectures and classes, gave a brief verbal description of the study, and distributed sign-up slips to be dropped into a box at the end of each lecture, ensuring confidentiality. Information sheets were also given to all those who expressed interest. Those who completed the sign-up slips were then contacted and invited to attend an introductory session, of which there were nine choices, at various times of the day during the course of a week. These nine sessions were then randomly allocated by the research supervisor to the no-contact control group, the still-life comparison group, or the expressive art-making group. That is, all participants attending a particular introductory session were assigned to one of the three experimental groups. Although this deviates from a strictly randomised assignment to groups, allocation of participants to study groups occurred in this way in an attempt to protect information about the different art-making activities, as participants signed up for art-making sessions during the introductory session if they were in allocated to the still-life or expressive drawing groups. If participants were assigned to groups in a truly random fashion we risked the still-life comparison group realising that they were not receiving the expressive intervention, which would have compromised the integrity of the experiment.

The researcher who contacted the potential participants was not made aware of which sessions were allocated to each group until after the participants had signed up to an introductory session, so that the researcher could not influence participant allocation to condition.

Introductory session

Due to different numbers of attendees in each session, only two of the introductory sessions were dedicated to the no-contact control group. These participants were advised of their role in a question and answer session, before being asked to sign a consent form. They were then asked to complete the demographics questionnaire and the first wellbeing assessment. Participants were instructed that three more of these assessments would be administered online during the semester, and participants were advised that they would be sent text and email reminders for each assessment phase. Participants in this group were aware of the study title 'therapeutic art-making', and for ethical reasons they were made aware that they were a comparison control group.

The remaining sessions were dedicated to the two art-making groups, where attendees were allocated to either the still-life comparison art-making group, or the expressive drawing group (although both groups were simply told that they would be participating in different forms of art-making, and labelled 'Group Two' and 'Group Three'). Participants in these groups were also asked to sign the consent form, complete the demographic questionnaire, and complete the first psychological wellbeing assessment. Arrangements with participants were made for the art-making sessions in the following three weeks using sign-up sheets for scheduled session times. Participants were instructed not to discuss the content of the art-making sessions with other participants in an attempt to keep the still-life art-making group from being made aware that they were assigned to a placebo-type comparison condition.

Art-Making sessions

Participants in both art-making groups were invited to complete six art-making sessions (approximately 30 minutes each) over a period of four weeks. The study was designed so that participants would attend two sessions per week for three weeks, and additional sessions were made available in the fourth week as 'catch-up' sessions for those who missed an earlier

session. Timing, materials, and number of drawings were consistent for both groups, but the instructions given differed between the two conditions. There was a maximum of eight participants per art-making session.

Due to unforeseen circumstances, the art-making sessions had to be relocated to a different room at the end of the first week of sessions. The first space consisted of several rooms, including a waiting area, a set-up area and a room with eight separate booths. Pilot testing (see Appendix G for details) revealed that privacy was important to participants, and this space had been located in an attempt to provide this. The room with the booths was both light and temperature controlled, and included a computer screen which displayed instructions on an automatically timed slideshow for participants to follow. Each booth also contained a sliding screen behind which objects could be placed for participants to view and draw in the still-life comparison group.

The second room was a boardroom which was also used as a storage area, and had the advantage of being located next door to the first room, which reduced participant confusion. Although participants sat around a large table, make-shift partitions were set up to increase privacy. Instruction delivery differed in the second room as computer screens were not available, and these were instead read aloud by the researcher. The timings, art materials, and content of instructions remained the same in both spaces. Feedback on the room change was sought from participants and will be discussed further in detail in the results section (see Appendix H for photos of these two rooms).

Still Life comparison group

Participants in Group Two were asked to complete six drawings in each of the six sessions, and were encouraged to use any of the available materials (including graphite pencils, charcoal,

felt-tip pens, coloured pencils and crayons). Participants were seated facing a group of small still-life objects – including, for example, a kettle, a mannequin, scarves, glasses, books and various household items. Participants were then instructed to draw these objects, with a time limit of two minutes for each drawing (see Appendix G for discussion of timings from the pilot sessions). Instructions and still-life objects varied in each session, as participants were encouraged to draw the objects from different angles or viewpoints, i.e. extreme close-up or 'bird's eye view'. Full instructions for a sample session can be found in Appendix I.

Expressive drawing group

Participants in this condition were again seated in separate booths/spaces, and were asked to consider something that they were currently finding stressful in their lives. They were instructed to draw this stress from several different viewpoints, including oneself (first person), a close friend or family member (second person), and an omniscient being (third person). As with the Still-life comparison group, sessions consisted of six drawings, each two minutes in drawing time. As discussed earlier, these instructions were based on those given in expressive writing studies, and adapted for the art-making medium. Full instructions for a sample session can be found in Appendix J.

Follow-up Assessments

In week seven of the semester (approximately half-way through the semester and the week following the last art-making sessions) all participants were asked to complete the second wellbeing assessment. All participants were sent a text reminder and emailed a hyperlink to the assessment to complete online. Participants who had not responded by the morning of the third day were sent a second text reminder, followed by a phone call two days later, and emails reminders.

In week twelve of the semester (i.e., just before the final exams), all participants were asked to complete the third wellbeing assessment. As with the second assessment, all participants were

notified by text and email when they needed to complete the online assessment. Participants were asked to complete a fourth and final wellbeing assessment in the week immediately following the end of the exams and the end of the semester.

Debrief

All participants were sent a debrief email following the final wellbeing assessment. While individual results were not discussed, a summary of the results was reported. Participants were encouraged to schedule an appointment with the researcher to further discuss the study if they wished. Participants were also asked to complete a feedback survey to gain insight into the experience that they had had as participants in the experiment.

Data Analysis

A 4(time) x 3(group) mixed model ANOVA was used to assess group differences over the four assessment phases. Because of the high attrition rate, further analyses were made to compare each of the follow-up assessments with the baseline data, using a 2(time) x 3(group) mixed model ANOVA. Data was analysed using SPSS (version 18) software (SPSS Inc, Released 2010).

Initial analyses were run with the potential covariates of optimism and gender, and compared to analyses without these covariates. This was also conducted with and without the participant who had self-selected into the no-contact control group. When covariates were not found to effect results, they were excluded from the final reported analyses.

Data was checked for normality, and the self-reported physical health measures were skewed. Number of days off, number of days sick and number of health visits were all very low in reported numbers, with many participants reporting 0.

Results

Group characteristics at baseline

Participant characteristics by group are displayed in Table 4.1 below. There were no significant differences between groups in any of the variables, except for an uneven distribution of gender, with more females in the expressive drawing group; χ^2 (2, N=61)=8.777, p=0.012. Most participants were enrolled in their first semester of study, with a few in their second, third or fourth year of study at AUT University. The subject area of qualifications also varied, with the largest proportion of students studying media and communication studies. Students in Computing, Maths and Engineering had been specifically targeted for participation as there are a higher proportion of males studying these subjects, but interest during recruitment from these groups was low. Participants varied in how often they engaged in art-making, with 11 participants creating art-works once a week or more, but 12 'never' engaging in art-making.

Group differences at baseline

No significant differences were found between the three groups at baseline measurement in any of the outcome variables, with all p values > 0.5, except for state anxiety measure which had a borderline p-value of 0.11, while participants in the no-contact control group reported slightly lower levels of anxiety than those in the two art-making groups.

Correlations for measures at baseline

As can be seen from the following Table 4.2 below, neither age nor gender was correlated with any of the outcome measures at baseline. Dispositional optimism was measured as a potential controlling variable, and was found to be correlated with perceived stress, anxiety, depression and fatigue, but only correlated with the health measure of 'days off' (study or work). However, optimism was not different for the three groups, $F(2, 58) = 0.12$, p 0.089.

Table 4.1
Participant characteristics for each of the three groups at baseline

Measure	No Contact Control	Still Life Comparison	Expressive Drawing
Gender			
Female	9	17	22
Male	7	5	1
Age (years)			
M	20	20	19.6
SD	2.94	3.25	2.34
Ethnicity			
Asian	2	7	3
New Zealand European	4	6	12
Pacific Islander	3	2	0
Other	7	7	8
Area of study			
Communication and Media Studies	3	8	7
Computing, Maths and Engineering	4	3	2
Fine Arts and Design	1	0	3
Psychology	5	4	3
Social Sciences	3	5	6
Other	0	2	2
Years of study			
First year, first semester	11	17	18
First year, second semester	1	0	1
Second, third or fourth year	4	5	4
Art making history			
All the time (once a week)	3	5	3
Often (once a month)	5	3	7
Occasionally (every six months)	4	4	1
Hardly ever (once a year)	2	4	6
Never	2	5	5

The self-report measures of perceived stress, anxiety, depression and fatigue were highly correlated with each other, but there were few correlations between measures of psychological wellbeing and physical health measures. No correlation was found between anxiety and any of the health measures, however fatigue was correlated with days sick and days off. Number of health visits made in the last month, as reported by participants, was correlated with days sick but not days off. The number of days participants reported as sick was correlated with fatigue and health visits. Days off were correlated with the measures of dispositional optimism, depression, fatigue and days sick.

Table 4.2
Bivariate correlations of measures, means and standard deviations at baseline

Variable	1	2	3	4	5	6	7	8	9	10
1. Gender	-									
2. Age	-.11	-								
3. Optimism	.04	-.16	-							
4. Perceived Stress	-.15	.01	.52**	-						
5. Anxiety	-.17	.03	.50**	.64**	-					
6. Depression	-.06	-.07	.50**	.70**	.48**	-				
7. Fatigue	-.23	-.15	.63**	.57**	.51**	.67**	-			
8. Health Visits	-.19	.13	.06	-.02	.03	.14	.14	-		
9. Days Sick	-.18	-.08	.23	.15	.18	.21	.26*	.32*	-	
10. Days Off	-.18	.01	.32*	.30*	.24	.34**	.34**	.09	.30*	-
	Mean	19.88	19.90	38.46	10.90	33.48	20.21	0.56	2.28	0.15
	SD	2.83	4.81	7.24	3.47	8.25	7.73	1.32	4.54	0.44

* correlation is significant at the 0.05 level, ** correlation is significant at the 0.01 level, *** correlation is significant at the 0.001 level. Note: For gender, 1 = Female, 2 = Male.

Attrition rate

As mentioned earlier in methods, the study suffered from a high rate of attrition. While 61 participants completed the baseline assessment, only 41 completed the first follow-up assessment, 38 completing the second follow-up assessment, and 35 completed the final follow-up assessment.

There were significant differences between those who dropped out of the study (did not complete all wellbeing measures), and those who completed all three of the follow-up measures. Perceived stress, depression, and fatigue were all significant, with those who dropped out of the study having higher ratings on these scales at baseline compared to those who completed for perceived stress ($t(61)=2.379$, $p<0.05$), depression ($t(61)=2.014$, $p<0.05$) and fatigue ($t(61)=2.043$, $p<0.05$).

There was also a borderline effect found for group and attrition rate χ^2 (2, N=60)=5.52, p=0.063 with the expressive drawing group showing a marginally higher attrition rate than the other two groups. Chi-square analyses did not find a relationship between gender and attrition ($p >0.5$). Ethnicity (categories listed in table 4.1 above) and discipline studied (categorised by faculty) were not related to attrition rate, and chi-square analyses did not find a relationship between these variables ($p > 0.2$).

Completion of art-making sessions

Although participants were scheduled to attend six art-making sessions, most completed fewer than six sessions. While 19 still-life comparison group participants attended their first scheduled art-making session, 14 attended at least four sessions, and nine of those completed all six. In the expressive drawing group, 17 attended the first art-making sessions, 13 attended at least four sessions and just three of those attended all six scheduled sessions. Numbers are displayed in Figure 4.1 below:

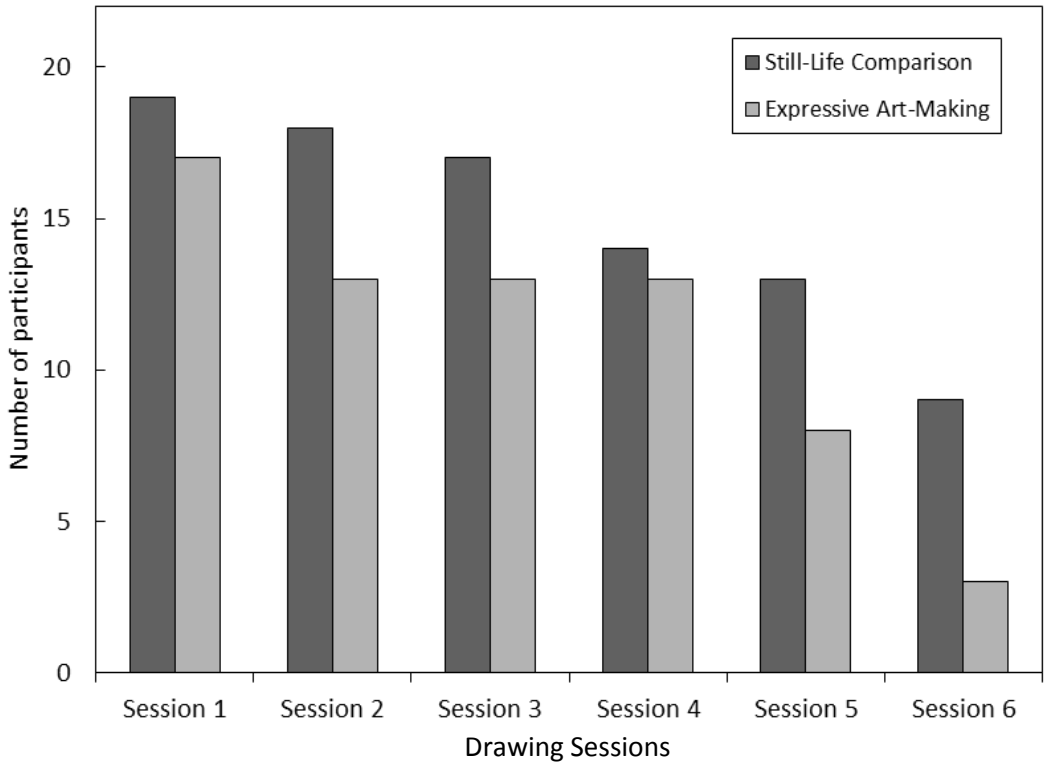


Figure 4.1. Number of participants who attended each art-making session for each of the two drawing groups.

Effects of the intervention

A total of ten outcome measures were assessed, including perceived stress, depression, state anxiety, fatigue, life orientation, positive and negative affect, number of days sick, number of days off work or study, number of health visits, and reasons for those health visits.

These data were initially analysed using a 3(group) x 4(time) mixed model ANOVA. However, because of the high attrition rate and subsequent loss of power, additional analyses were made to compare each of the follow-up assessments with the baseline data, using a 3(group) x 2(time) mixed model ANOVA.

Positive and Negative Affect

Participants in the art-making groups were asked to complete a PANAS scale immediately before and after each drawing session. As completion of art-making sessions dropped after the first four sessions, the mean difference in pre/post scores was calculated for the first four sessions attended.

The expressive drawing group had a mean decrease of 1.62 points (SD = 7.80) from pre to post drawing on the positive affect scores, compared to an increase of 0.68 points from pre to post drawing (SD = 4.03) for the still life comparison group. The expressive drawing group had a mean decrease of 0.15 points (SD = 5.35) between pre and post drawing on negative affect scores, compared to a decrease of M = 2.37 points (SD = 2.13), for the still life comparison group. t-test analyses found no significant difference between participants in the still life comparison or expressive drawing groups for positive affect; $t(34)=1.130$, $p=0.266$, and a borderline effect for negative affect; $t(33)=.633$, $p=0.112$, with the expressive drawing groups having higher levels of negative affect.

Anxiety

The expressive drawing group reported higher levels of stress than those in the comparison or control group. As can be seen in figure 4.2, all participants, irrespective of group allocation reported their lowest levels of anxiety at baseline (M = 10.90, SD = 3.47). Both the non-contact control and expressive drawing groups reported their highest levels of anxiety at follow-up two (the week before exams), no contact control; M = 12.50, (SD =3.63) and expressive drawing; M = 14.58, (SD = 3.09), while the still-life comparison group reported their highest levels of anxiety at follow-up one (in the week following art-making sessions), M = 12.37, SD = 5.19), and decreased in level of anxiety slightly at follow-up two. All participants dropped back to a level of anxiety that was similar to baseline at the final follow-up (M = 11.43, SD = 3.87).

The no contact control group reported slightly lower STAI scores at baseline (M = 9.38, SD = 3.284) compared to the other two groups (M = 11.22, SD = 3.190, M = 11.68, SD = 3.682 for expressive drawing and the still life control groups respectively), although this was not significant. Results from the 4 (time) by 3 (group) mixed-model ANOVA found a main effect for time $F(3,93)= 4.51$, $p=0.005$, and post-hoc analyses using a Bonferroni adjustment found that follow-up two was significantly different from the baseline assessment ($p=0.005$), with no other difference between time periods found.

As can be seen in Figure 4.2, there was little difference between the three groups irrespective of assessment time, with means (SD) of 11.20 (3.75), 12.04 (4.67), and 11.89 (4.05) for the no-contact control, the still-life comparison and the expressive writing groups respectively. The mixed model ANOVA confirmed that there was no effect for group $F(2,31)=0.37$, $p=0.77$. There was also no interaction effect for time by group, $F(6,93)=1.12$, $p=0.356$ across the four wellbeing assessments.

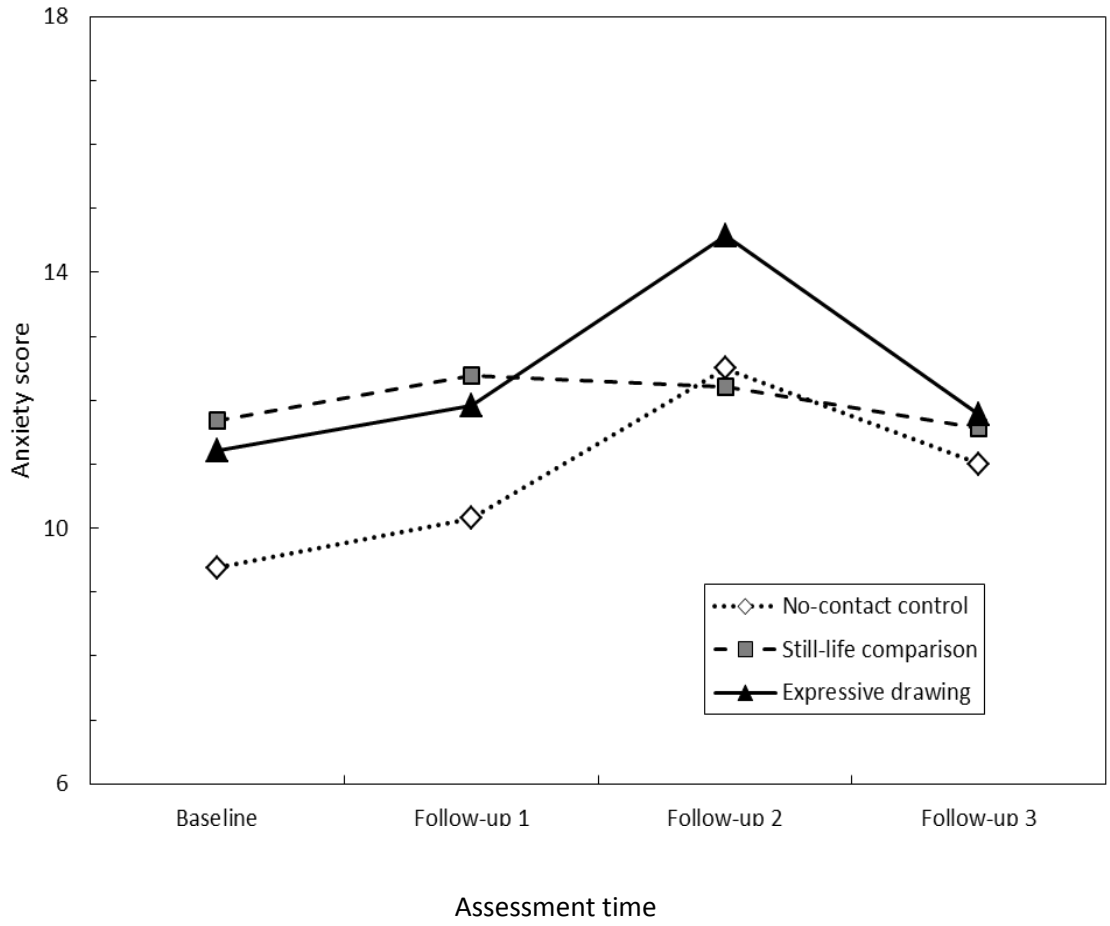


***Figure 4.2*.** Mean state anxiety scores reported by participants of the three groups at each of the four assessment times. Note that the graph reports data from all those who completed each assessment with n=61 at baseline, n=38 at follow-up one, n=35 at follow-up two, and n=32 at follow-up three.

We repeated the analyses using three 2(time) by 3(group) by mixed model ANOVAs with baseline and each follow-up assessment in each of the models. These results did not differ from what was reported in the 3 by 4 mixed model ANOVA reported above, with no significant difference between baseline and time 2 measures for time by group; $F(2,38)=0.03$, $p=0.968$, a borderline difference between baseline and time 3; $F(2,35)=2.371$, $p=0.108$, and no difference between baseline and time 4; $F(2,32)=1.273$, $p=0.294$.

Depression

As can be seen in figure 4.3, all participants reported their lowest levels of depression at baseline (M = 33.48, SD = 8.25). Both the non-contact control and still-life comparison groups reported their highest levels of depression at follow-up three (the week before exams - no contact control; M = 43.75 , SD =12.83, still life comparison; M = 41.36, SD 13.92), while the expressive drawing group reported their highest levels of anxiety at follow-up one (in the week following art-making sessions, M = 39.36, SD = 11.39), and decreased in level of depression at follow-up two. All participants dropped back to a level of depression that was similar to baseline at the final follow-up (M = 36.77, SD = 12.71).

There were no significant group differences at baseline; $F(2,60)=0.234$, $p=0.792$. Results from the ANOVA 4(time) by 3(group) show that there was an effect of time, $F(3,93)= 7.74$, P=.000, and post-hoc analyses using a Bonferroni adjustment found that all three follow-up assessments were significantly higher in depression scores than the baseline assessment (all p values <0.05).

Figure 4.3 below displays little variation between the three groups across the four assessments, with means (SD) of 38.41 (12.84), 36.80 (11.49), and 34.58 (8.46) for the no-contact control, the still-life comparison and the expressive writing groups respectively. The 4 (time) by 3(group) mixed model ANOVA found no effect for group $F(2,31)=0.463$, $p=0.633$, or time by group, $F(6,93)=0.371$, $p=0.895$ across the four wellbeing assessments.

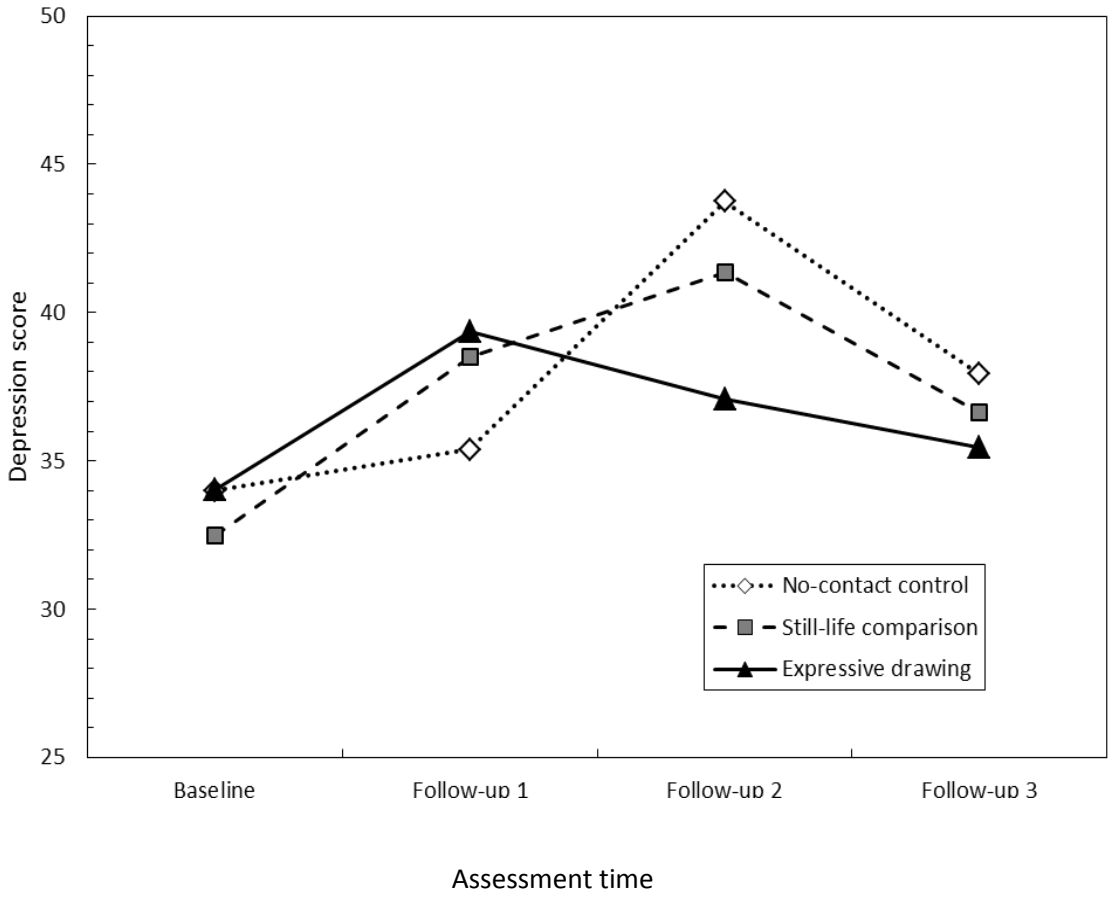


Figure 4.3. Mean depression scores reported by participants of the three groups at each of the four assessment times. Note that the graph reports data from all those who completed each assessment with n=61 at baseline, n=37 at follow-up one, n=35 at follow-up two, and n=32 at follow-up three.

