

## **Effects of Liberal Visitation on Anxiety, Satisfaction, and Length of Stay Among Intensive Care Unit Patients**

**Lito Pari-an Rama<sup>1</sup>, Rita C. Ramos<sup>2</sup>**

<sup>1</sup>Clinical Manager II, Acute Care for Elderly and Medical Oncology, Memorial Hermann Texas Medical Center, Houston, Texas, USA

<sup>1</sup>Faculty, University of the Philippines Open University, Los Baños, Laguna, Philippines

<sup>2</sup>Assistant Professor & University Registrar, University of the Philippines Open University, Los Baños, Laguna, Philippines

Corresponding Author: lito.rama@upou.edu.ph

### **Abstract**

Several organizations recommended liberalization of ICU visits; however, the majority of the ICUs maintained restrictive visitation causing further lower social support to critically ill patients. The objective of the study is to determine the effects of Patient-Centered Liberal Visitation in the patients' level of anxiety, satisfaction, and ICU length of stay. The study used a quasi-experimental, non-equivalent control group before-after design. It was conducted in an ICU in North America for a 5-month period using validated instruments. The study utilized consecutive sampling, 30 patients for the control and 30 for the intervention group. The control group had restricted visitation, wherein ICU visits were limited to specific hours per day. Patient-centered liberal visitation based on Levine's Conservation Principles was implemented on the intervention group where visitations in ICU were more flexible. The study was approved by the Ethical Review Board. Sixty participants were included in the study with no significant difference when control and intervention group were clustered according to age ( $t=0.591$ ,  $p=0.557$ ), gender ( $X^2=0.069$ ,  $p=0.793$ ), marital status ( $X^2=5.524$ ,  $p=0.137$ ) and ethnicity ( $X^2=1.024$ ,  $p=0.795$ ). A significant difference within the intervention group's pre-test and post-test Faces Anxiety Scale (FAS) Score ( $t=4.287$ ,  $p=0.000$ ) was noted. Similarly, the study found significant difference within the intervention group's pre-test and post-test overall 6-item State Anxiety Inventory (SAI) Score ( $t=4.774$ ,  $p=0.000$ ). Pre-test anxiety scores in the intervention group were higher compared to post-test anxiety

scores. Furthermore, a significant difference ( $t=3.831$ ,  $p=0.000$ ) was noted on patient satisfaction. The result showed higher patient satisfaction among the participants in the intervention group (4.73, SD 0.521) compared to the control group (3.97, SD 0.964). Lastly, when measuring the participants' length of stay, no significant difference ( $t=-0.397$ ,  $p=0.693$ ) was noted. Patient-centered liberal visitation in the ICU decreases the patients level of anxiety and improves patient satisfaction. However, liberal visitation does not have a significant effect on the patients' ICU length of stay.

*Keywords:* anxiety, liberal visitation, open visitation, intensive care unit, nursing, satisfaction, holistic care, critical illness

### **Introduction**

Anxiety is commonly reported among patients in the Intensive Care Unit or ICU (Baumgarten, & Poulsen 2015; Sharma, et al., 2014; Tate, et al., 2012; Pochard, 2011; Sukantarat, et al., 2007) and is usually associated with lower social support (Baumgarten, 2015; Fumagalli, et al., 2006) due to the restrictions in family visits. Consequently, anxiety interferes with patients' recovery (McKinley, et al., 2004; Hunter, et al., 2010; Brodsky-Israeli, 2011; Tate, et al., 2012), increases cardiac complications (Fumagalli, et al., 2006), prolongs length of stay (Rosa, et al., 2018; Sukantarat, et al., 2007) and may persist for years after ICU discharge (Castillo, et al., 2015; Sukantarat, et al., 2007). This led the American Association of Critical-Care Nurses (Usher & Hill, 2016) and the British Association of Critical-Care Nurses (Gibson, et al., 2012) to recommend liberalization of ICU visits. Ironically, the majority of ICUs in the Americas and Europe imposed restrictive family visitation policies causing further lower social support for critically ill patients (Chapman, et al., 2016; Liu, et al., 2013; Noordermeer, et al., 2013; Vandijck, et al., 2010). Nurses advocating for holistic approach in caring for patients in the ICU deemed it important to implement liberal visitation as an intervention to increase social support and consequently, alleviate anxiety and its associated complications among patients in the ICU (Castillo, et al., 2015; Pochard, 2011).

Most researches that explored the effects of liberal visitation to patients in the ICU focused on patient satisfaction (Roland, et al., 2001; Gonzalez, et al., 2004; Azzil & Bambi, 2009; Whitcomb, et al., 2010, Errasti-Ibarrondo & Tricas-Sauras, 2012) and stress (Gonzalez, et al., 2004). Only one published trial conducted by Fumagalli et al., (2006) relates anxiety to

liberal visitation. The said study on anxiety and social support cannot be generalized to other cultural groups since the sample of the published study were mostly Europeans. Globally, it is the only study conducted in the ICU that examined Levine's Conservation of Principles through Patient-Centered Liberal Visitation and the patients' level of anxiety.

