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# Patient Perceptions of Bedpan Usage and Comfort Levels

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Patient Perceptions of Bedpan Usage and Comfort Levels

By

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UNDERGRADUATE HONORS THESIS

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### Abstract

While it may be seemingly obvious, there is very little data on patient perceptions of bedpan use. In order to create a better bedpan, there needs to be evidence as to why it is necessary. The objective of this study is to explore patient experiences of bedpan use in order to define their perceptions of comfort levels. The literature shows that patients are physically and emotionally uncomfortable when using the bedpan, find the device unpleasant, and are not receiving the necessary levels of education and compassion from their care staff. A mixed methods study using a descriptive quantitative design was developed to further explore the patient experience of using a bedpan. A convenience sample of 50 participants in acute and long term care settings completed an interview tool developed by the researchers. Descriptive statistics were used to analyze frequencies and Chi square analysis was used to define statistically significant relationships. Patients identified major problems with physical, psychosocial, sociocultural, and environmental aspects of bedpan use, with frequent report of discomfort, embarrassment, improper positioning, and adverse device characteristics. Patients are experiencing unnecessary pain and are at risk for infection and constipation due to discomfort and embarrassment. Redesigning the bedpan will be integral to improving patient experiences.



## Patient Perceptions of Bedpan Usage and Comfort Levels

### Introduction

Going to the bathroom is not something that most people have to worry about. One stands up and walks to the bathroom whenever it is necessary. But what if that was not possible? What if it was necessary to depend on someone else for these needs, and when these needs were met, it was uncomfortable, it was messy, and it hurt? That would make a seemingly simple and natural process quite miserable. Unfortunately, these situations occur, and occur often. The bedpan helps bed-bound patients go to the bathroom, but at what cost?

The bedpan is as a double layer device with a hole in the middle. The purpose of the bedpan is to collect bodily waste, specifically urine and feces, in bed bound individuals or those unable to use an out of bed device such as a toilet or commode. However, how does a person feel about this method of going to the bathroom? Few nurse researchers have asked this question until very recently, and none in the United States (US). The purpose of this study is to analyze comfort levels related to bedpan use reported by persons in acute care and long term care settings. Questions addressed include: What is it like to be a patient who is dependent on a bedpan for elimination? Is the overall experience of using a bedpan a positive or negative one? What do patients who have used a bedpan suggest to improve the bedpan as a device for elimination and for staff who help them with bedpan use?

### Theoretical Framework

The theoretical framework for this study is Kolcaba's Comfort Theory. According to Kolcaba, Tilton, and Droin (2006), Kolcaba's Comfort Theory divides the human comfort needs into four domains. Physical needs encompass elements related to homeostasis, such as pain and

elimination. Psychospiritual needs include feelings such as anxiety, fear, embarrassment. Sociocultural needs have to do with education received and interactions with the health care provider. Environmental needs encompass odors, noises, room type (shared or private), temperature, etc. The significance of Kolcaba's comfort theory is explained in the following quote:

“Comfort Theory proposes that, when patients and their families are more comfortable, they engage more fully in health-seeking behaviors that include internal behaviors, external behaviors, or a peaceful death. When patients and families engage in health-seeking behaviors more fully, the institution benefits in such areas as reduced cost of care and length of stay, increased patient satisfaction, enhanced financial stability, more positive publicity, and so forth” (Kolcaba, Tilton, Drouin, 2006, p.539).

When the human comfort needs in the four main domains are met, healing happens quicker, needs are met, symptoms are managed, interactions are more meaningful and fulfilling, and the overall care and experience the patient has is improved. All aspects of bedpan use fit into the four domains of physical, psychospiritual, sociocultural, and environmental needs. Therefore, Kolcaba's Comfort Theory will provide the theoretical framework for this study.

