The presence of family during resuscitation in critical care settings: Nurses perspectives

Sofee Mohamed Akhlak, MSc[1], Wan Salwani Wan Husain[2], Mohd Shaharudin Shah Che Hamzah, PhD[3]

[1]Faculty of Health Science, Puncak Alam Campus, Universiti Teknologi MARA, Selangor, Malaysia, [2]Centre for Nursing Studies, Faculty of Health Science, Puncak Alam Campus, Universiti Teknologi MARA, Selangor, Malaysia, [3]School of Medical Sciences, Health Campus, Universiti Sains Malaysia, Kelantan, Malaysia

ABSTRACT

Introduction: Family presence during resuscitation (FPDR) is now an accepted practice in many western countries as research proven its positive impact on patient, family and also health care providers. In Malaysia, it is not known whether nurses in critical care settings agrees on family members' presence during the resuscitation process. This study aims to determine the perspectives of nurses toward family presence during resuscitation in critical care settings at Hospital Universiti Sains Malaysia. This study specifically looked at the risk and benefits perceived by nurses related to family presence during resuscitation, the self-confidence perceived by nurses related to family presence during resuscitation, and the correlation between nurses' perception of risk and benefits with self-confidence related to family presence during resuscitation.

Materials and Methods: A cross-sectional study was conducted using a self-administered questionnaire entitled the Family Presence Risk-Benefit Scale and Family Presence Self-Confidence Scale. Purposive sampling method was used to include 130 nurses working in eight Intensive Care Units at Hospital Universiti Sains Malaysia. Descriptive statistics and Pearson's Correlation test were used to analyse the variables of FPDR.

Results: Findings revealed that nurses in the critical care setting perceived low risk-benefit and low self-confident with regards to family presence during resuscitation. Pearson correlation analysis showed no correlation between perceptions of risk-benefits and self-confidence among critical care nurses (r = -0.016).

Conclusion: Relatively, nurses perceived that family presence during resuscitation would place high risk and low benefit to the family members. Thus there is a need for education, training, and guideline to enrich the concept of FPDR and its implementation.

KEYWORDS:
Family presence, family centered care, resuscitation, and witnessed resuscitation, critical care

INTRODUCTION

The expectations and beliefs of family members for the best treatment should be considered by health care provider especially during resuscitation. Even though the family presence during resuscitation (FPDR) practice is not favourable by the health care provider,[1-5] nurses significantly had a positive attitude toward FPDR.[6] In western countries, some professional bodies such as the Emergency Nurses Association[7] and the American Heart Association[8] have begun to lend support in allowing family members to be present during all resuscitative efforts such as cardiopulmonary resuscitation (CPR), invasive procedure, and others as there has been established policy on that matter and families are encouraged to be present during resuscitation.

It has been shown that the FPDR was accepted by health care professionals and has benefit to family members.[9-11] Allowing family members during resuscitation helps meet emotional and spiritual needs and facilitate the grieving process.[20] Family presence during resuscitation improves patient, and family experience in terms of health outcomes, promote satisfaction and enhances therapeutic relationships between staff, patient and family members.[21] Several studies have shown that FPDR has been favoured by clients and their family members as the positive implications it has to offer.[22-24] However, in Malaysia, family members are not allowed to witness resuscitations as there are lacking in apparent policies and framework in the implementation of FPDR. Moreover, the concept of FDPR is still new in Asia including Malaysia whereby only 15.8% emergency health care staffs were agreeable to the concept of FPDR.[26]

Family-witnessed resuscitation or FPDR is defined as one or more family members are present in the room while a family member is being resuscitated in an effort to sustain life.[12] It also can be described as witnessing or being physically present by the patient side during invasive procedures or resuscitation events by the family members in the patient care area.[13] Resuscitation and effort performing to resuscitate the patients is the process that has always been performed in critical care areas. Therefore, the perspectives of nurses on FPDR practice in critical care settings are crucial as nurses are the first line professionals who witnesses and attends to the clients during resuscitation process. Furthermore, this study would serve as a basis for developing the policy in allowing family presence during resuscitation.

