

# An Evaluation of Patient Comfort During Acute Psychiatric Hospitalization

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**PURPOSE:** To assess the difference in the level of comfort between psychiatric inpatients who received a warmed blanket and psychiatric inpatients who did not receive a warmed blanket.

**DESIGN AND METHODS:** A descriptive pilot study from a convenience sample of 37 psychiatric patients aged 18–59. Subject's level of comfort was measured with Kolcaba's verbal rating scale (VRS).

**FINDINGS:** Independent *t*-tests showed that the VRS mean score was lower in the control group (6.81) than the experimental group (7.29).

**PRACTICE IMPLICATIONS:** Comfort is central to nursing and there has been little research regarding the effects of warm topical applications in the psychiatric hospital setting. Warmed blankets are not routinely offered to patients in the psychiatric setting. The use of warmed blankets may increase patient comfort.

Acute psychiatric inpatients often experience distress upon admission. Patients who require short-term hospitalization experience distress because the majority are admitted with suicidal or homicidal ideation or have been rapidly decompensating to the point where they are no longer able to manage on their own in an outpatient community setting (National Alliance on Mental Illness [NAMI], 2013). Acute psychiatric patients also experience sensory deprivation during hospitalization. Situational sensory deprivation, as in acute psychiatric hospitalization, has been studied and results show that patients exhibit anxiety, agitation, and psychotic symptoms in as little as 12 h after being hospitalized, but the symptoms rapidly resolve after going to a sensory stimulating environment (Ball & Haight, 2005). Brief training in relaxation is a non-pharmacological intervention that has been shown to reduce psychological distress and improve positive mood states (Jain et al., 2007). The physiological adaptation and emotional responses to sensory-based approaches to promote comfort have been evidenced in studies in which temperature and environmental conditions have been manipulated. Another non-pharmacological intervention to

reduce psychological distress and improve positive mood states may be a warmed blanket. The purpose of the pilot study was to assess the difference in the level of comfort between psychiatric inpatients who received a warmed blanket and psychiatric inpatients who did not receive a warmed blanket. The problem being investigated is that nothing is known about the effects of a warmed blanket on psychiatric inpatients' comfort.

## Review of the Literature

Mental illness and related disorders encompass an array of illnesses that affect a person's thought processes, mood, behavior, and social encounters, originate in the brain, and can affect anyone at any age, race, religion, or socioeconomic status (NAMI, 2013). Mental illness affects approximately one in five families in the United States and nearly half of the leading causes of disability in the United States are mental disorders (NAMI, 2013). Approximately 1 out of every 17 individuals lives with serious mental illness in the United States (National Institute of Mental Health [NIMH], 2013). Non-

pharmacological interventions have been implemented throughout nursing and other health-related disciplines and have been shown to provide comfort in a variety of patient settings (Mamtani & Cimino, 2002).

The effects of the application of a warmed blanket on the level of comfort in elders hospitalized on a general medical unit were examined in an experimental study by Robinson and Benton (2002). Warmed blankets were defined as “a comfort measure that would help ease a diseased body experiencing coolness, pain, difficulty sleeping, anxiety, or restlessness” (Robinson & Benton, 2002, p. 322). Measurement obtained using a Verbal Descriptor Scale (VDS) with alert patients rated discomfort from 0 (*none*) to 6 (*as bad as could be*). Thirty-four patients rated comfort on the VDS. Of the 34 oriented patients, 15 were asleep after the 1-hr check. Of the 19 subjects who were still awake after 1 hr, 17 rated discomfort level lower, with a mean difference of 2.2 points. The discomfort score for all subjects before receiving the blanket was 2.4 and was 0.3 afterward, showing a decrease in discomfort by 2.1 with a 95% confidence interval of 1.9–2.8.

