REVIEW OF LITERATURE
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Effects of Hospitalization

Hospitalization is one of the most stressful events that children and adults can experience. Children and adults reactions to hospitalization, such as anxiety, fear, withdrawal, depression, regression and defiance, can be more severe than their reactions to the illness (Froehlich, 1984). The most common concerns of a hospitalized child are (a) anxiety due to separation from family and friends, (b) fear of the unfamiliar, (c) uncertainty about hospital rules and expectations, (d) prior perception of hospitalization, (e) fear of body mutilation or death, (f) fear of pain and discomfort, (g) thoughts of hospitalization as punishment, (h) loss of emotional and physical control, (i) other’s perception of physical changes, (j) loss of independence and identity, and (k) fear of rejection (Froehlich, 1996). Most of all, the hospital is an unfamiliar environment that disrupts the routine of daily living.

Other stressful factors of hospitalization may include frequent restrictions of activities and forced dependence on others which can lead to feelings of vulnerability, and developmental regression. In addition, anxiety aroused by diagnostic, radiological, or other presurgical screening procedures can give rise to fear of pain, fear of mutilation, and fear of death. When hospitalized, children and adults must make an emotional adjustment to the illness (Brodsky, 1989).

Hospitalization is a serious change that can affect a child’s emotional and developmental needs and adult’s emotional and physical needs. Publications regarding short-term and long-term effects of hospitalization state that as many as 30% of
hospitalized children experience emotional or behavioral problems (Robb, 1999). One specific type of illness is kidney disease.

Effects of Hemodialysis

Kidney disease and its complications affect many children and adults. These individuals must be treated through hemodialysis. Hemodialysis is the process of extracorporeal blood purification (Mallick & Gokal, 1999). Hemodialysis requires an extracorporeal filter or dialysis in which the blood is taken and returned through sterile tubing. Dialysis fluid is passed in the opposite direction across the outside of the membrane channels of the dialysis through which the blood is circulating (Mallick & Gokal, 1999). If these individuals are not treated, then end stage renal failure can occur. End stage renal failure occurs when nephrons (blood vessels) are lost to such an extent that the retention of non-volatile, metabolic waste products, salt, and water occurs, the results of which are potentially fatal (Mallick & Gokal, 1999).

Clinical issues related to hemodialysis are hypotension, hypertension, possible bone disease, low social activity, low physical activity, depression isolation, and withdrawal (Mallick & Gokal, 1999). Other problems include blood leaks, infection, headaches, and nausea (Brady & Singer, 1995; Schuster, 1985). Individuals on dialysis are usually on the machine for three to four hours, three times a week. These issues seem to be sufficiently serious to justify intervention.
Music Therapy

Music therapy is a treatment modality for hospitalized children and adults. Not only is music a form of nonverbal communication, “music involves the individual so totally and in such unique fashion that closeness is felt, and painful aloneness may be alleviated…Music is nearly always an expression of good will, a reaching out to others” (Gaston, 1968, pp. 24-25). Music therapy has effectively helped children adults cope with the traumatic effects of hospitalization and illness (Bailey, 1984; Barrickman, 1989; Brodsky, 1989; Fagen, 1982; Froehlich, 1996, Rudenberg & Royka, 1989).

Bailey (1984) provided cancer patients with an important means for support. She provided tools for change to help feelings of physical and emotional pain. Bailey explains song choice themes and methods for achieving therapeutic goals. Providing children choice and control is also an important part of the music therapy intervention. Music provides the patients a meaningful outlet for self-expression.

Barrickman (1989) stresses the importance of considering the following factors when planning a music therapy intervention for the hospitalized child: (a) the developmental level at which the child is functioning, (b) the musical abilities, (c) responses that are realistic for the child, and (d) special needs that result from the illness. Music can effectively help children cope with hospitalization because it provides stimulation, is an outlet for self-expression, and provides opportunities for motor response, according to Barrickman.

Brodsky (1989) gives an extensive overview of the effects of hospitalization, music therapy for hospitalized medical and oncology patients, and specifically music therapy in isolation rooms. The music therapy goals for hospitalized children include
providing a normalized environment promoting self-expression, to provide the release
of tension, to initiate group interactions providing social involvement with peers in age-
appropriate activities, and to work through issues related to medical conditions and
conceptions of death. Music in this setting functions as a distraction from pain, a
tension releaser, and a mode of expression.

