

Feasibility and Acceptability of Visual Arts Interventions with Patients Undergoing
Hematopoietic Stem Cell Transplant: Phase II

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Abstract

The current study examined the feasibility and acceptability of delivering psychosocial assessments and arts interventions to patients undergoing hematopoietic stem cell transplantation (HSCT). Recruitment took place during pre-HSCT evaluations at the UF Psychology Clinic. After HSCT, participants met an artist who provided an art kit and weekly interventions and a graduate student who delivered weekly psychosocial assessments. Psychosocial measures assessed mood (depression, anxiety, stress, and benefit). Descriptive statistics and independent *t*-tests evaluated participant characteristics, acceptability, and feasibility. The sample included eight participants with an average age of 53 years ($SD=12$). Utilizing Gabriel et al. (2001) as a reference for feasibility and acceptability, the study appeared acceptable, as 73% of eligible patients consented. Three participants (38%) completed at least one arts intervention, while all participants completed baseline assessments. After the baseline visit, completing interventions and assessments became less feasible due to patient fatigue/illness and preoccupation with medical procedures. Arts intervention delivery was successful 16% of the time (5 completed/32 attempts), and assessment delivery was 53% successful (19 completed/36 attempts). Though the study appeared to be acceptable, the feasibility waned with longer hospitalization due to medical complications and physical exhaustion.

Introduction

Hematopoietic Stem Cell Transplantation (HSCT)

According to the Center for International Blood and Marrow Transplant Research (2007), the number of HSCT's has grown rapidly over the past 30 years, with an estimated 50-60,000 HSCT's performed annually worldwide. The majority of these procedures treat hematologic and lymphoid cancers, but HSCT's also treat other malignant and nonmalignant disorders (Copelan, 2006). HSCT is a complex process as patients undergo a conditioning regimen involving chemotherapy and/or irradiation to eradicate the malignancy (National Cancer Institute, 2008). Subsequently, patients receive the transplantation of previously harvested stem cells, promoting immune reconstitution (Bevans, Mitchell, & Susan, 2008). Patients remain hospitalized in isolation for two to four weeks post-HSCT, but complete recovery of the immune system may take two years (National Cancer Institute, 2008). Given the intensity of HSCT, many physical complications may arise, chiefly fatigue, with one study reporting that 80-96% of patients experienced cancer-related fatigue after chemotherapy (Cella, Davis, Breitbart, & Curt, 2001).

In addition to the physical concerns, there are myriad psychosocial implications of HSCT. Several studies indicate that patient anxiety decreases over hospitalization while depression increases (Prieto et al., 2005; Syrjala et al., 2004; Wells, Booth-Jones, & Jacobsen, 2009). Prieto et al. (2005) reported that transient pre-HSCT anxiety might be due to patient anticipation of the HSCT. In terms of depression, several studies link depressive symptoms post-HSCT to an increased risk of death (Grulke, Larbig, Ka'chele, & Bailer, 2008; Loberiza et al., 2002). To counteract psychological distress, several studies indicate that social support facilitates patient coping during hospitalization. Specifically, patients who have an opportunity to express

their feelings with others (Ho, De L. Horne, & Szer, 2002; Grulke et al., 2005) and those with someone to do activities with (Wells et al., 2009) exhibit a better HSCT outcome.

Methods and psychosocial effects of visual arts interventions

Gabriel et al. (2001), a study exploring the feasibility and use of visual arts activities with HSCT recipients, compared with other studies evaluating arts with patients with cancer. In contrast to group arts interventions in the presence of other patients (Bar-Sela, Atid, Danos, Gabay, & Epelbaum, 2007; Heiney & Darr-Hope, 1999; Visser & Op'T Hoog, 2008) art therapists facilitated hour-long art sessions with a single patient. Patients received an art kit with materials and a supply list from which to create pictures during their hospitalization (Gabriel et al., 2001). The study speculated that arts interventions that addressed cancer would be too threatening to HSCT recipients given the long and isolated hospitalization, which differed from other interventions that specifically focused on cancer (Heiney & Darr-Hope, 1999; Visser & Op'T Hoog, 2008). As a result, the activities did not overtly mention cancer, but left room for patient interpretation. Moreover, similar to other studies, Gabriel et al. (2001) stressed the importance of informing patients that prior artistic skills were unnecessary in order to obviate possible discomfort with the creative process (Heiney & Darr-Hope, 1999; Nainis et al., 2006).

