




Knowledge, Attitude, and Practice of Healthcare Professionals Regarding Family Presence During Resuscitation: An Interventional Study in a Tertiary Care Setting, Karachi, Pakistan

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Background: Family presence during resuscitation (FPDR) has not been fully adopted by healthcare professionals (HCPs), especially physicians and nurses. However, the concept of FPDR is gradually gaining recognition around the world. There are no guidelines or policies in Pakistan to guide HCPs in their practice regarding FPDR. However, over time, patients' and families' rights have gained recognition and healthcare has progressed to become more patient-family centered. **Aim:** The study aims to evaluate the impact of an educational program on knowledge, attitudes, and practices (KAP) of HCPs towards FPDR in ED, at a tertiary care setting, in Karachi, Pakistan. **Methods:** A quasi-experimental pretest and posttest design was used. KAP of ED nurses and physicians were assessed before (pretest), immediately after (posttest I), and at two weeks (posttest II) after the educational intervention, which includes an hour of educational training session. **Results:** The mean scores of knowledge and attitude of HCPs at all three points (pretest, posttest I, and posttest II) were found to be statistically significant ($p < .001$). There was a significant difference between pre- and posttest I, and posttest II ($p < .001$), but not between the two posttests. No significant difference was observed regarding practice scores. **Conclusion:** The study tested an educational intervention for FPDR, which was found to be effective in improving the HCPs' knowledge and in changing their attitude. Based on these results, FPDR-specific training, with structured FPDR guidelines using a multidisciplinary team approach are essential for the implementation of FPDR.

Keywords: education; family-centered care; healthcare professionals; witnessed resuscitation; quasi experimental

INTRODUCTION

Family Presence During Resuscitation (FPDR) is the attendance or presence of family or relatives in a way that allows visual or physical contact in the process of actively attempting to revive

a patient by cardiac and/or respiratory resuscitation (Walker, 2008). Traditionally until the 1980s, clinical practice reflected the belief that family members of patients undergoing resuscitation would not want to be present or that their

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presence might hinder the process of resuscitation (Brasel, Entwistle, & Sade, 2016). However, this practice was first challenged by Foote Hospital's ED, since they found that families and patients wanted to be present with their loved ones during resuscitation (Royal College of Nursing, 2002). Current healthcare models encourage a patient-family-centered care approach (De Stefano et al., 2016).

The effect of FPDR among nurses and physicians is a subject of debate in the literature. Overall, 70% to 80% of the healthcare professionals (HCPs) may acknowledge and endorse the practice of FPDR, and 94% of family members may believe that witnessing resuscitation actively involved them in resuscitative process, comfort the patient and family member, encourage emotional connection to their loved ones, ease family's adjustment to death, and satisfy family with medical teams' intervention (Chapman, Watkins, Bushby, & Combs, 2012; De Stefano et al., 2016; Pratiwi, 2018; Zakaria & Siddique, 2008). However, implementation of FPDR remains low in some countries (Porter, Cooper, & Sellick, 2013). The reported reasons for reluctance among HCPs, particularly in physicians, appear to be concerns that this practice might hinder the performance of the resuscitation team, and cause psychological trauma to the family watching their loved one in need for resuscitation and at high risk for death (Koberich, Kaltwasser, Rothaug, & Albarran, 2011; De Stefano et al., 2016; Leung, & Chow, 2012; Pratiwi, 2018).

FPDR is gradually gaining recognition in western countries, however very few studies are reported from Asian countries (Al Mutair, Plummer, & Copnell, 2012; Badir & Sepit 2007; Ong, Chung, & Mei, 2007). The Emergency Nurses Association in 2003 and The American Heart Association in 2005 were the first organizations to develop guidelines for FPDR, and highlight its importance in order to bring consistency

in clinical practice and to support healthcare providers in caring for patients and family members (Holzhauser & Finucane, 2007; Pratiwi, 2018). The Emergency Nurses Association (ENA) position statement clearly states that families' emotional and psychological state should be assessed at first before allowing them to be present during resuscitation (ENA, 2007). At times, the ED setup is also extremely charged emotionally, and limited space in the ED's resuscitation room makes it difficult to accommodate family members. Thus, family assessment and facilitator's presence to accompany family during resuscitation should be taken into consideration (ENA, 2007).