Liberal visitation has been studied from the perspective of the family and the healthcare provider, but a very few studies have focused on the patients' perspective. In contrary, a Danish philosopher, Keld Thorgaard, stated that patients' perspective offers priceless resource when it comes to the opportunities and obstacles of a treatment that healthcare providers want to implement (Thorgaard, et al., 2012 as cited by Baumgarten & Poulsen, 2015). One of the reasons identified on the exclusion of ICU patients from studies are the patients' inability to communicate their preferences about visitations (McAdam & Puntillo, 2013). Present studies on liberal visitations and its effect to critically ill patients are very few (McAdam & Puntillo, 2013). Globally, most ICUs are maintaining restrictive visitation (Lee, et al., 2007; Hunter, et al., 2010; Vandijck, et al., 2010; Liu, et al., 2013; Noordermeer, et al., 2013; Khaleghparast, et al., 2014; da Silva Ramos, et al., 2014) due to the unfavorable perception of the nurses towards liberal visits (Azzil & Bambi, 2009; Biancofiore, et al., 2010; Cuiffo, et al., 2011; da Silva Ramos, et al., 2013; Athanasiou, et al., 2014) and limited resources (Lee, et al., 2007; da Silva Ramos, et al., 2014). Studies showed that nurses perceived that liberal visitations in the ICU increase patients' stress, increase nurses' workload and contribute to increase in infection rate. However, the nurses' perceptions contradict the current evidence. It is important to examine the effect of adequate social support to critically ill patients and its influence on patients' levels of anxiety in a diverse population to bridge the gap in the current body of knowledge.

The critical care environment has long been recognized as a highly stressful and "hostile" environment, and it differs from other hospital settings because of the complexity of patients and treatment modalities as well as social isolation that is frequently associated with it (Gibson, et al., 2012; Soh, et al., 2008; Wenham & Pittard, 2009; Ayllón Garrido, et al., 2014). Patients in the ICU usually experience pain, and they undergo sedation and mechanical ventilation. They are also exposed to noise and unfamiliar people and separated from their family which are often associated with the patients' psychological stress (Wenham & Pittard, 2009). Furthermore, critically ill patients are confronted with multiple physiologic problems making maintenance of hemodynamic stability the priority of medical and nursing

care while the patients' psychosocial needs are often placed on the backdrop. However, in the provision of holistic care to patients, psychosocial needs, like social support, should not be neglected. In addition, the link between low social support and increase in cardiac complications (Fumagalli, et al., 2006) and prolonged ICU stay proved that both patient needs are inseparable.

Hence, the objectives of this study were to determine the:

1. difference in the level of anxiety between the control group and the intervention group after the liberal visitation;
2. levels of anxiety before and after liberal visitation among ICU patients in the:
  - 1.1. intervention group;
  - 1.2. control group;
3. outcomes among ICU patients in the intervention group and control group after liberal visitation in terms of:
  - 3.1 satisfaction level;
  - 3.2 ICU length of stay;
4. difference in the level of satisfaction among ICU patients between the control and intervention group after the liberal visitation; and
5. difference in the ICU length of stay among ICU patients between the control and intervention group after the liberal visitation.

## Methods

### Research Design

A quasi-experimental research design was utilized for this study, specifically a non-equivalent control group before-after design. In this study, the researcher studied the effects of the treatment (liberal visitation) and the main outcome was the patients' level of anxiety, satisfaction and length of ICU stay. The intervention group received the treatment (liberal visitation) while the control group did not (restricted visitation).

Table 1

#### *Design Map of the study*

	Pre test	Treatment	Post test
Intervention group	O1	T	O2
Control group	O1		O2

The study was conducted within a time frame of 5 months. Consecutive sampling was utilized to recruit respondents for the study. Data was gathered from the patients' medical records and the anxiety level was assessed using the Faces Anxiety Scale (FAS) and the 6-item version of the Spielberger State Anxiety Scale.

### Sampling Design

The sampling design utilized in the study was consecutive sampling. The target population of this study were adult patients in the ICU. Any patient admitted in the research setting who met the inclusion criteria and consented was included in the study. A total sample size of 60 was obtained - 30 respondents for the control group and another 30 respondents for the intervention group. The study was conducted in a span of 5 months - 2 months for the intervention group and 2 months for the control group with 1 month washout period between observation of the 2 groups.