#### Significance

The challenges to patients of using a bedpan are often overlooked, although for some patients bedpans are a vital aspect of their care. In a study recently completed in Switzerland, almost 20% of the patient population needed the bedpan at one time or another while in the hospital (Saxer, Gattinger, Dopler, Scheffel, & Werner, 2011). This is one fifth of hospital

patients needing a device long belonged by many to be uncomfortable and hard to use, yet there is little information on patient comfort levels and needs during bedpan use. Why has this aspect of patient care been overlooked for so long? The health care field has made extraordinary advances in assistive technology, yet the bedpan has changed little over the past 200 years (Appendix A). While the nursing profession is at the forefront in providing care and comfort to bed-bound patients who require assistance in toileting, there is limited scientific evidence worldwide that gives voice to individuals dependent on bedpan use. It can be assumed that the perceptions of bedpans are negative and that patients are uncomfortable while using the bedpan, but scientific proof must exist. This nursing study aims to reduce the research gap by exploring patient reflections on the experiences and challenges of everyday bedpan use. Study findings will document anecdotal evidence that bedpan use is uncomfortable and difficult for many patients and give nurses guidance regarding patient concerns and challenges. The information can be used to increase the safety and comfort of those persons in need of bedpan assistance. Furthermore, the data will define the needs of a better bedpan, and aid in bedpan redesign.

#### Review of Literature

A thorough literature review was completed to assess the information currently available regarding patient perceptions of bedpan use already exists. A search on the Cumulative Index of Nursing and Allied Health Literature was completed with combinations of the words “bedpan”, “perceptions”, “injury”, “anxiety”, “embarrassment”, “patient”, and “nurse”. It quickly became evident few studies had been published. Of these few studies identified that focused on patient perceptions, none were completed in the United States. Additionally, bedpan use was addressed in a number of studies in different disciplines. Multiple anecdotal accounts of bedpan use were

also included. Studies fell into one of three categories: negative outcomes of bedpan use, physical characteristics of the bedpan, and nursing care associated with bedpan care needs.

### Negative Outcomes

A number of negative outcomes were documented with pain as one of the most common. Saxer and colleagues (2011) found 18.2% of women were reliant on the bedpan for either urination or defecation for at least 24 hours and 10.1% of men were reliant on the bedpan for defecation for at least 24 hours. Gattinger, Werner, & Saxer (2013) published one of the first research studies that quantified patient experiences regarding bedpan use. They had 78 participants from a Swiss general hospital complete their survey. Pain was experienced by 66% of the participants, and was most often due to the position of the patient while using the bedpan. Combining the results of these two studies, the evidence suggests that 12% of all women and almost 7% of all men in acute care settings are experiencing pain unrelated to their procedure or condition, simply due to the bedpan.

Skin breakdown is another negative outcome that can result from the bedpan. An account of a lawsuit regarding bedsores caused by a bedpan was found in the Legal Eagle Eye nursing newsletter (2012). A patient recovering from hip surgery developed two pressure ulcers on his buttocks overnight due to being left on a bedpan. The patient was heavily medicated, interfering with his ability to move himself off of the bedpan or to ring for assistance. The continued pressure of the buttocks against the hard surface of the bedpan led to skin breakdown resulting in the need for two additional surgeries and extended recovery time.

Anxiety, shame, fear, and embarrassment were commonly reported negative outcomes. Gattinger and colleagues (2013) reported that 57% of their participants found using the bedpan

embarrassing and that they had a lack of privacy. Ninety-one percent of their participants also felt that they were dependent on other people. Finally, 72% of the participants expressed fear regarding missing the bedpan and soiling the bed during elimination. A similar study interviewed 306 patients immediately following their use of the bedpan to analyze their anxiety levels (Soo, Boey, & Chia, 1975). Over half of the participants expressed some level of anxiety and 66% of the patients felt shyness when using the bedpan in a shared hospital room. Cohen (2009) interviewed 10 patients prior to and after an orthopedic surgery, and found six main themes- embarrassment was one of them. "... I should imagine that I will be embarrassed... I know they are nurses and that but you know still got a bit of pride haven't you" (p. 80) and "I have got fears about bed pans given at night without curtains being pulled and losing privacy..." (p. 80) are a few of the accounts reported by patients during the study. All participants in this study said that needing help with elimination was a cause of stress.

Bedpan use may be a contributing factor in new onset constipation. Su and colleagues found that new onset constipation occurred often following a first time stroke, and sought to determine the reason for this phenomenon by following 154 new stroke patients. Age, gender, stroke type/severity, risk factors, medications, stroke complications, and lab results were all factors taken into consideration. It was deemed that an increased level of disability due to the stroke and bedpan use were the two major factors attributing to new onset constipation (Su et al., 2009).