Given the high attrition rate over successive assessment times leading to potential loss of power, we repeated the analyses using three 2(time) by 3(group) by mixed model ANOVAs with baseline and each follow-up assessment in each of the models. These results differ little from what was reported in the 3 by 4 mixed model ANOVA reported above, with no effects observed between baseline and time 2 measures for time by group $F(2,37)=0.728$, $p=0.490$, baseline and time 3, $F(2,35)=0.878$, $p=0.425$; or baseline to time 4, $F(2,32)=0.77$, $p=0.926$.

Fatigue

The group patterns observed for fatigue were similar to those reported for depression and anxiety. As can be seen in figure 4.4, irrespective of group, the participants reported their lowest levels of fatigue at baseline (M = 20.21, SD = 7.73), but that these fatigue scores had increased at follow-up one (partway into the semester; M = 23.59, SD = 7.47) and follow-up two (just before exams; M=25.58, SD= 7.10), but dropped again immediately after exams had finished (i.e. follow-up three) to a level similar to that reported at baseline (M = 2.80, SD = 7.25).

There were no significant group differences at baseline, $F(2,60)=0.568$, $p=0.560$. Results from the 4(time) by 3(group) mixed model ANOVA found a main effect for time $F(3,93)= 6.96$, $P<0.001$, and a post-hoc analysis using a Bonferroni adjustment found significant differences between baseline and follow-up one ($p=0.040$) and baseline and follow-up two ($p<0.001$). We also observed a marginal effect between follow-up two and follow-up three ($p=0.069$) but no other time comparisons were significant (all p-values >0.4).

As can be seen in Figure 4.4, the three groups did not differ, with means (SD) of 23.14 (6.96), 21.89 (8.45), and 21.56 (6.99) for the no-contact control, the still-life comparison and the expressive writing groups respectively across the four assessments. Our 4(time) by 3(group) mixed model ANOVA confirms that there was no main effect for group $F(2,31)=0.34$, $p=0.716$. We also found no interaction effect for time by group, $F(6,93)=0.20$, $p=0.97$.

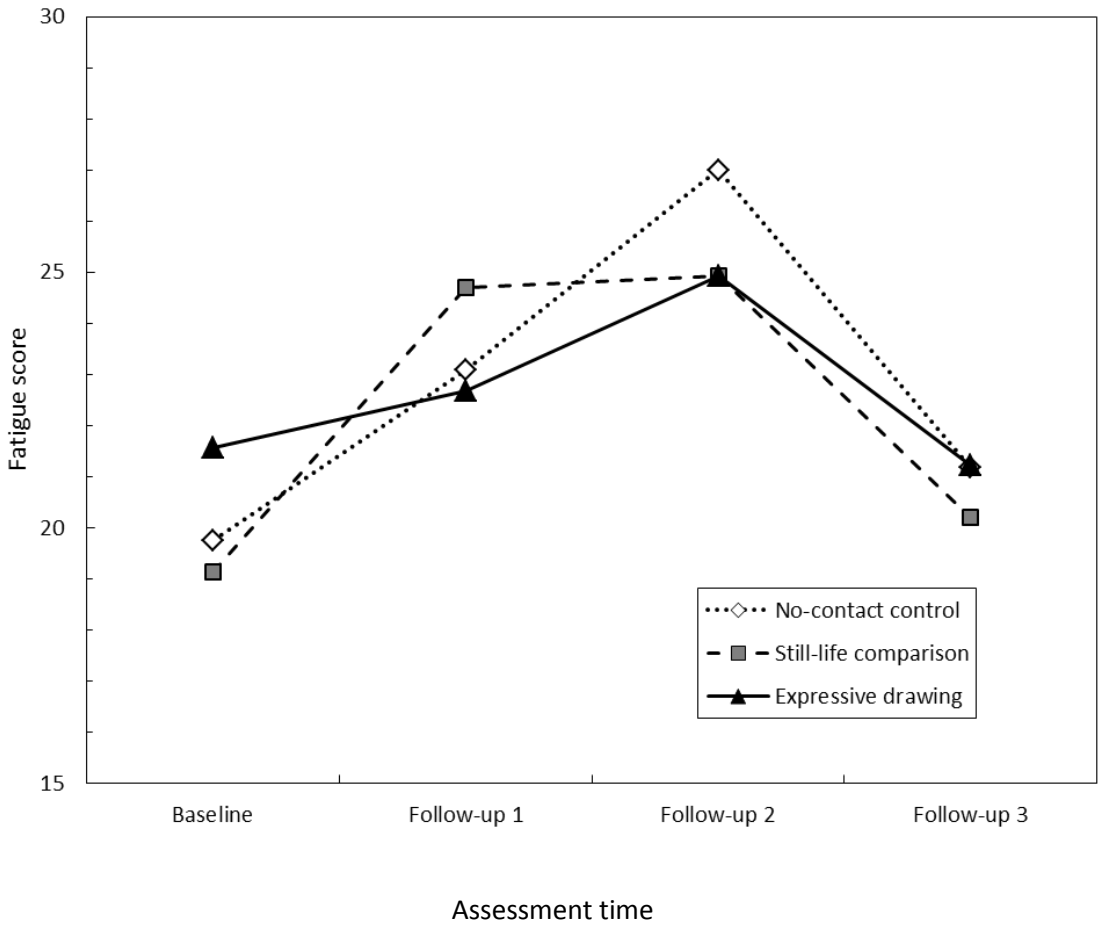


***Figure 4.4*.** Mean fatigue scores reported by participants of the three groups at each of the four assessment times. Note that the graph reports data from all those who completed each assessment with n=61 at baseline, n=37 at follow-up one, n=35 at follow-up two, and n=32 at follow-up three.

As described in the symptoms of depression analyses, we repeated the analyses using three 2(time) by 3(group) by mixed model ANOVAs with baseline and each follow-up assessment in each of the models. These results did not differ from what was reported in the 3 by 4 mixed model ANOVA reported above, with main effects observed for time between baseline and follow-up one, $F(1,38) = 10.31$, $p = 0.003$, and baseline and follow-up two , $F(1,35) = 20.72$, $p<0.001$, but not between baseline and follow-up three, $F(1,32) = 2.43$, $p = 0.129$). Also, no main effects or interaction effects were observed in these analyses (all $Fs < 1$, p-values > 0.5).

Perceived Stress

As found with previous measures, the group patterns observed for perceived stress were similar to the measures reported above of depression, anxiety and fatigue. As can be seen in figure 4.5, irrespective of group the participants reported their lowest levels of stress at baseline (M = 38.46, SD = 7.24), however those in the art making groups both had an increase in stress at follow-up one (Still life comparison (M = 42.88, SD = 11.44) and expressive drawing (M = 43.27, SD =6.23)) while the no contact control remained at a similar level to baseline. The no-contact control group reported their highest levels of stress at follow-up two, (M = 45.17, SD = 6.19), while the two art-making groups remained at a similar level of stress to follow-up one. All groups reported a decrease in stress at the third follow-up, with levels of stress reported similar to those at baseline(M = 39.60, SD = 8.86).

There were no significant group differences at baseline, $F(2,60)=0.082$, $p=0.921$. Results from the ANOVAs show that there was a statistically significant difference in time of follow-ups $F(3,93)= 7.614$, $P=0.000$, and post-hoc analyses using a Bonferroni adjustment found that follow-up assessments 2 and 3 were significantly higher in perceived stress scores than the baseline assessment (both p values <0.05), with follow-up four having no significant difference to baseline, but a borderline difference to follow-up 3; p=0.8.

No difference was found between groups during the assessments, with means (SD) of 40.70 (7.35), 40.48 (9.32), and 39.28 (7.84) for the no-contact control, the still-life comparison and the expressive writing groups respectively (Displayed in Figure 4.5 below). The 4(time) by 3 (group) mixed model ANOVA found no effect for group $F(2,31)=0.156$, $p=0.856$, or time by group, $F(6,93)=1.030$, $p=0.411$ across the four wellbeing assessments

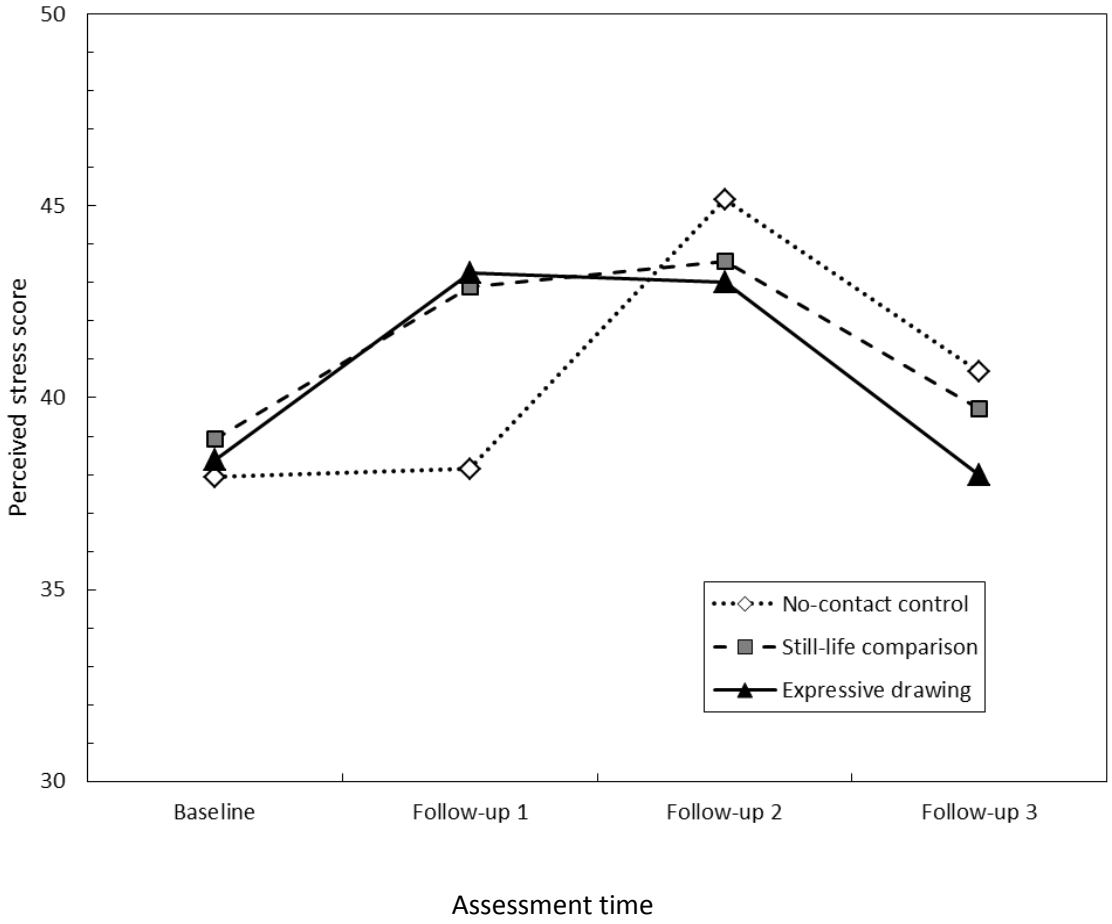


***Figure 4.5*.** Mean perceived stress scores reported by participants of the three groups at each of the four assessment times. Note that the graph reports data from all those who completed each assessment with n=61 at baseline, n=38 at follow-up one, n=35 at follow-up two, and n=32 at follow-up three.

Again, because of the high attrition rate and potential loss of power, we repeated the analyses using three 2(time) by 3(group) by mixed model ANOVAs with baseline and each follow-up assessment in each of the models. These results differ little from what was reported in the 3 by 4 mixed model ANOVA reported above, with no difference between baseline and time 2 measures for time x group $F(2,38)=0.705$, $p=0.501$, baseline and time 3, $F(2,35)=0.243$, $p=0.785$; or baseline to time 4, $F(2,32)=0.154$, $p=0.858$.

Academic grades

Participants were asked for permission to access their academic grades, and the mean score of their papers for the semester in which the experiment ran was analysed. All grades were available as percentages (i.e., number grades rather than letter grades) to the researchers. Students were generally enrolled in four papers each semester, and results in individual papers ranged from 12% to 98%, with overall grade averages ranging from 25 to 84 (out of a possible 100). There were no differences between the three groups, with the expressive drawing group having a mean grade average of 69.75 (SD = 9.46), compared to the still life comparison group M = 66.64, (SD = 11.99) and the no-contact control group M= 66.63, (SD = 11.18). A one-way ANOVA analysis found no statistically significant difference between the three groups ($F(2, 50)=0.514$, $p=0.602$).

Health Outcomes

There were no significant group differences at baseline. Numbers of days reported sick or off work or study were very low which meant that results were skewed – the mean number of days off at baseline was just 0.15 and days sick 2.28. Number of health visits and follow-up visits were also very low in number, with a mean of 0.56 and 0.28 respectively.

Health visits

There were very few visits at each of the time points, and most participants had few or no health visits across the study, meaning the data was skewed. For this reason, a single dichotomous variable of 'visits' or 'no visits' was created for Follow-up 1 to Follow-up 3. From these we found only small differences between the number of health visits, with 30% in the no-contact control group reporting any health visits, with slightly fewer participants in the still-life group reporting health visits (20%) and 25% of those in the expressive-drawing group reporting any health visits between follow-up 1 and follow-up 3. We then ran hierarchical logistic regression analyses (a regression model with a binary outcome) with health visits at

baseline in step 1, and the dummy codes to compare differences between the groups (with the expressive drawing group as the reference group) in step 2. The overall model (using the Cox and Snell approximation) explained just over 40% of the variance in health visits measured from follow-up 1 to follow-up 3 (R^2 = .411, p < .001), although nearly 40% of that variance was explained by health visits at time 1 (R^2 = .397) and the change in R^2 (ΔR^2 = .013) due to group allocation was not significant (p= .728). Data from those who completed all assessments (n=28) were analysed, and the no contact control group had slightly fewer health visits compared to the intervention group (OR = 2.61), but this was not significant (p =.0.564).The analyses were repeated including all participants who had completed at least one follow-up assessment, but results were very similar with (ΔR^2 < .001, p = .988).

Days off

As with the health visits described above, most participants reported few or no days off work or study, skewing the data collected. Again, a single dichotomous variable of days off or no days off was created for follow-up 1 to follow-up 3, and again, only small differences were found between the groups with 50%, 40% and 57% of participants in the no-contact control, still-life, and expressive drawing groups respectively reporting any days off between follow-up 1 and follow-up 3. The 2-step hierarchical logistic regression model created obtained an R^2 = .69 which was not significant (p = .597) so no further analyses were completed. The analyses were repeated including all participants who had completed at least one follow-up assessment, but again, no effects were found (R^2 = .083, p = .324).

Days Sick

Like the two previous health outcome measures, the number of days sick reported at each assessment time was low with many participants (51%, 58%, 40%, and 54% for baseline and follow-up 1, 2, and 3 respectively) reporting no days sick for each of the four-week assessment periods. For that reason, the number of days sick for the three follow-up assessments (i.e., excluding days sick from before commencing the study) were summed to create an overall number of days sick measure for the entire student semester. The number days sick for the four weeks prior to commencing the study, and the mean number of days sick for each of the four-week assessment period is presented in Figure 4.6, and show that there was a slight decrease in the number of days reported sick by the still-life group and the no-contact control group. The mean number of days sick increased in the expressive drawing group.

These data were also somewhat positively skewed. Although zero scores were common at each assessment, zero counts were low for this combined variable and it was not suitable to create a binary variable of days sick/no days sick as used in the above two measures. We ran a hierarchical linear regression model using the number of days sick at baseline as a covariate in step 1, and the aforementioned dummy codes testing group differences at step 2. The residuals from this model were normally distributed. The results from this regression model found that days sick at baseline was a significant predictor of days sick at the three follow-ups with $R^2 = .154$, $p = .027$. Step 2 in the model produced a $\Delta R^2 = .305$ which was significant ($p = .006$). The regression coefficients of the dummy codes comparing the expressive writing group to the remaining two groups both showed negative slopes (unstandardised regression coefficients of -8.38 and -6.79 for the no-contact control group and the still-life group respectively) indicating a decrease in days sick when compared to the expressive drawing groups. Both coefficients were statistically significant ($p = .002$ and $p = .007$ respectively).

We also ran a 2 (time) by 3 (group) mixed model ANOVA and obtained similar results. We found a main effect for time, $F(1, 23) = 38.72$, $p < .001$, but no effect for group, $F(2, 23) = 1.09$, $p = .353$. However, we did observe a group by time interaction, $F(2, 23) = 5.61$, $p = .010$, which is evident in figure 4.6:

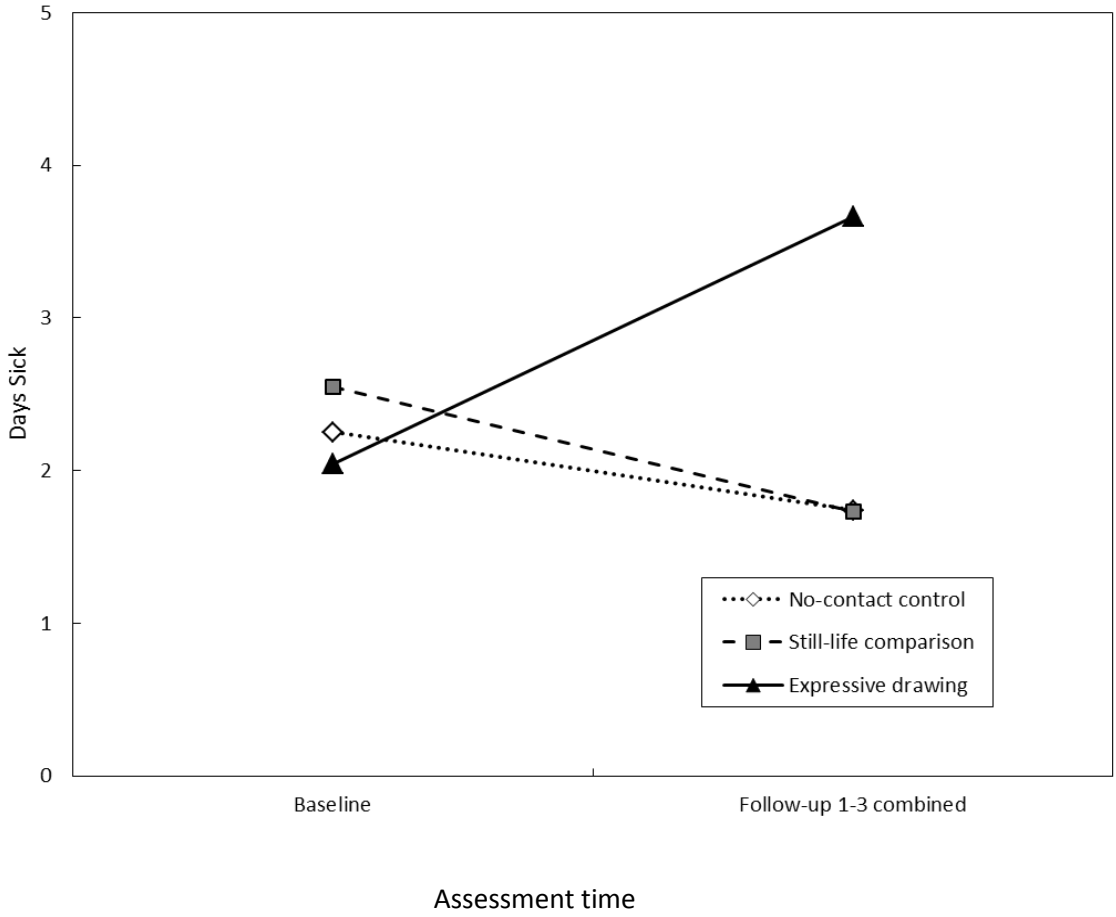


***Figure 4.6*.** Mean reported days sick by participants of the three groups at baseline, and the combined mean days sick for the three follow-up assessments.

Observations and participant responses on feedback forms

Some feedback data were collected during the last few art-making sessions for both expressive and still-life groups, and at the completion of the study. Art-making participants were invited to complete an anonymous feedback form during sessions four, five or six of art making, and all participants were asked to complete a feedback survey after the final wellbeing assessment had been issued. As the researcher conducted the art-making sessions, informal observations were also made during these times.

Informal observations during art-making sessions

Artworks created: Many participants were interested in showing the researcher their drawings, and said that they did not want them back after photographs had been taken. Some participants left their drawings in their art-making workspace, and many put their drawings in the rubbish bin when leaving the room, with very few participants actually taking their drawings with them.

One participant (from the still life comparison group) commented "I thought the drawings would be more important". Another participant (also in the still-life comparison group) said that they were very happy that the researchers weren't looking at their work.

Materials/Setting: Some participants were particular in where they were seated, based on the art materials available in the tray at that seat, and picking out the colours of crayons that they wanted to use during the session. One participant commented that the experiment should be conducted "in an actual art studio". Another disliked the art-making room (laboratory), commenting that it "smells like a hospital".

Timing: It was noticed that some participants in the expressive drawing session stopped drawing before the two minute drawing time was complete. This did not seem to happen in

the still-life comparison group, where participants more often complained that they did not have enough time.

Participants were instructed to draw the same thing twice – it was noticed that expressive drawing participants often hesitated over their first drawing (i.e. did not start drawing), but began their drawing faster when asked to draw the same thing a second time. A participant in the expressive drawing group commented that they "sometimes found it hard to think of what to draw".

Socialisation: In week two of sessions (sessions ran over a three week period), it was noted that many participants were choosing to stay behind after session to eat the refreshments and talk to each other. In the first week, most had taken refreshments with them and left before eating. By the final week, the researcher had to ask participants to be quiet during several sessions, as they were talking to each other during the art-making. This occurred in both the still-life comparison and expressive drawing groups.

Open-ended feedback surveys

Some participants commented that they did not think that there were enough drawing sessions, with one suggesting that participants could have been issued with a journal and allowed to draw in it whenever they wanted. Several participants in the still-life comparison group commented that they would have liked longer drawing times, while participants in the expressive drawing group did not comment on this issue.

There were comments from participants in both art-making groups that the sessions were 'boring' and instructions repetitive. However, many said that they liked the pace of the sessions, and liked that they were 'short'. Most (89%) participants reported that they enjoyed the art-making, and several in the still-life comparison group said that they felt more positive after sessions.

A common complaint from participants was that the scales were too repetitive, as they were issued the same wellbeing assessment four times (once at baseline, and then three follow-ups), and the same PANAS scales twice in every art-making session attended. Some participants in the still-life group commented that they did not like having to take the PANAS pre and post session as they felt that their feelings were the same.

While participants reported enjoying the art-making activities, several reported that they did not think that it 'worked', and that it was "just a nice distraction". Interestingly, those in the still-life comparison (67%) were more likely to report that they found the activity stress-relieving and relaxing, while the expressive drawing group were less likely (only 50% of respondents) to report a perceived benefit.

Summary of findings

No significant effect was found between groups on the self-reported follow-up measures of psychological wellbeing. The trend for the outcome variables is in the opposite direction of the hypothesis, in that the expressive drawing group self-reported higher scores on wellbeing scales than those in the other two groups, particularly in the measures of anxiety. Of the physical health measures, days sick was the only measure to produce a significant effect, where participants in the expressive drawing group reported more days sick than those in the still-life comparison or no-contact control groups. Analysis of attrition rates shows that those who dropped out of the study (did not complete all three follow-up assessments) had significantly higher scores of depression, stress and fatigue at baseline.

Significant effects were found for time; students predictably had an increase in negative psychological health scores on the first follow-up (a time associated with assignment due dates), and experienced another increase between follow-up one and two (with the second follow-up being issued a week before exams), and then a decline in score toward baseline at the third and final follow-up assessment when exams were over, and students were on holiday

from university. This pattern occurred for perceived stress, anxiety, fatigue and depression, and indicates that the measures used were sensitive to changes in participants reported health.

Participant feedback was mixed, with suggestions made for changes in session design, including longer drawing times, and less repetitive instructions. While many participants did not perceive benefit from the art-making sessions, comments were made by some in the still-life comparison groups that it was enjoyable as a distraction from the stresses of study.

Discussion

The aim of this research was to determine if art-making can produce measurable changes in the physical and psychological wellbeing of university students over the course of a semester. The idea that participating in art-making provides therapeutic benefit is the reason why art therapists have developed this branch of psychotherapy (Case & Dalley, 1992). However, there is very little empirical research to support this assumption (Bell & Robbins, 2007; E. R. Campbell, 2009; Metzl, 2008; Slayton et al., 2010). A lack of experiments in this field also means that there is no standard model for designing research in this field (Reynolds et al., 2000).

Most research in art therapy is based on case studies (Metzl, 2008), and art-making sessions, such as those described in the handbooks of Case and Dalley (1992), Rubin (1987) and Brooke (2006), are generally unstructured, where activities may adapt and change during the sessions. This dynamic is not easily captured in experimental design, where potential confounding variables need to be controlled for, and each participant needs to receive the same treatment. Without controlled conditions, efficacy is very difficult to assess.