This article was accepted: 29 October 2023
Corresponding Author: Sofee Mohamed Akhlak
Email: sofeeb6445@uitm.edu.my

MATERIALS AND METHODS

Research Design

Cross-sectional method was used to answer the research objectives.

This research was carried out at the intensive care units Hospital Universiti Sains Malaysia (HUSM), Kubang Kerian, Kelantan between May and July 2020 after obtaining ethical approval to conduct the study.

Population and Sample Size

A sample of 130 nurses working in critical care settings (General ICU, Surgical ICU, Surgical High Dependency Unit, Neurosurgery ICU, Trauma ICU, Cardiothoracic ICU, Coronary care unit, and Burn Unit) were involved in this study through a purposive sampling. Recommended sample size was 123 respondents. After adding a 10% drop out, the total number of respondents for this study was 135. However, five questionnaires were rejected for being incomplete.

Eligibility Criteria

Inclusion Criteria: Registered nurse working in critical care settings in intensive care units HUSM between May and July 2020.

Exclusion Criteria: Nurses who are on extended leave during the study period and with managerial position in nursing.

Study Instruments

This study used self-administered questionnaire adopted from Twibell et al.,[12] titled nurses' perceptions of their self-confidence and the benefits and risks of family presence during resuscitation. Permission was granted by the main author to use the questionnaire.

Demographic Characteristic

Demographic characteristic comprises five data, which is gender, age, educational level, years of experience in nursing, and the number of times invited family presence.

Family Presence Risk-Benefit Scale

The risk-benefit scale questionnaire consists of 22 questions. No modification was made from the original questionnaire. Items on scales had a 5-point Likert response opinion. Respondent rating with 5=strongly agree, 4=agree, 3=neutral, 2=disagree and 1=strongly disagree. The cut-off points of 4 and 5 were considered high and indicated that the respondents perceived more risk and benefited toward FPDR. Whereas cut-off points 1, 2, and 3 showed that the respondents perceived less risk and benefited toward FPDR. The higher score indicates a greater level of perceived risk and benefit of family-witnessed resuscitation.

Family Presence Self-Confidence Scale

The Family Presence Self-Confidence Scale consists of 17 questions. No modification was made from the original questionnaire. Items on scales had a 5-point Likert response opinion. Respondent rating with 5=very confident, 4=quite confident, 3=somewhat confident, 2=not very confident and 1=not at all confident. The cut-off points of 4 and 5 was considered high and indicated that the respondents had a greater self-confidence level in managing FPDR. The cut-off points of 1, 2, and 3 showed that the respondents perceived low confidence in managing FPDR.

Validity and Reliability

The questionnaire was validated by three experts, Intensive Care Anaesthesiologist, Matron of Intensive Care Unit, and Advanced Diploma of Intensive Care Nursing Tutor. A pilot study was conducted among 10 critical care nurses in the ICU, HUSM, to test the reliability of the questionnaire. Three of the participants had Bachelor of Nursing degrees, three had Advanced Diploma in ICU, and others are working more than ten years in ICU. The Cronbach's alpha for Family Presence Risk-Benefit Scale (FPR-BS) was 0.75 and 0.93 for Family Presence Self-Confidence. The reliability of the questionnaire of Family Presence Risk-Benefit Scale (FPR-BS) was supported by 0.96 in the previous study and Cronbach's alpha coefficient of 0.95 for Family Presence Self-Confidence Scale (FPS-CS).[12,14]

Ethical Consideration

Ethical approval for this study was obtained from the UiTM Ethics Committee on 4th February 2020 (Reference: REC/01/2020 (MR/17). The study was conducted with permission from The Human Research Ethics Committee of USM (JEPeM) on16 April 2020. (Reference: USM/JEPeM/20010015). Approval from Hospital Universiti Sains Malaysia's director was obtained before data collection. Participants were consented before data collection.

Data Collection

Data collection begun once approval from the hospital director, UiTM and USM Research Ethics Committee was obtained. All participants were briefed on the study objective and certain requirements, including criteria, informed consent, and time requirement for each respondent to answer the questionnaire (about 10–20 minutes). The approval letter from UiTM ethic, USM ethic and the hospital director was also attached. Respondents were chosen according to the method of purposive sampling and based on the working schedule. The questionnaire was filled up by the respondents after working hours, then collected and put in a wrapper. Each respondent was given a numerical code for data analysis, and confidentiality also was guaranteed.