A quantitative descriptive study by Bujdoso (2009) investigated whether cotton–polyester blend hospital blankets warmed in blanket warming cabinets at various temperatures were comfort inducing for patient use. The three participants were female healthcare workers between the ages of 25 and 55 years. Participants were asked to rate their perceived warmth and perceived comfort on a scale of 0–10 before the placement of a warmed blanket and then at 1, 3, and 5 min after the blanket was applied. The results of the Bujdoso study were as follows: the 110 °F blanket perceived warmth remained constant throughout; the 150 °F blanket perceived warmth 1 min after blanket placement had an average of 7.3 and decreased to 6.3 at 5 min. Perceived comfort with room temperature blanket decreased from an average of 5 at 1 min to average 4.3 at 5 min after blanket exposure. The perceived comfort with the 110 °F blanket improved from average 6.3 at 1 min to average 6.6 at 5 min after exposure. Perceived comfort with the 150 °F blankets at 1 min after exposure was 9.3 and decreased to 7.6 at 5 min. The study by Bujdoso showed that perceived warmth and comfort increased with the initial temperature of the blanket.

The non-pharmacological intervention of warm footbaths and subsequent effects on body temperatures, distal skin temperature, and sleep outcomes were examined in a single group crossover study design by Raymann, Swaab, and Someren (2007). Sleep onset latency (SOL) and the changes associated with advancing age and insomnia were evaluated. The authors hypothesized that warming the foot will decrease SOL. Interventions affecting foot temperatures occurred over 30 min by applying warm (42 °C) or neutral (32 °C) footbaths, or non-heated or heated bed socks. In elderly subjects who were free from sleep complaints, a warm footbath prior to sleep or wearing neutral bed socks during lights off accelerated the

onset of sleep. In young adults wearing warm or neutral bed socks after lights were turned off, sleep onset was accelerated and the rate of change in foot temperature after lights off was related to faster sleep onset (Raymann et al., 2007).

Another non-pharmacological intervention has been shown to be effective in the study entitled the “Sh-h-h-h project” presented by Robinson, Weitzel, and Henderson (2005). The qualitative study evaluated 40 subjects with a mean age of 75 years in a hospital medical unit. The study implemented a variety of modalities to improve rest and sleep, including back rubs, warm drinks, blankets warmed in a blanket warmer, aromatherapy, relaxation music, and ear-plugs. The warmed blanket was the most popular intervention chosen by the subjects to assist with rest and sleep for the older hospitalized patients (Robinson et al., 2005).

The application of warmed cotton blankets has been shown to be effective in promoting thermal comfort and had positive effects on patients’ sense of well-being in the perioperative setting (Wagner, Byrne, & Kolcaba, 2006). Patients who had warmed cotton blankets applied also had decreased levels of anxiety, restlessness, discomfort, and pain (Robinson & Benton, 2002; Wagner et al., 2006).

Comfort is central to nursing and imperative to healing and wellness for patients in the hospital setting (Tutton & Seers, 2004). The authors explored what comfort meant to both older patients in the hospital and their healthcare workers. The findings of the study revealed that within the hospital setting, nursing focused on relief of discomfort rather than creating an environment that facilitated comfort. Results had shown that comfort had not been provided on a regular basis for patients. The authors emphasized the importance of bringing comfort to the forefront in order to continue to contribute to current nursing practice (Tutton & Seers, 2004).

A quasi-experimental study by Apóstolo and Kolcaba (2009) tested the effects of a guided imagery intervention on patient comfort with 60 short-term hospitalized psychiatric patients diagnosed with mood disorders. Author’s theory of comfort provided the conceptual framework for the study. The intervention consisted of an audiotaped compact disk, approximately 20 min in duration with guided imagery techniques such as muscle relaxation techniques, imagery, and deep breathing that occurred over a 10-day period. The results of the study had shown that the guided imagery intervention had decreased depression, anxiety, and stress, and an increased personal perception of comfort over time.