A literature review revealed that educational programs related to FPDR in ED could bring about a change in HCPs' beliefs. Among HCPs, nurses tend to show positive attitude (from 56% before to 89% after) towards FPDR after attending an educational program (Mian, Warchal, Whitney, Fitzmaurice, & Tancredi, 2007). In addition, more than half of the physicians and nurses favored continuing the FPDR program and were in favor of giving family members an option of being present during resuscitation, along with a facilitator who could be a physician, nurse, clinical psychologist, or chaplain. (Grice, Picton, & Deakin, 2003; Halm, 2005).

The ENA position statement also endorsed the collaboration of HCPs and multidisciplinary team, and the education about FPDR (Zakaria & Siddique, 2008). There are a number of American, Canadian, European and Australian hospitals who have FPDR policies in place, whereas, specifically in Asia, most of the hospitals lack a FPDR policy and do not allow family during resuscitation. The aim of this study was to evaluate the impact of an educational intervention on the knowledge, attitude, and practices (KAP) of HCPs regarding FPDR, and to understand the specific benefits and barriers for HCPs related to adopting FPDR.

METHODS

Study Design

A quasi-experimental pretest and posttest design was used to assess the effectiveness of offering an educational intervention on FPDR for nurses and physicians. The dependent variables, such as KAP, were measured before the educational session, immediately after the educational session (posttest I), and at two weeks after the educational session (posttest II), to assess the difference in these variables and to evaluate its impact.

Study Setting and Recruitment

The study was conducted in an ED of a tertiary care hospital, Karachi, Pakistan. All full-time registered nurses and doctors having at least one year of clinical experience of working with adult patients in ED, were included in the study.

Pre- and Posttest Questionnaire

The pre- and posttest questionnaire was adopted from Al Mutair and Plummer, which was developed in 2012 in Saudi Arabia. The questionnaire was slightly modified to include cultural and contextual relevancy in the light of published evidence (Al Mutair et al., 2012; Fallis, McClement, & Pereira, 2008; Kianmehr, Mofidi, Rahmani, & Shahin, 2010). The questionnaire was evaluated by content experts for its validity. The Cronbach's alpha coefficient was used to measure the internal consistency of the tool. A pilot testing was conducted among 10% of the study participants, and the questionnaire was then further modified. The questionnaire consisted of two sections: Section A consisted of demographic data and section B comprised of questions related to KAP. Questions on knowledge and practices towards FPDR consisted of Yes or No responses; however, questions related to attitude were designed on the Likert scale, ranging from strongly disagree (1) to strongly agree (4). At the end of the questionnaire, two open-ended questions addressed participants' experiences and perceptions on benefits and barriers regarding FPDR.

Data Collection

The pretest questionnaire was distributed to the study participants after obtaining written informed consent. Codes were assigned to each participant for anonymity and to keep track of participants' responses at posttests. ED nurses and physicians were asked to fill the questionnaires at the beginning of the session as pretest. A similar questionnaire was again distributed to the participants as posttest I, immediately after the intervention, and also posttest II, at a two weeks after the intervention.

Study Intervention

The educational intervention was a 1-hour presentation, conducted by a nurse, physician, and psychologist. The information included the origin of FPDR practices, effects of FPDR according to the literature, factors influencing FPDR, providers' concerns and their role in FPDR, international healthcare organizations' position statements and policies regarding FPDR, and evidence-based guidelines to facilitate family witnessed resuscitation. Consistent with the literature, the educational intervention also included information on dealing with grieving family members, cultural influences, and comfort in interacting with families in crises situations, which showed a positive impact on facilitating FPDR (Hung & Pung, 2011; Jabre et al., 2013). The presentation was also shared with the content experts for its cultural relevance and was modified accordingly.