Data Analysis

The coded responses were recorded into IBM Statistical Package for the Social Science (SPSS) version 26 software. For this study, there are six negatively worded items in the FPR-BS questionnaire that have been reverse scores.[12,14] Descriptive statistics analysis (mean, standard deviation, percentage and frequency) was used to analyse the FPDR variables. Pearson correlation was used to determine the relationship between FPDR variables.

The parametric tests were used to determine the relative quality of each data. Kolmogorov-Smirnov normality tests were carried out before inferential data analysis. The results of the normality test for the main variables of this study indicate that these variables are typically distributed with probabilities ($p > 0.05$).

RESULTS

Demographic Data

Most of the respondents were between 25 and 35 years old, with 63.1% (n=82) and mean age was 33.22. The majority of the participants were female 84.6% (n=110), 26.6% (n=32) of respondent had <5 years of experience in nursing profession, 33.1% (n=43) had 6-10 years, 37.7% (n=49) had 11-20 years and 4.6% (n=6) had >20 years of experience in nursing profession. Majority of the participants were diploma holders 90% (n=117), followed by degree holders 8.5% (n=11) and others 1.5% (n=2). The finding showed that more than half of the respondents, 53.8% (n=70) does not have experience in family presence during resuscitation, 40.8% (n=53) have experienced <5 times, and 5.4% (n=7) have and experience more than 5 times.

Nurses' Perception on Family Presence Risk-Benefit Scale

Findings showed that respondents had strongly disagree on the item that family members will panic if they witness a resuscitation effort 50.8% (n=66) [Table II]. Another item that respondent disagrees with is that family members will have difficulty adjusting to the long-term emotional impact of watching a resuscitation effort 30.8% (n=40). Whereas there are two items that respondent is strongly agree regarding the risks on FPDR is the statement of family members will become disruptive if they witness resuscitation efforts 33.8% (n=44) and the resuscitation team will not function well if family members are present in the room 35.4% (n=46).

The two items that strongly agreed by the respondents had a high mean score. The mean score on family members' item will become disruptive if they witness resuscitation efforts were 4.04. The resuscitation team will not function as well if family members are present in the room was 4.07. There are three other high mean scores for perceived risk and benefit among critical care nurses in this study, which is family members are more likely to sue (3.88), and the belief on FPDR effort give benefit to patients (3.58) and the family (3.51).

Items on benefits of FPDR showed that respondents answering disagree with the statement of the presence of FPDR efforts is beneficial to nurses 43.1% (n=56), beneficial to physicians 42.3% (n=55), and should be a component of family-centred care 37.7% (n=49). The mean score for the FPR-BS scale was 2.88 (standard deviation, SD 0.302) and interpreted as low.

Nurses' Perception on Family Presence Self-Confidence Scale

Most nurses in the study answered between the scale of 'not very confidence' and 'somewhat confidence.' [Table III] The respondents in this study were not very confident in performing electrical therapies 49.2% (n=64), encourage family members to talk to their family member 36.9% (n=48), and prepare family members to enter the area of resuscitation of their family members 36.2% (n=47). There are two items that respondents showed high self-confidence toward FPDR. The respondents were quite confident in communicating about the resuscitation effort to family members who are present 36.9% (n=48) and coordinate bereavement follow-up with family members after resuscitation efforts of their ill family member, if required 31.5% (n=41).

The mean score of nurses' perceptions of the Family Presence Self-Confidence Scale by items reveal that only one item was coded as high. Mean score for items regarding nurses' confidence in administering drug therapies during resuscitation with family presence was high with a mean score of 3.46 (SD 1.043). FPS-CS scale's mean score was 2.95 (SD 0.686) as recorded to strongly disagree, disagree, neutral, and strongly agree or agree. The mean score result for FPS-CS scale's coded as low.

The Relationship between Nurses' Perceptions of Risk and Benefits with Self-Confidence Related to FPDR

A Pearson correlation coefficient was computed to assess the relationship between the level of risk-benefits and self-confidence among participants towards FPDR practice [Table IV]. Pearson correlation reveals no correlation between perceptions of risk-benefits and self-confidence among critical care nurses with r = -0.016, n= 130.