The final negative outcome identified was bedpan cleanliness and potential for infection. A number of articles were found that explored if and when *Clostridium difficile* was found on bedpan surfaces after washing. The microspores were in fact present on the bedpans. In

facilities that reused their bedpans between 7.6 and 33% of the bedpans were still infected with *c.diff* after being cleaned with two machines specialized for bedpan decontamination with heat and chemicals (Bryce et al., 2011; Sundram et al., 2009).

### Physical Characteristics

There are a number of physical characteristics that were identified as problematic with the bedpan. Gattinger and colleagues (2013) found that the two most common negative characteristics of the bedpan were hardness and coldness. These were experienced by 81% and 67% of the participants, respectively. They also found that 42% of the participants thought the bedpan was not deep enough (Gattinger et al., 2013). Eighty-four percent of the participants in the study conducted by Soo and colleagues (2009) also found that the bedpan was “uncomfortable, cold, hard, and tended to slip during use”. In Cohen’s qualitative study (2009), one participant voices the opinion that “I do not think they are big enough... it squeezes up your bum...”. In an anecdotal article, Branson (1964), the author of “Bedpan Reconsidered” suggests that the bedpans be slightly warmed, as “the shock of a cold bedpan may cause a patient to tense and thus be unable to give a voided specimen”.

Another physical aspect of bedpan use that is important is the position of the bed. One quantitative study focused on posture while using the bedpan. Hagisawa, Kawase, Kanai, Tsuchiya, & Hayasaki (1988) studied how posture effects heart rate and oxygen consumption while using the bedpan and bedside commode. Ten healthy students volunteered for the study and developed a habit of having a bowel movement after breakfast. Once this pattern was established, the participants attempted to have bowel movements in the supine position, semi-recumbent position, semi-sitting position, and sitting position. The initial three positions were

using the bedpan with the head of the bed up 0, 30, and 60 degrees respectively, with the sitting position on the bedside commode. This study found that with each increase in incline there were more successful bowel movements than the previous position. There were significantly more/ longer periods of straining in the supine and semi-recumbent position than the other two. The greatest increase in heart rate occurred with the sitting position and the smallest increase in heart rate occurred with the semi-sitting (60 degree) position. It was concluded that the semi-sitting (60 degree) position was the most successful, as it had the second highest rate of successful elimination (88.5%) and was the least physically taxing position. Branson (1964) also suggests that the semi or full Fowler's position will aid in elimination. Seventy-eight percent of the participants in the Gattinger and colleagues (2013) reported being in uncomfortable positions while on the bedpan, with 48% of the participants reporting that they were "too horizontal". Few participants in this study found there to be problems with sitting too vertically, which confirms the findings of Hagsawa and colleagues that vertical positions are more successful.

#### Nurse Factors

It quickly became evident in the literature that nursing care is a large factor in the patient's perception of a positive or negative experience with the bedpan. Nancy Di Finizio (2002), who is a nurse, recounted her experience using the bedpan while in the hospital after suffering an AVM. She describes it as "scary and lonely" and did not feel she was getting proper care. She recalls asking for the bedpan in the middle of the night, and the nurse's response was "you just had it and didn't do anything" (p.20) and left the room without helping her. This account of the nurse's attitude and the burden di Finizio must have felt is an important aspect of

bedpan use. The nurse needs to understand the stress and embarrassment associated with the task of using a bedpan, and thus be compassionate and empathetic while helping the patient.

The findings of the Cohen article (2009) shed light on areas of concern regarding how the nurse interacts with the patient and how the nurse educates the patient. If the nurse's provide education, they can alleviate a lot of stress experienced by the patient. A few of the recommendations of this study were for the nurse to "specifically bring up the subject of using bed pans, and ask patients about any previous experiences they might have had relating to them" (p. 83) and that diagrams illustrating how the patient will get onto the bedpan may help alleviate some of the stress and anxiety related to bedpan use. Finally, "nurses must continue to be sensitive in their approach to giving patients bed pans" (p. 83). Education regarding all aspects of bedpan use can aid in relief of anxiety and fear.