Data Analysis

Data were checked for completeness and accuracy. The data was exported to the Statistical Package for Social Sciences (SPSS) version 19. Descriptive analysis was carried out for participants' demographic characteristics. Measures of central tendency and frequencies were also calculated. The one factor repeated measure analysis of variance (ANOVA) was used, with a nominal statistical significance level of 5% to assess the difference in the mean scores of the pretest and

two posttests survey results. Moreover, the Bonferroni method was used to explore post hoc pairwise comparisons of mean KAP among study time points.

Ethical Consideration

Ethical committee approval for this study was given by the Aga Khan University's Ethical Review Committee. Voluntary Consent was taken from all the participants and were allowed to withdraw from the study at any time.

RESULTS

A total of $n = 85$, nurses and physicians from the ED, in all three shifts (morning, evening, and night) were included. Out of which, $n = 30$ physicians, and $n = 55$ nurses completed the pretest, and posttest I questionnaire, and attended the educational session. However, $n = 2$ physicians and $n = 2$ nurses did not attempt posttest II questionnaire. Thus, the response rate of overall participants from the pretest was ($n = 85$) 100%, posttest I was ($n = 85$) 100%, and posttest II was ($n = 81$) 95.25%.

Demographic Profile of the Participants

Table 1 presents the summary of the demographic variables of the participants, nurses, and physicians.

KAP Mean Scores of the Participants in the Pretest, Posttest I, and Posttest II

The mean score differences between pretest, posttest I, and posttest II of KAP were assessed by one factor repeated measures ANOVA. The mean scores of knowledge and attitude at all three points were statistically significant different ($p < .001$). However, an insignificant difference was found in the mean scores of practice ($p = .941$) at those time points. The difference in the mean score of KAP at the three points in time is presented in Table 2.

Post hoc pair-wise comparisons, using Bonferroni's method, revealed that the mean score of

TABLE 1. Descriptive Data on the Demographic Variables of the Participants ($n = 85$)

Variables	Physicians $n = 30$ (%)	Nurses $n = 55$ (%)
Age group		
<25 years	-	6 (10.9)
25-30 years	16 (53.3)	38 (69.1)
>30 years	14 (46.7)	11 (20)
Gender		
Male	17 (56.7)	20 (36.4)
Female	13 (43.3)	35 (63.6)
Religion		
Islam	30 (100)	43 (78.2)
Hinduism	-	1 (1.8)
Christianity	-	11 (20)
Qualification		
Diploma	-	19 (34.5)
Degree	-	35 (63.6)
Masters	-	1 (1.8)
Post graduate trainees	18 (60)	-
Fellowship	12 (40)	-
Position		
RN	-	55 (100)
Resident	18 (60)	-
Consultant	11 (36.7)	-
Instructor	1 (3.3)	-
Years of experience		
1-3 years	16 (53.3)	31 (56.4)
4-6 years	4 (13.3)	16 (29.1)
> 6 years	10 (33.3)	8 (14.5)

knowledge and attitude was significantly different for the pair of pretest and posttest I ($p < .001$), and pretest and posttest II ($p < 0.001$).

In addition, the differences in the mean score (of KAP) for the two groups of participants (nurses and physicians) were also assessed. A significant difference was found in the mean score for knowledge at the pre and posttest II ($p < .001$), with nurses exhibiting higher scores, whereas there was a significant difference in the mean attitude

Figure 1. Comparison of mean knowledge score between the physicians and nurses at three different points.