Another way that comfort has been measured is through serum cortisol levels after the administration of warm footbaths. The psychological and physiological effects of wrapped warm footbaths were examined in a pilot study using a visual analog scale (VAS), salivary secretory immunoglobulin A, serum cortisol levels, and wavelet analysis of heart rate variability in 13 subjects ( $n = 7$ ) in a footbath group and ( $n = 6$ ) in a control group (Yamamoto, Aso, Nagata, Kasugai,

& Maeda, 2008). The results showed that subjects in the footbath group had a significant decrease in serum cortisol concentrations after the footbath with associated reductions in sympathetic activity and increased parasympathetic response that yielded increased relaxation (Yamamoto et al., 2008). The footbath group also showed significant changes in the VAS results toward “comfortable” and “relaxed” moods at the posttest period compared with the pretest period (Yamamoto et al., 2008).

The intervention of applying warmed cotton blankets to patients has been shown to provide thermal comfort and decrease anxiety and pain (Wagner et al., 2006). Physical interventions such as a hot bath have been shown to induce a sense of well-being and relaxation, and the topical application of warmth has been shown to cause oxytocin to be released in both males and females in response to a variety of stimuli leading to a state of calm and connection (Uvnäs-Moberg, Arn, & Magnusson, 2005). Oxytocin is released from the brain and has been reported to assist in minimizing stress, fear, and stress-related autonomic functions, and to assist in promoting the sensation of finding surroundings friendly and pleasurable (Uvnäs-Moberg et al., 2005). Cold temperatures and the presence of environmental dangers have been shown to cause activation of stress and fear reactions and of defense mechanisms initiated by the hypothalamus, brainstem, and amygdala parts of the brain (Uvnäs-Moberg et al., 2005). The sensation of feeling cold has been described by patients as an uncomfortable sensation that causes an increase in restlessness, exacerbates pain symptoms, and leads to a decrease in patient satisfaction (Wagner et al., 2006).

## Concepts of the Study

### Warmed Blanket

Blankets warmed to a temperature of 110 °F (40 °C) in a standard hospital blanket warmer have been shown to be effective for increasing comfort (Bujdoso, 2009). A warmed blanket kept out of the warmer at room temperature for 10 min or longer has little thermal effect because the blanket cools rapidly and is no longer warmer than skin temperature after 10 min (Moon, 2006). Normal skin temperature of healthy individuals is approximately 91 °F (33 °C) with an average range of 90–95 °F (32–35 °C) in a room at 59–70 °F (15–20 °C) (Elert, 2005).

The topical application of warmth has been shown to cause a release of oxytocin that produces a sensation of comfort that can lead to an increase in relaxation (Uvnäs-Moberg et al., 2005). The intervention of applying a warmed blanket occurred during the evening shift hours because the serum cortisol levels through between 6:00 p.m. and 12:00 a.m., which has an effect on the circadian rhythm and stress reaction of adults (Zhao et al., 2002).

*Acute Psychiatric Inpatients.* Acute psychiatric inpatients in the study are defined as individuals who have an abrupt onset, with a short duration of an exacerbation of psychiatric illness that required hospitalization on a short-term stabilization unit (National Health Policy Forum, The George Washington University, 2007).

*Comfort.* The comfort theory (Kolcaba, 2003) provides a holistic description of comfort based on the taxonomic structure of comfort that contains the four contexts (physical, psychospiritual, environmental, and sociocultural) and three types (relief, ease, and transcendence), with each context of comfort having an influence on each type of comfort. Author provides a technical definition of total comfort as “the immediate state of being strengthened by having the needs for relief, ease, and transcendence addressed in the four contexts of holistic human experience: physical, psychospiritual, sociocultural, and environmental” (Kolcaba, 2003). Comfort is defined as “strengthening aid, consolation in time of trouble or worry; a feeling of relief or encouragement; and a satisfying or enjoyable experience” (Merriam-Webster Incorporated, 2013).