Given the lack of clear protocol, the study presented here was based on the expressive writing paradigm developed by Pennebaker and Beall (1986), which triggered a large number of studies showing much empirical support (Frattaroli, 2006; Lepore & Smyth, 2002; Sloan & Marx, 2004; Smyth, 1998). It was thought that the expressive writing model would be adaptable to art-making, as writing researchers have posited that it is the cognitive processes that occur during writing which are used to explain the therapeutic effect (Cameron & Nicholls, 1998; Lepore, 1997; Pennebaker & Francis, 1996). Unlike writing research, theories are less clear in art therapy, and studies on art-making lack in theory as to why art might be effective (Campbell, 2009), but explanations found in writing have been discussed in some art-making

literature, such as catharsis (Curl, 2008), cognitive restructuring (Grodner et al., 1982) and exposure (Henderson et al., 2007). If participants engaged in art-making activities that caused the same cognitive processes to occur as in writing, then it was hypothesised that it would be similarly effective as a therapeutic treatment.

However, analyses did not find a statistically significant effect for those engaged in art-making, either stress-focus or still-life, on any of the psychological wellbeing outcome measures. While outcome measures did fluctuate over the period of the semester, all groups experienced similar changes, and returned to baseline measures at the end of the study. This means that art-making may not have the therapeutic qualities assumed by professionals in the field of art therapy, and the hypothesis was not supported in the results found.

Because of the high attrition rate, there was a loss of statistical power across all follow-ups. For this reason, each follow-up was further analysed separately against the baseline assessment, but again, no statistically significant effects were found. Importantly, a borderline statistically significant effect was found for participant drop-out rate in the intervention group compared to the two control groups. This means that the participants who were receiving treatment were more likely to leave the study than those who were in the two comparison groups.

The measures of physical health resulted in little support for art-making as a therapeutic tool. While data on health measures was skewed, as many participants reported few or no health visits or days off work or study, further analysis found that there was an effect for number of days sick and group. Those in the intervention group reported more days sick after the art sessions than those in the still-life comparison or no-contact control group. This suggests that focusing on stress while drawing in the session design of this study could have a negative impact on self-reported physical health.

For those in the expressive intervention and still life comparison groups, a mood measure was taken immediately before and after each art-making session, and it was found that those

engaged in the expressive intervention sessions had a greater increase in negative affect pre-post session than those in the still-life control group. This finding is consistent with what was observed in the expressive writing studies e.g. Pennebaker (1993), who thought initial negative affect is an essential part of the therapeutic process. This may mean that those in the expressive art-making sessions began to engage in similar cognitive processes to those in expressive writing studies; however positive health outcomes were not found in the follow-up sessions. One possible explanation for this is that there was inadequate time for reflection, which meant that participants were not fully able to the process their stresses during the art-making activity. It also suggests that while those who engaged in the still-life drawing activity enjoyed the task, this activity did not result in any longer term health benefit (such as a reduction in anxiety or stress levels), and any benefits of this type of neutral art-making are superficial or fleeting.

While there is a lack of well-controlled trials with samples large enough to detect an effect size common in other psychotherapeutic interventions, the few studies that have adopted a controlled experimental approach (Chan & Horneffer, 2006; Curl, 2008; Pizarro, 2004; Slegelis, 1987), have failed to show measurable benefits from art. As such, our findings were somewhat predictable in that no benefit was found for either art making group, but also unexpected, in that the art-making treatment did not benefit participants in the way that expressive writing studies have.

While this study attempted to address issues listed with adapting the writing model, it may be that art-making and writing are not easily substituted. While the authors of this study assumed that participants engaged in expressive drawing would have similar thought processes to participants in expressive writing studies, these two activities may not be similar enough for this to occur.

Therapeutic Mechanisms

At present the mechanisms behind expressive writing are unknown, and there are many different explanations for the effects of art therapy. This study drew on several theories in the design consideration. While catharsis was originally posited as the mechanism behind expressive writing therapy (Pennebaker & Beall, 1986), most findings seem to support cognitive restructuring, exposure and self-regulation. Cognitive processing (Pennebaker, 1993), is the theory that the act of writing enables an individual to make new connections or organise information about the trauma in a new way, while exposure (Lepore & Smyth, 2002) explains the process of repeatedly examining a traumatic experience in a safe environment until an individual is able to accept it as tolerable. Self-regulation (Cameron & Nicholls, 1998; King, 2001) is the process of encouraging people to describe ways in which they can cope with their problems or imagine a scenario when all of their problems are solved, in an effort to develop a better sense of self-efficacy toward regulation of emotions.

Participants in this study were asked to focus on something that was stressful in their lives, and create artworks in response to this stress. This activity was designed to encourage cognitive restructuring, as participants were asked to reflect upon their stresses. Because simply focusing on a stress may not be enough to encourage cognitive change (Watson & Clark, 1984), participants were also asked to consider their issue from others points of view, as there is some evidence in expressive writing literature to suggest that this is beneficial (Campbell & Pennebaker, 2003). Participants were asked to draw twice from each viewpoint, which allowed for repetition, which is similar to the techniques of exposure.

Because art-making in itself is thought by some to be inherently therapeutic (i.e. through relaxation) (Case & Dalley, 1992), a control group was asked to draw neutral still-life compositions. A no-contact control group was therefore necessary to determine the effects of art-making, which was not utilised in the art-making experiments described above (Chan &

Horneffer, 2006; Henderson et al., 2007; Pizarro, 2004). However, despite these adaptions to the original writing model, no effect was found for those in the expressive or comparison art-making groups, in fact, those in the experimental group reported more days sick than those in the still-life comparison or no contact control groups. Results did not support either of these theories, as the group who were asked to actively reflect on stresses in their lives showed no more improvement than those who engaged in a neutral activity, or those who did not participate in any art-making activities.

Timing of Assessments

One of the possible reasons why art-making has little empirical support may relate to the research design of many studies. Most of the art-making studies reviewed earlier had fewer sessions than writing studies, and did not include adequate follow-up measures. In our study, we attempted to overcome this issue by increasing the number of art making sessions to six, which aligns with expressive writing studies (Frattaroli, 2006), instead of the common single session design in art therapy research (Chan & Horneffer, 2006; Curl, 2008; Slegelis, 1987). Participants were measured at four different time-points – at baseline and three follow-ups, as some studies have found that positive effects may only appear after a month or more after the expressive sessions (Henderson et al., 2007; Pennebaker, 1993; Smyth, 1998).

The assessments were timed to tap into predictable fluctuations of stress. That is, it was expected that participants would be less stressed at the baseline assessment, and that this would increase at assessment two because of assignment pressure, that the stress levels would be highest at time three because of exams, and that stress levels would reduce and be similar to baseline levels at the final welling assessment. This was represented in the results found, meaning that the design and timing of the assessments during the experiment were correctly allocated. This made the participant population suitable for research of this nature. This also demonstrates that the outcome measures used were sensitive to changes in

participant wellbeing, and suggests that lack of findings are not due to little variability in the data. The results showed significant changes over time, but the changes were consistent across all three groups, where participants reported decreases in wellbeing during the semester, but returned to near baseline at the conclusion of the semester.

Despite the inclusion of more sessions, and the final follow-up measure taken two months after the last art-making session, no positive effect was found for the expressive drawing group compared to the still-life comparison and no contact control group. This suggests that future researchers would need to further develop and adapt the art-making session content from the Pennebaker model, as the timings used in expressive writing studies did not find benefits in participants making art.

Still-life comparison activity

Another issue in previous art-making research was the lack of adequate comparison groups, such as in the research by Walsh et al., (2005) where participants were fully aware that they were a control group. The still-life control group in this study was successful as a placebo because participants seemed to be under the impression that they were receiving treatment with quotes such as – "I feel more positive afterwards and I don't really know why, because I get really frustrated drawing because I'm not good at it, but then I feel happy afterwards", and "My pre and post tests are going to be very different today – before I was all stressed and jittery but now I'm ok". It is important to have naïve participants in controlled studies, particularly when the data collected is from self-report measures.

It may be that the placebo group enjoyed the art-making sessions as escapism, and avoidance of issues, as one participant commented "(I enjoyed) the chance to relax and concentrate on one thing for a short while in my day". However, it could also be proposed that being creative leads to a sense of self-efficacy and increases self-esteem (Moon, 1994; Wikstrom, 2005) and that is why they enjoyed it. Some participants made comments that suggest a certain level of

reflection was occurring during the 'neutral' activities – i.e. "what we're doing here is what I wanted to do. I did art all through high school, and I'm really interested in psychology… but I've ended up (elsewhere)". This participant commented in later sessions that they were considering changing their course of study.

Participant characteristics and the attrition rate

Problems with participant numbers first became clear during recruitment, when we advertised the study to lecture halls of hundreds of students, and found that a very small proportion of students were willing to complete a sign-up slip. It is estimated that over 1000 students were approached to participate in this experiment, yet just 127 sign-up slips were collected. Mercer, Warson and Zhao (2010) commented on a similar issue in their research on art-making, finding that student populations were unwilling to volunteer. They had planned for 60 participants for their two session design and single follow-up study, but only managed to recruit ten, whereas we managed to get 60 to complete the first assessment, and 30 participants to complete all three follow-ups. The final numbers in this study were similar to those in previous art-making studies (i.e. Slegelis (1987) and Curl (2008)) but somewhat smaller than typical expressive writing studies such as Greenberg, Wortman and Stone (1996) and Pennebaker, Colder and Sharp (1990) with more than 30 participants in each experimental group. However, writing studies with fewer participants - such as Pennebaker and Beall's (1986) original expressive writing study - also found positive benefits, so the lack of results in this study cannot be explained by participant numbers alone.

Attrition was a problem in this study, with less than ten intervention-participants completing the final follow-up assessment. This led to a loss of power which meant that the possibility of finding a statistically significant result was reduced. It seems that problems with attrition are common in this field – Bar-Sela et al. (2007) found that only 31% of their participants attended four or more sessions, with the majority only attending one session and not returning for any

further sessions. Bar-Sela et al. did not specify for participants to attend a certain amount of sessions, and although sessions lasted for an hour (one per week), participants could leave early at whatever time they wanted. With this in mind, the time requirement of participants in this art-making experiment may have been too great, as they were asked to attend six sessions of 20 minutes each, as well as the baseline assessment and the three online follow-up assessments. However, if participants perceived benefit from the study, then they may have participated at a higher rate.

University students lead busy lives, and it an effort to be amenable, the follow-up assessments were completed online, with a link sent out to participants via email, and a time period of three days given in which to complete the survey. While this may have been easier in terms of scheduling for participants, it also meant that there was very limited interaction between the researcher and participants, and this distance may explain the lack of interest of many in continuing in the study. There was also no reward or payment given (apart from refreshments at art sessions), so incentive to complete was low. Camerer and Hogarth (1999) reviewed 74 experimental studies in psychology, and compared performance rates (through completion of and responsiveness to tasks) of those with no financial incentive, low incentive and high financial incentive for participants – finding mixed results to support payment of participants. Harris (1998) reviewed research on attrition rates in therapy studies, and found that there are many different explanations for attrition, including age of participants, level of maturity and motivation, but that it is a common difficulty in research on psychotherapy.

There are many possible reasons why there was such a high drop-out rate – and indeed why recruitment was so difficult. In particular, the university where data was collected is relatively new in status as a university, and it could be that a research culture has not yet developed. It is relatively uncommon for students to be approached for participation in experiments, and this may partly explain the lack of interest. Students who are not familiar with participation in

research may not have really understood how important it was for them to complete all of the follow-up assessments, or appreciated their role. An interesting finding during the recruitment phase was the lack of interest from psychology students, who arguably had to most to gain from experiencing research first-hand.

This is important, given that many of the art-making studies which have found benefit are on populations with serious health issues i.e.(Bar-Sela et al., 2007; Hughes & da Silva, 2011), which could mean that this type of intervention is more useful for those coping with severe distress. The participant sample (university students) was unusual in that art therapists are not generally employed in universities. The traditional client base of those seeking art therapies are those with diagnosed conditions, i.e. children with learning difficulties in schools, or those sick in hospital, or imprisoned, and perhaps further research in future should focus on such groups.

Of course, university students often suffer from high levels of stress during study (Carveth et al., 1996; Dyrbye et al., 1996), and they may not have felt that they could offer the time requested for participation and well as coping with their current work and study load. Students who decided to volunteer may have been students who felt that their university stress was manageable, and were able to volunteer their time to participate, but had less to gain from the study. The students who may have been the most stressed (and potentially the ones with the most to benefit) may not have chosen to volunteer. Finally, the participants in this study were recruited to be part of an experiment, not clients of a therapist – and that could be an important difference.

The study was designed to collect data from participants at times when they were expected to be stressed, which may have led to their dropping out. Several students dropped out of university altogether – partly explained because many of the participants were first year

students and first years often have high drop outs – but probably because of high levels of stress too.

In further analysis of the baseline assessment data, it was found that those who dropped out had significantly higher scores of psychological distress (stress, fatigue and depression) than those who completed all four wellbeing assessments. This is important to note, because those who presumably had the most to gain in improvement in wellbeing were the participants who decided to leave. Also, the intervention group experienced the highest rate of attrition, and this was marginally significant. This is an issue because those who may have more to gain or benefit from a therapeutic intervention were the participants who chose not to receive it. It is not known if this drop-out was because people who are stressed are less likely to find the time to participate in a study, or if they did not like the treatment or found it irrelevant. We received responses from very few participants as to why they left the study (most simply stopped contact), but further attempts should be made in future research to gather this data.

Because numbers were small, we were unable to test for moderating effects – for example, it may have been interesting to find if there was a difference in outcome between those who chose to show the researcher their art-works compared to those who kept them private, or those who kept their art-works compared to those who destroyed them at the end of the session. Males may have benefited more or less than female participants, as gender differences have been found in writing studies (Frattaroli, 2006) and it has been purported that males may benefit more from the process of expression because they are less likely to express emotions in social situations (Ptacek et al., 1992). However, like many of the writing studies, male participants were in the minority. For this same reason, it would have also been interesting to analyse any differences between cultural backgrounds, as those from collectivist cultures may be less comfortable with emotional expression (Georges, 1995; Wellenkamp, 1995).

Group allocation

Because recruitment was difficult, the researchers allowed participants to choose to attend a range of introductory session times, and each session was randomly allocated to one of the three study groups. Unfortunately, allowing this system of allocation meant that there was an uneven spread of gender, with only two males in the intervention group (both of whom dropped out of the study). It is also probable that friends attended the same introduction sessions together, and this may have influenced the rate of attrition if one dropped out and other decided to follow. Although there was no difference found between groups in outcome measures at baseline, this is an issue in the experimental design. If future research in this area is to be conducted, care should be taken to ensure a process of random allocation to groups.

Session length

The literature on expressive writing studies has shown that experiments should ideally have at least three intervention sessions, and that each session should be 20 minutes or longer (Frattaroli, 2006). These timings were used for this study, although previous art-writing comparison studies included fewer, but longer sessions – for example, Pizarro (2004) had two sessions, each one hour in length. In this study, the researchers attempted to design a study more aligned with writing literature, and encouraged participants to attend six art making sessions that were approximately 20 minutes in length. Although each participant was scheduled to attend six sessions, in reality, only the first four sessions that participants attended were analysed for the PANAS mood scores, as the drop-out rate was extremely high, with thirteen expressive drawing participants attending three sessions, and only three expressive drawing participants attending all six sessions. This could explain why the intervention did not produce any benefits, as participants did not spend enough time in art-making activities.

The 20 minute sessions were divided into six drawing tasks, with two minutes allowed for each drawing. This design was initially inspired by an activity in an art class (not designed to be therapeutic, but to encourage creativity) where students drew for just ten seconds, and then moved on to next drawing. This was in an attempt to remove focus from participants to produce skilled or aesthetically pleasing drawings, as it is the cognitive process that occurs during the activity which is thought to be therapeutic.

Several different timings were trialled in the pilot test, ranging from ten seconds to two minutes, and it was found that people preferred two minutes. However, during the experimental sessions, several participants in the neutral still life drawing complained that they were not given long enough to draw, while the opposite occurred in the intervention stress-focus group, where many participants finished drawing before the two minute time period, and sat waiting for the next activity. In previous research, Dalebroux et al., (2008) found that participants who were allowed 'free draw' (no instructions given) took an average of eight minutes to complete a picture. Clearly, timings need to be experimented with, and perhaps later sessions could include longer drawing times as participants became more familiar with the activity – i.e. sessions could begin with ten second 'warm-up' drawings and progress to longer periods such as 15 or 20 minute drawings (which would be more aligned with the length of time spent on a single piece of work in expressive writing sessions).

Art-Making Facilities

Due to unforeseen circumstances, the location of the art-making room was changed partway through the study. The impact this had on participants is unknown, but as the second room had limited facilities it may have affected perceptions toward the experiment, and privacy was limited. Although care was taken to control as many variables as possible, some changes were made for the second room – for example instructions were read aloud by the researcher instead of being projected though timed shows on computer screens. This change could have

affected results, and may have increased the rate of attrition (see Appendix X for photographs of the two spaces).

Participant views on the room change were mixed in both intervention and control groups, with some commenting in an anonymous survey that they preferred the first lab setup: “The technical room was better - clear and was quiet, was easy to concentrate”; “I prefer to have instructions from the computer, can suit my pace better, can work on the session as an individual rather than as a group”, while others preferred the second room: “the second room was my preferred room due to its spaciousness and due to the low panels of each study desk it felt more comfortable”; and “I liked the second room better. It felt more cosy and not like a science lab.”

Art therapy is used in hospital or other clinical establishments to help ‘humanise’ the unfamiliar environment (Bellmer et al., 2003). Conducting the experiment in a laboratory may have an opposite effect on participants, and it would be interesting to compare results from participants in an art studio as future study. Frattaroli (2006) considered this issue when reviewing expressive writing studies, and found that setting did not moderate the overall effect size, but found that participants who disclosed in their homes had more positive changes in psychological health than those who participated in writing sessions in a laboratory setting.

Bar-sela et al., (2007) conducted their study with groups (eight in a session) at painting stations set up in a ‘small hall’. They mentioned that many participants said that they would have preferred to have private sessions, and suggested this for future studies. Campbell (2009) had a different suggestion, where it was thought that those who suffer from a stress or trauma on a group scale might benefit more from art therapy as a group. University is an individual and group experience – while personal issues occur, classmates experience similar levels of stress as all are faced with similar fluctuations of academic stress (as evidenced in the wellbeing

measures of this study). The experimental room for this study included eight booths, but because of attrition rates, some participants had sessions alone, while others attended group sessions. While numbers are too small to be statistically examined, it might be useful in future studies to find if there is a difference between individual or group sessions, and if there is any effect for number of participants in a group session.

Directions given

The experimental room in this study was decorated with pictures of a range of different art-works – from realistic to abstract, and line drawings to colourful paintings. These were pointed out in the first art-making sessions, where participants were reassured that they could make any type of drawing they liked, and that they shouldn't focus on the quality. The art-making sessions in this experiment were very directive (see example of instructions in Appendix X). This was partly in response to the research of Curry and Kasser (2005), who found participants in the free form group (who were told to simply colour in a blank sheet of paper) said that they would have liked more direction, and were observed pausing and tapping the pencil, as if they were unsure of what to do next. Some participants disliked the instructions and commented that they would have preferred to draw without instruction "I didn't like drawing the same thing all the time and got bored", while some struggled with this unfamiliar task, commenting that "at first it was stressful just thinking about the stress and what to draw, but as the sessions progressed it got easier", and "I find it hard to think of what to draw". Further research is needed to develop the session content and instruction.

Art-Making materials

Chan and Horneffer (2006) suggested that one of the reasons why no effect was found in their art-making group was because the materials were not 'artistic' i.e. just a plain pencil and 'letter sized' paper. Grodner, Braff, Janowsky and Clopton (1982) specifically chose materials

which they believed heightened the kinaesthetic experience of art-making, such as using clay, finger paint and large sheets of paper, and found mood improvements in participants.

In this study, participants most enjoyed using crayons, despite being given a selection of graphite pencils, charcoal, coloured pencils, pens, and felt-tip pens, with several commenting that crayons reminded them of childhood. During the sessions one participant also mentioned to the researcher that they would have liked to have been able to use clay or Lego for a three dimensional artwork. Further exploration of art materials would be interesting to study, for example paint, which may be a more expressive medium.

Health Measures

Self-report scales were the most convenient measurement to use, but are subjective, and inclusion of physiological measures such as cortisol levels or heart-rate would have been ideal. It is possible that participants discussed art activities with fellow participants and were able to guess the hypothesis and manipulate their results, particularly when many of the participants were studying social sciences and communication studies, and may have shared classes.

People with depression may selectively distort self-reports, particularly when asked to rate emotions, thoughts, or behaviours generally, compared to a specific instance (Nelson & Craighead, 1977), and remember their thoughts and behaviours more negatively than they actually were at the time. A more recent study found similar results, in that self-reports on health information may unreliable (Pizarro, Schneider, & Salovey, 2002). Most of the scales in the wellbeing assessment asked participants to evaluate their health over the previous month, and these reports may have been inaccurate. However, self-report measures can be more effective than objective measures in some cases -for example, Coyne, Aldwin and Lazarus (1981) suggested that it is the appraisal of life events or struggles rather than the actual struggle which predicts a person's depression, and that it doesn't matter so much about what happens, but more about how it is perceived, which effects emotional stability.

Issues in scale comprehension were reported during the baseline assessments (completed during an information session with the researcher present) with some of the established scales. For example, many participants were not sure of the meaning of some terms i.e. 'every cloud has a silver lining', and the word 'jittery'. This may have had an effect on how they understood, interpreted and responded to the scales, however, reliability tests were run on these items during analysis and this was not found to be a problem.

Campbell (2009) considered that art-making researchers induce anxiety in participants when they are asked to focus on something that was pressing or stressful in their lives, and in this study we asked this of the stress-focus intervention group. Campbell found that those studies which induced stress resulted in much higher effect sizes and better treatment outcomes than in art-making studies, which measured anxiety generally. Campbell also found that those with complicated anxiety – i.e. PTSD, had less effective treatment outcomes than those with 'simple' anxiety, such as student populations. Unfortunately, this change in anxiety was not observed in the current study.

A possible variable that could have been controlled for is the stress of moving away from home. Most of the participants in this study were first year students, and moving away from home to study can initially be highly stressful (Misra et al., 2003). While many students continue to live at home during university study, students from towns that do not have tertiary institutions, and international students may have the extra stress of settling into a new city and/or culture. The baseline measures could have asked participants if they were living away from home (i.e. family in another city or country) or about social support in general.

A health measure that could have been included in the wellbeing assessments was a test for alexithymia (a condition where people struggle to verbalise emotions, and find it difficult to distinguish between body sensation and emotion) (Bagby et al., 1994). A measure for this was considered (e.g. the Toronto Alexithymia Scale (Zech et al., 1999)) when designing the

experiment, but decided against as this would have increased the total length of the wellbeing assessment.

Therapeutic reflection

Rubin (1999) states that art therapy is "the combination of genuine expressive activity, with some kind of thoughtful reflection on that process" (p xxi), and argued that art therapy is the 'doing' combined with the 'relaxed reflection'.

The Pennebaker expressive writing model does not include a reflection time, as it is assumed that the 'therapy' happens during the cognition that occurs while writing, but maybe this isn't applicable to art-making. Pennebaker and Francis (1996) claimed that it was the organisation of thought that occurred while writing which created the therapeutic effect, but Pizarro (2004) thought that perhaps art making didn't result in enough of this organisation. When designing this study, the authors made the assumption that writing and drawing were interchangeable expressive activities, and that both would encourage similar cognitive processes to occur.

In this study, participants were instructed to quickly draw several pictures, and as each picture was completed, participants were instructed to turn the page over and begin a new drawing. Drawing time was limited because pilot testing had shown that many participants become more concerned over the quality of their art-work output rather than focusing on the task given (i.e. when given a longer time period some participants ripped up their pictures, spent time erasing sections or restarted new drawings several times). This meant that there was no time allocated to reflection, as participants were instructed to move immediately on the next activity, and may explain why cognitive restructuring did not occur.

Beebe, Gelfland and Bender (2010) did not describe their method in enough detail for replication, but did mention that the art sessions included an art making activity and then an opportunity for participants to discuss feelings related to artworks. While verbal discussion could be considered a confounding factor in this experiment, perhaps time could have been

allocated to silent reflection. This would support the views of Carnes (1979) who claimed that the therapeutic effect occurred after the subjective picture had been created and while the client was objectively reviewing it.

Schaverien (1995), discussed the potential importance of retrospective viewing of art-works, commenting that it naturally happens during therapy because most art therapists are artists themselves, and are familiar with organising works according to time periods or themes (as occurs in art galleries for public viewing). Dissanayake (1980) hypothesised that arts are about making the ordinary special, and that art is a complex cycle of creating, observing and responding. This process of organising art-works could have been incorporated in the study design of this experiment, although it would mean a deviation from the standard expressive writing model. Drawings from previous sessions could have been collected, and participants may have benefited from viewing and organising their many works created over the experiment (see Appendix X for examples of a series of drawings).

Perceived efficacy of art-making as a therapeutic treatment

It is entirely possible that participants in the intervention group did not think that the art-making activities were useful, and discontinued because they perceived no benefit from participation in the study. Mercer et al., (2010) found that 40% of participants in their art-making study would not use the method again, and participants in their study were also university students. This point of view was expressed by one participant when they commented that “I don't feel as though I really benefitted from the project. Personally, it didn't reduce my stress levels as at times I found it was just another thing in my schedule that I had to do”.