Moreover, quantitative findings established feasibility implications as well as short-term benefits with patients with cancer. Walsh & Weiss (2003) found that patients reported significant anxiety and stress reductions after one intervention. Similarly, Nainis et al. (2006) noted statistically significant reductions in pain, tiredness, depression, and anxiety. Ninety-six percent of the patients who completed the interventions felt comfortable making art despite having no previous experience with art therapy, and 92% of the patients were interested in doing it again. After four sessions, Bar-Sela et al. (2007) indicated a statistically significant reduction in patient

depression and fatigue. Contrastingly, Visser & Op't Hoog (2008) found no significant improvement in mood or quality of life after eight sessions, but 92% of the patients stated that they would recommend the arts activity, and over 50% of the patients preferred longer, more frequent sessions despite 85% reporting fatigue after the activities. In most of the studies, patient illness and fatigue had an adverse impact on the feasibility of the arts interventions (Bar-Sela et al., 2007; Gabriel et al., 2001; Nainis et al., 2006; and Visser & Op't Hoog, 2008). Given its focus on HSCT recipients, Gabriel et al. (2001) set precedence for the current study measures of feasibility (the ratio of successful completion to total attempts of assessments and arts interventions as well as the percentage who completed at least one assessment battery and arts intervention) and acceptability (the percentage of consenting patients). Independent of Gabriel et al. (2001), this study determined assessment and arts intervention acceptability based upon whether patients withdrew from the study due to lack of interest.

Study Aims

Using Gabriel et al. (2001) as precedence, the aims of this study were (1) to attain study acceptability based upon a 48% consent rate, and (2) to attain assessment and arts intervention feasibility based upon 50% completion rates and 75% participation rates. Considering previous research linking arts interventions to significant psychosocial changes in patients with cancer, the hypothesis was that the arts intervention would improve patient psychosocial scores if there were no major feasibility and acceptability issues.

Methods

Protocol

Subsequent to a pilot phase, upon IRB revision approval, researchers approached patients who were fluent in English and at least 18 years of age during their pre-HSCT

evaluation at the University of Florida Psychology Clinic. Consenting patients received a baseline orientation within 48 hours after hospital admission for HSCT, where they met an Arts-in-Medicine (AIM) artist who provided an AIM kit and a graduate student who administered standardized psychosocial assessments. The artists and graduate students met separately with the patients each subsequent week. Researchers abstracted demographic and biological data from patient medical records to control for variables and to provide descriptive statistics.

Arts Intervention (Phase II)

In attempt to improve feasibility and acceptability with the weekly, hour-long arts intervention from our preliminary phase, researchers incorporated new approaches. An additional AIM-trained artist (two total) facilitated intervention delivery, primarily making hospital room visitations to improve patient receptivity to the arts interventions and rapport with the artist. To alleviate creative hesitation, a prominent issue in the first phase, patients received their own AIM art kit at the baseline meeting and the artist discussed potential benefits of art and enjoyable projects that required little time. Furthermore, the artist described the contents of the art kit (e.g. watercolors, acrylics, markers, etc.). Patients also received reassurances that prior artistic skill was unnecessary, researchers would not rate their creations, and there was no right way to do art as each creation was inherently special. They were encouraged to explore materials on their own time. The artists served as guides during the arts interventions, tailoring the sessions to the creative interests of the patients who produced their own works of art.

Assessments (Phase II)

In order to expand knowledge of patients during the HSCT process, we broadened our assessment collection from the first phase. The weekly psychosocial measures included the Mini-Profile of Mood States (McNair, Lorr, & Droppleman, 1992), Spielberger State-Trait Anxiety

Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), Benefit Finding Scale (Antoni et al., 2001), Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), and the Functional Assessment of Cancer Therapy Bone Marrow Transplant (McQuellon et al., 1997). The collection measured patient mood, anxiety, depression, stress, and perceived benefit from their cancer experience.

Results

The current sample included eight patients with an average age of 53 years ($SD=12$). Five men and three women composed the sample of various ethnicities (four Caucasian, one African American, and one Asian participant). Diagnoses primarily included multiple myeloma ($n=3$) or non-Hodgkin's lymphoma ($n=3$). On average, patients remained in the hospital for three to four weeks ($M=26$ days, $SD=10$). The small sample size would yield limited results in evaluating relationships between assessments and intervention, and thus, was not included in this report.