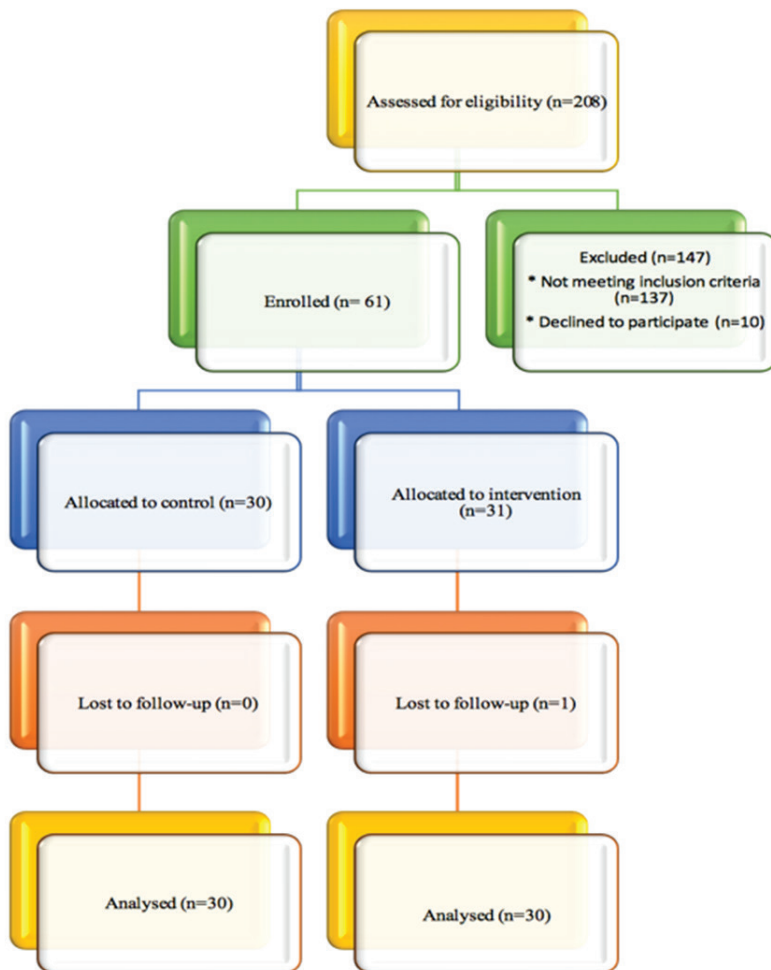


Figure 1. Enrollments and exclusions during the study period

### Sampling Scheme

The inclusion criteria in recruiting subjects were: (1) 18 years or older; (2) fully conscious and oriented; (3) with normal or corrected vision; (4) able to communicate in English; and (5) able to consent within 24 hours. The exclusion criteria were: (1) unresponsive and/or disoriented; (2) unable to complete the FAS; (3) with expected ICU stay <24 hours; (4) readmitted after enrollment in the same study; (5) unwilling or unable to provide informed consent; (6) with documented mental incompetence; and (7) unable to communicate in English.

## Research Setting

This study was conducted in an Intensive Care Unit of a 154-bed community hospital in Lake Jackson, Texas. The ICU had 8 beds, catering general medical-surgical patients. The usual nurse/patient ratio in the ICU was 1:2. It had a substantial volume of patients. Thus, the researcher had a substantial accessible population for the study.

## Research Instruments

The study utilized four tools in the collection of data to answer the research questions. The instruments used were the following:

1. Patient Profile Characteristic Tool – In order to obtain a description of the sample, the physiologic response and the patient satisfaction, a self-made Patient Profile Characteristic Tool was utilized.

2. Faces Anxiety Scale (FAS) – This tool was used to measure the patients' level of anxiety. Studies showed that more patients could respond to the single-item FAS and that it offered less burden to ICU patients compared to other anxiety scales (McKinley, et al., 2003). In previous studies, it was concluded that the FAS elicited the highest number of responses among ICU patients compared to other brief measures (McKinley & Elliot, 2008). The researcher kept the instructions in the administration of the FAS in its original form (English) since the accessible population are English speakers.

3. Shortened State Anxiety Scale (SSAS)- To supplement the FAS, the researcher also utilized the shortened version of the Spielberger State-Trait Anxiety Inventory (STAI) which was called the Shortened State Anxiety Scale developed by Chlan (2003). The Shortened State Anxiety Scale consisted of 6 items, each of which were rated from 1 (not at all) to 4 (very much). Its psychometric rigor has been demonstrated in various studies and it was one of the most frequently used measures for anxiety in many cultures (Perpina-Galvan, 2009; Fioravanti-Bastos, 2011).

4. Acute Physiology and Chronic Health Evaluation II (APACHE II) – This tool was used to measure the severity of illness among the subjects. The APACHE II was a measure of severity of illness and an estimate of mortality risk. The highest possible score was 71 in a scale that included 12 physiological measures, presence of long-term illness and patient age (Brodsky-Israeli & De Keyser Ganz, 2011; Knaus, et al., 1985). The score was obtained after encoding the measures on an online health application.

## Data Collection

The study was conducted in the research setting discussed previously. All critically ill patients admitted in the ICU were considered potential subjects. When the patient met the inclusion criteria, information regarding the study was given. The researcher then asked the patient questions to examine he or she cognitive orientation. If the patient was oriented and agreed to participate in the study, he or she would be asked to sign an informed consent form. Once the patient gave an informed consent. Baseline measurements were taken including the Acute Physiologic and Chronic Health Evaluation II (APACHE II) score, and Parts I & II of the Patient Profile Characteristics. The patient's baseline anxiety was measured using the FAS and SSAS. Subjects were first asked to rate the level of their anxiety in a single scale known as FAS then followed by administration of the 6-item questionnaire called SSAS. This lessened the presentation bias. After assessing the baseline level of anxiety, the nurse informed the patient of their visitation program using either of the two protocols. Visitation protocols for the control and intervention group were strictly implemented. Prior to discharge, the patient's level of anxiety was re-evaluated using FAS and SSAS. During this stage, Part III of the Patient Profile Characteristics was completed. Those who could no longer answer the FAS were considered as drop-outs.