Several participants expressed their dismay to the researcher when they were told that their art-works would not be analysed. This may have led to a reduced perception of efficacy in regard to the treatment – a comment made by a participant in the intervention group

demonstrates this – "I don't know that it was (anything) really other than a nice distraction', and another commented 'I thought that the drawings would be more important".

Frank and Frank (1991) identified six factors common in psychotherapy, including: the therapeutic relationship; hope in the client for change; emotional arousal; new learning experiences, increased self-efficacy, and opportunity to practice. While emotions may have been aroused while expressing through drawing, and new learning experiences and increased self-efficacy may have occurred, the session design did not allow for individual relationships to develop between participant and researcher, and did not allow for the new skills developed to be practiced in daily life. If participants did not perceive efficacy of the treatment, then they would be unlikely to have hope for positive change, meaning that only three of Frank and Frank's factors occurred in session, which may explain the lack of benefit from the sessions.

Issues with validity

One of the main issues in expressive art-making research is that the activity of art-making is often combined with other forms of expression such as verbal therapy or writing. These other forms of therapy potentially confound any results found to support the efficacy of art-making, and few attempts have been made to design studies that consider art-making alone. Campbell (2009) discusses this problem of validity, explaining that while experimental studies need to be highly internally valid, art therapy methods in real-life sessions are often used in conjunction with other expressive mediums, meaning that controlled expressive art-making experiments have little in common with art therapy as it is practised.

"Creating art can indeed be therapeutic, and verbal therapy can be very effective. But there is something about the two together that is really spectacular" (Rubin, 1999, p. xxi). In 'real life', art therapy is hardly ever an independent therapy, and maybe it's not supposed to be. Driessnack's (2005) study found that children were able to verbally recall more details about a

(neutral) event if they first drew the event on paper, and a future avenue of study could include art-making followed by verbal or written expression.

Coyne, Aldwin and Lazarus (1981) wrote about how laboratory studies are not really adequate for measuring and understanding changes in psychological wellbeing in people. Using scales generates quantitative data that can be analysed, but may not identify underlying cause or coping strategies that individuals have when coping with anxiety and depression – "laboratory simulations fall short of everyday situations in terms of duration, severity and complexity" p439. By restraining responses on scales, participants are forced to respond in a certain way, and researchers may not get the full scope of their answer. Likert scale options are limiting in that only one of five (or four) options can be chosen, while a participant may have felt more than one way during the time period reviewed – for example a major event (either positive or negative) may have occurred, and the scales cannot capture this scenario, instead asking participants to 'average' their emotion over the last week or month.

Participant observations and feedback

Although the qualitative data collected during this study was not conducted in a systematic manner, it seems important to note that there is a discrepancy between the feedback given by participants and the self-report outcome measures of the study.

Feedback was generally positive: "It made me happy for the rest of the day after the art making sessions, and I have discovered things about myself I did not know were there as the project progressed, so I think it was quite beneficial to me - thank you!'"; "I feel as though this was a worthwhile project, and I do believe drawing does help with stress relief"; "Participating in this experiment made me feel more relaxed after partaking in it"; and "I feel like a kid again – but in a good way". However, these comments must be read with caution, as feedback forms were issued in the fourth art-making sessions, and again after the last follow-up assessment, so the opinions are not known of those who decided to leave the study earlier.

The atmosphere in the art-making room changed as the experiment progressed, with participants socialising with each other, and by the third week of sessions, the researcher had to ask participants to be quiet multiple times during art making sessions. In the final week of sessions, two participants in an intervention session spontaneously showed each other their drawings as they left the experiment room. Some participants remained behind in the refreshment area discussing their studies after sessions were finished. This socialisation of participants was also noted by Walsh, Radcliffe, Castillo, Kumar and Broschard (2007), who said that "the festive and informal atmosphere promoted participation but was a deterrent to a well-controlled research protocol" (p6).

This reason for this difference in feedback is difficult to understand. It may simply be that participants felt the need to give socially acceptable feedback to the researcher, but anonymous feedback forms yielded similar comments to those verbally made to the researcher. If positive affect was induced during sessions, this should have been evidenced in the PANAS mood scales, but an effect was not found.

It is also possible that different aspects of health should have been measured, but the wellbeing assessments were fairly comprehensive – covering anxiety, depression, fatigue, stress and physical health. A more objective measure such as heart-rate or cortisol levels may have different results.

Summary of strengths and limitations

This study had limitations, but also strengths which could be refined in future research. The difficulties in recruiting participants, and high drop-out rate during art-making sessions and the follow-up assessments need to be addressed in further studies. Identifying a population who is more willing to participate, and re-designing the sessions to allow more focused reflection, may increase perceived efficacy as well as measureable benefits to participants.

The use of still-life objects as a drawing activity seemed to be a successful placebo activity. It also allowed the researchers to design neutral tasks that considered the objects from the participants' own viewpoint as well as from different viewpoints – such as drawing from a birds-eye-view. This mimicked the instructions given to expressive drawing participants, who were asked to draw an image or representation of their stress from their own point of view as well as from others – such as that of an omniscient being. The timing of the follow-ups was also successful in that fluctuations in wellbeing were found as predicted, and the measures used were sensitive to these changes.

With the rates of attrition resulting in small participant numbers, this experiment can really be seen only as a pilot test of an adaptation of the expressive writing model, and many changes are needed for future experimental studies. The study design was relatively successful in some aspects, including timing of assessments and activity for the placebo control group, but inadequate time for, or guidance in reflection may explain the lack of therapeutic effect found.

Justification for further research

While this experiment did not produce statistically significant results to support (or disprove) art-making as a therapeutic tool, it does highlight the need for further study. This is an important area of future research as there is little experimental data available, and little is known about the session design of most published art-making studies. If a working experimental model can be designed and replicated, then more can be known about the field and discipline of art-making for therapeutic benefit.

As long as people keep qualifying in, and practicing art therapy, then research in this field should continue – "It is a common supposition that the production of art can have stress reducing or relaxing effects. However, this basic claim has yet to be empirically supported in a controlled trial" (Bell & Robbins, 2007, p. 72). There are many practitioners in various forms of counselling and psychotherapy, but as governments look for areas to cut funding, there is a

real need for an evidence base in healthcare (Lees & Tovey, 2012). Art therapists won't receive future funding unless there is some evidence of benefit, and equally it is important for clients to know whether the money and time they are investing into a therapy is helping them to improve their lives.

Maybe the key to art-making is that it helps to stimulate verbal discussion (Driessnack, 2005), and future studies could focus on a combination of art-making and verbal therapy, or art-making and expressive writing. Pizarro (2004) reported that participants found art-making (both art-making focused on stress and drawing still life) significantly more enjoyable than writing about stress. And even though Pizarro's experiment found that writing had a significant positive effect on wellbeing, participants reported that they were much less likely to continue to do it in future or recommend to a friend than they would art-making. Those in art conditions were also more likely to share and discuss their experience with other participants than those in the writing condition, lending support to the theory that art encourages socialisation and verbalization. A combination of art-making and writing might result in higher satisfaction and retention rates than writing alone.

Conclusion

Results from previous experimental studies are mixed in their support for art-making as a therapeutic intervention (Slayton et al., 2010), and this experiment has provided no further supporting evidence. While none of the psychological measures differed between groups, self-reported numbers of days sick were higher for those in the intervention group. This does not necessarily mean that art-making does not provide any therapeutic benefits, but further research is needed. While it is necessary to control as many factors as possible in research of this kind, it may be that the study design was too far removed from art therapy sessions as used in real life. The Pennebaker model produces measurable benefits in expressive writing, but there is a need for further adaptation of this model in expressive art-making.

The sample of undergraduate students in this study was difficult to recruit and had a high attrition rate, which may have contributed to the lack of findings. It may be more useful in future studies to consider existing populations who are comfortable with or interested in art-making - such as community art class populations. A population which may be of particular interest are patients in spinal units who are offered art-making classes as part of the rehabilitation programme, where creativity is encouraged in the form of foot and mouth painting (Auckland Spinal Rehabilitation Unit, 2011).

An issue in the field of expressive therapies is the lack of understanding of exactly how and when the therapeutic effect occurs. While many expressive writing studies have provided evidence to support the efficacy of the treatment, there are still several different explanations used to describe this mechanism (Frattaroli, 2006; Sloan & Marx, 2004; Smyth, 1998). This causes issues when adapting the expressive writing model for art-making, as it is unknown which components are essential and which can be replaced. Timing, materials and instructions could be modified in future experiments of this type. While art-making is an expressive activity, it may be that it is a different kind of expression to writing, and that the two mediums are not interchangeable.

Reflection on the art-works created may be an integral component in achieving a therapeutic effect. Further experiments could adapt the Pennebaker Paradigm further by including a directed reflective activity. For example, participants could be encouraged to step back and visually assess their artworks, instead of immediately beginning the next drawing activity. It also may have been of benefit to collate the artworks of participants across several sessions, and included time to review previous session's work before or after each art-making session. As an example, refer to Appendix X, where several series of artworks are displayed from participants of both the stress-focus drawing and still-life comparison drawing groups. It is

interesting to note the progression of art-making, and participants may have benefited from reflecting on this themselves.

Another direction could be to look past the Pennebaker paradigm, and consider activities that occur in non-therapeutic art classes. One example of such activity is the 'creation-destruction-creation' task (B. McGorry, personal communication, March 2010), which the author of this thesis completed as an art student. In this activity, pictures are drawn, then ripped apart, and repositioned, adhered to and reworked on a new sheet of paper to complete an abstracted version of the first art-work. While the images drawn in the art class attended were still life compositions, and not intended to be therapeutic in purpose, this task could easily be adapted to suit stress-focus art-making. Perhaps future participants may find some benefit in literally ripping apart representations of their problems and creating new works of art from them.

The fact that there are over 200 Art Therapists practicing in Australasia (ANZATA, 2012), and many more worldwide means it is important to continue to research on art-making as a therapeutic intervention. It is also important to publish studies with clear art-making session methods, so that research in this field can be refined and improved. If art-making is found to be beneficial, then research can provide support for funding and training, and if art-making is not found to be useful then alternative therapeutic methods can be encouraged for use.

References

Aiken, N. E. (1998). *The biological origins of art*. Westport, CT: Praeger Publishers.

Alvares, T. S. (1998). Healing through imagery: Gabriel's and maria's journeys. *The Arts in Psychotherapy, 25*(5), 313-322. doi:10.1016/S0197-4556(98)00039-2

Anderson, F. E. (1995). Catharsis and empowerment through group claywork with incest survivors. *The Arts in Psychotherapy, 22*(5), 413-427. doi:10.1016/0197-4556(94)00046-8

ANZATA. (2012). *The official website of the Australian and New Zealand arts therapy association*. Retrieved from http://www.anzata.org/

Appleton, V. (2001). Avenues of hope: Art therapy and the resolution of trauma. *Art Therapy: Journal of the American Art Therapy Association, 18*(1), 6-13. doi:10.1080/07421656.2001.10129454

Arnheim, R. (1970). *Visual Thinking*. London, England: Faber and Faber Limited.

Art Therapy New Zealand. (2012). *Art therapy info*. Retrieved from http://www.arttherapy.co.nz/art-therapy-info.html

Atkins, S. S., & Williams, L. D. (2007). *Sourcebook in expressive arts therapy*. Boone, N.C.: Parkway Publishers.

Auckland Spinal Rehabilitation Unit. (2011). *Community services directory*: Counties Manukau District Health Board.

AUT University. (2012). *AUT university: Facts, figures and background*. Retrieved from http://www.aut.ac.nz/about-aut

Bagby, R. M., Parker, J. D. A., & Taylor, G. J. (1994). The twenty-item Toronto alexythymia scale-I. Item selection and cross-validation of the factor structure. *Journal of Psychosomatic Research, 38*(1), 23-32. doi:10.1016/0022-3999(94)90005-1

Bar-Sela, G., Atid, L., Danos, S., Gabay, N., & Epelbaum, R. (2007). Art therapy improved depression and influenced fatigue levels in cancer patients on chemotherapy. *Psycho-Oncology, 16*, 980-984. doi:10.1002/pon.1175

Bassie, A. (2008). *Expressionism*. New York, NY: Parkstone International.

Batten, S. V., Follette, V. M., Hall, M. L. R., & Palm, K. M. (2002). Physical and psychological effects of written disclosure amoungst sexual abuse survivors. *Behaviour Therapy, 33*, 107-122. doi:10.1016/s0005-7894(02)80008-9

Beck, Beck, & Jolly. (2001). *Maunal for the beck youth inventories of emotional and social impairment*. San Antonio, TX: The Psychological Corporation.

Beck, & Steer, R. A. (1993). *Beck anxiety inventory manual*. San Antonio, TX: The Psychological Corporation.

Beck, Steer, R. A., & Brown, G. K. (1996). *BDI-II: Beck depression inventory-II*. San Antonio, TX: The Psychological Corporation.

Beebe, A., Gelfand, E., & Bender, B. (2010). A randomized trial to test the effectiveness of art therapy for children with asthma. *Journal of Allergy and Clinical Immunology, 126*(2), 263-266. doi:10.1016/j.jaci.2010.03.019

Bell, C. E., & Robbins, S. J. (2007). Effect of art production on negative mood: A randomized, contolled trial. *Art Therapy: Journal of the American Art Therapy Association, 24*(2), 71-75. doi:10.1080/07421656.2007.10129589

Bellmer, E. A., Hoshino, J., Schrader, B., Strong, M., & Hutzler, J. B. (2003). Perception of art therapy field by psychology professors. *Art Therapy: Journal of the American Art Therapy Association, 20*(3), 163-169. doi:10.1080/07421656.2003.10129573

Bradburn, N. M. (1969). *The structure of psychological well-being*. Chicago: Aldine Publishing Company.

Brooke, S. L. (Ed.). (2006). *Creative arts therapies manual: A guide to the history, theoretical approaches, assessment, and work with special populations of art, play, music, drama and poetry therapies*. Springfield, IL: Charles C Thomas Publisher Ltd.

Bushman, B. J. (2002). Does venting anger feed or extinguish the flame? catharsis, rumination, distraction, anger and aggressive responding. *Personality and Social Psychology Bulletin, 28*, 724-731. doi:10.1177/0146167202289002

Cabinet Domestic Policy Committee. (2011). *Victims of crime reform bill - additional policy decisions and approval for introduction*: New Zealand Ministry of Justice.

Camerer, C., & Hogarth, R. M. (1999). The effects of financial incentives in experiments: A review amd capital-labour-production framework. *Journal of Risk and Uncertainty, 19*(1), 7-42. doi:10.1023/A:1007850605129

Cameron, L. D., & Nicholls, G. (1998). Expression of stressful experiences through writing: Effects of a self-regulation manipulation for pessimists and optimists. *Health Psychology, 17*(1), 84-92. doi:10.1037/0278-6133.17.1.84

Camic, P. M. (2008). Playing in the mud: Health psychology, the arts and creative approaches to health care. *Journal of Health Psychology, 13*, 287-298. doi:10.1177/1359105307086698

Campbell. (2009). *The effectiveness of art therapy in reducing symptoms of trauma, anxiety, and stress: a meta-analysis*. Wheaton College Graduate School, Wheaton, Illinois.

Campbell, & Pennebaker, J. W. (2003). The secret life of pronouns: Flexibility in writing style and physical health. *Psychological Science, 14*(1), 60-65. doi:10.1111/1467-9280.01419

Campbell, E. R. (2009). *The effectiveness of art therapy in reducing symptoms of trauma, anxiety, and stress: a meta-analysis*. Wheaton College Graduate School, Wheaton, Illinois.

Carnes, J. J. (1979). Toward a cognitive theory of art therapy. *Art Psychotherapy, 6*, 69-75. doi:10.1016/0090-9092(79)90001-2

Carolan, R. (2001). Models and paradigms of art therapy research. *Art Therapy: Journal of the American Art Therapy Association, 18*(4), 190-206. doi:10.1080/07421656.2001.10129537

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56*, 267-283. doi:10.1037/0022-3514.56.2.267

Carveth, J. A., Gesse, T., & Moss, N. (1996). Survival strategies for nurse-midwifery students. *Journal of Nurse-Midwifery, 41*(1), 50-54. doi:10.1016/0091-2182(95)00072-0

Case, C., & Dalley, T. (1992). *The handbook of art therapy*. London, England: Routledge.

Chan, K. M., & Horneffer, K. (2006). Emotional expression and psychological symptoms: a comparison of writing and drawing. *The Arts in Psychotherapy, 33*, 26-36. doi:10.1016/j.aip.2005.06.001

Christenfeld, N., & Creager, B. (1996). Anxiety, alcohol, aphasia and ums. *Journal of Personality and Social Psychology, 70*(3), 451-460. doi:10.1037/0022-3514.70.3.451

Clark, L. F. (1993). Stress and the cognitive-conversational benefits of social interaction. *Journal of Social and Clinical Psychology, 12*, 25-55. doi:10.1521/jscp.1993.12.1.25

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behaviour, 24*, 385-396. doi:10.2307/2136404

Coyne, J. C., Aldwin, C., & Lazarus, R. S. (1981). Depression and coping in stressful episodes. *Journal of Abnormal Psychology, 90*(5), 439-447. doi:10.1037/0021-843X.90.5.439

Curl, K. (2008). Assessing stress reduction as a function of artistic creation and cognitive focus. *Art Therapy: Journal of the American Art Therapy Association, 25*(4), 164-169. doi:10.1080/07421656.2008.10129550

Curry, N. A., & Kasser, T. (2005). Can colouring mandalas reduce anxiety? *Art Therapy: Journal of the American Art Therapy Association, 22*(2), 81-85. doi:10.1080/07421656.2005.10129441

Dalebroux, A., Goldstein, T. R., & Winner, E. (2008). Short-term mood repair through art-making: Positive emotion is more effective than venting. *Motivation and Emotion, 32*(4), 288-295. doi:10.1007/s11031-008-9105-1

Darley, S., & Heath, W. (2008). *The expressive arts activity book: A resource for professionals*. London, United Kingdom: Jessica Kingsley Publishers.

Deaver, S. (2002). What constitutes art therapy research? *Art Therapy: Journal of the American Art Therapy Association, 19*(1), 23-27. doi:10.1080/07421656.2002.10129721

Derogatis, L. R. (1994). *Symptom checklist-90-R: Administration, scoring, and procedures manual* (3 ed.). Minneapolis, MN: National Computer Services Inc.

Dewan, S. (2007, September 17). Using crayons to exorcise Katrina. *New York Times,* p. E.1.

Dissanayake, E. (1980). Art as a human behavior: Toward an ethological view of art. *Journal of Aesthetics and Art Criticism, 38*(4), 397-406.

Domar, A., Clapp, D., Slawsby, E., Kessel, B., Orav, J., & Freizinger, M. (2000). The impact of group psychological interventions on distress in infertile women. *Health Psychology, 19*(6), 568-575. doi:10.1037/0278-6133.19.6.568

Driessnack, M. (2005). Children's drawings as facilitators of communication: A meta-analysis. *Journal of Pediatric Nursing, 20*(6), 415-423. doi:10.1016/j.pedn.2005.03.011

Dyrbye, L., Thomas, M. R., & Shanafelt, T. D. (1996). Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. *Academic Medicine, 81*(1), 354-373. doi:10.1097/00001888-200604000-00009

Erb, W. (2008). Learning and play at hospital. *New Zealand Education Gazette*(August 2008).

Eysenck, H. J. (1952). The effects of psychotherapy: An evaluation. *Journal of Consulting Psychology, 16*, 319-324. doi:10.1037/h0063633

Fiske, S. T., & Linville, P. W. (1980). What does the schema concept buy us? *Personality and Social Psychology Bulletin, 6*(4), 543-557. doi:10.1177/014616728064006

Fleshman, B., & Fryrear, J. (1981). *The arts in therapy*. Chicago: Nelson-Hall.

Foa, E. B. (1995). *PDS posttraumatic stress Diagnostic scale: Manual*. Minneapolis, MN: National Computer Systems Inc.

Foster, M. T. (1992). Experiencing a "creative high". *The Journal of Creative Behavior, 26*(1), 29-38. doi:10.1002/j.2162-6057.1992.tb01154.x

Frank, & Frank. (1991). *Persuasion and healing: A comparative study of psychotherapy*. Baltimore: John Hopkins University Press.

Frank, & Gilovich, T. (1989). Effects of memory perspective on retrospective causal attributions. *Journal of Personality and Social Psychology, 57*(3), 399-403. doi:10.1037/0022-3514.57.3.399

Frattaroli, J. (2006). Experimental Disclosure and Its Moderators: A Meta-Analysis. *Psychological Bulletin, 132*(6), 823-865. doi:Doi: 10.1037/0033-2909.132.6.823

Freud, S., Strachey, J., & Richards, A. (1991). *Introductory lectures on psychoanalysis*. London, England: Penguin. (1915)

Frisina, P. G., Borod, J. C., & Lepore, S. J. (2004). A meta-analysis of the effects of written emotional disclosure on the health outcomes of clinical populations. *The Journal of Nervous and Mental Disease, 192*(9), 629-634. doi:10.1097/01.nmd.0000138317.30764.63

Gantt, L. M. (2009). The formal elements art therapy scale: A measurement system for global variables in art. *Art Therapy: Journal of the American Art Therapy Association, 26*(3), 124-129. doi:10.1080/07421656.2009.10129372

Gawrysiak, M., Nicholas, C., & Hopko, D. R. (2009). Behavioral activation for moderately depressed university students: Randomised controlled trial. *Journal of Counseling Psychology, 56*(3), 468-475. doi:10.1037/a0016383

Georges, E. (1995). A cultural and historical perspective on confession. In J. W. Pennebaker (Ed.), *Emotion, disclosure and health* (pp. 11-22). Washington, DC: American Psychological Association.

Gladding, S. (1992). *Counseling as an art: The creative arts in counseling*. Alexandria, VA: American Counseling Association.

Goldberg, D. P., & Hillier, V. F. (1979). A scaled version of the general health questionaire. *Psychological Medicine, 9*(139-145). doi:10.1017/S0033291700021644

Greenberg, M. A., & Stone, A. A. (1992). Emotional disclosure about traumas and its relation to health: Effects of previous disclosure and trauma severity. *Journal of Personality and Social Psychology, 63*(1), 75-84. doi:10.1037/0022-3514.63.1.75

Greenberg, M. A., Wortman, C. B., & Stone, A. A. (1996). Emotional expression and physical health: Revising traumatic memories or fostering self-regulation? *Journal of Personality and Social Psychology, 71*(3), 588-602. doi:10.1037/0022-3514.71.3.588

Grodner, S., Braff, D., Janowsky, D., & Clopton, P. (1982). Efficacy of art/movement therapy in elevating mood. *The Arts in Psychotherapy, 9*, 217-225. doi:10.1016/0197-4556(82)90038-7

Gussak, D. (2009). The effects of art therapy on male and female inmates: Advancing the research base. *The Arts in Psychotherapy, 36*, 5-12. doi:10.1016/j.aip.2008.10.002

Hand, M. (2006). Creative connections. In S. L. Brooke (Ed.), *Creative arts therapies manual: A guide to the history, theoretical approaches, assessment, and work with special populations of art, play, music, drama and poetry therapies*. Springfield, IL: Charles C Thomas Publisher Ltd.

Harris, P. M. (1998). Attrition revisited. *The American Journal of Evaluation, 19*(3), 293-305. doi:10.1177/109821409801900303

Henderson, P., Rosen, D., & Mascaro, N. (2007). Empirical study on the healing nature of mandalas. *Psychology of Aesthetics, Creativity and the Arts, 1*(3), 148-154. doi:10.1037/1931-3896.1.3.148

Henzell, J. (1995). Research and the particular: Epistemology in art and psychotherapy. In A. Gilroy & C. Lee (Eds.), *Art and music: Therapy and research*. London, England: Routledge.

Herrera, H. (2003). *Frida: a biography of Frida Kahlo*. London, England: Bloomsbury.

Hill, C. E. (2009). *Helping skills - facilitating exploration, insight, and action* (3rd ed.). Washington D.C.: American Psychological Association.

Hlubocky, F. J., Ratain, M. J., Wen, M., & Daugherty, C. K. (2007). Complementary and alternative medicine among advanced cancer patients enrolled on phase I trials: A study of prognosis, quality of life, and preferences for decision making *Journal of Clinical Oncology, 25*(5), 548-554. doi:10.1200/JCO.2005.03.9800

Honos-Webb, L., Harrick, E. A., Stiles, W. B., & Park, C. L. (2000). Assimilation of traumatic experiences and physical-health outcomes: Cautions for the pennebaker paradigm. *Psychotherapy, 37*(4), 307-314. doi:10.1037/0033-3204.37.4.307

Hughes, E. G., & da Silva, A. M. (2011). A pilot study assessing art therapy as a mental health intervention for subfertile women. *Human Reproduction, 26*(3), 611-615. doi:10.1093/humrep/deq385

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7*(2), 113-136. doi:10.1521/soco.1989.7.2.113

Kaplan, F. (2000). *Art, science and art therapy: Repainting the picture*. London, England: Jessica Kingsley Publishers.