## Significance to Nursing

Comfort is central and integral to the role of the professional nurse. Nurses can apply comfort interventions across all aspects of patient care in most patient settings. The presence of comfort is integral for healing and wellness in the hospital setting (Tutton & Seers, 2004). Physical comfort interventions instituted by nursing were meant to provide mental comfort for patients, and during the early twentieth century, physician’s orders were required for various comfort measures such as poultices and heat (Peterson & Bredow, 2009). By the 1970s, comfort measures were implemented by nurses without a doctor’s order (Peterson & Bredow, 2009).

The pilot study addressed the proposed national Healthy People 2020 goal number MHMD HP2020-9.1 “to increase the proportion of adults aged 18 years and older with serious mental illness who receive treatment” (U.S. Department of Health and Human Services, 2014). The study may positively influence psychiatric nursing care with an evidence-based practice intervention that can increase patient comfort during hospitalization. The results and outcomes may affect future policy and nursing practice guidelines within the psychiatric setting.

## Methods

### Conceptual Framework

Kolcaba’s (2003) comfort theory provided a conceptual framework that guided the study derived from the taxonomic

**Table 1.** Verbal Rating Scale

Please rate your Total Comfort from 0 to 10 using the scale below

Place X in best box below	The amount of Total Comfort you are experiencing right now:
10	Highest comfort possible
9	Very high comfort
8	Between fairly high and high comfort
7	Fairly high comfort
6	Between moderate and fairly high comfort
5	Moderate comfort
4	Between some and moderate comfort
3	Some comfort
2	Between a little bit and some comfort
1	A little bit of comfort
0	No comfort at all

Note: Total Comfort includes physical, psychological, spiritual, and social aspects of comfort, all combined into one score (Kolcaba 2010b).

structure of comfort and holistic qualities of comfort. The comfort theory contains four contexts and three types, and each context influences the types of comfort. The four contexts are defined as (a) “physical—refers to bodily sensations, homeostatic mechanisms and immune function” (Kolcaba, 2003, p. 15); (b) “psychospiritual—the internal awareness of self, including esteem, identity, sexuality, meaning in one’s life, and one’s understood relationship to a higher order or being” (Kolcaba, 2003, p. 15); (c) “environmental—the external background of human experience such as temperature, light, sound, odor, color, furniture, landscape” (Kolcaba, 2003, p. 15); and (d) “sociocultural—the interpersonal, family, and societal relationships” (Kolcaba, 2003, p. 15). The three types of comfort are defined as (a) relief comfort—“the state of having a specific comfort need met” (Kolcaba, 2003, p. 15); (b) ease comfort—“the state of calm or contentment” (Kolcaba, 2003, p. 15); and (c) transcendence comfort—“the state in which one can rise above problems or pain” (Kolcaba, 2003, p. 15).

Total comfort was measured by using Kolcaba’s verbal rating scale (VRS) where a score of 5 or more indicates contentment (Table 1).

The acute hospitalization of individuals with psychiatric illnesses can be a stressful event, and in stressful situations the application of comfort is important (Kolcaba, 2003, p. 16).

According to Kolcaba’s comfort theory, the actions of nurses and other healthcare staff strengthen patients, which can lead them toward more health-seeking behaviors. A major concept of Kolcaba’s comfort theory is healthcare needs (Figure 1).

Healthcare needs for comfort include the physical, psychospiritual, social, and environmental needs and arise from stressful healthcare situations that cannot be met by traditional support systems. The study was based on the concept of the use of warm topical applications in the hospital setting to assist in increasing patient comfort. Kolcaba’s comfort theory guided the study of the application of a warmed blanket to provide comfort during the hospitalization of acute psychiatric patients.