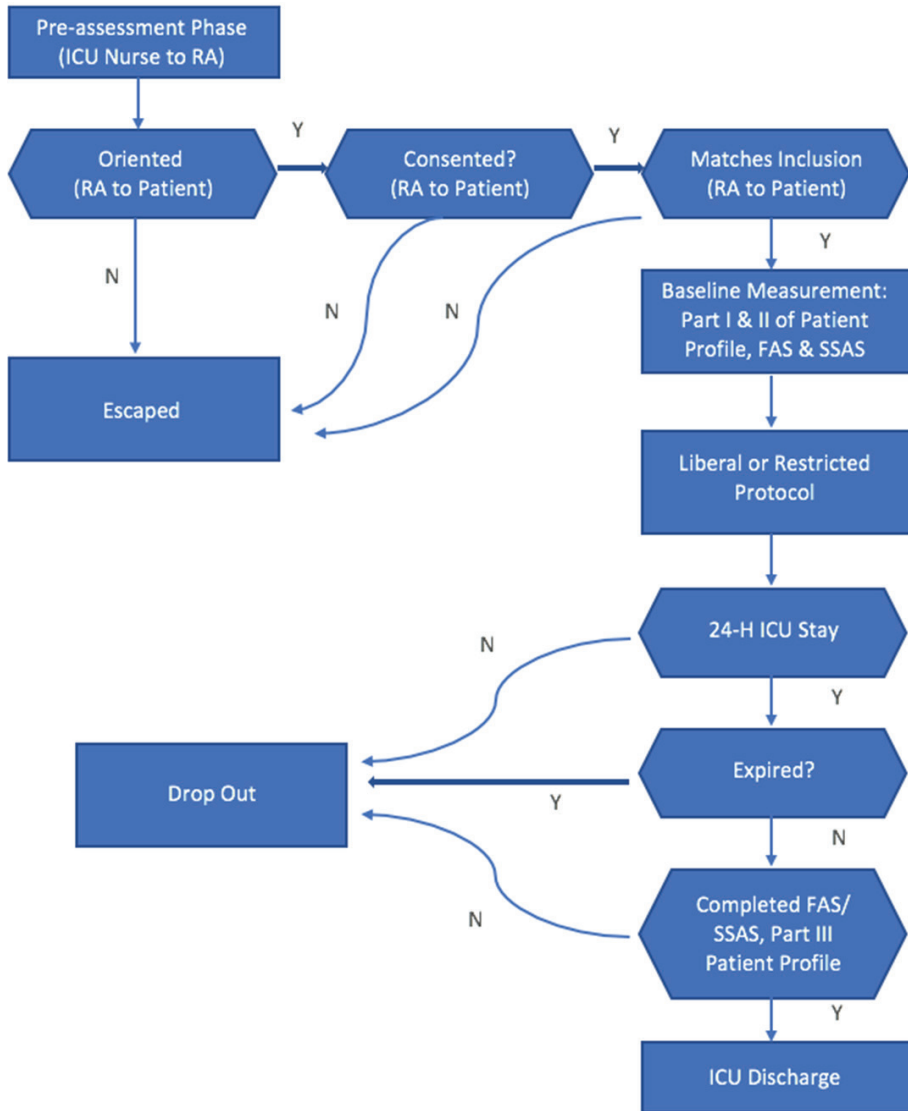


Figure 2. Data gathering during the study period

### Ethical Considerations

The study was approved by the Ethical Review Board and was done in compliance with the Declaration of Helsinki.

## Data Analysis

The statistical software utilized for the data analysis was the SPSS Statistics. Descriptive statistics was used to describe the sample and variables of the study. The variables were described using means, standard deviation, and percentage. The difference between nominal level data (sex, race, and marital status) were determined using Chi Square. Paired T-test was utilized for the level of anxiety before and after the intervention while Independent T-test was used to measure the significant difference in the anxiety level between the control and intervention group.

## Results

Sixty participants were included in the study with no significant difference when control and intervention group were clustered according to age ( $t=0.591$ ,  $p=0.557$ ), gender ( $X^2= 0.069$ ,  $p=0.793$ ), marital status ( $X^2= 5.524$ ,  $p=0.137$ ), and ethnicity ( $X^2= 1.024$ ,  $p=0.795$ ).

When it comes to severity of illness, the control group had a lower mean APACHE II Score (12.13, SD 4.547) compared to the intervention group (14.87, SD 5.355). The results showed that there was a significant difference when the control group and the intervention group were clustered according to APACHE II Score ( $t=2.131$ ,  $p=0.037$ ) as shown in Table 3.

Although more than a quarter of the participants in the intervention group had medical respiratory diagnosis, the result showed no significant difference between control group and intervention group based on their diagnosis ( $X^2=6.428$ ,  $p=0.491$ ).

Table 2

*Sociodemographic characteristics of participants from the control group and intervention group (n=60)*

<b>Factors</b>	<b>Control (n=30) [n(%) / M(SD)]</b>	<b>Intervention (n=30) [n(%) / M(SD)]</b>	<b>x<sup>2</sup> or t</b>	<b>P value</b>
<b>Age</b>	61 (SD 19.374)	64 (SD 19.5)	0.591	0.557
<b>Sex</b>				
Female	13 (43)	12 (40)	0.069	0.793
Male	17 (57)	18 (60)		
<b>Marital Status</b>				
Divorced	0 (0)	3 (10)	5.524	0.137
Married	21 (70)	20 (66.7)		
Single	3 (10)	5 (16.7)		
Widowed	6 (20)	2 (6.6)		
<b>Ethnicity</b>				
Asian	0 (0)	1 (3.3)	1.024	0.795
Black	2 (6.7)	2 (6.7)		
Hispanic	7 (23.3)	7 (23.3)		
White	21 (70)	20 (66.7)		

Table 3

*Clinical characteristics of participants from the control group and intervention group (n=60)*