Kaplan, F. (2005). Editorial: Why we do research. *Art Therapy: Journal of the American Art Therapy Association, 22*, 66-67. doi:10.1080/07421656.2005.10129447

Kennedy-Moore, E., & Watson, J. C. (2001). How and when does emotional expression help? *Review of General Psychology, 5*(3), 187-212. doi:10.1037//1089-2680.5.3.187

King, L. A. (2001). The health benefits of writing about life goals. *Personality and Social Psychology Bulletin, 27*(7), 798-807. doi:10.1177/0146167201277003

Klein. (1996). Preventing hung juries about therapy studies. *Journal of Consulting and Clinical Psychology, 64*(1), 81-87. doi:10.1037/0022-006X.64.1.81

Klein, & Boals, A. (2001). Expressive writing can increase working memory capacity. *Journal of Experimental Psychology, 130*(3), 520-533. doi:10.1037/0096-3445.130.3.520

Kloss, J. D., & Lisman, S. A. (2002). An exposure-based examination of the effects of written emotional disclosure. *British Journal of Health Psychology, 7*, 31- 46. doi:10.1348/135910702169349

Landhuis, C. E. (2008). *Therapeutic writing: testing the effects of writing frequency and point of view*. University of Auckland, Auckland.

Landy, R. J. (1991). A taxonomy of roles: A blueprint for the possibilities of being. *The Arts in Psychotherapy, 18*(5), 419-431. doi:10.1016/0197-4556(91)90054-E

Larson, K. (2006). Ethical delivery of creative therapeutic approaches. In S. L. Brooke (Ed.), *Creative arts therapies manual: A guide to the history, theoretical approaches, assessment, and work with special populations of art, play, music, drama and poetry therapies*. Springfield, IL: Charles C Thomas Publisher Ltd.

Lees, J., & Tovey, P. (2012). Counselling and psychotherapy, complementray and alternative medicine and the future of healthcare. *British Journal of Guidance and Counselling, 40*(1), 67-81. doi:10.1080/03069885.2011.621520

Lepore, S. J. (1997). Expressive writing moderates the relation between intrusive thoughts and depressive symptoms. *Journal of Personality and Social Psychology, 73*(5), 1030-1037. doi:10.1037/0022-3514.73.5.1030

Lepore, S. J., & Smyth, J. M. (2002). *The writing cure*. Washington, D. C.: American Psychological Association.

Leste, A., & Rust, J. (1990). Effects of dance on anxiety. *American Journal of Dance Therapy, 12*(1), 19-25. doi:10.2466/pms.1984.58.3.767

Levy, D. (2011, 17/08). Concern's over kids pictures in court. *The Dominion Post*.

Luborsky, L., Rosenthal, R., Diguer, L., Andrusyna, T. P., Berman, J. S., Levitt, J. T., ... Krause, E. D. (2002). The dodo bird verdict is alive and well - mostly. *Clinical Psychology: Science and Practice, 9*(1), 2-12. doi:10.1093/clipsy.9.1.2

Malchiodi, C. A. (2005). *Expressive therapies*. London, England: The Guilford Press.

Malchiodi, C. A. (2007). *The art therapy sourcebook*. New York, NY: McGraw-Hill.

Marteau, T. M., & Bekker, H. (1992). The development of a six item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI). *British Journal of Clinical Psychology, 31*, 301-306. doi:10.1111/j.2044-8260.1992.tb00997.x

McNair, P. M., Lorr, M., & Droppleman, L. F. (1981). *POMS manual* (2 ed.). San Diego: Educational and Industrial Testing Service.

McNair, P. M., Lorr, M., & Droppleman, L. F. (1992). *POMS manual* (3 ed.). San Diego, CA: Educational and Industrial Testing Service.

McNiff, S. (1981). *The arts and psychotherapy*. Springfield, IL: Thomas. doi:10.1037//0022-006X.70.4.880

Mercer, A., Warson, E., & Zhao, J. (2010). Visual journaling: An intervention to influence stress, anxiety and affect levels in medical students. *The Arts in Psychotherapy, 37*, 143-148. doi:10.1016/j.aip.2009.12.003

Metzl, E. (2008). Systematic analysis of art therapy research published in *Art Therapy: Journal of AATA* between 1987 and 2004. *The Arts in Psychotherapy, 35*(1), 60-73. doi:10.1016/j.aip.2007.09.003

Misra, R., Crist, M., & Burant, C. J. (2003). Relationships among life stress, soical support, academic stressors and reactions to stressors of international students in the united states. *International Journal of Stress Management, 10*(2), 137-157. doi:10.1037/1072-5245.10.2.137

Moon, B. L. (1994). *Introduction to art therapy: Faith in the product*. Springfield, IL: Charles C Thomas.

Mowrer, O. H. (1960). *Learning theory and behaviour*. New York: Wiley.

Nelson-Jones, R. (2000). *Six key approaches to counselling and therapy*. London, England: SAGE Publications Ltd.

Nelson, R. E., & Craighead, W. E. (1977). Selective recall of positive and negative feedback, self-control behaviors, and depression. *Journal of Abnormal Psychology, 86*(4), 379-388. doi:10.1037/0021-843X.86.4.379

Newton, K. (2011, 27/07/2011). Kiwis among the worst for rates of depression. *The Dominion Post,* p. E.1.

Nisbett, R. E., Caputo, C., Legant, P., & Marecek, J. (1973). Behaviour as seen by the actor and as seen by the observer. *Journal of Personality and Social Psychology, 27*(2), 154-164. doi:10.1037/h0034779

Nishith, P., Resick, P. A., & Griffin, M. (2002). Pattern of change in prolonged exposure and cognitive-processing therapy for female rape victims with post-traumatic stress. *Journal of Consulting and Clinical Psychology, 70*, 880-886.

Osgood, C. E., Suci, G. J., & Tannenbaum, P. H. (1957). *The measurement of meaning*. Urbana, IL: University of Illinois Press.

Pennebaker, J. W. (1993). Putting stress into words: Health, linguistic and therapeutic implications *Behaviour Research and Therapy, 31*(6), 539-548. doi:10.1016/0005-7967(93)90105-4

Pennebaker, J. W. (1997). Writing about emotional experience as a therapeutic process. *Psychological Science, 8*, 162-166. doi:10.1111/j.1467-9280.1997.tb00403.x

Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology, 95*(3), 274-281. doi:10.1037/0021-843X.95.3.274

Pennebaker, J. W., Colder, M., & Sharp, L. K. (1990). Accelerating the coping process. *Journal of Personality and Social Psychology, 58*, 528-537. doi:10.1037/0022-3514.58.3.528

Pennebaker, J. W., & Francis, M. E. (1996). Cognitive, emotional and language processes in disclosure. *Cognition and Emotion, 10*(6), 601-626. doi:10.1080/026999396380079

Pennebaker, J. W., Kiecolt-Glaser, J. K., & Glaser, R. (1988). Disclosure of traumas and immune function: Health implications for psychotherapy. *Journal of Consulting and Clinical Psychology, 56*, 239-245. doi:10.1037/0022-006X.56.2.239

Pizarro, J. (2004). The efficacy of art and writing therpay: Increasing positive mental health outcomes and participant retention after exposure to traumatic experience. *Art Therapy: Journal of the American Art Therapy Association, 21*(1), 5-12. doi:10.1080/07421656.2004.10129327

Pizarro, J., Schneider, T. R., & Salovey, P. (2002). A source of error in self-reports of pap test utilization. *Journal of Community Health, 27*(5), 351-356. doi:10.1023/A:1019888627113

Ptacek, J. T., Smith, R. E., & Zanas, J. (1992). Gender, appraisal, and coping: A longitudinal analysis. *Journal of Personality and Social Psychology, 60*(4), 747-770. doi:10.1111/j.1467-6494.1992.tb00272.x

Radloff, L. (1977). The CES-D scale: A self report depression scale for research in the general population. *Applied Psychosocial Measurement, 1*, 385-401. doi:10.1177/014662167700100306

Regev, D., & Guttmann, J. (2005). The psychological benefits of artwork: The case of children with learning disorders. *The Arts in Psychotherapy, 32*(4), 302-312. doi:10.1016/j.aip.2005.02.001

Resick, P. A., & Schnike, M. K. (1992). Cognitive processing therapy for sexual assault victims. *Journal of Consulting and Clinical Psychology, 60*(5), 748-756. doi:10.1037/0022-006X.60.5.748

Reynolds, M. W., Nabors, L., & Quinlan, A. (2000). The effectiveness of art therapy: Does it work? *Art Therapy: Journal of the American Art Therapy Association, 17*(3), 207-213. doi:10.1080/07421656.2000.10129706

Riley, S. (1996). An art psychotherapy stress reduction group: For therapists dealing with a severely abused client population. *The Arts in Psychotherapy, 23*(5), 407-415. doi:10.1016/S0197-4556(96)00054-8

Rosenzweig, S. (2002). Some implicit common factors in diverse methods of psychotherapy. *Journal of Psychotherapy Integration, 12*(1), 5-9. doi:10.1037//1053-0479.12.1.5 (1936)

Rubin, J. A. (1999). *Art therapy: An introduction*. Philadelphia, PA: Brunnel/Mazel.

Rubin, J. A. (Ed.). (1987). *Approaches to art therapy: Theory and technique*. New York, NY: Brunner-Mazel.

Rusted, J., Sheppard, l., & Waller, D. (2006). A multi-centre randomized control group trial on the use of art therapy for older people with dementia. *Group Analysis, 39*(4), 517-536. doi:10.1177/0533316406071447

Sarid, O., & Huss, E. (2010). Trauma and acute stress disorder: A comparison between cognitive behavioural intervention and art therapy. *The Arts in Psychotherapy, 37*(1), 8-12. doi:10.1016/j.aip.200911.004

Schaverien, J. (1995). Researching the esoteric: Art therapy research. In A. Gilroy & C. Lee (Eds.), *Art and music: Therapy and research*. London, England: Routledge.

Scheier, M. F., & Carver, C. S. (1985). Optimism, coping and health: Assessment and implications of generalized outcome expectancies on health. *Health Psychology, 4*, 219-247. doi:10.1037/0278-6133.4.3.219

Schlenker, B. R., & Leary, M. R. (1982). Social anxiety and self presentation: A conceptualisation and model. *Psychological Bulletin, 92*(641-669). doi:10.1037/0033-2909.92.3.641

Schmidt, U., Bone, G., Hems, S., Lessem, J., & Treasure, J. (2002). Structured therapeutic writing tasks as an adjunct to treatment in eating disorders. *European Eating Disorders Review, 10*(5), 299-315. doi:10.1002/erv.465

Seih, Y.-T., Chung, C. K., & Pennebaker, J. W. (2011). Experimental manipulations of perspective taking and perspective switching in expressive writing. *Cognition and Emotion, 25*(5), 926-938. doi:10.1080/02699931.2010.512123

Slayton, S. C., D'Archer, J., & Kaplan, F. (2010). Outcome studies on the efficacy of art therapy: A review of findings. *Art Therapy: Journal of the American Art Therapy Association, 27*(3). doi:10.1080/07421656.2010.10129660

Slegelis, M. H. (1987). A study of Jung's mandala and it's relationship to art psychotherapy. *The Arts in Psychotherapy, 14*, 301-311. doi:10.1016/0197-4556(87)90018-9

Sloan, D. M., & Marx, B. P. (2004). Taking pen to hand: Evaluating theories underlying the written disclosure paradigm. *Clinical Psychology: Science and Practice, 11*(2), 121-137. doi:10.1093/clipsy/bph062

Smith, Gilchrist, I. D., Butler, S. H., Muir, K., Bone, Reeves, I., & Harvey, M. (2007). Non-lateralised deficits of drawing production in hemispatial neglect. *Brain and Cognition, 64*(2), 150-157. doi:10.1016/j.bandc.2007.02.001

Smith, Glass, G. V., & Miller, T. I. (1980). *The benefits of psychotherapy*. Baltimore: The John Hopkins University Press.

Smyth, J. M. (1998). Written emotional expression: effect sizes, outcome types, and moderating variables: Effect Sizes, Outcome Types, and Moderating Variables. *Journal of Consulting and Clinical Psychology, 66*(1), 174-184. doi:10.1037/0022-006X.66.1.174

Smyth, J. M., Stone, A. A., Hurewitz, A., & Kaell, A. (1999). Effects if writing about stressful experiences on symptom reduction in patients with asthma or rheumatoid arthritis: A randomised trial. *The Journal of the American Medical Association, 281*(14), 1304-1309. doi:10.1001/jama.281.14.1304

Souter, G. (2011). *Frida Kahlo: Beneath the mirror*: Parkstone International.

Spera, S. P., Buhrfeind, E. D., & Pennebaker, J. W. (1994). Expressive writing and coping with job loss. *The Academy of Management Journal, 37*(3), 722-733. doi:10.2307/256708

Spiegel, D. (1999). Healing words: Emotional expression and disease outcome. *Journal of the American Medical Association, 281*(14), 1328-1329. doi:10.1001/jama.281.14.1328

Spielberger, C. D. (1983). *Manual for the Sate Trait Personality Inventory STAI (Form Y)*. Palo Alto, CA: Consulting Psychologists Press.

SPSS Inc. (Released 2010). IBM SPSS Statistics for Windows, Version 19.0 [Armonk, NY: IBM Corp.

St John, P. (2006). A short history of art therapy practice in the united states. In S. L. Brooke (Ed.), *Creative arts therapies manual: A guide to the history, theoretical approaches, assessment, and work with special populations of art, play, music, drama and poetry therapies.* . Springfield, IL: Charles C Thomas Publisher Ltd.

Stanton, A. L., Kirk, S. B., Cameron, C. L., & Danoff-Burg, S. (2000). Coping through emotional approach: Scale construction and validation. *Journal of Personality and Social Psychology, 78*(1150-1169). doi:10.1037/0022-3514.78.6.1150

Statistics New Zealand. (2006). *Sex for the census: Usually resident population count, 2006*. Retrieved from http://www.stats.govt.nz/Census/2006CensusHomePage/classification-counts-tables/about-people/sex.aspx

Symons, J., Clark, H., Williams, K., Hansen, E., & Orpin, P. (2011). Visual art in physical rehabilitation: experiences of people with neurological conditions. *British Journal of Occupational Therapy, 74*(1), 44-52. doi:10.4276/030802211X12947686093729

Thurschwell, P. (2009). *Sigmund Freud* (second ed.). New York, NY: Routledge.

Tinnin, L. W. (1994). Transforming the placebo effect in art therapy. *American Journal of Art Therapy, 32*(3), 75-78.

Twenge, J. M. (2000). The age of anxiety? Birth cohort change in anxiety and neuroticism, 1952-1993. *Journal of Personality and Social Psychology, 79*(6), 1007-1021. doi:10.1037//0022-3514.79.6.1007

van der Kolk, B. A., & van der Hart, O. (1989). Pierre janet and the breakdown of adaptation in psychological trauma. *The American Journal of Psychiatry, 146*(12), 1530-1540. doi:10.1002/jts.2490020404

VandenBos, G. R. (Ed.). (2007). *APA dictionary of psychology*. Washington, DC: American Psychological Association.

Wahler, H. J. (1968). The physical symptoms inventory: Measuring levels of somatic complaining behavior. *Journal of Clinical Psychology, 24*(2), 207-211. doi:10.1002/1097-4679(196804)24:2<207::AID-JCLP2270240223>3.0.CO;2-G

Walsh, S. M., Chang, C. Y., Schmidt, L. A., & Yoepp, J. H. (2005). Lowering stress while teaching research: A creative arts intervention in the classroom. *Journal of Nursing Education, 44*(7), 330-333.

Walsh, S. M., Radcliffe, S., Castillo, L., Kumar, A., & Broschard, D. (2007). A pilot study to test the effects of art-making classes for family caregivers of patients with cancer. *Oncology Nursing Forum, 34*(1), 1-8. doi:10.1188/07.ONF.E9-E16

Wampold, B. E., Mondin, G. W., Moody, M., Stich, F., Benson, K., & Ahn, H. (1997). A meta-analysis of outcome studies comparing bona fide psychotherapies: Empirically, "all must have prizes". *Psychological Bulletin, 122*(3), 202-215. doi:10.1037/0033-2909.122.3.203

Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin, 96*, 465-490. doi:10.1037/0033-2909.96.3.465

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology, 54*(6), 1063 -1070. doi:10.1037/0022-3514.54.6.1063

Wellenkamp, J. (1995). Cultural similarities and differences regarding emoitonal disclosure: Some examples from indonesia and the pacific. In J. W. Pennebaker (Ed.), *Emotion, disclosure and health* (pp. 293-311). Washington, DC: American Psychological Association.

Wikstrom, B.-M. (2005). Communicating via expressive arts: The natural medium of self expression for hospitalised children. *Pediatric Nursing, 31*(6), 480-485.

Williams, N. (2011). Art draws out youngsters feelings. *Eastern Courier,* p. 42.

Wood, M. J. M., Molassiotis, A., & Payne, S. (2010). What research evidence is there for the use of art therapy in the management of symptoms in adults with cancer? A systematic review. *Psycho-Oncology, 20*(2), 135-145. doi:10.1002/pon.1722

Wright, J., & Chung, M. C. (2001). Mastery or mystery? Therapeutic writing: A review of the literature. *British Journal of Guidance and Counselling, 29*(3), 277-291. doi:10.1080/03069880120073003

Zech, E., Luminet, O., Rime, B., & Wagner, H. (1999). Alexythymia and its measurement: Confirmatory factor analyses of the 20-items toronto alexythymia scale and the bermond-vorst alexythymia questionairre. *European Journal of Personality, 13*, 511-532. doi:10.1002/(SICI)1099-0984(199911/12)13:6<511::AIDPER347>3.0CO;2-0

Zwerling, I. (1989). The creative arts therapies as "real therapies". *American Journal of Dance Therapy, 11*(1), 19-26. doi:10.1007/BF00844263

Appendix A

Participant Information Sheet

Date Information Sheet Produced:

27 August 2011

Project Title

Therapeutic Art-Making

An Invitation

Hi, I'm Jessica Henry, and I'm currently completing my Master of Arts in Human Services at AUT University. I have designed an experiment to test whether different kinds of art-making are beneficial to the psychological wellbeing of students, and I would really appreciate it if you are interested in volunteering to be a participant.

Participation in this experiment is completely voluntary, and you are free to withdraw at any time before data collection has been completed. If you decide that you do not wish to continue, there is no disadvantage to you, and any data that has been collected from you will be destroyed.

What is the purpose of this research?

This research project has been designed to try and determine whether art therapy works. More specifically, I am looking to see whether participation in art-making classes has any effect on the psychological wellbeing of university students over the course of a semester. This experiment will be used to write my master's thesis, and may also possibly be used for publication in an academic journal article.

How was I identified and why am I being invited to participate in this research?

I have contacted students attending undergraduate classes in a range of courses at AUT University. I am interested in recruiting students from range of disciplines, and am trying to balance the number of male and female participants. There is no exclusion criterion other than a minimum age of 18 years old.

What will happen in this research?

You will be randomly assigned into one of three research groups. Group One will only be asked to complete the measures of psychological wellbeing (an online self-report questionnaire). Groups Two and Three will be asked to complete the same questionnaire, but will also be asked to participate in six short sessions of art-making across three weeks.

If you choose to volunteer as a participant, you will be given more details on the exact type of art-making activity that you will be engaged in during the first session.

The art-works that you create will not be analysed by any of the researchers. The data that we will collect and record are the answers that you give on the online questionnaire. These answers will then be compared to those that were given by members of the other two groups for evaluation.

We are also asking for your permission to access your academic grades for this coming semester (S1 2012) and last semester (S2 2011) so that we can see if participating in this project has had any academic effect. You can still be a participant in the rest of the experiment even if you do not give us permission to access your grades.

While the art-works you produce are private and remain your property, I will ask if anyone is interested in allowing me to view their work and photograph it to illustrate my thesis. Any artworks pictured will be kept anonymous and the artwork will not be identifiable as yours.

What are the discomforts and risks and how will they be alleviated?

We don't expect you to experience any discomfort, nor do we expect any risk. However, in the unlikely event that you experience any negative effects, you can withdraw from the study at any point, and your data will be withdrawn if you would like. You also have access to the free counselling and wellbeing services provided by AUT if you need.

What are the benefits?

There are many potential benefits from this study, and it is hoped that results will help inform those who use art therapy as a therapeutic method. Possible benefits include a reduction in symptoms of depression, anxiety, fatigue and/or stress relating to university studies, and a possible improvement in mood and/or academic performance.

If art-making is found to have an effect on psychological wellbeing, you will be directly informed of the most effective practice, and be given some guidelines on how you could incorporate this technique into your life as a university student.

As a researcher, I will benefit from this project as the experiment will be used to write up my thesis as part of the Master of Arts at AUT University.

How will my privacy be protected?

Your privacy will be protected because your identity will be kept confidential. If you agree to participate in this research, you will be asked to select a code name that will be used for data collection. You will not be identifiable in any of the published results, and only the researchers listed on this sheet will have access to your named consent form.

What are the costs of participating in this research?

While this experiment will run over several different sessions throughout a sixteen week period, it is not expected to take a total of more than five hours of your time, plus travel time and costs if applicable.

What opportunity do I have to consider this invitation?

If you think that you would like to participate in this research, please sign the consent form before taking the first psychological wellbeing assessment. The first session will commence up to one week after you receive this information form.

How do I agree to participate in this research?

If you agree to participate in this research, you will be asked to sign a consent form.

Will I receive feedback on the results of this research?

Yes, I will send you a copy of the report if you would like me to. There is a section on the consent form where you can indicate this.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should be notified in the first instance to the Project Supervisor, Dr Erik Landhuis, *erik.landhuis@aut.ac.nz*, 921 9999 ext 6645.

Concerns regarding the conduct of the research should be notified to the Executive Secretary, AUTEC, Dr Rosemary Godbold, *rosemary.godbold@aut.ac.nz*, 921 9999 ext 6902.

Whom do I contact for further information about this research?

Researcher Contact Details

Jessica Henry, *jessica.henry@aut.ac.nz*

***Project Supervisor Contact Details*:**

Dr Erik Landhuis, *erik.landhuis@aut.ac.nz*, 921 9999 ext 6645

Approved by the Auckland University of Technology Ethics Committee on the 25th of October 2011

AUTEC Reference number 11/270

Appendix B

Consent Form

Project title: ***Therapeutic Art-Making***

Project Supervisor: ***Dr Erik Landhuis***

Researcher: ***Jessica Henry***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 27 August 2011.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I understand that I may withdraw myself or any information that I have provided for this project at any time prior to completion of data collection, without being disadvantaged in any way.
- ○ If I withdraw, I understand that all relevant information including questionnaire results, or parts thereof, will be destroyed.
- ○ I give the researcher permission to access my academic grades in ARION for semester two 2011 and semester one 2012 to use for analysis (please circle one): **Yes** **No**
- ○ I agree to take part in this research.
- ○ I wish to receive a copy of the report from the research (please circle one): **Yes** **No**

Participant's signature: .....

Participant's name: .....

Participant's Contact Details (mobile phone number and email address) :

……..

……..

……..

Date:

Approved by the Auckland University of Technology Ethics Committee on the 25th of October 2011

AUTEC Reference number 11/270

Consent and Release Form

Project title: ***Therapeutic Art-Making***

Project Supervisor: ***Dr Erik Landhuis***

Researcher: ***Jessica Henry***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated 27 August 2011.
- ○ I have had an opportunity to ask questions and to have them answered.
- ○ I agree to allow the researcher to take photographs of the art-works I produced while participating in the art-making sessions of this research project.
- ○ I understand that any photographs, if used, will remain confidential and my identity will not be revealed (photographs will be labelled with my code name).
- ○ I understand that I may request that any photographs of my art-works are withdrawn and destroyed at any time prior to completion of data collection, without being disadvantaged in any way.
- ○ I permit the researcher to use the photographs produced as part of this project and/or any drawings from them and any other reproductions or adaptations from them, either complete or in part, alone or in conjunction with any wording and/or drawings solely and exclusively for the researchers thesis, and related research publications.
- ○ I understand that any copyright material created by the photographic sessions is deemed to be owned by the researcher and that I do not own copyright of any of the photographs.
- ○ I wish to receive a copy of the report from the research (please circle one): **Yes** **No**

Participant's signature: .....

Participant's name: .....

Date:

Approved by the Auckland University of Technology Ethics Committee on the 25th of October 2011

AUTEC Reference number 11/270

Code Name:

Appendix C:
Participant Data Form

- Age (please state in years) _____

- Which gender do you identify with? ☐ female ☐ male

- Which ethnic group do you most identify with?

  ☐ Asian
  ☐ Indian
  ☐ Middle Eastern
  ☐ Pacific Islander
  ☐ European
  ☐ Maori
  ☐ New Zealand European
  ☐ Other (please specify)

- What is the name of the qualification you are currently enrolled in? (please state below)

  _____

- Are you currently a part-time or full-time student? (please tick one)

  ☐ part-time ☐ full-time

- How many years have you been studying the qualification you are currently enrolled in? (please tick one)

  ☐ This is my first year, and this is my first semester of study
  ☐ This is my first year, but second semester
  ☐ This is my second year
  ☐ This is my third year
  ☐ I have been studying this qualification for more than three years

- Do you have exams and/or assignments this semester? (please tick one)

  ☐ Exams only ☐ Assignments only ☐ Both assignments and exams

- On the scale below, please indicate how stressful you consider your experience as a university student to be: (please tick one)

☐	☐	☐	☐	☐
Not stressful at all	hardly ever stressful	sometimes stressful	fairly often stressful	very often stressful

- When you are facing stresses related to your university studies, how do you usually cope or deal with the problems?