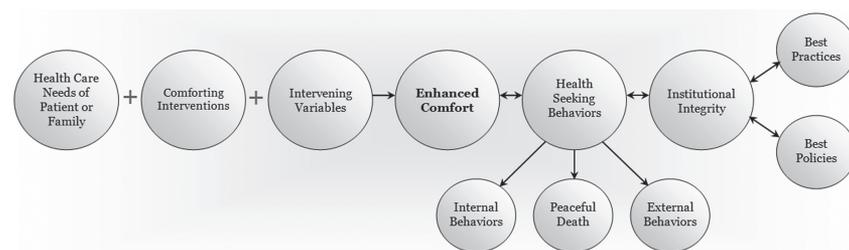
**Design**

A quasi-experimental nonequivalent comparison control group posttest-only design pilot study was conducted to answer the following research question: What is the difference in the level of comfort between psychiatric inpatients who received a warmed blanket and psychiatric inpatients who did not receive a warmed blanket (usual care)?

The two groups, the comparison control “bed” group and experimental “blanket” group, were composed of adult psychiatric patients on a 36-bed locked acute short-term psychiatric unit. The bed group was provided with the current standard care without the application of a warmed blanket for a period of 15 min, and the blanket group was given the intervention, a warmed blanket for a period of 15 min. Data collection occurred after approval was obtained from the affiliated Institutional Review Board and informed signed consent was obtained from each subject. After the comfort session intervention was completed, the VRS was administered within 5 min of intervention completion after each subject reviewed it. The first 10 days evaluated the subjects in the control group and the following 10 days evaluated the subjects in the experimental group.

**Setting**

The setting for the study’s treatment administration and data collection was the assigned patient rooms on the 36-bed



**Figure 1.** Conceptual Framework for Kolcaba’s Comfort Theory (Kolcaba, 2010a)

locked acute psychiatric adult unit in the rural southeastern part of the United States. The study was conducted with the patient seated on the bed with upper torso reclined back on the upper portion of the bed, dressed in comfortable clothing. The door to the room was closed, with privacy ensured. The room had minimal lighting, with one fluorescent light on over the bed during completion of the study tools, and one 25-W bulb within the wall that shined out through an open grate that was located near the door. The hospital staff and patients refer to the light as a “nightlight,” which cannot be turned off by patients. The noise in the room was kept to a minimum, as well as adjacent background noise of the unit. The hospital had a centralized intercom system with speakers built into the walls of each room which were not able to be turned off or adjusted.

### Sample

The sample for the study was obtained from all patients who were on the 36-bed acute inpatient psychiatric unit. The unit is considered a short term with an average patient length of stay of 3–5 days. Convenience sampling was used and the subjects were recruited over the 20-day study period, 10 days for each group. Two groups were not randomly formed and the subjects were assigned to participate in a control group on days 1–10 and an experimental group on days 11–20.

### Inclusion Criterion

Adult psychiatric inpatients were aged 18–59 years at the time of testing. Individuals less than 18 years old were not hospitalized in the adult psychiatric unit that was the setting for the study.

### Exclusion Criteria

Adult psychiatric patients who had alcohol and/or street drugs in the 12-hr period preceding data collection and patients who were being treated for opiate addiction were excluded from the study. The substances have an effect on the regulatory centers in the brain which also affects cardiac function resulting in lower blood flow to the skin (Elsevier, 2009). Psychiatric patients diagnosed with any active skin lesion or rash on the upper anterior or posterior body were excluded as skin lesions or erythema affects thermal sensations of the skin. Patients who had a diagnosis of diabetes mellitus and pregnant women were excluded due to the skin’s impaired vasodilation and blood flow in patients with diabetes and changes in hormones during pregnancy which affects the thermoregulation of the skin’s blood flow (Elsevier, 2009).

## Measures

### Independent Variable

The warmed blanket intervention had two levels. The treatment level was the application of a warm blanket to a psychiatric inpatient for 15 min (experimental group). The second level of treatment was no application of a warmed blanket that represented usual treatment for patients on an inpatient psychiatric unit (control group).