The literature review highlighted aspects of bedpan use that needed to be included in the survey tool. The physical characteristics of the bedpan, feelings of pain, discomfort, embarrassment, and dependence by the patient, education by the nurse regarding the bedpan, the position of the bedpan and cleanliness were the over-arching themes.

#### Research Design

The study used a descriptive cross sectional design. The data were collected using a survey including quantitative and qualitative items developed by the researchers.

#### Tool Development

The tool was based on our question about patient experience with bedpan use as a basis for documenting the need for a better bedpan or bodily waste collective device. The survey was conducted to identify current problems with bedpan use identified by the patient and to assess



their perceptions of ways to improve the bedpan. The tool was divided into sections: demographics, patient perceptions of bedpan characteristics and use, nursing care associated with bedpan use, and suggestions for improvement. General demographic information included participants gender, age, type of unit, and if the patient was currently using a bedpan or had used a bedpan in the past. Patient perceptions focused on different aspects of bedpan use. Following the demographic questions and the initial question establishing past or present bedpan use, there were nine sections of the survey; education, fear and anxiety, assistance, positioning, embarrassment, discomfort, difficulty, characteristics of the device, and benefit. The nine main sections of the survey were developed from the literature review, Kolcaba's Comfort Theory, and expert opinion. Many of the main sections had a number of sub-questions that offered very specific information, such as the exact bodily areas where the participant experiences discomfort most frequently. The majority of these questions used a Likert-type scale (never, sometimes, most of the time/always), for responses. Content validity was determined by expert opinion. The tool was reviewed by previous patients who had used the bedpan and nurses who had worked with patients who had used bedpans.

At the end of the survey, there were three open ended questions, providing opportunities for participants to make comments about personal experiences not included in the tool and suggestions for ways to improve the bedpan. Any comments made by the participants about their experience with bedpan use were recorded and included as qualitative data.

### Study Sample

The study sample consisted of a non probability sample of patients, in four wards of a general hospital and one wing of a long term care facility who reported that they currently used a

bedpan or had used a bedpan in the past. The patients understood and spoke English and were not reported by their care providers to have cognitive or memory impairment. Participants were excluded if they were critically ill, were non English speaking, had no experience using a bedpan, or were under precautionary measures.

#### Data Collection

Once a list of eligible participants was established, the researcher entered each room at a convenient time and explained the study to the patient. This included the researcher's background, what the survey entailed, and the end purpose of the study. If the patient was currently using or had used a bedpan in the past and wished to participate in the study, verbal consent was obtained. The researcher then found a place to sit in the room facing the participant and asked each question from the survey verbally, filling in the answers on the paper copy. If patients did not wish to participate or expressed that they had no present or past experience with the bedpan, they were simply thanked for their time and were removed from the eligible participant list. All information was confidential and no patient identifiers were used. With these considerations, there was little to no risk for the participant.

#### Data Analysis

Data analysis was done through SPSS statistical software with frequency and Chi Square analysis. All data was coded and entered in a secure master database. The data collected at each location was coded differently and the data collected by each researcher was coded differently. The surveys were collected in two different groups, with a significant amount of time between them. Initial analysis revealed that there was no statistically significant differences (Chi Sq  $<0.05$ ) between the data collected at the hospital and the long-term care facility, no differences

between the data collected by each researcher, and there was no differences in the data provided by participants who were currently using the bedpan versus those recalling past experiences. Therefore, all data could be merged into our set, giving a total n of 50. Combining the results allowed for a larger sample population as well as a greater wealth of qualitative data from patients.

The data was changed to yield yes and no answers rather than Likert-type answers. In every category there was not sufficient data in the “sometimes” category to yield valid results using Chi Square analysis. Therefore, the “sometimes” responses were merged in with the “always” responses to have enough data in each section. All questions were also reworked to yield yes or no answers. For example the question “How often did you experience discomfort in your buttocks?” was converted to “Did you experience discomfort in your buttocks?”. These changes made the data set more user friendly and gave more understandable results without changing the meaning of the responses.