_____

- How often do you participate in art-making (i.e. painting, drawing, sculpting etc)? (please tick one)

☐ All the time – i.e. at least once a week

☐ Often – i.e. once a month

☐ Occasionally – i.e. about every six months

☐ Hardly ever – i.e. once a year

☐ Never

- Can you please specify what type/s of art-making you participate in?

_____

Appendix D:

Participant Wellbeing Assessment

Instructions: The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

3. In the last month, how often have you felt nervous and "stressed"?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

4. In the last month, how often have you dealt successfully with irritating life hassles?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

6. In the last month, how often have you felt confident about your ability to handle your personal problems?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

7. In the last month, how often have you felt that things were going your way?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

8. In the last month, how often have you found that you could not cope with all the things that you had to do?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

9. In the last month, how often have you been able to control irritations in your life?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

10. In the last month, how often have you felt that you were on top of things?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

11. In the last month, how often have you been angered because of things that happened that were outside of your control?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

12. In the last month, how often have you found yourself thinking about things that you have to accomplish?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

13. In the last month, how often have you been able to control the way you spend your time?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

☐ Never ☐ almost never ☐ sometimes ☐ fairly often ☐ very often

A number of statements which people have used to describe themselves are given below. Read each statement and then tick the most appropriate statement to indicate how you feel **right now, at this moment.** There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

		not at all	somewhat	moderately	very much
1.	I feel calm	☐	☐	☐	☐
2.	I am tense	☐	☐	☐	☐
3.	I feel upset	☐	☐	☐	☐
4.	I am relaxed	☐	☐	☐	☐
5.	I am content	☐	☐	☐	☐
6.	I am worried	☐	☐	☐	☐

Instructions: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way **during the past week**.

		rarely or none of the time (less than one day)	some or little of the time (1-2 days)	occasionally or a moderate amount of the time (3-4 days)	most or all of the time (5-7 days)
1.	I was bothered by things that don't usually bother me.	☐	☐	☐	☐
2.	I did not feel like eating; my appetite was poor.	☐	☐	☐	☐
3.	I felt I could not shake off the blues even with help from my family or friends	☐	☐	☐	☐
4.	I felt that I was just as good as other people	☐	☐	☐	☐

5. I had trouble keeping my mind on what I was doing	☐	☐	☐	☐
6. I felt depressed	☐	☐	☐	☐
7. I felt that everything I did was an effort	☐	☐	☐	☐
8. I felt hopeful about the future	☐	☐	☐	☐
9. I thought my life had been a failure	☐	☐	☐	☐
10. I felt fearful	☐	☐	☐	☐
11. My sleep was restless	☐	☐	☐	☐
12. I was happy	☐	☐	☐	☐
13. I talked less than usual	☐	☐	☐	☐
14. I felt lonely	☐	☐	☐	☐
15. People were unfriendly	☐	☐	☐	☐
16. I enjoyed life	☐	☐	☐	☐
17. I had crying spells	☐	☐	☐	☐
18. I felt sad	☐	☐	☐	☐
19. I felt that people dislike me	☐	☐	☐	☐
20. I could not “get going”	☐	☐	☐	☐
	rarely or none of the time (less than one day)	some or little of the time (1-2 days)	occasionally or a moderate amount of the time (3-4 days)	most or all of the time (5-7 days)

	strongly agree	agree	neutral	disagree	strongly disagree
1. In uncertain times, I usually expect the best.	☐	☐	☐	☐	☐
2. If something can go wrong for me, it will.	☐	☐	☐	☐	☐
3. I always look on the bright side of things	☐	☐	☐	☐	☐
4. I'm always optimistic about my future	☐	☐	☐	☐	☐
5. I hardly ever expect things to go my way.	☐	☐	☐	☐	☐
6. Things never work out the way I want them to.	☐	☐	☐	☐	☐
7. I'm a believer in the idea that "every cloud has a silver lining".	☐	☐	☐	☐	☐
8. I rarely count on good things happening to me.	☐	☐	☐	☐	☐

For the following items, circle the answer for each statement that best describes how you generally felt during **<u>the past week.</u>**

	Not at all		moderately		extremely
I felt tired	☐	☐	☐	☐	☐
I was focused	☐	☐	☐	☐	☐
I was full of energy	☐	☐	☐	☐	☐
I was **unable** to concentrate	☐	☐	☐	☐	☐
I felt drained	☐	☐	☐	☐	☐

I was attentive	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I felt invigorated	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I was absentminded	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I felt exhausted	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I was inspired	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I was lively	☐	☐	☐	☐	☐
	Not at all		moderately		extremely
I was distracted	☐	☐	☐	☐	☐
	Not at all		moderately		extremely

In the **last 4 weeks**, how many times did you visit a health centre or health professional? (**Do not** include professional counselling services)

_____

Please list the reasons for **each** of those visits (e.g. regular check-up, accident or injury, prescription, colds, flu, headaches, asthma etc)

_____

_____

Of these, how many were **follow-up** or **repeat** visits? (i.e. visits for the same complaint)

_____

In the **past 4 weeks**, how many days **altogether** have you been sick?

_____

In the **past 4 weeks**, how many days did you take off work and/or study due to ill health?

_____

Code Name:

Appendix E:

PRE TEST: Please complete this BEFORE beginning the art-making session

This scale consists of a number of words that describe different feelings and emotions. Read each item and then tick the appropriate answer in the box next to that word. Indicate to what extent you have felt this way during the past week.

interested	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
distressed	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
excited	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
upset	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
strong	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
guilty	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
scared	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
hostile	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
enthusiastic	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely

proud	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
irritable	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
alert	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
ashamed	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
inspired	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
nervous	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
determined	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
attentive	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
jittery	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
active	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely
afraid	☐ Very slightly or not at all	☐ a little	☐ moderately	☐ quite a bit	☐ extremely

Appendix F: Debrief Survey

(Issued online through survey.monkey.com)

1. Is there anything that you would have done differently as a participant?

2. To what extent did you enjoy participating in this project?

3. To what extent do you feel that participating in this project was of benefit to you?

4. Would you participate in a project like this again?

5. Looking back over the whole project, please provide any comments or feedback you have regarding the project organisation:

6. How satisfied were you with the way in which you were assigned to a group?

7. Thinking back on the data collection process, please provide any comments or feedback about your experience

8. What did you enjoy most about participating in this project?

9. What did you like least about participating in this project?

10. If you were a participant in either Group Two or Group Three, did you continue to draw at any time after the six sessions?

Please write any further comments or feedback you have below:

Appendix G: Pilot Tests

Because very few therapeutic art-making experiments describe the activities in enough detail for replication, it was necessary to test the procedure. Issues that needed to be considered were length of time for drawing, materials, location and instructions.

While writing studies generally ask participants to write a single essay for 15-20 minutes (Frattaroli, 2006), this was not ideally suited to art-making. Many people do not actively produce art on a regular basis and so it is an unfamiliar activity in many ways (Malchiodi, 2007). The researchers also wanted to emphasise to participants that it is not the artwork which is being assessed, but rather, it is the expression that occurs during the process that may be therapeutic. For this reason, it was decided to test out much shorter drawing times – ranging from ten seconds to two minutes.

Perhaps one of the most expressive qualities of art-making is the use of colour, however some materials such as charcoal also seem to aid expressive marks on the page. For this reason, a range of materials were trialled including felt-tip marker pens, graphite pencils, coloured pencils, crayons and charcoal.

Privacy seems to be more of an issue with art-making than it is with writing. While writing studies often allow participants to sit at desks in a classroom space, researchers have commented that drawing participants have given negative feedback on this layout (Chan & Horneffer, 2006). The location originally used in the first pilot was a large table, with participants seated apart and spaced evenly. However, comments made during the first session encouraged the researchers to find a location which could offer more privacy, and a laboratory with separate booths was able to be used.

Participants

The first pilot study included three females, and English was the first spoken language of all. One participant left the session part way through (on the third drawing) stating that she felt stressed and uncomfortable with the task.

The second pilot included four females and one male (the academic supervisor and one of the researchers of the study). In this group, English was a second language for several of the participants. All participants completed the session.

Study design

The study was designed to test the procedure for both drawing groups. Participants drew several images of still-life objects, and several images of 'stress' events they were experiencing.

Materials

Session One: each participant was asked to sit at a table, with a stack of paper and a range of drawing materials including felt-tip marker pens, graphite pencils, coloured pencils, and oil pastels.

Session Two: each participant was seated in a separate booth. Each booth contained a stack of paper, felt-tip marker pens, graphite pencils, coloured pencils, crayons and charcoal. Participants in each booth also had a still life arrangement of two or three objects in front of them, with objects including bottles, vases, capsicums, pears, a hat and wooden letters.

Participants in the second session had a slideshow display of instructions on a screen mounted to the wall at eye level in each booth. Slides were automatically timed, in a sequence with an instructional slide followed by a green 'start drawing' slide, and a red 'stop drawing' slide.

Procedure

Each session was designed to test different possible combinations of factors, in an attempt to determine which was most comfortable and preferable for participants. The following two tables display the range of factors tested and the order of instructions for each drawing in the sessions.

In the first pilot session, the researcher read the instructions aloud to participants and used a stopwatch to time drawings. In the second session, participants were seated in front of a screen where a timed slideshow alerted participants when to begin and end drawings.

Table A:
Factors tested Pilot Tests 1 and 2

Topic	Time	Materials
Neutral – still-life	10 seconds	Graphite pencil
Stress event – 3 viewpoints of same event	30 seconds	Coloured pencil
	1 minute	Felt-tip pen
	2 minutes	Crayon
		Charcoal

Table B:
Session design for Pilot Tests 1 and 2

	Pilot Session 1	Pilot Session 2
Drawing 1	Self, 10 s, felt-tip pen	Still-life, 30 s, pencil
Drawing 2	Self, 30 s, coloured pencil	Still-life, 2 min, crayon
Drawing 3	Self, 2 min, pencil	Still-life, 1 min, coloured pencil
Drawing 4	Self, 1 min, crayon	Self, 2 min, pencil
Drawing 5	Omnipresent, 2 min, charcoal	Self, 10 s, charcoal
Drawing 6	Omnipresent, 10 s, pencil	Self, 1 min, felt-tip pen
Drawing 7	Omnipresent, 1 min, coloured pencil	Omniscient, 30 s, crayon
Drawing 8	Omnipresent, 30 s, felt-tip pen	Omniscient, 1 min, pencil
Drawing 9	Family member, 1 min, crayon	Omniscient, 30 s, charcoal
Drawing 10	Family member, 30 s, pencil	Friend, 10 s, coloured pencil
Drawing 11	Family member, 10 s, charcoal	Friend, 2 min, felt-tip pen
Drawing 12	Family member, 2 min, coloured pencil	Friend, 10 s, crayon

Findings from Pilot Session One

Note: the feedback survey was used only in the second pilot session. During the first, one of the participants walked out, and another had an injury and found it difficult to write, so a discussion was held instead. Participants of session two were first asked to fill out a feedback form, and then were invited to discuss their thoughts with the rest of the group.

Discussion with pilot participants:

A participant found it difficult to begin drawing and suggested that there could be a "line or circle or squiggle on the page – just to get you started".

One participant left after the first three drawings, stating that "you asked me to draw about stress, THIS is making me stressed".

There were complaints from participants that they thought the other participants were looking at their drawings, and this made them feel inhibited.

Another participant said that she was first worried that others were looking at and judging the quality of her drawings, but then was more worried that they could see and judge the content – "I felt silly because I was complaining about the weather compared to problems other people had".

There was an issue with one participant not understanding that they were being asked to draw about the same thing rather than literally drawing the same thing four times from each viewpoint.

One participant commented that oil pastels were "too thick" and they couldn't draw enough detail, preferring felt-pens because they "showed up on paper best". However, another said they found no difference between materials and didn't care/mind which ones they used.

Some said colour was important, and preferred coloured materials (instead of sketching pencil/charcoal).

Consensus was that participants preferred short drawing times to start with, but longer once 'settled' into the activity. Participants said that they felt pressured to keep drawing for the full 2 minutes. One minute was too long at the beginning but 'ok' by the end. The thirty second time was thought to be the best time if only one timing was used for the whole session.

One participant commented that they felt 'put on the spot' and didn't know what to draw, asking for advance warning in future that they would be asked to draw about a stressful issue.

One participant said that they felt anxious about not knowing what to draw, and that their drawings "wouldn't be good enough".

Participants weren't sure of when to use 'coloured pencils' and when to use 'lead pencils'.

The term 'omnipresent or god-like' was problematic, as one participant didn't like the term 'god', but another wasn't sure what 'omnipresent' meant.

Changes made for second pilot session based on feedback:

- A lab space was located where participants were able to sit in separate booths – ensuring privacy from each other and the researcher.
- Instructions were given on a PowerPoint slideshow rather than read out by the researcher.
- Oil pastels were replaced with crayons, and charcoal was also used as an alternative medium.
- Participants were briefed at the session introduction that they would be asked to draw about a stressful topic
- An effort was made to put participants at ease by displaying a range of abstract sketches and paintings to show that there is no 'right' way to draw, and that they were free to make whatever kind of art-works they liked.

Findings from Session Two

Feedback Survey

1. ***How clear were the instructions given? Was there anything that you found confusing during the session?***

   "What does omnipresent mean? (sic), instructions generally very clear. What is graphite?"

   "The instructions were clear. But when my screen didn't start it flustered me"

   "Introductions were very clear, but I couldn't remember what 'omniscient' means, so I was confused as to what I should draw…."

2. ***How comfortable did you feel during the session?***

   "Nothing to complain about. Nice temperature, chairs were comfortable enough."

   "Physically? Was ok. When looking at my drawing I couldn't see the computer screen so had to keep checking to see if I had timed out. Perhaps a countdown timer in the green screen? Or a noise when the red starts? Or different positioning?"

   "Once I got going it was great. Awesome place to do it in."

   "Very comfortable!"

3. ***A few different versions of length of drawing time were trialled (10 seconds, 30 seconds, one minute and two minutes). Please comment on which time/s you most preferred and why:***

   "30s – 1 min depending on what was drawn. The object took some time while the stressful thing was easy and quick to draw. But I guess that depends on what and how many things one finds stressful."

   "When I saw I only had 30 seconds in the start it stressed me – too short. 10 sec way too short. 1 min + 2 min good but I had no idea how long I used and didn't want to leave my drawing half finished. Countdown timer would have been good."

   "I preferred the 2 mins because I had lots to express for stress. But for still life – 2 mins was too long."

"I preferred 2 mins – 10 seconds was way too short – I was so focused on drawing that I didn't look at the screen, when the time was up and it was time to start the next drawing, I was behind. 2 mins was good for me."

4. ***Different materials were used during the session (graphite pencils, coloured pencils, felt tip markers, charcoal, and crayons). Please comment on which material/s you preferred and why:***

"Coloured pencils because it's fun with colours. Crayons may bring out too much of the artist in people."

"They were all fine but sometimes didn't have the colours I wanted. The graphite made my hand dirty which I didn't like but using it to draw was fun. Perhaps have some tissues available?"

"Crayon and pens were good because they were easy to use. But others were good for expressing things in a different way."

"I prefer the felt tips because they are bold and colourful and vibrant and easy to use. They also have different types of weights to them i.e. thick line, thin line, etc."

5. ***You were asked to draw some still life objects and also to draw a stressful event that you are experiencing. Which task did you find more difficult and why?***

"The things I find stressful are easy to draw so I preferred that. Not good at drawing so the object was a bit difficult."

"Still life was an artistic challenge but stress was a mental/emotional challenge. I think stress was easier because that's what I came here to do. So still life was a harder challenge."

"The still life was most difficult because the objects were clear as in not coloured. This was a tricky concept to reproduce with crayons and pen."

"The stressful event, because it's not very tangible and hard to express in drawing… I had to think more about it."

6. ***Which task (still life or stressful event) did you find more enjoyable and why?***

"More fun to draw the object because of the challenge of the colours"

"Still life because I didn't have to think about my stressful event and how it's perceived by others."

"I enjoyed the stressful event more because I felt more involved. Before in the still life, I had more tension about getting drawing and timing right."

"The stressful event, because I get to think about it… it was a bit therapeutic drawing it although it was difficult to express…"

7. ***Please write any further comments or feedback you have below:***

"This was really interesting to be a part of, thanks! Be more confident in your introduction, don't let late people put you off. Baking = delicious".

"Loved the bit where I drew the stress from an omniscient being. In future, if you want a feedback form, - best to put food out first to settle and reflect – at least for me."

"It was interesting experiment :)"

Discussion with pilot participants:

One participant commented that they were disturbed when the researcher walked past because they felt like the researcher might be able to see what they were drawing.

Participants all agreed that ten seconds was too short and suggested somewhere between 30 seconds-one minute (although written responses suggest two mins was preferred).

Still life objects – one participant didn't like the use of clear/glass objects as they were instructed to use colourful material such as crayons and found it limiting.

One participant commented that they "felt better as a consequence" of participating in the activity.

Participants disagreed as to whether the still-life objects or stressful event were easier to draw, commenting that they felt more pressure to draw a "good" representation of the objects, but others found it hard to think of what to draw for the stress.

One participant commented that they "wouldn't normally get out pencils and draw", but this activity was fun.

"Drawing is normally to show people"- a participant commented that they hadn't considered art-making as an activity to do in solitude.

"What am I wasting my time for?" – one participant couldn't see the relevance of drawing still life considering the project is titled 'therapeutic art-making'.

The word omniscient was discussed as several participants were unsure of its meaning, and suggestions were made that the term 'all-seeing' be used instead.

Some participants commented that they found the building difficult to locate and suggested a map be provided to future participants.

Researcher observations from both sessions:

All participants in both sessions threw their completed drawings in the rubbish bin.

Participants in the first session tended to draw very small images on the sheet of paper – i.e. the total drawing took up less than a quarter of the available page space. This may have been due to lack of privacy.

Participants in both sessions folded drawings up, holding them during the discussion – and were unwilling for the researcher to dispose of drawings for them. One participant commented "I want to see these go in the bin myself!"

Some participants struggled to understand the project - before the session began, one potential participant asked the researcher if she could "analyse my drawing and tell me what type of personality I have", and chose not to be part of the pilot after finding out that the drawings would not be assessed.

Except for the second researcher who was a participant in the second session, all of the participants were female – despite attempts to recruit males. One male commented that he

did not wish to participate because he “couldn’t take it seriously” and was dubious about the potential effects of art making.

Recommendations for the study

- When introducing the task, instructions will be more detailed and explicit when explaining that ‘drawing’ can mean anything – i.e. a solid block of colour or lines rather than a literal representation of a concept.

- Instead of having a range of times, all drawings will be two minutes in length, allowing participants to adjust to this time.

- When drawing time finishes, the red slide will ‘flash’ several times so that it is more noticeable, and the green slide will have a timer counting down the number of seconds remaining.

- Provide hand wipes for any mess on hands from charcoal and pencils.

- Instead of directing participants on which drawing material to use, the instructions will ask them to ‘choose a drawing material’, and then ‘choose a different drawing material’, allowing more autonomy.

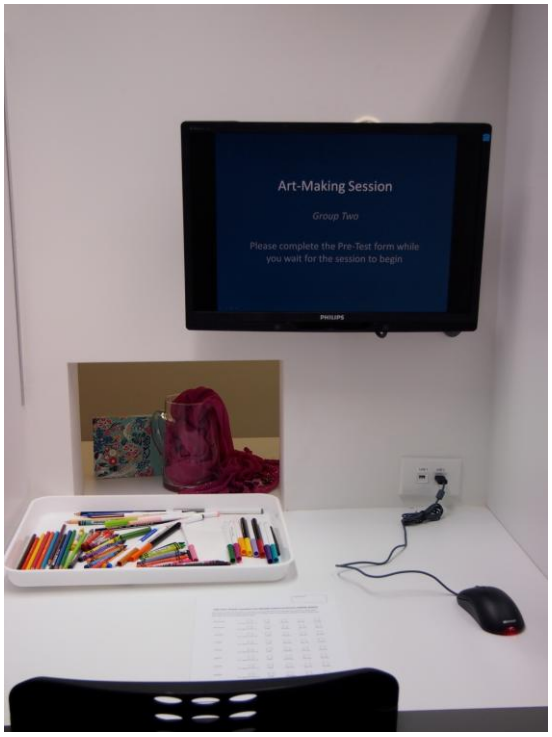
- Participants will be asked to complete a PANAS scale both before and after each session.

- The ‘third person’ perspective will be worded as an ‘omniscient or all-seeing being’.

- The researcher will remain in the waiting room during the session so that participants are not distracted by movement.

Appendix H

Photographs of the study rooms

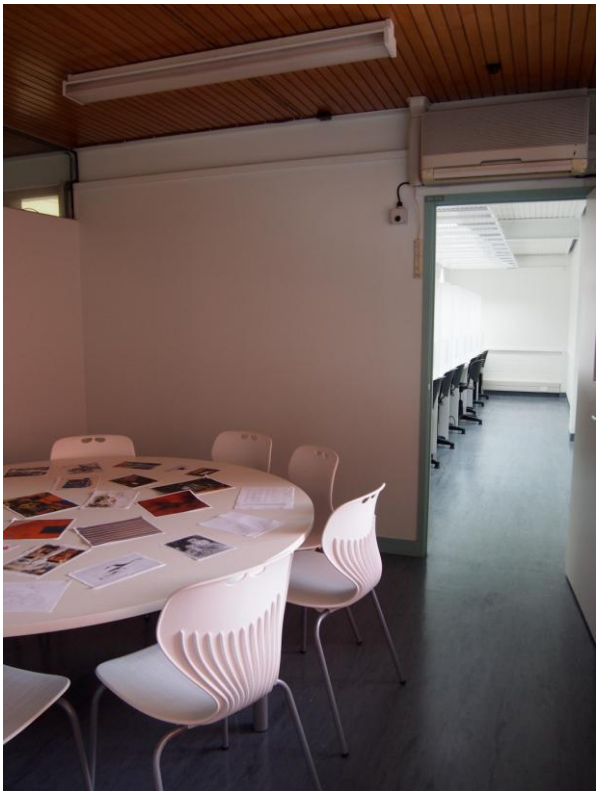


Above: The first room used for the study – before set-up.

Left: An example of a booth set up (still life session).

Above: The meeting room used for the first space, with examples of artworks on display.

Right: View into the study room from the meeting room



Above: The second space used in the study. Below: Makeshift partitions used to separate participants and aid privacy.

Appendix I

Sample art-making session – Still Life Comparison Group

Art-Making Session

Group Two

Please complete the Pre-Test form while you wait for the session to begin

Please try not to talk to others in the room while the art-making session is running.

Please make sure that your mobile phone is switched off so that you do not disturb others

During this session you will be asked to complete several short drawings

You will be asked to focus on the collection of still-life objects in front of you

Try not to worry too much about what the drawing looks like – you can make any kind of mark on the page that you like – abstract or realistic.
However, please do not write any words on the page

Drawing One

Using an art material of your choosing, please draw the collection of items in front of you

You have 2 minutes

Drawing Two

Using a different art material, please draw **again the collection of items in front of you**

Drawing Three

Using any art material you choose, please draw the items in front of you **while imagining that you are looking down from a high viewpoint or 'birds eye view'**

Drawing Four

Using a different art material, please draw

again while imagining that you are looking down from a high viewpoint or 'birds eye view'

Drawing Five

Using any art material you choose, please draw **the items in front of you while focusing on where the light hits each object**

Drawing Six

Using a different art material, please draw **again the items in front of you while focusing on where the light hits each object**

Please complete the short

post-test form

Thank you

You are free to do what you like with your drawings.

Appendix J

Sample art-making session – Expressive Intervention Group

Art-Making Session

Group Three

Please complete the Pre-Test form while you wait for the session to begin

Please try not to talk to others in the room while the art-making session is running.

Please make sure that your mobile phone is switched off so that you do not disturb others

Please think about something you have found stressful or troubling in the past week.