DISCUSSION

Nurse Perceptions on Family Presence Risk-Benefit

The mean score of risk and benefits perceived by nurses related to FPDR is low (2.88), with a standard deviation of 0.302. Contrary to the other study,[12] the result indicated nurses' perceived high benefit and low risk toward FPDR. The differences in the mean score in this study compared to others study may be because of the respondents' high number of neutral responses. The respondents might not be sure if they agreed or disagreed with the questionnaire statement due to lack of experience with FPDR influenced by availability or lack of adequate family witnessed resuscitation policy and guidelines.[15]

Three high risks perceived by critical care nurses toward FPDR in this study were that family members will become disruptive, the resuscitation team will not function well with the family present, and family members are more likely to sue were differ with findings in other studies.[1,3,16] These findings suggest that nurses in a critical care setting understand the barrier in managing families in the resuscitation process. Understanding the barrier of FPDR will guide critical care nurses to deliver FPDR as an essential component in nursing care.

This study also showed that the respondents had mixed opinions regarding the benefit of FPDR to the family, patient, nurses, and physician. FPDR showed to give benefit to the patient and family but not to the nurses and physician. This mixed opinion may be caused by a lack of family members' involvement in FPDR in the critical care settings. Participants agreed that family members' presence in FPDR efforts is beneficial to the patients and the family which consistent with earlier study.[5] Overall, critical care nurses in this study perceived high risk and low benefit toward FPDR. The adverse finding on the perception of risks and benefits in this study could be related to the current no formal guideline related to FPDR in the critical care settings.

Nurse Perceptions on Family Presence Self-Confidence Scale

Contrary to the previous study,[12,17] the total mean score of 2.95 result shown negatives perceptions, indicating that

Table I: Demographic characteristics of the respondents (n=130)

Characteristics	n	%
Demographic		
Age (years old)		
21-25	10	7.7
26-35	82	63.1
36-45	33	1.8
>45	5	3.8
Gender		
Male	20	15.4
Female	11	84.6
Years of experience in nursing		
<5 years	32	24.3
6-10	43	33.1
11-20	49	37.7
>20 years	6	4.6
Education level		
Diploma	117	90.0
Bachelors	11	8.5
Other	2	1.5
Number invited family presence.		
0	70	53.8
<5	53	40.8
>5	7	5.4

Table II: Mean score of nurse's perceptions on Family Presence Risk-Benefit Scale (FPRBS) by items (n=130)

Items	N	Mean	SD*	Interpretation of mean
Overall FPRBS	**130**	**2.88**	**0.302**	**Low**
1. Family members should be given the option to be present when a loved one is being resuscitated	130	2.26	1.082	Low
2. Family members will panic if they witness a resuscitation effort	130	1.54	0.586	Low
3. Family members will have difficulty adjusting to the long-term emotional impact of watching a resuscitation effort	130	1.83	0.672	Low
4. The resuscitation team may develop a close relationship with family members who witness the efforts, as compared to family members who do not witness the efforts	130	2.64	0.907	Low
5. If my loved one were being resuscitated, I would want to be present in the room	130	3.16	1.062	Low
6. Patients do not want family members present during a resuscitation attempt	130	3.12	0.659	Low
7. Family members who witness unsuccessful resuscitation efforts will have a better grieving process	130	2.89	1.066	Low
8. Family members will become disruptive if they witness resuscitation efforts	130	4.01	1.008	High
9. Family members who witness a resuscitation effort are more likely to sue	130	3.88	0.957	High
10. The resuscitation team will not function as well if family members are present in the room	130	4.07	0.882	High
11. Family members on the unit where I work prefer to be present in the room during resuscitation efforts	130	3.19	0.855	Low
The presence of FPDR efforts is				
12. … beneficial to patients	130	3.58	0.896	High
13. … beneficial to families	130	3.51	0.942	High
14. … beneficial to nurses	130	2.48	1.006	Low
15. … beneficial to physicians	130	2.52	1.036	Low
16. … should be a component of family-centred care	130	2.55	0.845	Low
The presence of FPDR efforts will have a positive effect on				
17. ...patient ratings of satisfaction with hospital care	130	2.55	0.949	Low
18. … family ratings of satisfaction with hospital care	130	2.77	1.023	Low
19. … on nurse ratings of satisfaction in providing optimal patient and family care	130	2.70	0.970	Low
20. … physician ratings of satisfaction in providing optimal patient and family care	130	2.65	0.921	Low
21. The presence of FPDR efforts is a right that all patients should have	130	2.75	0.973	Low
22. The presence of FPDR is a right that all family members should have	130	2.71	0.927	Low