<b>Factors</b>	<b>Control (n=30) [n(%) / M(SD)]</b>	<b>Intervention (n=30) [n(%) / M(SD)]</b>	<b>x<sup>2</sup> or t</b>	<b>P value</b>
<b>APACHE II Score</b>	12.13 (SD 4.547)	14.87 (SD 5.355)	2.131	0.037
<b>Diagnosis</b>				
Surgical- Cardiac	1 (3.3)	1 (3.3)	6.428	0.491
Surgical- others	3 (10)	2 (6.7)		
Medical- Cardiac	5 (16.7)	5 (16.7)		
Medical- Neuro	2 (6.7)	0 (0)		
Medical- Respiratory	4 (13.3)	11 (36.7)		
Medical- Renal	4 (13.3)	3 (10)		
Medical- GI	4 (13.3)	4 (13.3)		
Medical- Others	7 (23.3)	4 (13.3)		

Table 4

*Comparison of the intervention group's pre-test and post-test Faces Anxiety Scale and Shortened State Anxiety Scale*

Scale	Pre-Test Mean (SD)	Post-test Mean (SD)	Paired t-Test	P value
<b>Faces Anxiety Scale</b> (Intervention)	2.77 (1.406)	1.70 (0.702)	4.287	0.000
<b>Faces Anxiety Scale</b> (Control)	2.07 (1.081)	1.87 (0.973)	1.533	0.136
<b>Shortened State Anxiety Scale</b> (Intervention)	13.60 (4.538)	9.57 (2.501)	4.774	0.000
<b>Shortened State Anxiety Scale</b> (Control)	10.17 (4.728)	9.27 (4.425)	1.175	0.250

A significant difference between the intervention group's pre-test and post-test Faces Anxiety Scale (FAS) Score ( $t=4.287$ ,  $p=0.000$ ) was noted. Similarly, the study found significant difference between the intervention group's pre-test and post-test overall 6-item State Anxiety Inventory (SAI) Score ( $t=4.774$ ,  $p=0.000$ ). The significant decrease in the level of anxiety was not present among patients with restrictive ICU visitations.

When measuring the level of satisfaction as an outcome of patient-centered liberal visitation, the results revealed a higher patient satisfaction among the participants from the intervention group (4.73, SD 0.521) compared to the control group (3.97, SD 0.964). The data analysis showed a significant difference on the level of patient satisfaction between the control and intervention group ( $t=3.831$ ,  $p=0.000$ ). When patient-centered liberal visitations were implemented, a significant increase in the patients' level of satisfaction were noted in the study.

Table 5

*Post-test comparison of participants' level of satisfaction (n=60)*

Scale	Control Mean (SD)	Intervention Mean (SD)	Independent t-test	P value
<b>Satisfaction Level</b>	3.97 (0.964)	4.73 (0.521)	3.831	0.000

Lastly, when measuring the participants' length of stay, no significant difference ( $t=-0.397$ ,  $p=0.693$ ) was noted.

Table 6

*Post-test comparison of participants' ICU length of stay (n=60)*

Scale	Control Mean (SD)	Intervention Mean (SD)	Independent t-test	P value
Length of Stay	2.90 (1.296)	2.77 (1.305)	-0.397	0.693

## Discussion

### Liberal Visitation and Anxiety

One of the major findings of this quasi-experimental research is the decrease in the level of anxiety among ICU patients when liberal visitation was implemented. The data showed a higher level of anxiety upon ICU admission, and a significant decrease in the level of anxiety was found when patient-centered liberal visitation was implemented. These findings supported the conclusion of an earlier study that suggests that an increase in the number and length of family visitation resulted in the reduction in the patients' level of anxiety (Fumagalli, et al., 2006). The result was also in agreement with a previous study done by Deja, et al., (2006) suggesting that social support might favorably affect the patients' mental health and long-term outcome. Furthermore, the result of the study also supported the findings of another study that identified the need to further examine the role of social support in reducing the level of patient anxiety in the ICU (Tate, et al., 2012). It was noted by Tate that the absence of family members in the ICU was associated with feeling of fear. Fear, panic, and frustration were words used by patients to describe their experience associated with anxiety. Finally, the result was also in agreement with a study in Nepal which noted that social support decreases the risk of anxiety (Kohrt & Worthman, 2009).

### Liberal Visitation and Patient Satisfaction

When patient-centered liberal visitations were implemented, a significant increase in the patients' level of satisfaction was noted in the study. The results of the study were consistent with several findings which showed higher patient satisfaction to care when ICU visitations are liberalized (Errasti-Ibarrondo & Tricas-Sauras, 2012; Whitcomb, et al., 2010; Azzil & Bambi, 2009; Gonzalez, et al., 2004; Roland, et al., 2001).

One component of this study was patient control and active participation. Patients were involved in selecting the number and frequency of visitors that they wanted and in electing their preferred rest periods when no visitors would be allowed. Involvement in their own care made ICU patients feel more in control, more human and encouraged them to fight for recovery (Baumgarten & Poulsen, 2015). In a recently published article on Consonance Theory (Arde, 2017), patients were recognized to play an active role in their care. The theory suggested that when patients were given decisional control on their care, there would be an increase in the patient's level of satisfaction thereby producing better outcomes. The findings of the present study supported the proposed Consonance Theory.