*Warmed Blanket.* A warmed blanket for the study is defined as a standard cotton hospital bath blanket warmed in a standard portable blanket warmer electric “Hotbag,” measuring 18” × 19” × 12” with blankets warmed to a temperature of 130 °F. A blanket was applied around the subject’s shoulders and upper torso for a period of 15 min to each subject assigned to the “blanket” group during the times of 6:00 p.m. to 11:00 p.m. The standard hospital heavyweight white bath blankets utilized were made of 82/18% cotton polyester each measuring approximately 70 × 90 inches; weight 2.0 lb (Medline Industries, Inc., 2012). A handheld “flashpoint” brand infrared surface temperature gauge was used to ensure blankets were warmed to a temperature of 130 °F. The temperature of 130 °F is recommended by the ECRI Institute (HCPro, Inc., 2015) as a safe blanket warmer setting. The investigator (first author) instructed the subject to lie back on his/her bed and had the lights turned off, placed the bedcovers over the subject if he/she preferred. The investigator told the participant: “Now it is time for you to rest and relax. Try to clear your mind, close your eyes, and focus on your breathing and think of relaxing, happy thoughts. I will return in 15 minutes.” The investigator exited the participant room and returned after the 15-min comfort session.

*No Warmed Blanket (Usual Treatment).* The no warmed blanket application, or usual standard of care treatment for the subjects assigned to the control group, was used to ensure that the patient was comfortable by usual means. The investigator instructed the study participant to lie back on his/her bed with the lights turned off. Ordinary bedcovers were placed over the subject if he/she preferred. The investigator then told the participant: “Now it is time for you to rest and relax. Try to clear your mind, close your eyes, and focus on your breathing and think of relaxing, happy thoughts. I will return in 15 minutes.” The investigator exited the participant’s room and returned after the 15-min comfort session.

The dependent variable of comfort was measured using the VRS (Table 1) developed by Kolcaba (2010b). A Demographic Data Collection Sheet (DDCS) was developed by the first author and contained six items and choices for each subject to self-report that included the following: subject’s age in years, ethnicity, years of education, marital status, and

employment status obtained for statistical purposes. The subject's gender was obtained for statistical purposes. In addition, women have been found to have slightly increased body temperatures when compared with men (Adhi et al., 2008). The Background Data Collection Sheet (BDCS) also developed by the first author contained five items for each subject to self-report and included the subject's experience or status regarding hunger, thirst, physical pain, sleepiness, and comfort.

**Results**

A posttest-only, quasi-experimental, descriptive pilot study was conducted. Cohen's power analysis (Cohen & Cohen, 1983) on GPower3.0.5 for a two-tailed "a priori" test, a two-sample independent *t*-test to test mean difference, with alpha = 0.05, power = 0.80, and an effect size of 0.50 for the dependent variable of the level of comfort were used initially to determine the sample size for the study. Results indicated that a sample of 64 subjects was required in each group but a smaller than anticipated sample size was obtained during the 4-week study period (*n* = 37). A smaller than anticipated sample size was due to a relatively low hospital patient census, low admission rate, amount of subjects who qualified for the study based on the inclusion and exclusion criteria, and a short hospital stay duration, with an average of 3 days. Therefore, a descriptive pilot study was presented. The results from the convenience sample included 37 adult psychiatric patient participants with 50% males and females in the control and experimental groups ranging in age from 18 to 59 years and occurred over a 4-week period. Initially, 38 subjects participated in the study but 1 subject in the blanket group fell asleep during the intervention, therefore the VRS was not completed for that subject. The DDCS results (Table 2) showed the characteristics of the subjects that included a convenience sample of adult psychiatric patients who were 50% male and female in the control and experimental groups ranging from 18 to 59 years old with a total mean age of 33 years.