*SD – Standard Deviation

Table III: Mean score of nurses' perceptions on Family Presence Self-Confidence Scale (FPSCS)by items (n=130)

Items	N	Mean	SD	Interpretation of mean
Overall FPSCS	**130**	**2.95**	**0.686**	**Low**
1. … communicate about the resuscitation effort to family	130	3.88	0.856	Low
2. … administer drug therapies during resuscitation efforts with family members present	130	3.46	1.043	High
3. … perform electrical therapies during resuscitation efforts with family members present	130	2.50	0.958	Low
4. … deliver chest compressions during resuscitation efforts with family members present	130	3.36	1.049	Low
5. … communicate effectively with other health team members during resuscitation efforts with family members present	130	3.18	1.084	Low
6. … maintain dignity of the patient resuscitation efforts with family members present	130	2.91	1.110	Low
7. … identify family members who display appropriate coping behaviours to be present during resuscitation efforts	130	2.88	0.941	Low
8. … prepare family members to enter the area of resuscitation of their family member	130	2.80	0.968	Low
9. …enlist support from attending physicians for family presence resuscitation efforts	130	2.69	0.922	Low
10. … escort family members into the room during resuscitation of their family member	130	2.75	0.973	Low
11. …announce family member's presence to resuscitation team during resuscitation efforts of their family member.	130	3.11	1.021	Low
12. … provide comfort measures to family members witnessing resuscitation efforts of their family member	130	2.68	0.998	Low
13. … identify spiritual and emotional needs of family members witnessing resuscitation efforts of their family member	130	2.84	1.048	Low
14. …encourage family members to talk to their family member during resuscitation effort	130	2.60	1.090	Low
15. ...delegate tasks to other nurses in order to support family members during resuscitation efforts of their family member	130	3.10	1.003	Low
16. … debrief family after resuscitation of their family member	130	2.99	0.919	Low
17. … coordinate bereavement follow-up with family members after resuscitation efforts of their family member, if required	130	3.04	0.935	Low

*SD – Standard Deviation

Table IV: Pearson's Correlation between perceptions on risk-benefit and perception on self-confidence

Variables	1	2
1. Risk-benefits	1.00	
2. Self-confidence	--0.016	1.00

nurses are not confident in managing resuscitation with family members' presence. In this study, nurses showed confidence in administer drug therapies during resuscitation efforts with family members presence consistent with earlier study.[14] The majority of participants in this study are not very confident in performing electrical therapies, have support from attending physicians and escorting family members into the resuscitation room. Some studies highlight the importance of health care providers or nurses escorting family members to the resuscitation room.[4,5,18] The explanation why nurses are not confident in managing FPDR in this study could be because of the newness of FPDR practice in Malaysia. Nurses in critical care settings were confident in items that they are familiar with. There is also no formal education related to FPDR in Malaysia that can helps nurses in critical care settings understand and support the need of the family members during the resuscitation process. Even though nurses and physicians were confident that FPDR practice does not affect their performance, they are concern about the training to support relatives in FPDR situations.[19]

The Relation between Nurses' Perception of Risk and Benefits with Self-Confidence Related To FPDR

The result reveals no relationship between perceptions of risk-benefits and self-confidence toward FPDR among participants in this study with r = -0.016, p˃0.001). The finding in this study was differ with other, studies.[12,14,17] In the previous studies, nurses' perceptions of risks, benefits, and self-confidence toward FPDR were found very significantly and strongly interrelated into each other. It shows that perception of more benefit and fewer risks and more self-confidence in managing FPDR.