Schuster (1985) investigated the efficacy of music therapy in reducing the amount
of fluctuation in the blood pressures of patients undergoing hemodialysis treatments.
She studied adult dialysis patients between the ages of 22 and 81. The control group
received blood pressure measurements after each hour of dialysis. The experimental
group received the same blood pressure measurement but received music prior and after
the treatment. The statistical tests revealed no significant difference between the
groups; however, the results were statistically significant for every blood pressure
reading. Therefore, Schuster concluded that the experimental group displayed less
anxiety upon entering the treatment room, suggesting that the opportunity to listen to
music reduced anxiety.

Fagen (1982) states that music therapy is an effective tool in uncovering and
working through fears and anxieties related to death. She states that music therapy can
be used (a) to provide the child opportunity for expression, (b) give them a will to live,
(c) energize or relax the child, (d) to promote thought or distraction, and (e) provide
creative energy. Music therapy was used in this setting to improve quality of life of the
patients.

Music is a natural part of life for the child, providing stimulation, an outlet for
self-expression, and opportunities for motor responses. Active music therapy is the key
because children are people of action. They process through doing, working out problems in their life through play (Froehlich, 1996). Music is comforting, non-threatening, and not associated with medical procedures for hospitalized children. Froehlich (1996) states that music therapy provides children and their families opportunities to (a) stimulate and maintain developmental skills, (b) interact with family members, (c) promote independence, (d) provide opportunities for choice and control, (e) socialize with peers, (f) increase self-expression, and (g) improve fine/gross motor skills.

Froehlich (1984) researched the effects of music therapy and medical play therapy on the verbalization behavior of pediatric patients. The results suggest that music therapy elicited significantly more involved verbalization about hospitalization than did the play therapy session. Froehlich concluded that music therapy seems to stimulate more verbalization than medical play therapy. Music therapy goals have also been incorporated into play therapy to attain mutual therapeutic goals for burn patients’ optimal psychological and rehabilitative recovery (Rudenberg & Royka, 1989).

Rudenberg & Royka (1989) describe the common issues in which music therapists and play therapists address during a child’s hospitalization. These include (a) to help the child cope with multiple losses, (b) to work through painful procedures, (c) to reinforce physical therapy goals, (d) to increase lung capacity, and (e) to adapt through stages of recovery. She further explains the emotional states experienced by the pediatric patients from a developmental standpoint. Overall, music therapy helps the hospitalized child identify and accept feelings. Rudenberg and Royka emphasize interventions like lyric discussion, instrumental, vocal, or movement improvisation, and
songwriting. Rudenberg and Royka as well as other researchers suggest using
songwriting to promote self-expression in hospitalized children and help children cope
with the trauma of hospitalization.

Cooke (1969) describes the use of music in play therapy with a latency-age child
(age 5) who demonstrated a strong degree of sensitivity to music. Cooke used puppets
and “play acting” as an intervention. Music was used to reduce anxiety, to sustain
concentration and attention, to facilitate self-expression, and to induce or maintain
various moods or affect states. Establishing the therapeutic relationship was difficult for
the therapist, but also showed the benefits and importance of establishing a meaningful
positive relationship. The child was able to maintain control of her feelings because of
the structure and order involved in the music therapy experiences. The importance of the
therapeutic relationship is also meaningful for adult patients as well.

Summary

A hospital is an unfamiliar environment to most individuals. Not only are the
physical surroundings different, but the procedures that children and adults encounter
for the first time are new. This can cause regressive behavior, which is a means for
coping with hospitalization. The issues of developmental regression, choices, play, and
emotional difficulties need to be addressed when working to normalize the hospital
environment for children. Adults may become depressed and withdrawn without any
diversional activities or stimulation. Robb (1999) states that the role of the music
therapist is to support children and adults and facilitate coping; therefore, therapists are
able to devote all of their attention to the individual’s emotional needs, acknowledging their feelings and supporting them during difficult procedures.

Hospitalization is a serious adjustment that can affect an individual’s emotional and physical needs. An individual’s reaction to hospitalization is serious enough to justify intervention. Music therapy focuses on minimizing the trauma of hospitalization and meeting the needs of individuals.

The purpose of this study was to determine the effects of music therapy on dialysis patient’s heart rate, blood pressure, level of psychological distress, and adjustment to illness.
METHOD

Participants
The study took place at University Hospitals of Cleveland. Participants were selected from children and adults on a hemodialysis unit with a diagnosis of a kidney disorder requiring dialysis (screening blood for impurities). Patients were between the ages 8-76. A total of four subjects participated in the study. Two of the patients were male and two were female. Three of the patients were African American and the other was Caucasian. The patients received dialysis treatments three times a week.

Variables
The independent variable is the music therapy. The dependent variables are heart rate, blood pressure, level of psychological distress, attitude toward illness scale, and music therapy questionnaire. The control variable of the study is the diagnosis of a kidney disorder requiring dialysis.