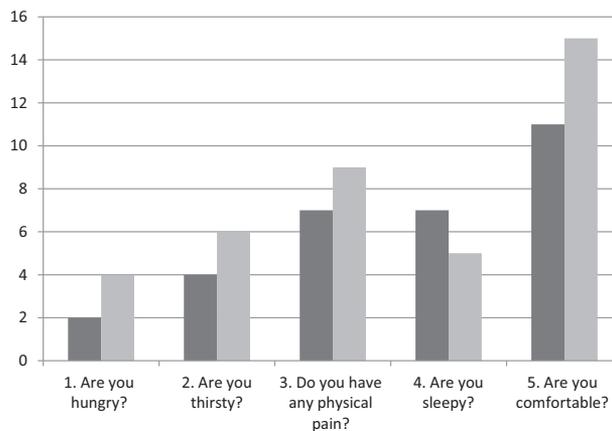
Results from the BDCS (Figure 2) regarding each subject's status had similar responses for both groups. The BDCS was administered before the intervention to both groups. The first item that asked "are you hungry" had the majority from both groups answered "no" (84%); the second item that asked "are you thirsty" had the majority from both groups answered "no" (74%); the third item that asked "do you have any physical pain" had the majority from both groups answered "no" (58%); the fourth item that asked "are you sleepy" had the majority from both groups answered "no" (68%); and the last item that asked "are you comfortable" had the majority from both groups answered "yes" (68%).

PASW Statistics GradPack 18 for Windows by SPSS Inc. (2009) was utilized for the data analysis. The overall scores, frequencies, and scores by group were analyzed and indepen-

**Table 2.** Demographic Data Obtained From the DDCS

	Control group N = 16 (%)	Experimental group N = 22 (%)
Gender, <i>n</i> (%)		
Male	6	13
Female	10	9
Age (years); mean	36	30
Race, <i>n</i> (%)		
Caucasian	15 (92)	20 (92)
Black	0	1
Hispanic	0	1
Asian	1	0
Marital status, <i>n</i> (%)		
Single	5 (47)	11 (47)
Divorced	7 (34)	6 (34)
Married	3 (16)	3 (16)
Separated	1 (3)	0
Education (years)		
10	3	1
11	3 (16)	3
12	6 (34)	7
13	1	3
14	0	1
15	2	1
16	0	4
17	0	1
19	1	0
Employment status, <i>n</i> (%)		
Employed	4	4
Unemployed	6	5
With disability	4 (29)	7 (29)
Students	2 (21)	6 (21)

DDCS, Demographic Data Collection Sheet.



**Figure 2.** Number of "Yes" Responses Answered on the Background Data Collection Sheets (BDCS) from Subjects in the Control and Experimental Groups  
Notes: ■, control; ■, experimental.

**Table 3.** Verbal Rating Scale Results

	Group bed or blanket	N	Mean	Standard deviation	Standard error of the mean
The amount of total comfort you are experiencing right now	Bed, control	16	6.81	3.124	.781
	Blanket, experimental	21	7.29	1.384	.302

dent *t*-tests were run on the independent and dependent variables. The results of the VRS (Table 3) that was administered following the comfort session intervention had 16 subjects in the control group and 21 subjects in the experimental group. There was one less subject who participated in the VRS from the experimental group, as one subject had fallen asleep during the comfort session with the warmed blanket, therefore the VRS could not be administered to that subject. The results of the VRS for the control group had a mean score of 6.81, the category of between moderate and fairly high comfort. The experimental group had a mean score of 7.29, which was a category one higher on the VRS of “fairly high comfort.” The standard deviation for the control group was 3.124 and the standard deviation for the experimental group was 1.384.

### Pertinent Findings

The independent *t*-tests performed showed that overall there were no significant differences in the level of comfort between psychiatric inpatients who received a warmed blanket and psychiatric inpatients who did not receive a warmed blanket. However, the mean from the VRS of the level of comfort was lower in the control group (6.81) than the experimental group (7.29) showing less comfort in the control group than the experimental group (Table 3).