This study's different in findings may be explained in terms of varying acceptance of FPDR practice in Asian and Western countries among nurses. However, there is no study in the Asian population has been done to assess the relationship between the perceptions of risk-benefits and self-confidence toward FPDR among critical care nurses. Both scale FPR-BS and FPS-CS can be used to classify nurses who favour family presence quickly, easily, and feel secure in handling it. It also

can be a self-assessment method to understand what the nurses feel regarding FPDR.

Effort should be made to raise awareness toward FPDR practice among critical care settings and critical care nurses by inviting family members in the resuscitation process. On top of that, clear policies or guidelines regarding FPDR may need to be developed by top authorities to enhance nurses' practice.

This study's limitation is that samples are limited to critical care nurses working in an ICU only and do not represent nurses working in other units. The inclusion of nurses from different settings such as medical, paediatric, and surgical wards could provide insights into nurses' perceptions of risk, benefit, and self-confidence toward FPDR. Involving a larger sample of critical care nurses across the country might produce various participant responses to the items related to risk benefits and self-confidence toward FPDR.

CONCLUSION

Critical care nurses had perceived high risk and low benefit toward FPDR and had perceived low self-confidence in managing FPDR. There is no correlation between nurses' perception of risk and benefits with self-confidence related to FPDR. Hopefully, this study will be inspired by nursing and other health care workers to explore more about FPDR concepts in Malaysia in the future. FPDR is an integral component of treatment and requires sufficient training and practice in the hospital environment, especially for critical care nurses. Appropriate educational training would impact awareness toward FPDR and healthcare providers' attitudes regarding perceptions on risk-benefits and their self-confidence. Continued training and assessment are important to build their competencies toward FPDR in the future.

ACKNOWLEDGEMENTS

Authors would like to acknowledge both UiTM and USM with special thanks to all professionals and health personnel in the Intensive Care Unit, Hospital Universiti Sains Malaysia for supporting this study.

CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

FUNDING

No funding received.