Design
This study used a pre/post-test design. Patients were seen immediately after they went on the dialysis machine. Since music is not an invasive treatment, the patients and staff agreed to music while on dialysis. A total of four patients participated in the study. An individualized or group (2 patients) 30 minute music therapy session were given to each patient. The adult patients took the Beck Depression Inventory (BDI-II) and the SCL-90-R as the pre and post-test. The children (13 and under) took the CDI and Child
Attitude Toward Illness Scale as the pre/post-test. The patients, family, and staff were also asked to fill out a questionnaire about music therapy as a pre/post-test. Their vital signs including heart rate and blood pressure were taken every 30 minutes while on dialysis.

The music therapy session lasted 30 minutes and the interventions included one or more of the following: relaxation/visualization techniques, singing songs, instrument playing, music listening, music activities, and songwriting. The session was done at the patient’s chair and in most cases with the children, they participated at the same time in chairs next to one another.

Possible threats to internal validity included history and maturation. History effects are any event (other than the intervention) occurring at the same time of the study that could influence the results for the pattern of data otherwise attributed to the intervention. Maturation is any change over time that may result from processes within the participant. The design moderated history and practice effects because of the pre/post-test design.

Materials
Musical instruments included a guitar, keyboard, Q chord, maracas, bells, egg shakers, cabasas, tambourines, vibraslap, and rhythm sticks. A c.d. player, headphones, and relaxation c.d. were also used. Instruments were chosen because of portability, could be easily cleaned after use, and are age-appropriate.

Procedure
At the first meeting with the patients, the music therapy intern’s role was explained and the music therapy intern specifically informed the patient of what they would do together (O’Callaghan, 1998).

“Hello, (name.) My name is Courtney Brez and I am a music therapy intern at the hospital. We use music therapy here to help kids and
adults with their hospitalization. I am working on a special project and would like it if you would help me with this project. We are going to be singing, playing instruments, and writing songs together. I hope that it is going to be lots of fun. I will see you next week. Bye, (name.)”

This meeting took place two days before the pre-tests were given.

The patients were on dialysis for three to four hours every Monday, Wednesday, and Friday afternoons. On Monday, September 10 the pre-tests were given to the patients and the questionnaires were given to the staff and family members. Music therapy sessions began on Wednesday, September 12.

The music therapy session lasted about 30 minutes for each patient and in some cases the sessions were together. The interventions included one or more of the following: relaxation/visualization techniques, singing songs, instrument playing, music listening, music activities, and songwriting. The session was done at the patient’s chair while the patient was on dialysis. Music therapy was implemented for four weeks. On Friday, October 12 and Monday, October 15 the post-tests were given.

Hypotheses

Hypothesis 1: Music therapy will decrease the patient’s heart rate and blood pressure from beginning of music therapy to end of music therapy sessions.

Hypothesis 2: Music therapy will decrease the patient’s scores on the level of psychological distress tests.

Hypothesis 3: Music therapy will decrease scores on the attitude toward illness tests.

Data Analysis

Vital Signs

Heart rate and blood pressure were used to determine if the music lowered the patient’s vital signs while on dialysis. The vital signs were taken every 30 minutes for the duration of the patient’s time on dialysis. These signs were compared to the patient’s vital signs of the beginning six measurements of the implementation of music therapy and the last six measurements.
**Level of Psychological Distress**

The BDI-II (Beck Depression Inventory) is used to measure an adult’s level of psychological distress. The questionnaire consists of 21 groups of statements and the patient is asked to pick out one statement in each group that best describes the way they have been feeling during the past two weeks, including today. Each group of statements has four options numbered 0 to 3. The CDI (Child Depression Inventory) is similar to the BDI-II except written for children ages 13 and under. This questionnaire consists of 27 statements with three sentences in each statement. The patients are asked to pick one sentence that describes them best for the past two weeks.

**Attitude Toward Illness**

The SCL-90-R is a measurement for adult patients. It consists of 90 questions and the patients are asked to select one of the numbers descriptors that best describes how much discomfort that problem has caused them during the past two weeks. The Child Attitude Toward Illness Scale measure a child’s, 13 and under, adjustment to having a kidney condition. There are 13 questions with 5 possible answers numbered from 0 to 4.

**Music Therapy Questionnaire**

The music therapy questionnaire was given to the patients, staff, and family members prior to music therapy. The questions were about the use of music during dialysis treatments and how the patient’s mood has been. The questions were scored from 1 to 5. The questionnaire was also given at the end of the four weeks asking similar questions.
REFERENCES