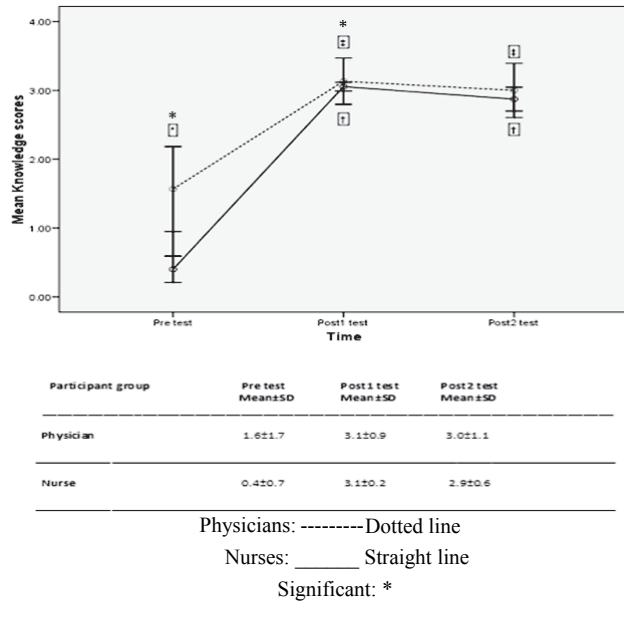
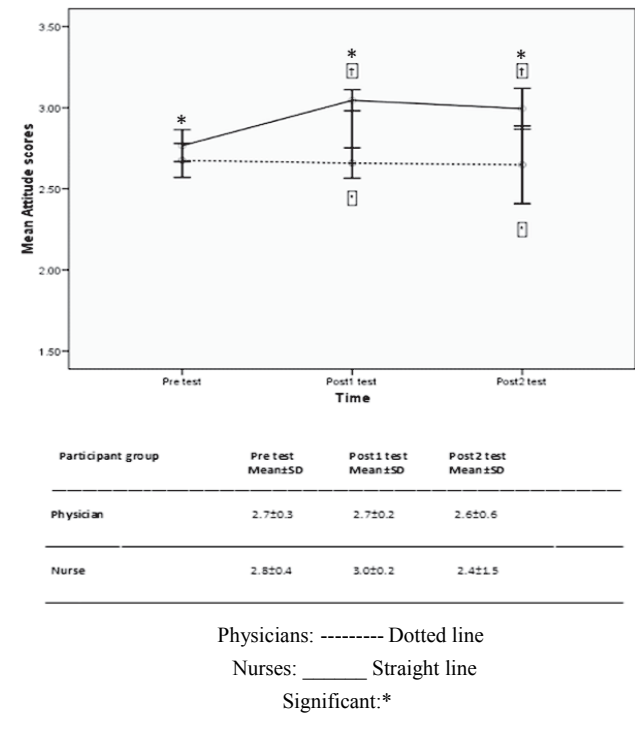


Figure 2. Comparison of mean attitude score between the physicians and nurses at three different points.



score at all points ($p < .001$), with nurses exhibiting higher scores. However, there was no difference in the mean score of practice for the two types of participants ($p = .208$).

The interaction between KAP score with type of participants, at the three points in time, was also assessed, and it was found to be significant for knowledge and attitude ($p < .001$). On the contrary, the practice score was insignificant ($p = .208$). The graphical presentation is illustrated in Figures 1, 2, and 3.

Participant’s Responses to Open-Ended Questions Regarding Their Experiences of FPDR

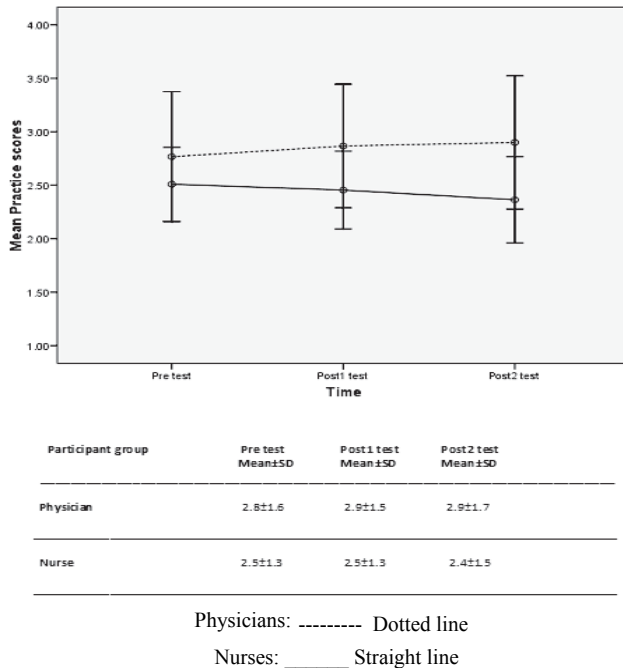
In the practice component of the questionnaire, participants were also asked to share their experiences regarding FPDR. Participants (50.6%) who had negative experiences of FPDR most commonly reported psychological trauma to the family (20%), violent and aggressive behavior of family (14.4%), and family interruption during the resuscitative process (11.8%). On the other hand, participants (41.2%) who had positive experiences