REFERENCES

1. Ong ME, Chan YH, Srither DE, Lim YH. Asian medical staff attitudes towards witnessed resuscitation. Resuscitation 2004; 60(1): 45-50.
2. Güneş UY, Zaybak A. A study of Turkish critical care nurses' perspectives regarding family-witnessed resuscitation. J Clin Nurs 2009; 18(20): 2907-15.
3. Kianmehr N, Mofidi M, Rahmani H, Shahin Y. The attitudes of team members towards family presence during hospital-based CPR: a study based in the Muslim setting of four Iranian teaching hospitals. J R Coll Physicians Edinb 2010; 40(1): 4-8.
4. Vavarouta A, Xanthos T, Papadimitriou L, Kouskouni E, Iacovidou N. Family presence during resuscitation and invasive procedures: physicians' and nurses' attitudes working in pediatric departments in Greece. Resuscitation 2011; 82(6): 713-6.
5. Leung NY, Chow SK. Attitudes of healthcare staff and patients' family members towards family presence during resuscitation in adult critical care units. J Clin Nurs 2012; 21(13-14): 2083-93.
6. Meyers TA, Eichhorn DJ, Guzzetta CE, Clark AP, Klein JD, Taliaferro E, et al. Family presence during invasive procedures and resuscitation. Am J Nurs 2000; 100(2): 32-42.
7. Emergency Nurses Association. (2017). Clinical practice guideline: Family presence during invasive procedures and resuscitation. Retrieved Mac 3, 2020, From https://www.ena.org/docs/default-source/resource-library/practice-resources/CPG/paid/familypresencecpg.
8. Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 2: ethical aspects of CPR and ECC. Circulation 2000; 102(8 Suppl): I12-21.
9. Köberich S, Kaltwasser A, Rothaug O, Albarran J. Family witnessed resuscitation - experience and attitudes of German intensive care nurses. Nurs Crit Care 2010; 15(5): 241-50.
10. Porter JE, Cooper SJ, Taylor B. Family presence during resuscitation (FPDR): A survey of emergency personnel in Victoria, Australia. Australas Emerg Nurs J 2015; 18(2): 98-105.
11. Waldemar A, Thylen I. Healthcare professionals' experiences and attitudes towards family-witnessed resuscitation: A cross-sectional study. Int Emerg Nurs 2019; 42: 36-43.
12. Twibell RS, Siela D, Riwitis C, Wheatley J, Riegle T, Bousman D, et al. Nurses' perceptions of their self-confidence and the benefits and risks of family presence during resuscitation. Am J Crit Care 2008; 17(2): 101-11
13. Baumhover N, Hughes L. Spirituality and support for family presence during invasive procedures and resuscitations in adults. Am J Crit Care 2009; 18(4): 357-66;
14. Tudor K, Berger J, Polivka BJ, Chlebowy R, Thomas B. Nurses' perceptions of family presence during resuscitation. Am J Crit Care 2014; 23(6): e88-96.
15. 15.Maclean SL, Guzzetta CE, White C, Fontaine D, Eichhorn DJ, Meyers TA, et al. Family presence during cardiopulmonary resuscitation and invasive procedures: practices of critical care and emergency nurses. J Emerg Nurs 2003; 29(3): 208-21.
16. Al-Mutair AS, Plummer V, Copnell B. Family presence during resuscitation: a descriptive study of nurses' attitudes from two Saudi hospitals. Nurs Crit Care 2012; 17(2): 90-8.
17. Chapman R, Watkins R, Bushby, A, Combs S. Familywitnessed resuscitation: Perceptions of nurses and doctors working in an Australian Emergency department. International Scholarly Notices 2012; 2022: 369423.
18. Fulbrook P, Albarran JW, Latour JM. A European survey of critical care nurses' attitudes and experiences of having family members present during cardiopulmonary resuscitation. Int J Nurs Stud 2005; 42(5): 557-68.
19. Lam DSY, Wong SN, Hui H, Lee W, So KT. Attitudes of doctors and nurses to family presence during pediatric Cardiopulmonary resuscitation. Hong Kong Journal of Paediatrics 2007; 12: 253-9.
20. Vardanjani AE, Golitaleb M, Abdi K, Kia MK, Moayedi S, Torres M, et al. The Effect of Family Presence During Resuscitation and Invasive Procedures on Patients and Families: An Umbrella Review. J Emerg Nurs 2021; 47(5):7 52-60.
21. Meghani S. (2021). Witnessed resuscitation: A concept analysis. Intensive and Critical Care Nursing, 64: 103003.

22. Boudreaux ED, Francis JL, Loyacano T (2002) Family presence during invasive procedures and resuscitations in the emergency department: a critical review and suggestions for future research. Ann Emerg Med 40(2): 193-205
23. Mazer MA, Cox LA, Capon JA (2006) The public's attitude and perception concerning witnessed cardiopulmonary resuscitation. Crit Care Med 34(12): 2925-8.
24. Boyd R. Witnessed resuscitation by relatives. Resuscitation 2000; 43(3): 171-6.
25. Chew KS, Ghani ZA. Attitudes and perceptions of the general Malaysian public regarding family presence during resuscitation. Singapore Med J 2014; 55(8): 439-42.
26. Sheng CK, Lim CK, Rashidi A. A multi-center study on the attitudes of Malaysian emergency health care staff towards allowing family presence during resuscitation of adult patients. Int J Emerg Med 2010; 3(4): 287-91.
27. Pratiwi ID. Family presence during resuscitation: patient and family members' preferences and attitudes. International Journal of Research in Medical Sciences 2018; 6(2): 394-400.
28. Powers K, Reeve CL. Family Presence During Resuscitation: Medical–Surgical Nurses' Perceptions, Self Confidence, and Use of Invitations. Am J Nurs 2020; 120(11): 28-38.
29. Sak-Dankosky N, Andruszkiwicz P, Sherwood PR, Kvist T. Preferences of patients' family regarding family witnessed cardiopulmonary resuscitation: A qualitative 18 perspective of intensive care patients' family members. Intensive Crit Care Nurs 2019; 50: 95-102.
30. Wahyu Ariani NP, Trisyani Y, Mulyati T. (2021). An Exploration of Nurses' Experience of Family Presence During Resuscitation in Intensive Care Setting. Jurnal Keperawatan Padjadjaran 9(1): 41-51.