Simple analysis of frequencies was used most. This data yielded the most meaningful information in regards to the patient’s comfort experience with the bedpan. Cross-tabs/Chi Square analysis was also completed to identify statistically significant relationships between different aspects of patient experience. There were three main categories that had statistically significant relationships. The qualitative data were analyzed to add a more detailed perspective of patient comfort and experience using the bedpan. Qualitative comments were analyzed according to each domain identified by Kolcaba. For example, if the participant made a comment about the bedpan being too hard, the comment was added to the device characteristics section

## Results

A section of the survey tool focused on male experiences with “urinal devices” was excluded from the data analysis for this study. The urinal is an important tool for men to easily and safely urinate while they have certain physical restrictions. No studies to date have addressed male perceptions of urinal use. Therefore, it is an important aspect of the larger study, but does not add to this study, as it is solely analyzing patient experiences with bedpans. It must also be noted that there were no statistically significant differences between the dataset that came from the general hospital and the dataset that came from the long term care facility. Therefore, the datasets were merged into one to offer a larger population. The demographic information was the first thing to be analyzed and is reported in table 1.

**Table 1**

<b>Age n=44</b>	<b>Gender n=44</b>	<b>Unit type n=45</b>	<b>Time of use n=45</b>
mean: 69.9	male: 27.3%	medical surgical: 66.7%	current: 44%
minimum: 37	female: 72.7%	long term care: 28.9%	past: 56%
maximum: 99		ICU: 4%	

Following demographic analysis, the data was analyzed in groups according to Kolcaba’s Comfort Theory, with the results grouped into the four main domains of physical, psychospiritual, sociocultural, and environmental.

### Physical

The survey categories that fell into the physical domain were those that inquired about discomfort, difficulty, and benefit. Table two outlines the percentage of patients and residents who identified physical discomforts associated with bedpan use.

**Table 2**

<b>Physical</b>	<b>No</b>	<b>Yes</b>
Hip discomfort n=29	58.60%	41.40%
Back discomfort n=35	51.40%	48.60%
Buttocks discomfort n=39	17.90%	82.10%
Abdomen discomfort n=29	89.70%	10.30%
General body discomfort n=36	33.30%	66.70%
Difficulty urinating n=39	46.20%	53.80%
Difficulty defecating n=37	62.20%	37.80%
Difficulty moving n=28	35.70%	64.30%
Discomfort getting on n=37	27%	73%
Discomfort getting off n=33	27.30%	72.70%
Benefit n=34	11.80%	88.20%

The most common discomfort (82.1%) was in the buttocks. Almost three quarters of the participants reported difficulty getting on and off the bedpan (73% and 72.7% respectively). Two thirds (66.7%) experienced general body discomfort. Almost half of the participants (48.6%) reported experiencing discomfort in their back, and 41.4% experienced discomfort in their hips. Thus the majority of patients and residents experience high rates of discomfort unrelated to their illness. There were also high rates of difficulty with moving (64.3%), urinating (53.8%), and defecating (37.8%).

There were a number of statistically significant relationships between discomfort on the bedpan, difficulty urinating, and difficulty defecating and certain device characteristics. Table three shows the Chi Square scores when these aspects are compared.

**Table 3**

<b>Difficult to urinate</b>	<b>Chi Square</b>	<b>Difficult to defecate</b>	<b>Chi Square</b>	<b>Discomfort while on bedpan</b>	<b>Chi Square</b>
too cold	0.016	too hard	0.019	too messy	0.039
too shallow	0.028	too shallow	0.016	too shallow	0.009
too unstable	0.002	too unstable	0.001		
too high	0.001	too high	0.003		
too small	0.022	too low	0.019		
too messy	0.001	too small	0.001		
		too messy	0.006		

One participant simply stated “It hurts to move on the bedpan” (#6). However, 88.2% of participants reported that the bedpan *was* a benefit to them when they were unable to get out of bed to use the commode or bathroom. These results show that the bedpan device causes significant discomfort for those using it and that it is a difficult device to use in general, while concurrently being beneficial.

Psychosocial

Survey questions regarding embarrassment, concerns, fear, and anxiety fell into the psychosocial domain. The rates of embarrassment, fear, and anxiety for various reasons are reported in table four.