TABLE 2. Mean Scores for Pre-test, Post-test I, and Post-test II of Knowledge, Attitude, and Practice (KAP), n = 85

KAP	Pretest Mean ± SD	Posttest I Mean ± SD	Posttest II Mean ± SD	p Values
Knowledge scores	0.8 ± 1.3	3.1 ± 0.6	2.9 ± 0.8	<.001
Attitude scores	2.7 ± 0.3	2.9 ± 0.3	3.0 ± 0.4	<.001
Practice scores	2.6 ± 1.4	2.6 ± 1.4	2.6 ± 1.6	.941

Note. SD = standard deviation.

Figure 3. Comparison of mean practice score between the physicians and nurses at three different points.



of FPDR commonly reported family satisfaction with the resuscitative process (22.4%), and family acknowledged HCPs' efforts in the resuscitative care provided to their loved ones (18.8%), and understood the CPR process (20%).

Participant's Responses to Open-Ended Questions Regarding Benefits and Barriers of FPDR

The study participants were also asked about the benefits and barriers of FPDR in ED. In the pretest, 47.1% of participants mentioned that FPDR assists family in making critical decisions regarding continuation or termination of CPR, and this response increased in posttest I, and posttest II (55% and 60.3%, respectively). Moreover, in the pr-test, 38.5% reported that FPDR ensures family satisfaction as they witnessed that every possible effort was made to save their patient's lives; this also improved in posttest I and posttest II (35% and 30%, respectively). However, 14.4% participants in the pretest, and 10% participants in

posttest I and posttest II reported no benefits of FPDR.

On the other hand, several barriers of FPDR were also identified by the participants. The most common barriers included the potential for family to interrupt the resuscitative process (40.6% in pretest, 40% in posttest I, 38.7% in posttest II); aggressive and violent behaviors of family members or relatives (20% in pretest, 30.8% in posttest I, 36.4% in posttest II); families' lack of knowledge regarding CPR (14.2% in pretest, 8.2% in both posttest I and posttest II); lack of trained HCPs in ED to manage family members in a crises situation (10.6% in pretest, 11% in posttest I, 10% in posttest II); and fear of legal actions and lawsuits (14.6% in pretest, 10% in posttest I, 6.7% in posttest II).

Discussion

To the degree of our knowledge, this is the first study in Pakistan, which assessed the impact of an educational intervention to enhance the KAP of HCPs regarding FPDR. A significant improvement was seen in the knowledge and attitudes of all the participants towards FPDR. Awareness and knowledge about the emotional aspects of resuscitation need to be embraced in medical and nursing curricula (Zakaria & Siddique, 2008). Research evidence shows that FPDR can be readily implemented into practice if HCPs are appropriately trained and skilled, and provided with ethical rationales for practicing family witnessed resuscitation that address family concerns, and grieving (Feagan & Fisher, 2011). Educators need to follow a well-designed evidence-based curriculum and integrate theory into practice to assist HCPs performing evidence-based practice in actual practice settings. The transformed practice will allow HCPs to provide patient- and family-centered care, and to initiate evidence-based practice of family witnessed resuscitation within the norms of the Pakistani culture. Continuing education would raise staff awareness and would inform best practices during end of life care.

The majority of participants demonstrated a positive change in attitude after the educational session and demonstrated increased comfort and confidence using FPDR. Similar findings are shown in other studies (Feagan & Fisher, 2011; Holzhauser & Finucane, 2007; Leung, & Chow, 2012; Nykiel et al., 2011).