Keeping this in mind, you will be asked to complete some drawings

Try not to worry too much about what the drawing looks like – you can make any kind of mark on the page that you like – abstract or realistic.
However, please do not write any words on the page

Drawing One

Using an art material of your choosing, please draw about your stress **from your own point of view**

You have 2 minutes

Drawing Two

Using a different art material, please draw about your stress **again from your own point of view**

Drawing Three

Using any art material you choose, please draw about your stress **from a close friend's point of view**

Drawing Four

Using a different art material, please draw about your stress **again from a close friend's point of view**

Drawing Five

Using any art material you choose, please draw about your stress **from the point of view of an omniscient or 'all seeing' being**

Drawing Six

Using a different art material, please draw about your stress again from the point of view of an 'all seeing' omniscient being

Please complete the short

post-test form

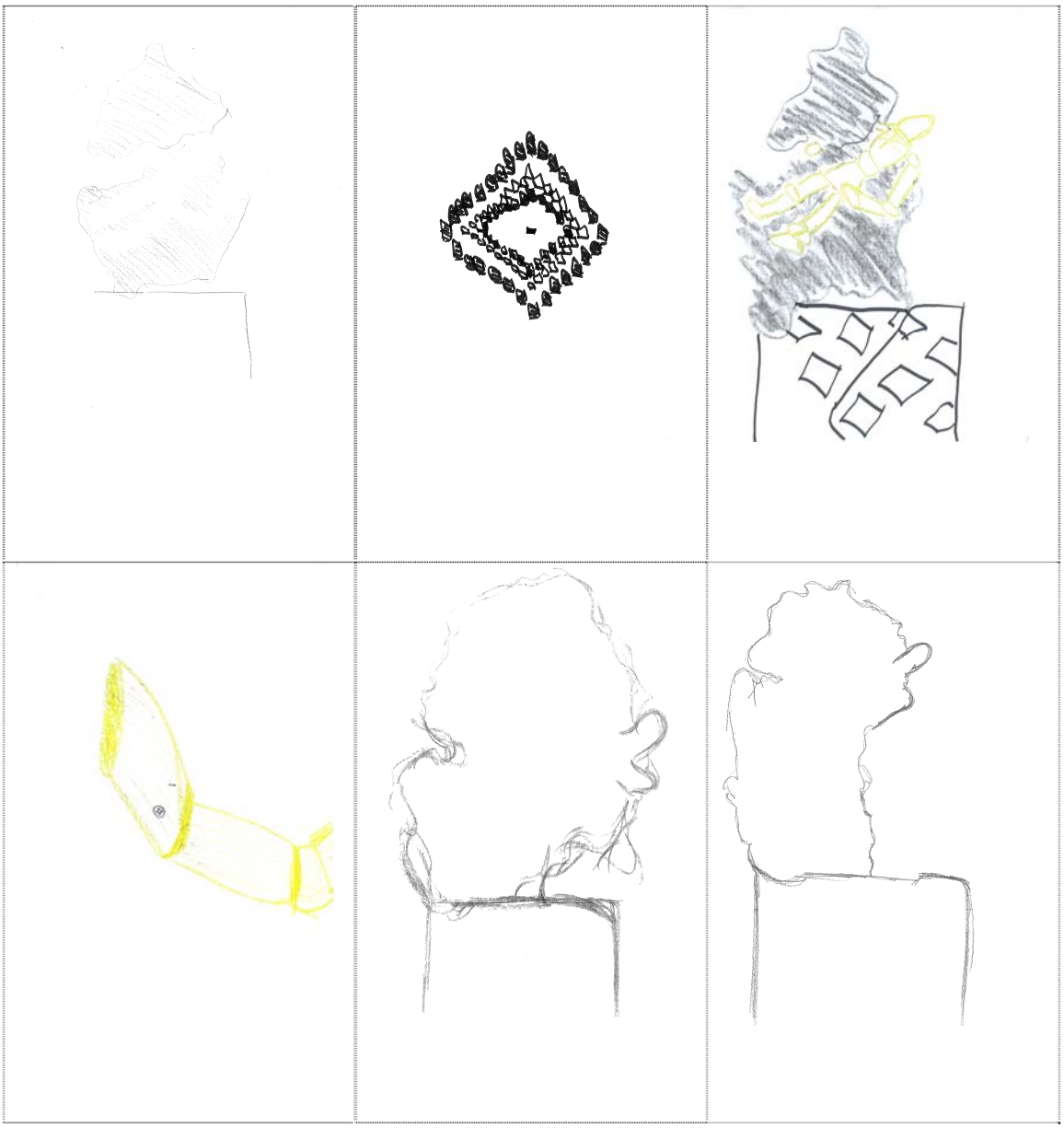
Thank you

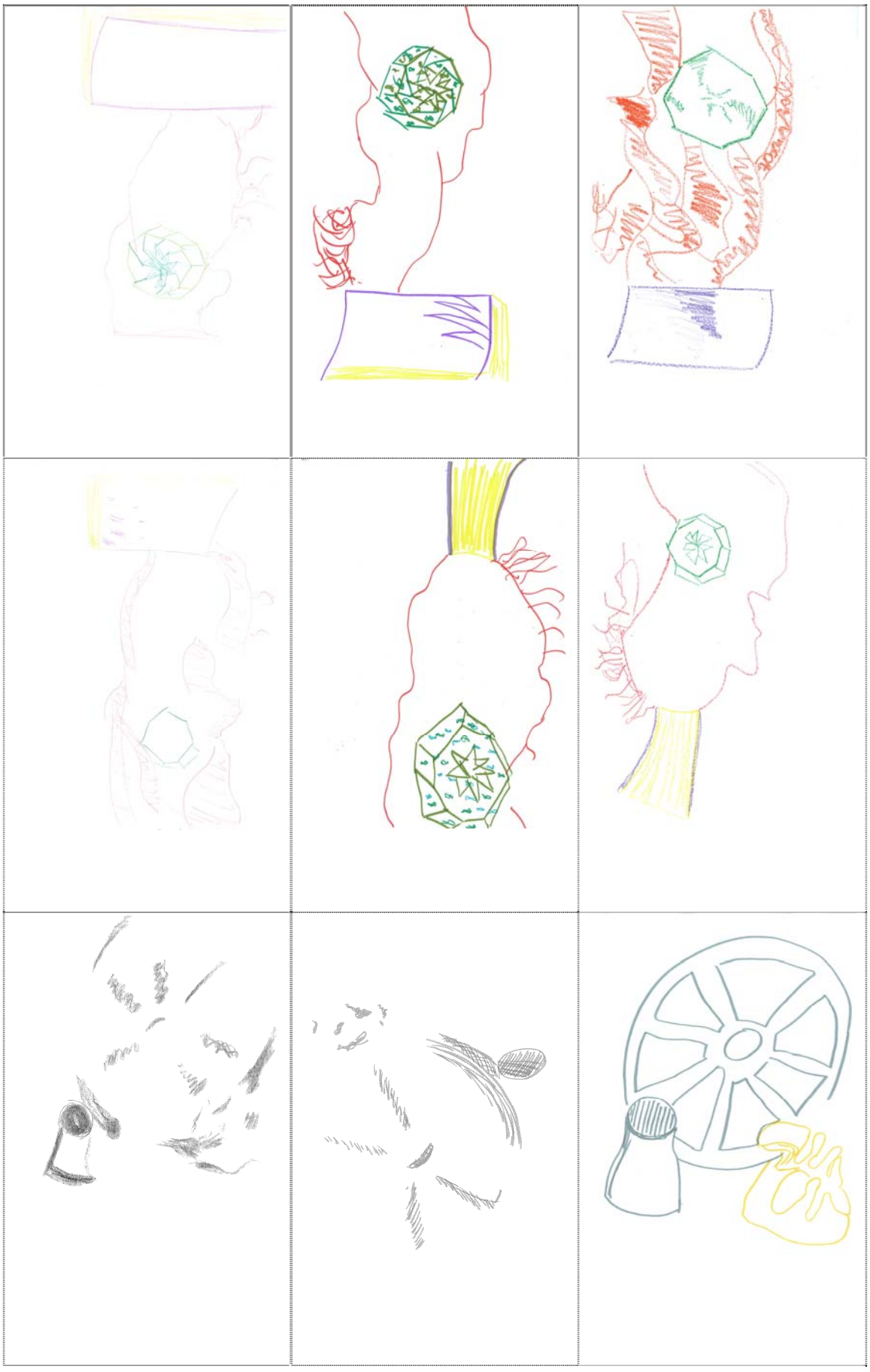
You are free to do what you like with your drawings.

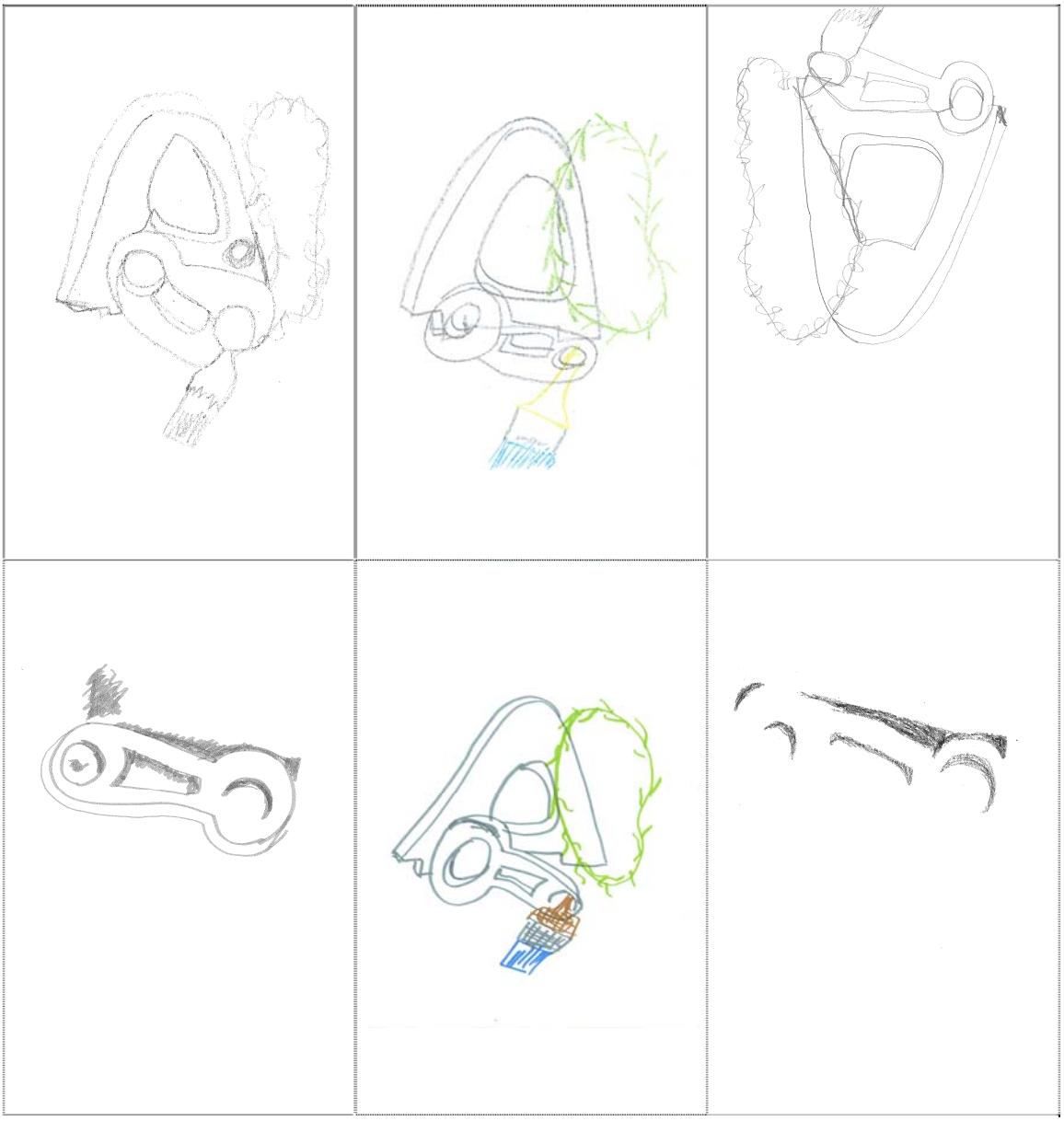
Appendix K

Examples of drawings created during the still-life art-making sessions

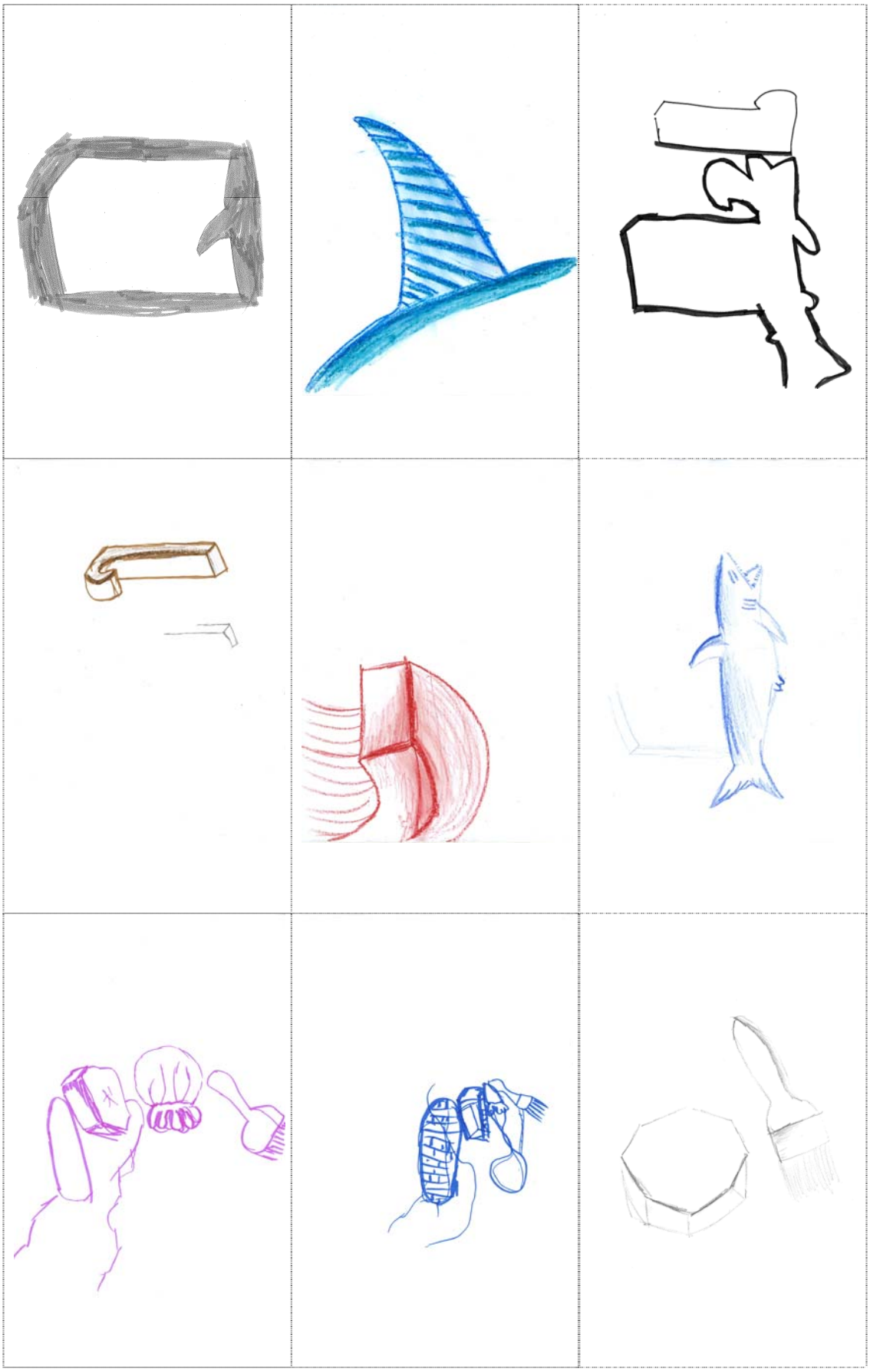
Example A (Still-Life Drawing group) – drawings listed in sequence of sessions attended

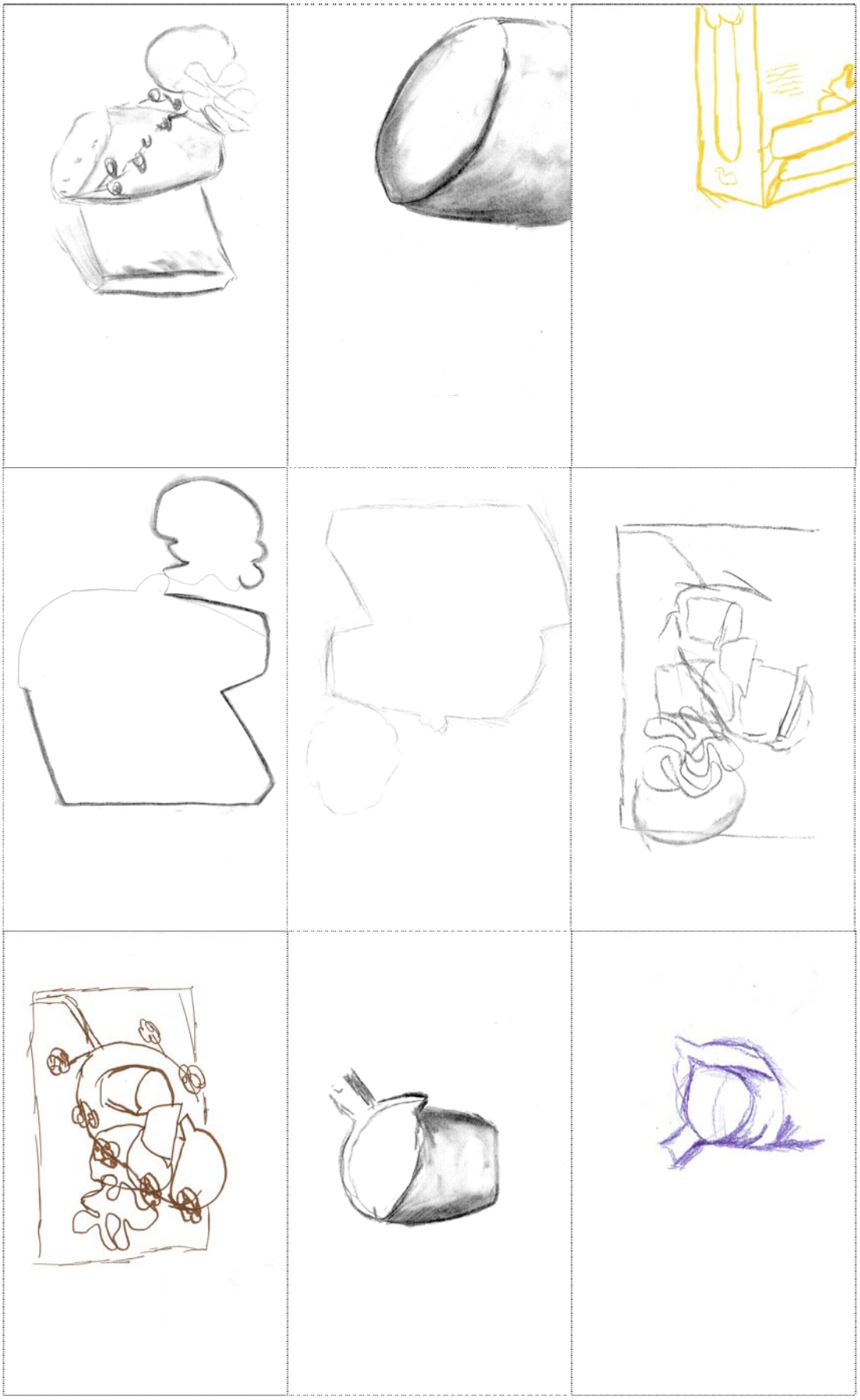


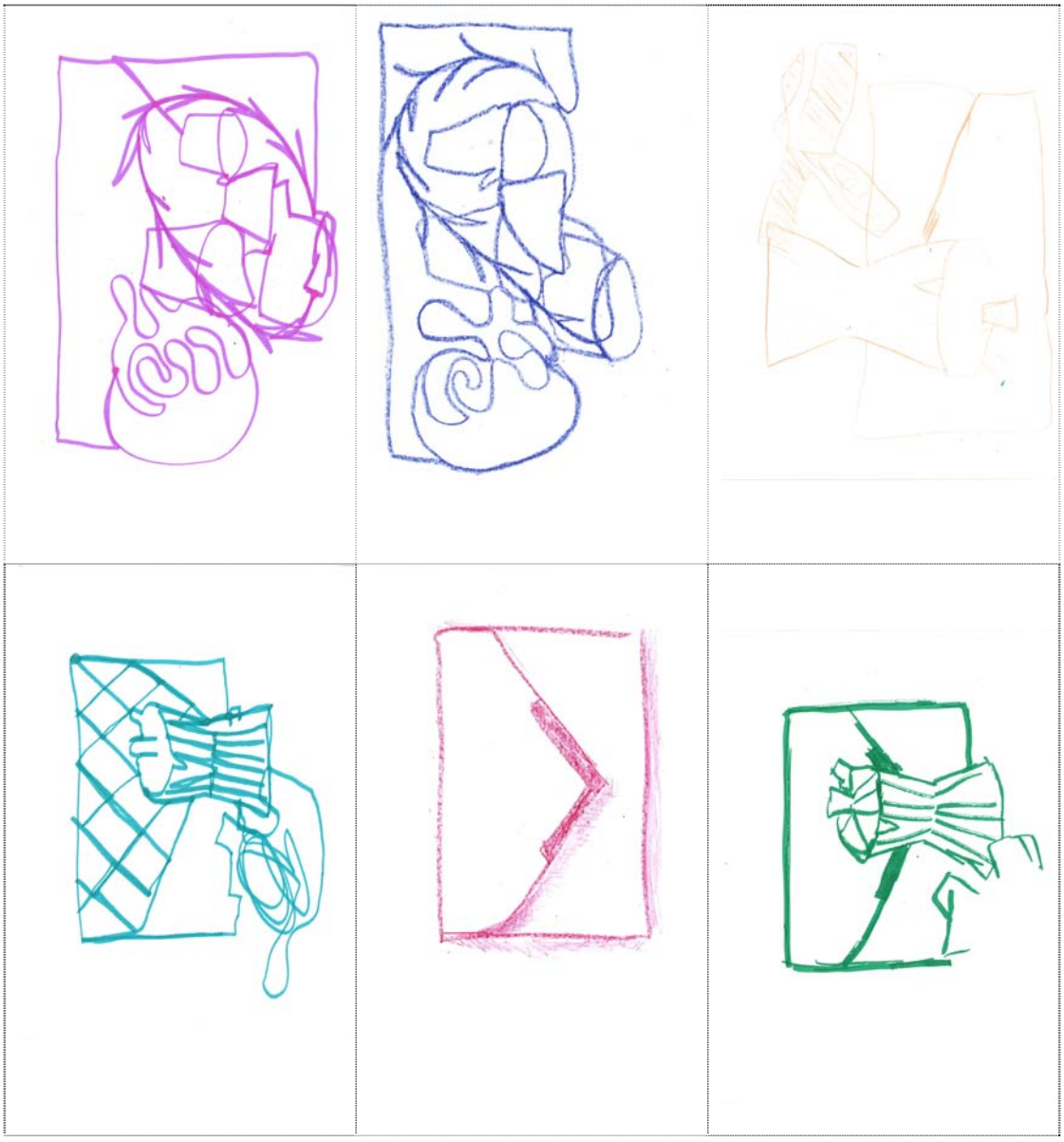




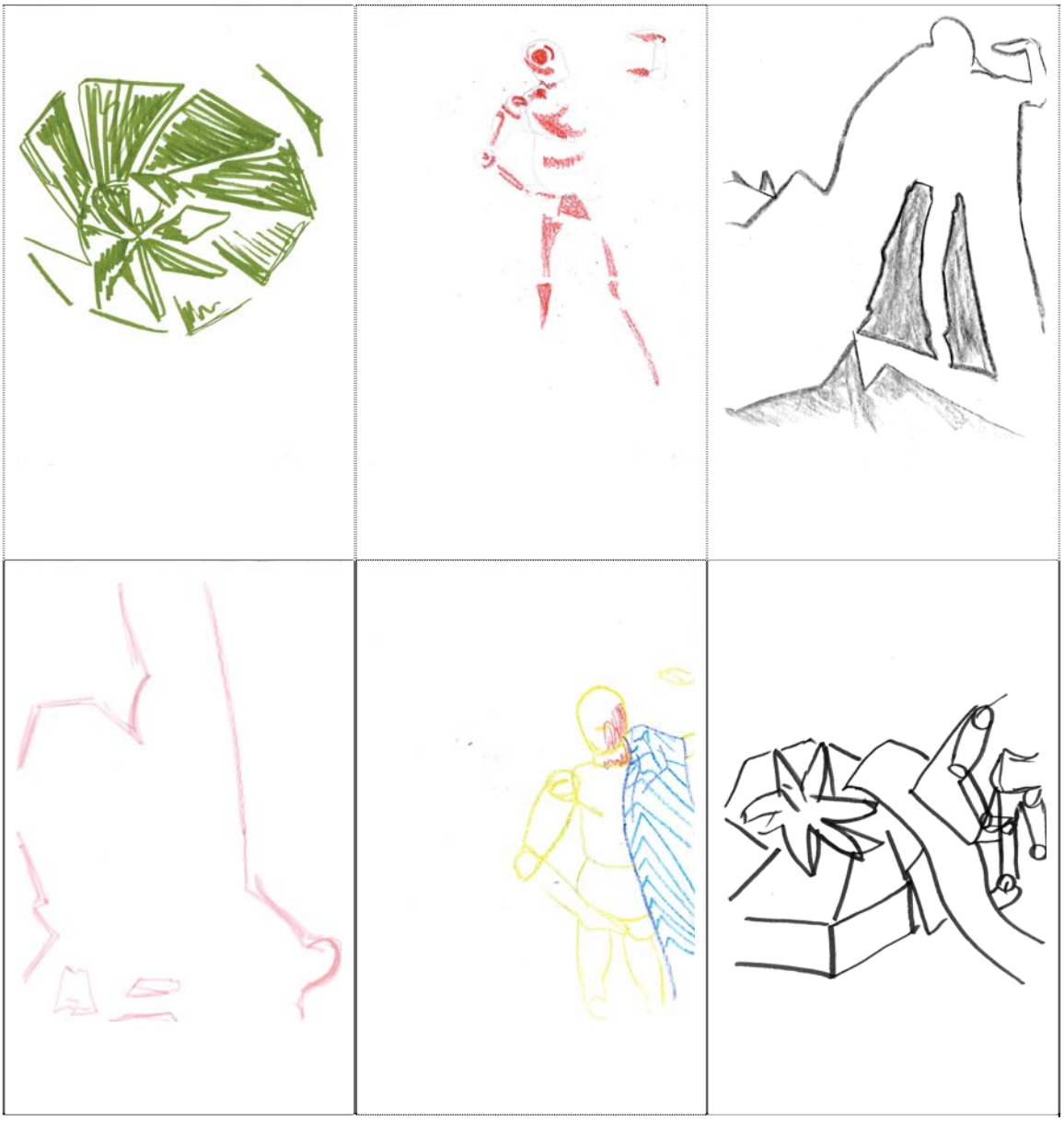
Example B (Still-Life Drawing group) – drawings listed in sequence of sessions attended