**Table 4**

<b>Psychosocial</b>	<b>No</b>	<b>Yes</b>
Embarrassment about spilling the bedpan n=44	36.40%	63.60%

<b>Psychosocial</b>	<b>No</b>	<b>Yes</b>
Embarrassment about odor/noises n=41	53.70%	46.30%
Embarrassment about being washed n=39	53.90%	46.10%
Embarrassment about other patients in the room n=32	59.40%	40.60%
Embarrassment about visitors in the room n=31	71%	29%
Embarrassment about patient care staff n=35	60%	40%
Fear of spilling the bedpan n=39	38.50%	61.50%
Fear of falling/slipping off the bedpan n=37	64.90%	35.10%
Anxiety about using the bedpan n=38	31.60%	68.40%

Participants had the highest rates of concerns and embarrassment regarding spilling the bedpan (63.6%), odors and noises (46.3%), and being washed (46.1%). Embarrassment included more than just bedpan use. For example, one participant stated “You ring [the call bell] and they [the care staff] don’t come right away and then you have an accident and feel even more embarrassed”. Sixty-one and a half percent of participants feared spilling the bedpan and 35.1% feared falling off or slipping from the bedpan. Finally, 68.4% of participants reported feeling anxious about having to use the bedpan. According to these results, using the bedpan causes significant patient embarrassment, fear, and anxiety in patients needed to go to the bathroom.

#### Sociocultural

The sociocultural domain encompassed the questions regarding needing assistance, education, and other emotions pertaining staff interaction. The rates of assistance with different actions, education provided, and emotions evoked by staff are reported in table five.

**Table 5**

<b>Sociocultural</b>	<b>No</b>	<b>Yes</b>
Assistance getting onto bedpan n=43	4.60%	95.40%
Assistance staying on the bedpan n=38	60.50%	39.50%
Assistance getting off the bedpan n=43	18.60%	81.40%
Assistance cleaning/washing after use n=41	19.50%	80.50%
Explanation of how to use the bedpan n=32	53.10%	46.90%
Feel at ease asking for/using the bedpan n=22	77.30%	22.70%
Feel like you're bothering someone asking for bedpan n=24	50%	50%
No assistance using bedpan 4.3%		
Minimal assistance using bedpan 23.9%		
Great deal of assistance using bedpan 71.7%		
		n=46

Almost all participants (95.4%) reported needing assistance getting on the bedpan, with 81.4% reporting needing assistance getting off the bedpan, and getting 80.5% needing assistance with cleaned/washed after using the bedpan. In regards to level of assistance needed, 71.7% of participants reported needing “a great deal of assistance” to use the bedpan. Two participants commented about the length of time waiting to get the bedpan. Forty-six and nine tenths percent of participants reported receiving no information or education on how to use the bedpan and 50% of participants felt as if they were “bothering” someone when asking for the bedpan. One participant stated “you feel like you’re *always* bothering someone” (#7). These results reveal that patients frequently need a high level of assistance when using the bedpan but are not receiving adequate education or emotional support.



Environmental

The questions regarding position and bedpan characteristics fall into the environmental domain. Table six reports the frequencies of certain physical characteristics of the bedpan and the positions the participants were in.

**Table 6**

<b>Environmental</b>	<b>No</b>	<b>Yes</b>
Bedpan too cold n=40	42.50%	57.50%
Bedpan too hard n=42	19.10%	80.90%
Bedpan too shallow n=37	37.80%	62.20%
Bedpan too unstable/uneven n=38	52.60%	47.40%
Bedpan too high n=32	71.90%	28.10%
Bedpan too low n=30	63.30%	36.70%
Bedpan too small n=35	48.60%	51.40%
Bedpan too large n=29	86.20%	13.80%
Bedpan too messy n=37	35.10%	64.90%
Flat position: 31.8% Semi-upright position: 56.8% Full-upright position: 11.4%	n=44	

The majority of participants reported being in the semi-upright position while using the bedpan (56.8%). A participant made this comment regarding positioning: “The weight is distributed better when you’re in a semi-upright position. If you’re straight up it drives the weight down into the bedpan and it’s more uncomfortable” (#3). The device characteristics that were reported most often were it being too hard (80.9%), too messy (64.9%), too shallow (62.2%), too cold (57.5%), too small (51.4%), and too unstable (47.4%). Some participant comments regarding the

characteristics were as follows; “It gets stuck on you and it cuts into you” (#3), “The shape is good but it needs to be deeper and softer” (#3), and “The padded bedpans are better and it needs to be flexible” (#3). As previously mentioned, many of these characteristics had statistically significant relationships with discomfort while on the bedpan, difficulty urinating, and difficulty defecating. These results reveal that patients are often in the incorrect position for optimal bedpan use and also find there to be many unpleasant characteristics.