It was noted from previous study that higher anxiety level was associated with greater degree of dissatisfaction (Herrera-Espiñeira, et al., 2009). The participants from the intervention group of this study had a significant decrease in their level of anxiety. The marked decrease in the participants' level of anxiety in the intervention group could help explain the higher level of satisfaction among participants. Thus, one can conclude that with a decrease in the patients' level of anxiety, greater patient control and increased social support would lead to an increase in patients' level of satisfaction.

### **Liberal Visitation and ICU Length of Stay**

Lastly, when measuring the participants' length of stay, no significant difference ( $t=-0.397$ ,  $p=0.693$ ) was noted. It could be concluded that patient-controlled liberal visitation did not significantly affect the ICU patients' length of stay.

It was proposed that liberal visitations may shorten the length of ICU stay (Rosa, et al., 2018). However, in a study by Gruenberg (2006), it was recognized that length of ICU stay was influenced by multifactorial factors including institutional, medical, social, and psychological. With the multiple factors affecting the ICU length of stay, one may conclude that it could not be an accurate measure of improved physiologic and psychosocial well-being.

## Strengths and Limitations

One could conclude that the sociodemographic characteristics between the control and intervention group were homogenous. The sample size was comparable, if not bigger, to other similar studies (Tate, et al., 2012; Gustad, et al., 2005; McKinley, et al., 2003). This study had a bigger sample size compared to a study that looked into anxiety among mechanically ventilated patients which involved 30 participants (Tate, et al., 2012). The study also had a larger sample size compared to two Australian studies that used the Faces Anxiety Scale (Gustad, et al., 2005; McKinley, et al., 2003).

However, the study had several limitations. The robustness of the findings on the ICU patients' levels of anxiety is limited due to the small sample size obtained for the study. In addition, the study was a single center study with less diverse participants. One may conclude that the results of the study could not be generalized to other geographic and sociocultural context. One study, however, which involved four countries in four continents concluded that culture itself did not account variations in anxiety (De Jong, et al., 2004). The inclusion criteria also caused bias - delirious and unresponsive patients were not included in the study. Thus, patients who were more ill were excluded from the study. Similar limitations were noted in a study conducted in Israel (Brodsky-Israeli & De Keyser Ganz, 2011). Similar to previous research (Rosa, et al., 2018; Fumagalli, et al., 2006), the study design made it impossible to keep the data collectors masked to study periods.

## Conclusion

Despite some limitations, the study concluded that liberal visitation offers many benefits to the ICU patients. The findings suggest that liberalizing the visiting hours and giving control to patients on the ICU visitation may increase the patients' satisfaction and decrease the level of anxiety.

## References

- Athanasidou, A., Papathanassoglou, E.D.E., Patiraki, E., McCarthy, M.S., Giannakopoulou, M. (2014). Family visitation in Greek intensive care units: Nurses' perspective. *American Journal of Critical Care*, 23(4), 326-333. <https://doi.org/10.4037/ajcc2014986>
- Arde, B. O. (2017). Consonance theory: A proposed theory of patient satisfaction. *Philippine Journal of Nursing*, 87(2), 74-79.
- Azzil, R., Bambi, S., (2009). Open intensive care units: A feasible option? The opinions of patients, relatives and health care workers. *Assistenza Infermieristica e Ricerca* 2009, 28(2), 89-95.
- Ayllón Garrido, N., Montero Rus, P., Acebes Fernández, M. I., & Sánchez Zugazua, J. (2014). Open door intensive care unit: Perspective of the professionals. *Enfermería Intensiva*, 25(2), 72-77. <https://doi.org/10.1016/j.enfi.2013.11.007>
- Baumgarten, M. & Poulsen, I. (2015). Patients' experiences of being mechanically ventilated in an ICU: A qualitative metasynthesis. *Scandinavian Journal of Caring Sciences*, 29; 205-214. <https://doi.org/10.1111/scs.12177>
- Biancofiore, G., Bindi, L.M., Menichin, S., Baldini, S. (2010). Open intensive care units: A regional survey about the beliefs and attitudes of healthcare professionals. *Minerva Anestesiologica*, 76(2), 93-99.
- Brodsky-Israeli, M. & De Keyser Ganz, F. (2011). Risk factors associated with transfer anxiety among patients transferring from the intensive care unit to the ward. *Journal of Advance Nursing*, 67(3), 510-518. <https://doi.org/10.1111/j.1365-2648.2010.05497.x>
- Castillo, M., Cooke, M., MacFarlane, B., & Aitken, L. (2015). Anxiety and depression in survivors of critical illness: What role does anxiety in ICU play? *Australian Critical Care*, 28, 38. <https://doi.org/10.1016/j.aucc.2014.10.004>
- Chapman, D.K., Collingridge, D.S., Mitchell, L.A., Wright, E.S., Hopkins, R.O., Butler, J.M., Brown, S.M. (2016). Satisfaction with elimination of all visitation restriction in a mixed-profile intensive care unit. *American Journal of Critical Care*, 25(1), 46-50. <https://doi.org/10.4037/ajcc2016789>
- Chlan, L (2003). Description of anxiety levels by individual differences and clinical factors in patients receiving mechanical ventilatory support. *Heart Lung*, 32(4): 275-82. [https://doi.org/10.1016/s0147-9563\(03\)00096-7](https://doi.org/10.1016/s0147-9563(03)00096-7)