### Discussion

The lack of significances in the level of comfort between psychiatric inpatients who received a warmed blanket and psychiatric inpatients who did not receive a warmed blanket may have been due to several reasons. First, the small sample size obtained during the study period was due partly to a low patient census on the psychiatric unit at the time of the study along with the availability of subjects who met the study criteria during the study period. A larger sample size and longer study duration may have yielded more significant results as found in the study by Wagner et al. (2006) that had 5-month study duration and a total of 126 adult participants. Second, a pretest and posttest quasi-experimental design may have yielded results that are more significant as the posttest-only design, such as the study is considered pre-experimental (Burns & Grove, 2005). The patient’s level of sensory deprivation could be measured prior to the study’s implementation

which could strengthen the study design and yield more significant results. Third, the Hawthorne effect may have contributed to a lack of more significant findings in the study. The subjects in the control group did not know that they were participants in the control group and may have had some response bias during the implementation of the study. Fourth, a portable blanket warmer that was used rather than a larger facility-based warmer and the 15-min comfort session period of the blanket application may have contributed to a decrease in some results. The study by Bujdoso (2009) found that blankets warmed in a standard hospital blanket warmer were shown to be effective for perceived patient comfort. However, the study by Moon (2006) found that blankets that were out of the warmer for longer than 10 min had little thermal effect because the blankets cool rapidly and are no longer warmer than skin temperature after 10 min. Another reason that the study results did not show overall significance may have been that many subjects had checked yes responses for hunger, thirst, sleepiness, and pain that may have affected comfort prior to the comfort sessions.

A larger sample size that would have included subjects older than 59 years may have benefited from the study and would have yielded greater numbers for the results. The studies by Liao, Chiu, and Landis (2008), Raymann et al. (2007), Robinson and Benton (2002), and Robinson et al. (2005) had shown effective results with the application of warmed topical interventions in subjects over the age of 59 years. Another limitation was that a standard hospital blanket warmer, such as by Steris, was not obtained or donated to the psychiatric unit as originally planned. The temperatures of the blanket warmers were 130 °F which were used to heat the blankets for the study based on the hospital’s recommended blanket warmer settings. However, the study by Bujdoso (2009) had shown that the initial temperatures of blanket warmers set at 150 °F (66 °C) had increased the subject’s perceived warmth and comfort. Another limitation of the study was that one of the subjects in the experimental group had fallen asleep during the comfort session and the VRS was not completed for that participant. However, since the subject had fallen asleep after the application of a warmed blanket, the comfort session intervention may have contributed to the patient’s comfort level by allowing him or her to fall asleep. The study addresses a gap in the literature of research studies related to comfort from warmed blankets in the psychiatric hospital setting.

## Recommendations for Future Research

Based on the study, recommendations for future research are (a) larger sample sizes, (b) studies that occur over a longer time period, (c) different intervention time periods regarding the role of topical heat applications and warmed blankets, (d) a pretest and posttest quasi-experimental design, and (e) samples that include other groups such as participants less than 18 years old and greater than 59 years old and subjects in other inpatient or outpatient psychiatric and medical settings. All of these factors would also be helpful to assess the correlation between comfort levels and the application of warmed blankets.

## Implications for Nursing Practice

Comfort is central to nursing and assists in the healing process and is a desirable holistic outcome of care. Nurses should provide a warm caring approach to prepare patients to relax in providing comfort. Warmed blankets are not routinely offered to patients in the psychiatric setting as in other hospital settings, and warmed blankets are not routinely offered to psychiatric patients in the emergency departments. Patient levels of comfort from warmed blanket interventions could be evaluated to lead to improving patient satisfaction, and cost-effectiveness which may affect standards of nursing care. Advanced nursing practice could implement future changes to nursing procedures, standard protocols, and policies within the psychiatric hospital setting for nurses to offer warmed blankets to patients experiencing anxiety or discomfort to assist in providing comfort and warmth for hospitalized psychiatric patients.

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