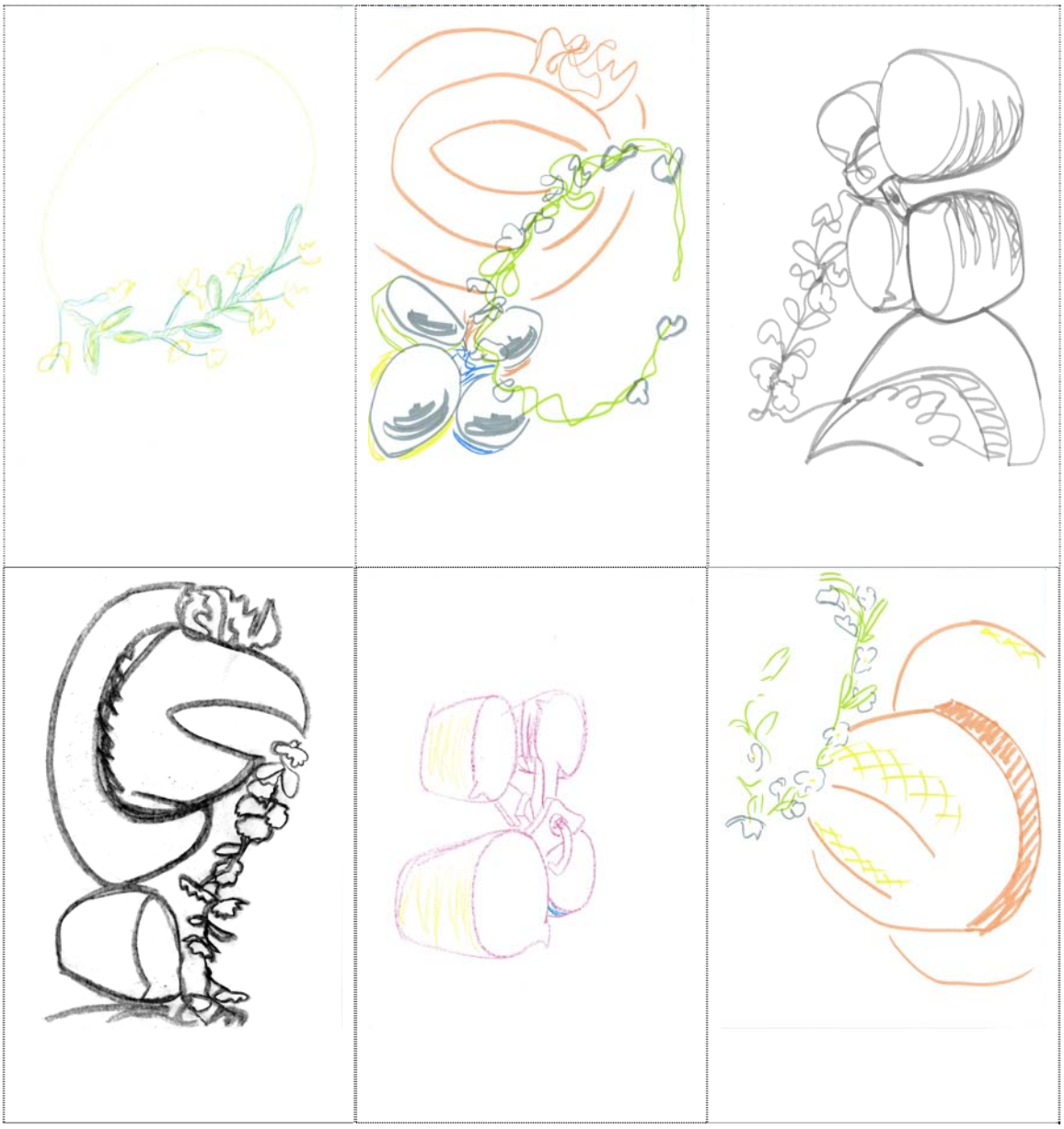






Example C (Still-Life Drawing group) – drawings listed in sequence of sessions attended

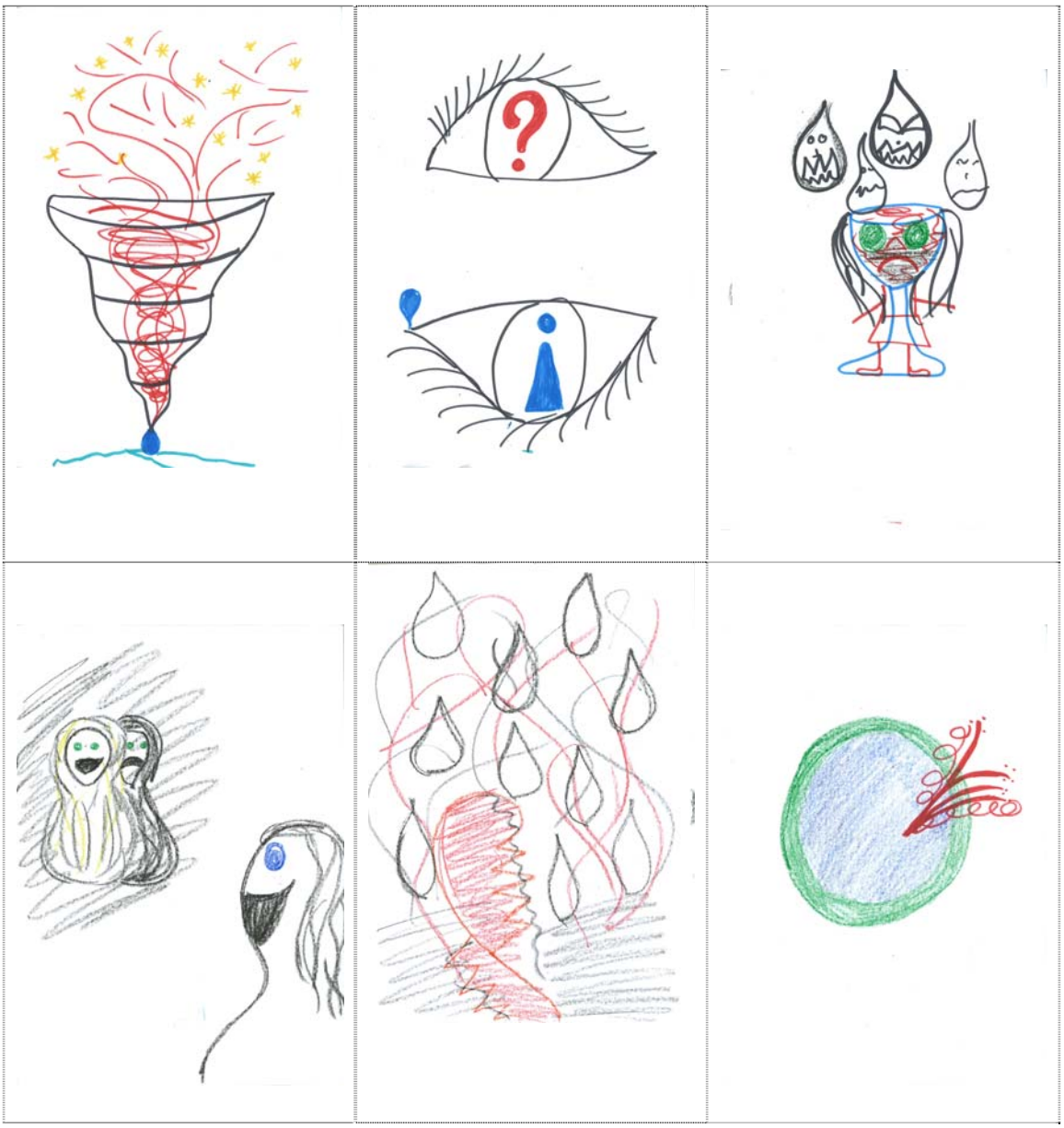


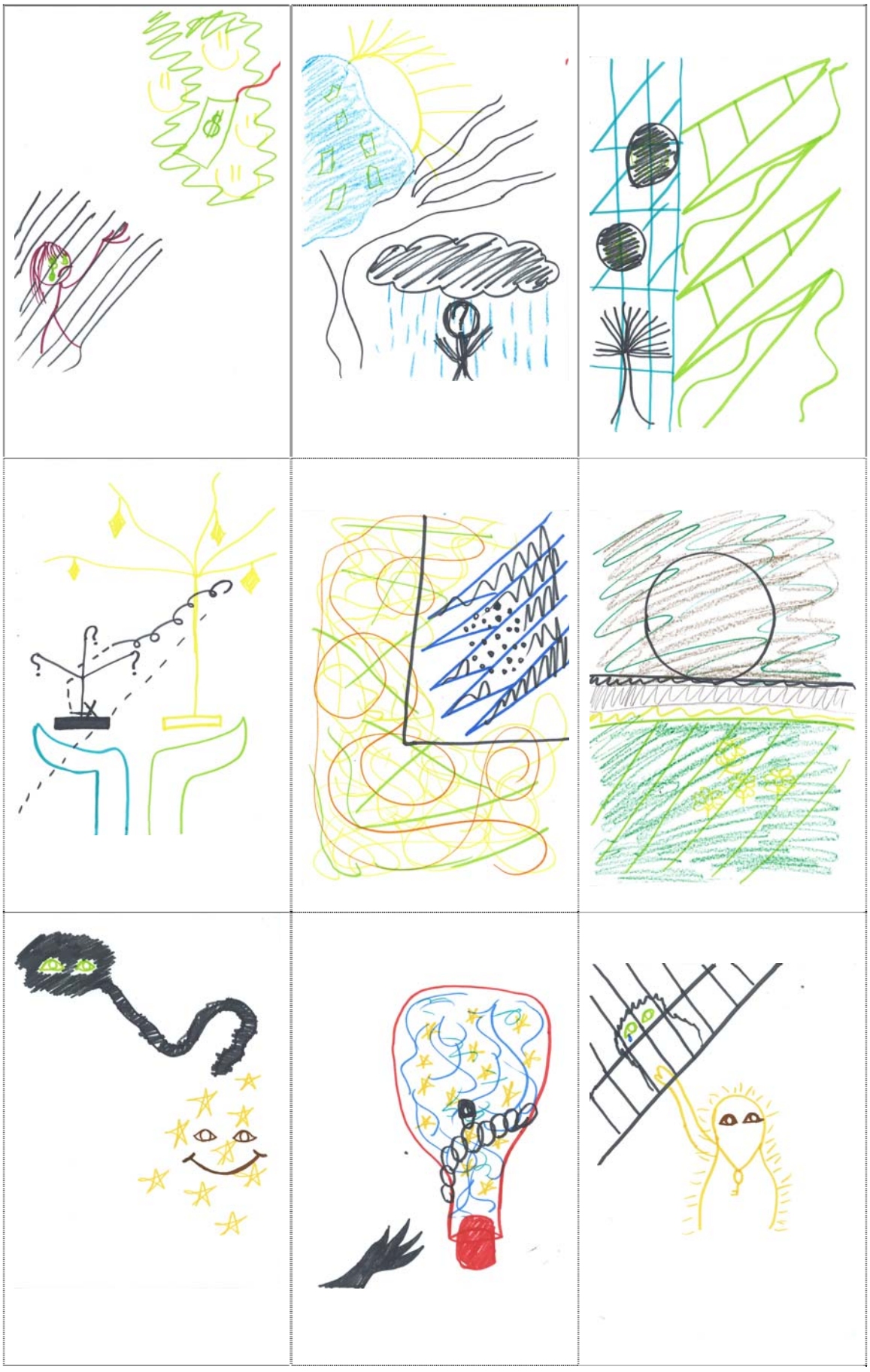


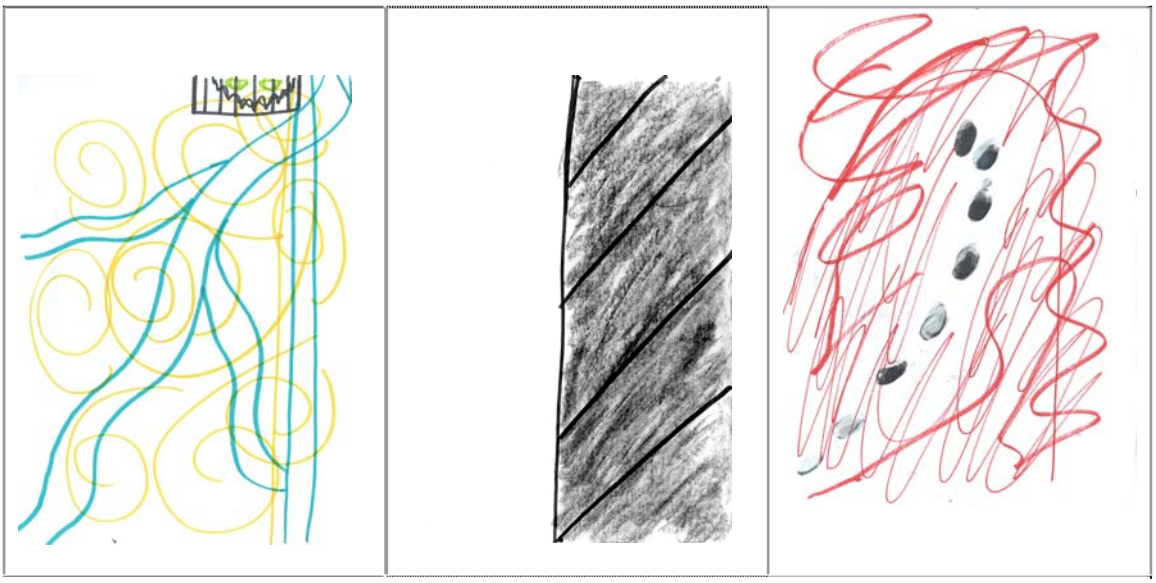
Appendix L

Examples of drawings created during the expressive art-making sessions

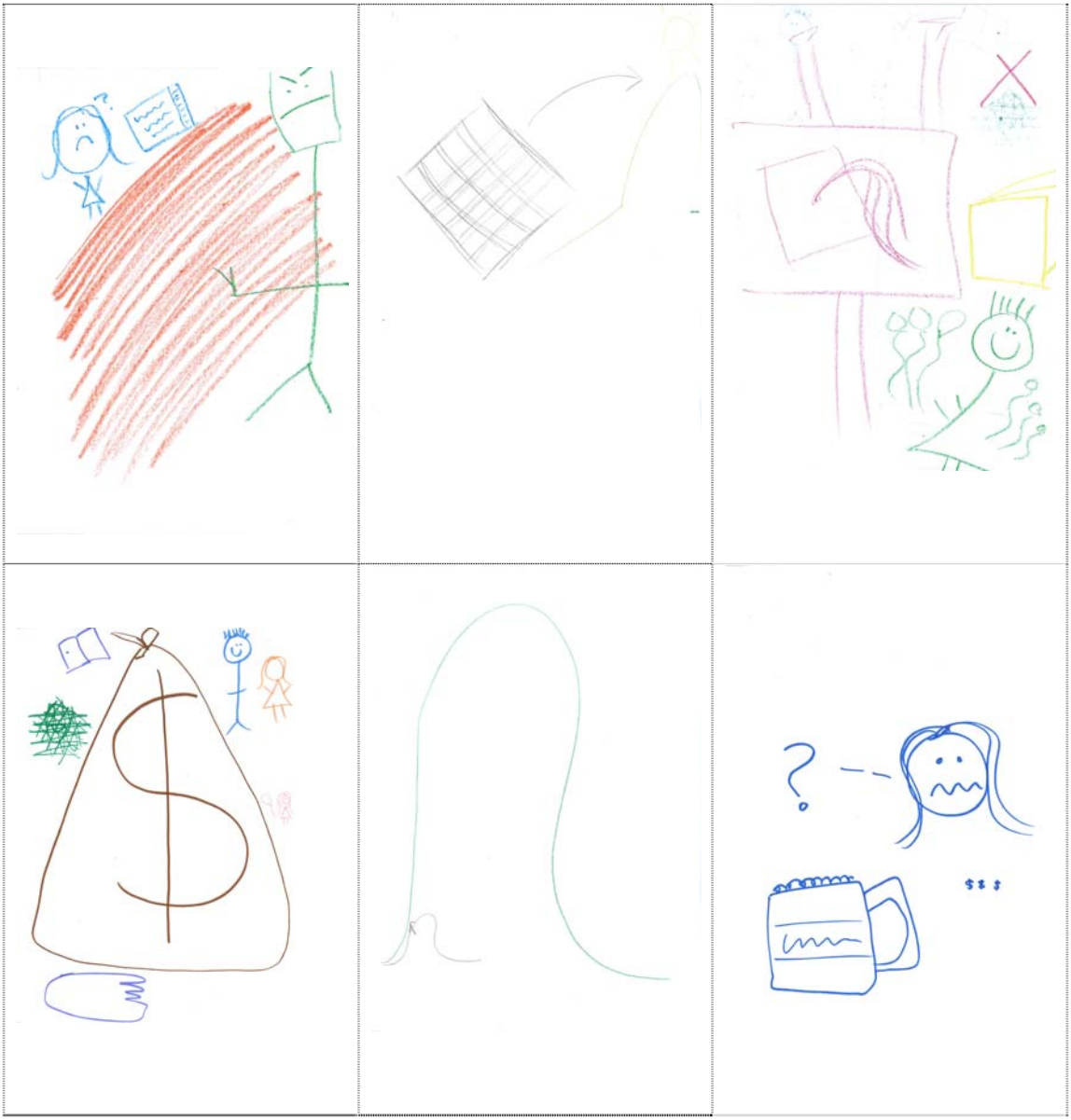
Example D (Expressive Drawing group) – drawings listed in sequence of sessions attended

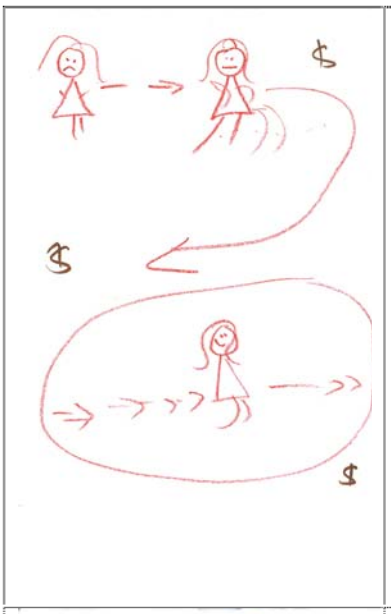


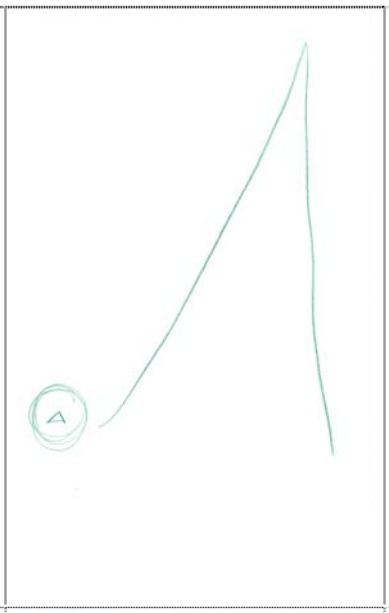




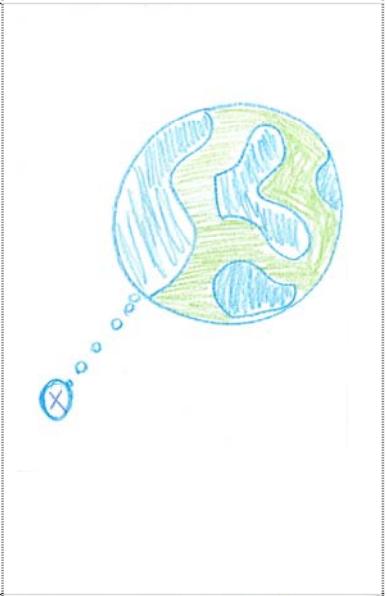
Example E (Expressive Drawing group) – drawings listed in sequence of sessions attended

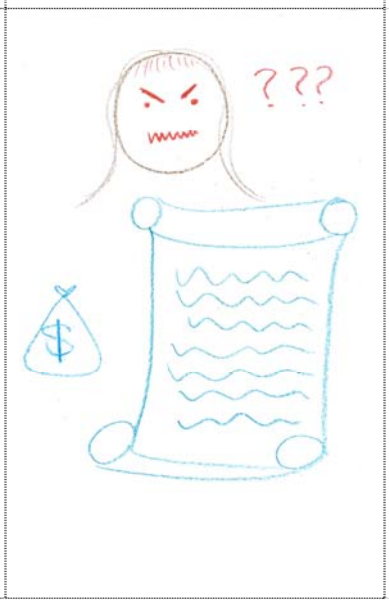


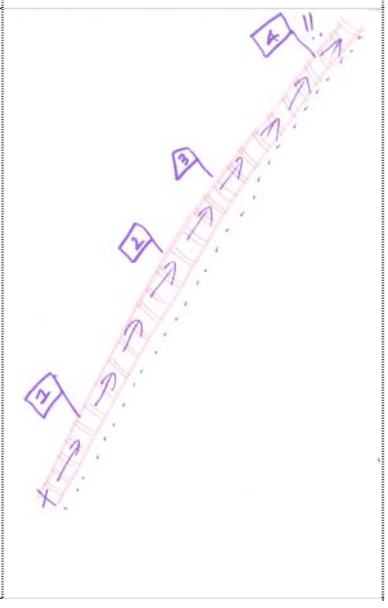


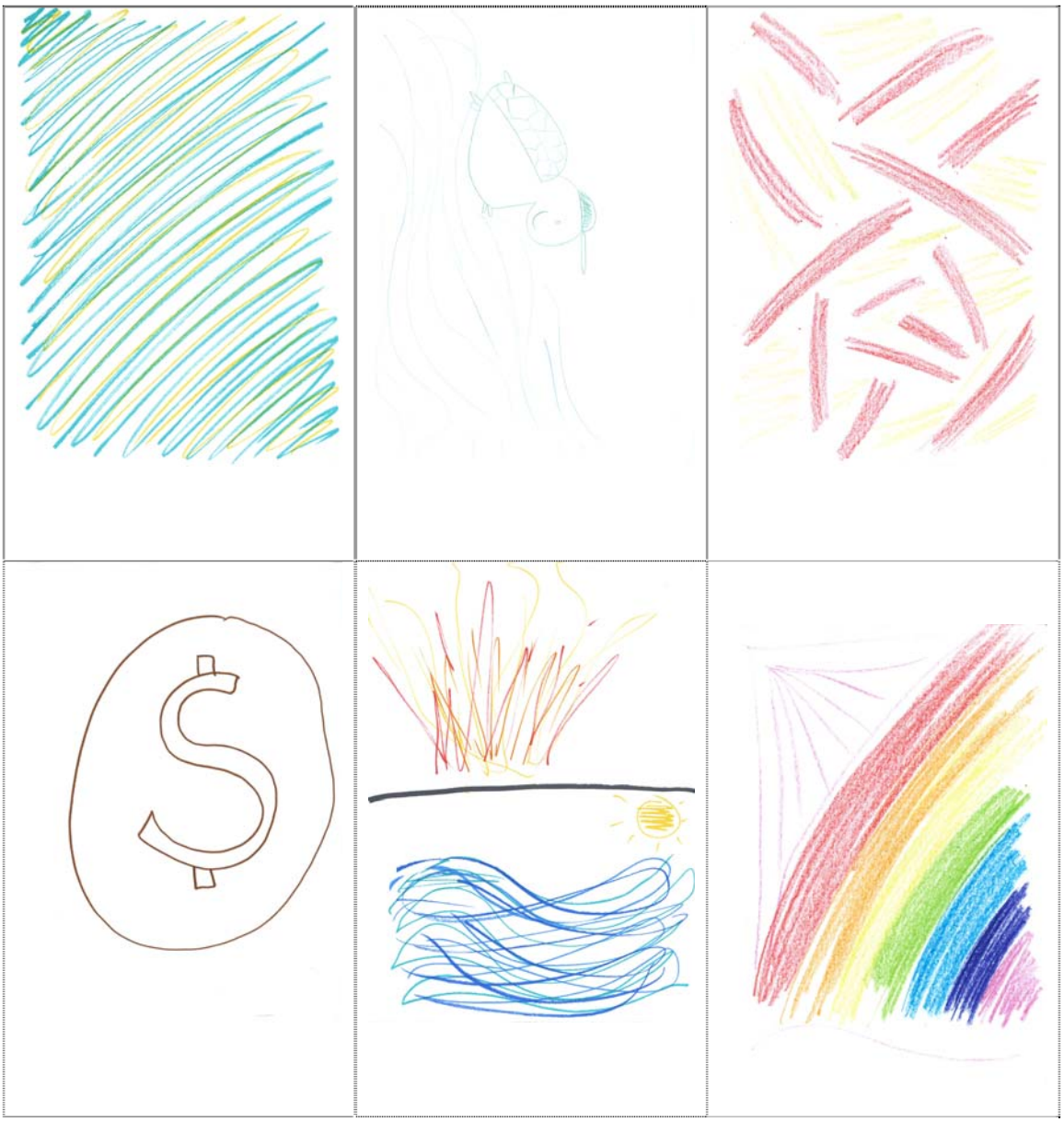



D









Example F (Expressive Drawing group) – drawings listed in sequence of sessions attended