- Ciuffo, D., Hader, R., Holly, C. (2011). A comprehensive systematic review of visitation models in adult critical care units within the context of patient- and family-centered care. *International Journal of Evidence-Based Healthcare*, 9(4), 362-387. <https://doi.org/10.1111/j.1744-1609.2011.00229.x>
- Da Silva Ramos, F.J., Fumis, R.R., Azevedo, L.C., Schettino, G. (2013). Perceptions of an open visitation policy by intensive care unit workers. *Annals of Intensive Care*, 17, 31-34. <https://doi.org/10.1186/2110-5820-3-34>
- Da Silva Ramos, F.J., Fumis, R.R.L., De Azevedo, L.C.P., Schettino, G. (2014). Intensive care unit visitation policies in Brazil: A multicenter survey. *Revista Brasileira de Terapia Intensiva*, 26(4), 339-346. <https://doi.org/10.5935/0103-507X.20140052>
- Deja, M., Denke, C., Weber-Carstens, S., Schröder, J., Pille, C. E., Hokema, F., Falke, K. J., & Kaisers, U. (2006). Social support during intensive care unit stay might improve mental impairment and consequently health-related quality of life in survivors of severe acute respiratory distress syndrome. *Critical care* (London, England), 10(5), R147. <https://doi.org/10.1186/cc5070>
- De Jong, M.J., Chung, M.L., Roser, L.P., Jensen, L.A., Kelso, L.A. et al. A five-country comparison of anxiety early after acute myocardial infarction. *European Journal of Cardiovascular Nursing*, 3(2), 129-134. <https://doi.org/10.1016/j.ejcnurse.2004.01.004>
- Errasti-Ibarrondo, B., Tricas-Sauras, S. (2012). Benefits of flexible visitation in the intensive care units for the family of critical patients. *Enfermeria Intensiva*, 23(4),179-188. <https://doi.org/10.1016/j.enfi.2012.08.001>
- Fumagalli, S., Boncinelli, L., Lo Nostro, A., Valoti, P., Baldereschi, G., Di Bari, M., Ungar, A., Baldasseroni, S., Geppetti, P., Masotti, G., Pini, R., & Marchionni, N. (2006). Reduced cardiocirculatory complications with unrestrictive visiting policy in an intensive care unit: results from a pilot, randomized trial. *Circulation*, 113(7), 946–952. <https://doi.org/10.1161/CIRCULATIONAHA.105.572537>
- Gibson, V., Plowright, C., Collins, T., Dawson, D. , Evans, S. , Gibb, P. , Lynch, F. , Mitchell, K. , Page, P. and Sturmey, G. (2012). Position statement on visiting in adult critical care unit in the UK. *Nursing in Critical Care*, 17: 213-218. <https://doi.org/10.1111/j.1478-5153.2012.00513.x>

- Gonzalez, C.E., Carroll, D.L., Elliott, J.S., Fitzgerald, P.A., Vallent, H.J. (2004). Visiting preferences of patients in the intensive care unit and in a complex care medical unit. *American Journal of Critical Care*, 13(3), 194-198.
- Gruenberg, D. A.; Shelton, W.; Rose, S. L.; Rutter, A. E.; Socaris, S.; McGee, G. (2006). Factors influencing length of stay in the intensive care unit. *American Journal of Critical Care*, 15(5):502-509
- Gustad, L.T., Chaboyer, W., & Wallis, M. (2005). Performance of the faces anxiety scale in patients transferred from the ICU. *Intensive and Critical Care Nursing*, 21, 355-360. <https://doi.org/10.1016/j.iccn.2005.06.006>
- Herrera-Espiñeira, C., Aguila, M., Castillo, M.R. (2009). Relationship between anxiety level of patients and their satisfaction with different aspects of healthcare. *Health Policy*, 89 (1), 37-45. <https://doi.org/10.1016/j.healthpol.2008.04.012>
- Hunter, J.D., Goddard, C., Rothwell, M., Ketharaju, S., Cooper, H. (2010). A survey of intensive care unit visiting policies in the United Kingdom. *Anaesthesia*, 65(11), 1101-1105. <https://doi.org/10.1111/j.1365-2044.2010.06506.x>
- Knaus, W. A., Draper, E. A., Wagner, D. P., & Zimmerman, J. E. (1985). APACHE II: a severity of disease classification system. *Critical care medicine*, 13(10), 818–829.
- Khaleghparast, S., Joolaei, S., Ghanbari, B., Maleki, M., Peyrovi, H., & Bahrani, N. (2015). A Review of Visiting Policies in Intensive Care Units. *Global journal of health science*, 8(6), 267–276. <https://doi.org/10.5539/gjhs.v8n6p267>
- Kohrt, B.A., & Worthman, C.M. (2009). Gender and anxiety in Nepal: the role of social support, stressful life events, and structural violence. *CNS Neuroscience & Therapeutics*, 15(3), 237-248. <https://doi.org/10.1111/j.1755-5949.2009.00096.x>
- Soh, K. L., Soh, K. G., Ahmad, Z., Abdul Raman, R., & Japar, S. (2008). Perception of intensive care unit stressors in Malaysian Federal Territory hospitals. *Contemporary nurse*, 31(1), 86–93. <https://doi.org/10.5172/conu.673.31.1.86>
- Lee, M.D., Friedenber, A.S., Mukpo, D.H., Conray, K., Palmisciano, A., Levy, M.M. (2007). Visiting hours policies in New England intensive care units: Strategies for improvement. *Critical Care Medicine*, 35(2), 497-501. <https://doi.org/10.1097/01.CCM.0000254338.87182.AC>