Utilizing Gabriel et al. (2001) as a reference, the current study appeared to be acceptable as 73% (11/15) of eligible patients consented. Of the eight patients, three (38%) completed one arts intervention or more, and one withdrew due to lack of interest. Completion of the arts intervention was only 16% successful (5 interventions delivered / 32 attempts), predominantly due to patient reports of illness, fatigue, and treatment preoccupation, rather than lack of interest. This suggests that the arts intervention was acceptable but exhibited low feasibility. In terms of assessment delivery, all patients completed baseline assessments with no withdrawals. Collection of assessments had a success rate of 53% (19 assessments completed / 36 attempts). Although the chief reasons for refusal were the same as the arts intervention, more patients stated lack of interest when refusing the assessments. Thus, the assessments were initially feasible and

acceptable. After the baseline visit, intervention and assessment completion became less feasible, primarily due to patient fatigue and illness as well as preoccupation with medical procedures.

Independent samples *t* tests revealed that, on average, the three participants who completed an arts intervention ($M=27$ days, $SD=12.2$) had significantly longer yet more variable length of hospitalizations than the five ($M=23.3$ days, $SD=1.5$) who did not complete an arts intervention ($p<.01$). A variety of complications may be responsible for increased hospital stay for art intervention nonparticipants (Bishop, Welsh, Coons, & Wingard, 2001) and the same factors may lead to patients feeling too ill to participate, a commonly expressed reason for participation refusal. However, this theory lacks explanation for the nonparticipating patients with relatively short hospital stays. A larger sample size may help to clarify this phenomenon.

Discussion

The HSCT procedure is an intense, isolating process in which patients are in great need of psychosocial attention but remain difficult to reach. According to established measures (Gabriel et al., 2001), this study demonstrated sizeable acceptability at recruitment, but participant treatment and ensuing illness during hospitalization appeared to constrain feasibility. Baseline assessments and initial visits from the artists were more successful than attempts in subsequent weeks as medical treatment and the recovery process intensified. Though one patient withdrew from the arts intervention due to lack of interest, most patients expressed fatigue or illness as a reason for refusing participation in assessments and the arts intervention, indicating that, regardless of initial acceptability, study adherence became increasingly infeasible.

Despite feasibility issues, the arts intervention provided an inexpensive, versatile resource with the capacity to empower capable patients and visitors during their hospital stay. Two of the eight patients took advantage of the kit while alone to create projects. Akin to Gabriel et al.

(2001) and Walsh & Weiss (2003), some patients used their artwork to embellish their rooms and to create gifts, and one noted that the arts intervention served as a distraction from the treatment. Additionally, two patients (including the patient who withdrew from the arts intervention) had children who utilized the art kit during their visit. Moreover, the information packet helped to spark patient interest, as several patients requested supplies during their stay. Contrastingly, the odor of the arts kit was an unforeseen consequence; a patient cited its overwhelming smell. Likely, the treatment effects led to the patient's hypersensitivity to smell (Epstein et al., 2002).

Though treatment and fatigue are inherent HSCT circumstances that hindered arts intervention participation, further alteration to the development of the arts intervention may improve participation. As aforementioned, Nainis et al. (2006) affirmed the energizing nature of the arts. Enlightening fatigued patients that the arts can counteract their tiredness may improve their motivation to participate. Furthermore, given that patients were often in the presence of friends and family, developing collaborative arts activities that welcome family and friend participation might boost participation. The visitors could encourage patient participation, and patients may be more willing to participate if they have familiar persons with whom to create.

One limitation of the study was the small sample size hindering the evaluation of a potential relationship between the battery of assessments and the arts intervention. This information will be beneficial to expand understanding of the psychosocial implications of HSCT recipients and their interaction with the arts intervention. Moreover, given that research surrounding arts-in-health programs has historically involved qualitative designs and surveys to determine the effects of arts interventions, with study expansion, this posttest/pretest study employing standardized assessments will help to solidify the previously indicated benefits of arts programs (Hacking, Secker, Spandler, Kent, & Shenton, 2008).

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