### Discussion

The results found in this study regarding patient perceptions of bedpan use and comfort are alarming and consistent with other recently published studies. Participants reported high levels of discomfort in many body areas, difficulty performing the tasks the bedpan is meant to facilitate (urinating and defecating), feelings of embarrassment, anxiety, fear, and high assistance needs with relatively low education rates on how to use the bedpan most easily. All of these categories overlap and affect each other. If a patient feels the bedpan is uncomfortable, they may ask for it less frequently. If they ask for it less frequently they could have an accident in the bed. Having an accident in the bed can lead to anxiety and embarrassment. These feelings can lead to feelings of bothering the health care provider, and the cycle continues. Many of these adverse characteristics can lead to the patient holding their bladder and bowels, which can lead to increased risk of infection and constipation. However, almost 90% of the participants did report that the bedpan was a benefit to them when they could not get out of bed to use the bathroom or commode. One participant stated “It *is* more convenient to use the bedpan”. This device is thought of as a “necessary evil”- but that needs to change.

Changes need to occur with the bedpan and care associated with it in order to improve every one of Kolcaba's domains of human comfort. The physical characteristics of the bedpan need to change to decrease pain and discomfort. A number of participant suggestions for redesign were to include padding, use a flexible material, and to make it wider and deeper, just to name a few. Increased education and compassion provided by the health care provider can improve both the psychosocial and sociocultural domains. Patients should not feel like they are being "a bother" as this can lead to negative outcomes. Fear and anxiety can also be decreased with increased education such as diagrams on how to use the bedpan, when they will use the bedpan, how the will be cleaned after using the bedpan, etc. Environmental problems can be eliminated with device redesign, which will also decrease fear and anxiety.

#### Limitations

There were a number of limitations to this study. The primary limitation was the small sample size. The data would have been stronger if we had more participants. This way, there might have been more data points in the "sometimes" section of the Likert-scale, which would have prevented having to re-work the questions. Another limitation was the lack of demographic information. It would have been helpful to collect more demographic information from the participants- such as why they were hospitalized, their primary diagnosis, co-morbidities, type of bedpan use, etc. This would have given more insight into the participant experience as a whole. The final drawback was having to rework the interview tool. Having the questions in a yes or no format to begin with might have made the administration more straight forward for the participants.

### Conclusion

The bedpan experience needs to change. There is no reason for patients who are in the hospital to be subjected to additional pain and suffering with a natural bodily process that is, in fact, crucial to their recovery and discharge. In post-operative patients, having a first void and bowel movement within a specified timeframe is extremely important. By using an uncomfortable, embarrassing, difficult device we are not helping our patients with these processes. We need to adopt the attitude that the status quo is unacceptable and that we can improve the patient experiences of bedpan use- and this can be done with the SmartPan.

### Implications

The goal of “building a better bedpan” began before this study. An interdisciplinary nursing and engineering research team came up with the idea of the SmartPan. We knew that there were problems with the bedpan design, but there was no data at the time to prove it. Therefore, this study regarding patient perceptions of bedpan use and comfort arose. With these findings, the need for a better bedpan is justified. The SmartPan would be a device that rises from inside the bed and is controlled by the patient. This will increase patient physical comfort and decrease health care provider reliance, thus decreasing anxiety and embarrassment. The device will have the capabilities of being monitored remotely by the health care provider to ensure proper documentation and assessment. Finally, the SmartPan will have diagnostic capabilities right inside the bed, decreasing risk of specimen contamination and infection rates. In many cases, getting patients up and out of bed is best practice. However, for some patients this is not possible and may ultimately be detrimental for them. The bedpan experience is extremely negative, and the SmartPan is the future of bodily waste management.

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Appendix A

1770-1800 model



2015 model