- Liu, V., Read, J.L., Scruth, E. & Cheng, E. (2013). Visitation policies and practices in US ICUs. *Critical Care*, 17, R71. <https://doi.org/10.1186/cc12677>
- McAdam, J.L., Arai, S. & Puntillo, K.A. (2008). Unrecognized contributions of families in the intensive care unit. *Intensive Care Medicine*, 34(6), 1097-1101. <https://doi.org/10.1007/s00134-008-1066-z>
- McAdam, J.L. & Puntillo, K.A. (2013). Open visitation policies and practices in US ICUs: Can we ever get there? *Critical Care*, 17, 171. <https://doi.org/10.1186/cc12763>
- McKinley, S., Coote, K., Stein-Parbury, J. (2003). Development and testing of a faces scale for the assessment of anxiety in critically ill patients. *Journal of Advance Nursing*, 41 (1), 73-79. <https://doi.org/10.1046/j.1365-2648.2003.02508.x>
- McKinley, S. & Elliott, R.M. (2008). Implications for Australian practice of North American guidelines for the support of the family in patient-centred intensive care. *Collegian*, 15(1), 11-17. <https://doi.org/10.1016/j.colegn.2007.11.001>
- McKinley, S., Stein-Parbury, J., Chehelabi, A., Lovas, J. (2004). Assessment of anxiety in intensive care patients by using the faces anxiety scale. *American Journal of Critical Care*, 13, 146-152.
- Noordermeer, K.; Rijpstra, T. A.; Newhall, D.; Pelle, A. J. M.; van der Meer, N. J. M. (2013). Visiting policies in the adult intensive care units in the Netherlands: Survey among ICU directors, *International Scholarly Research Notices*. <https://doi.org/10.5402/2013/137045>
- Pochard, F. (2011). Psychiatric issues during and after intensive care (ICU) stays. *Bulletin De L'academie Nationale De Medecine*, 195(2), 377-385.
- Roland, P., Russell, J., Richards, K.C., Sullivan, S.C. (2001). Visitation in critical care: Processes and outcomes of a performance improvement initiative. *Journal of Nursing Care Quality*, 15(2), 18-26. <https://doi.org/10.1097/00001786-200115020-00004>
- Rosa, R. G., Falavigna, M., Robinson, C. C., da Silva, D. B., Kochhann, R., de Moura, R. M., Santos, M. M. S., Sganzerla, D., Giordani, N. E., Eugênio, C., Ribeiro, T., Cavalcanti, A. B., Bozza, F., Azevedo, L. C. P., Machado, F. R., Salluh, J. I. F., Pellegrini, J. A. S., Moraes, R. B., Hochegger, T., Amaral, A., ICU Visits Study Group Investigators and the BRICNet. (2018). Study protocol to assess the effectiveness and safety of a flexible

- family visitation model for delirium prevention in adult intensive care units: A cluster-randomised, crossover trial (The ICU Visits Study). *BMJ open*, 8(4), e021193. <https://doi.org/10.1136/bmjopen-2017-021193>
- Sharma B. G., Maben EVS, & Ganaraja B. (2014). Psychological evaluation of patients in critical care/intensive care unit and patients admitted in wards. *Journal of Clinical and Diagnostic Research*, 8(12),1-3. <https://doi.org/10.7860/JCDR/2014/10293.5297>
- Sukantarat, K., Greer, S., Brett, S., & Williamson, R. (2007). Physical and psychological sequelae of critical illness. *British Journal of Health Psychology*, 12(1), 65-74. <https://doi.org/10.1348/135910706X94096>
- Sukantarat, K., Williamson, R.C.N., & Brett, S.J. (2007). Psychological assessment of ICU survivors: A comparison between the Hospital Anxiety and Depression scale and the Depression, Anxiety and Stress scale. *Anaesthesia*, 62(3), 239-243. <https://doi.org/10.1111/j.1365-2044.2006.04948.x>
- Tate, J.A., Dabbs, A.D., Hoffman, L., Milbrandt, E. & Happ, M.B. (2012). Anxiety and agitation in mechanically ventilated patients. *Qualitative Health Research*, 22(2), 157–173. <https://doi.org/10.1177/1049732311421616>
- Usher, B & Hill, K. (2016). AACN Practice Alert: Family visitation in the adult ICU. *Critical Care Nurse*, 36(1): e15-e19.
- Vandijck, D. M., Labeau, S. O., Geerinckx, C. E., De Puydt, E., Bolders, A. C., Claes, B., Blot, S. I., & Executive Board of the Flemish Society for Critical Care Nurses, Ghent and Edegem, Belgium (2010). An evaluation of family-centered care services and organization of visiting policies in Belgian intensive care units: A multicenter survey. *Heart & Lung: The Journal of Critical Care*, 39(2), 137–146. <https://doi.org/10.1016/j.hrtlng.2009.06.001>
- Wenham, T., & Pittard, A. (2009) Intensive care unit environment. *Continuing Education in Anaesthesia Critical Care & Pain*, 9(6): 178–183. <https://doi.org/10.1093/bjaceaccp/mkp036>
- Whitcomb, J.J., Roy, D., Blackman, V.S. (2010). Evidence-based practice in a military intensive care unit family visitation. *Nursing Research*, 59(1), S32-39. <https://doi.org/10.1097/NNR.0b013e3181c3c028>