Cultural context influences healthcare attitudes and practices. In Pakistani culture, families play an essential role in illness; it is not the sick individual but the family who makes medical or end of life care decisions for the patient (Al Mutair, Plummer, & Copnell, 2012; Lalani, Duggleby, & Olson, 2018). Within a Pakistani healthcare context, the role of a family facilitator should be appended to support family members' psychological and emotional coping with the resuscitative event (Al Mutair et al., 2012; Feagan & Fisher, 2011; Hung & Pang, 2011; Oman & Duran, 2010).

The literature reveals that the most common reasons reported by HCPs against family-witnessed resuscitation were the fear of experiencing a traumatic situation, psychological trauma for the family members, interference of the family in the resuscitative efforts (Al Mutair et al., 2012; Kianmehr et al., 2010; Ong et al., 2007), and the negative impression of family members that the resuscitation efforts were ineffective and disorganized (Yanturali et al., 2005). Our study adds another fear among healthcare providers, such as the fear of violence and family abuse especially during times of civil riots, city crisis, acts of terror, or disaster situations. During such situations, it is often noticed that ED spaces are full, and staff safety becomes at risk. Staff is often confronted with verbal and physical threats and abuse from family or members of political parties or other influential people in the system. In such occurrences, staff requires better administrative support, which is often lacking. Protective measures, such as consistent presence of a family support person or family facilitator in all situations, as well staff safety and support policies should be maintained at the organizational level. A family facilitator can assess the associated risks of

safety and abuse towards staff, assist in providing adequate explanations, support and to calm family members and other attendants before inviting them in the resuscitation room. (Al Mutair et al., 2012; Feagan & Fisher, 2011).

More than half of the participants favored adopting formal guidelines and policies of FPDR. Other studies have also mentioned the importance of formal policies in order to safely practice the presence of family members during resuscitation. This requires a multidisciplinary approach, including medical and nursing leaders' support, administrative support, and policy makers' involvement for implementing structured FPDR guidelines (Al Mutair et al., 2012; Fallis et al., 2008; Kianmehr et al., 2010). Many studies have recommended that besides written policies or protocols, HCPs should have the option to decide for FPDR, in order to screen and assess families' emotional status, families' ability to cope with resuscitative efforts, and HCP's perceptions about family presence (Dougal, Anderson, Reavy, & Shirazi, 2011; Feagan & Fisher, 2011; Meyers et al., 2004; Madden & Condon, 2007; Miller & Stiles, 2009). Therefore, it must be noted that, none of the guidelines firmly endorse the practice of FPDR as mandatory. FPDR is recommended only as an option for the family to stay with their loved ones during a critical condition or a dying situation under certain criteria.

On the other hand, the participants also mentioned positive experiences of family presence, which included family satisfaction, family involvement in decision-making, helping in the grieving process, and allowing a sense of closure; and acknowledging HCPs' efforts throughout the resuscitative process. Other studies also support our findings (Knott & Kee, 2005; MacLean et al., 2003; Mian et al., 2007; Miller & Stiles, 2009).

RECOMMENDATIONS

The study highly recommends the need to implement FPDR-specific training and support in the hospital system. A multidisciplinary team approach would be required for the process of

instituting and implementing structured FPDR guidelines, identifying staff training needs, and developing separate teaching modules regarding FPDR. There should be an institutional FPDR policy to ensure a consistent approach for family presence as an option, so that the healthcare providers can assess and screen each family at its individual situation. A onetime educational program does not change the attitude and practice of HCPs. Continuous educational interventions and strategies should be planned to reinforce the importance of accepting and initiating the efforts for developing the FPDR practice guidelines that can be sustained over time. Additional research needs to be conducted for triangulating the data, including families' attitudes and opinions regarding FPDR from a Pakistani context.

Limitations

Findings are limited to a single setting and therefore, generalizability is questionable. Using a novel questionnaire and not having tested for content validity was another limitation. Also, sensitization to multiple administration of the same questionnaire may have altered response and introduced bias. Change in the practice component in the study could not be assessed as it required more time and change involving a multidisciplinary approach.

Conclusion

FPDR is an essential component of care and requires appropriate training and practice among HCPs in the hospital setting. The educational training provided had an impact on the knowledge and attitudes of HCPs; however, ongoing training and evaluation may be required.

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