

Family Presence During Resuscitation

Physicians' Perceptions of Risk, Benefit, and Self-Confidence

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Background: Families often desire proximity to loved ones during life-threatening resuscitations and perceive clear benefits to being present. However, critical care nurses and physicians perceive risks and benefits. Whereas research is accumulating on nurses' perceptions of family presence, physicians' perspectives have not been clearly explicated. Psychometrically sound measures of physicians' perceptions are needed to create new knowledge and enhance collaboration among critical care nurses and physicians during resuscitation events.

Objective: This study tests 2 new instruments that measure physicians' perceived risks, benefits, and self-confidence related to family presence during resuscitation.

Methods: By a correlational design, a convenience sample of physicians (N = 195) from diverse clinical specialties in 1 hospital in the United States completed the Physicians' Family Presence Risk-Benefit Scale and Physicians' Family Presence Self-confidence Scale.

Results: Findings supported the internal consistency reliability and construct validity of both new scales. Mean scale scores indicated that physicians perceived more risk than benefit and were confident in managing resuscitations with families present, although more than two-thirds reported feeling anxious. Higher self-confidence was significantly related to more perceived benefit and less perceived risk ($P = .001$). Younger physicians, family practice physicians, and physicians who previously had invited family presence expressed more positive perceptions ($P = .05-.001$).

Discussion: These 2 new scales offer a means to assess key perceptions of physicians related to family presence. Further testing in diverse physician populations may further validate the scales and yield knowledge that can strengthen collaboration among critical care nurses and physicians and improve patient and family outcomes.

Keywords: Perceptions, Physicians, Professional-family relations Resuscitation

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Family presence during resuscitation is a growing trend, especially in critical care settings. Physicians, nurses, patients, and families often hold conflicting views on the advantages and disadvantages of family presence during lifesaving events.¹⁻⁴ Between 50% and 96% of family members believe that it is their right to be present during resuscitations of their loved ones and, once they experience it, would choose to be present again.^{1,3-6} Patients often prefer family to be present, both to bring the patient comfort and to provide the family with timely, firsthand information.⁷⁻⁹ Professional organizations, including critical care specialty associations, now support family presence during resuscitation and offer guidelines for effective implementation.^{1-6,8,10,11} Yet, health care professionals continue to debate the risks and benefits.^{4,8,11-27}

Research reflects that health care professionals perceive advantages for the family when they witness resuscitation attempts.¹²⁻¹⁵ Families may grieve better if they have a chance to say goodbye to a loved one and witness the efforts of the resuscitation team.^{9,15,19} Conversely, health care professionals report concerns about emotional trauma to families, potential disruptions of the resuscitation event by distraught family members, and added stress on the resuscitation team.¹²⁻¹⁵

Research on health care professionals' perceptions of family presence during resuscitation has primarily focused on nurses, particularly nurses who work in high-acuity settings. Multiple descriptive studies with diverse samples of nurses have identified perceived risks and benefits, as measured by instruments with adequate reliability and validity.^{12,26,28-32} Research studies on physicians' perceptions of family presence during resuscitation have been more limited methodologically, both by small samples from a single clinical specialty area and the lack of reliable and valid instrumentation.^{7,17-19,21-23,29,33,34} In most studies in which physicians were sampled, physicians' data were combined with data from other health care professionals,^{4,13-20,23-25,29} thus limiting clear evidence about physicians' perceptions of family presence. Furthermore, few psychometrically sound measures exist

to explicate physicians' perceptions. Two studies cited no reliability or validity of newly developed instrumentation.^{21,22} In 2 additional studies, physicians responded to instrumentation that had been validated with nurses but not validated in physician samples.^{23,29}

Also missing from the evidence on physicians' perspectives is research about physicians' self-confidence in managing family presence during resuscitations. Self-confidence related to a behavior influences the likelihood of engaging in the behavior, as proposed by Bandura's³⁵ theory of self-efficacy. Only 1 study has explored self-confidence among physicians in a small sample with an unvalidated survey.²¹ In comparison, nurses' self-confidence related to family presence has been measured with psychometrically sound scales and has correlated significantly with perceptions of risk and benefit related to family presence.^{12,28,29,31,32}

From this review of existing evidence, the dearth of research solely focused on physicians' perceptions of family presence was notable, compared with a rapidly increasing number of studies of nurses' perceptions. Therefore, the purpose of the study was to develop and test measures of physicians' perceptions of family presence to provide insight for critical care colleagues and possibly enhance interprofessional communication and collaboration during resuscitation events. Previously, the research team that conducted this study had developed and tested scales that measured nurses' perceptions of risk, benefit, and self-confidence related to family presence. Subsequent research has evaluated these scales in diverse samples of nurses and documented support for the psychometric properties.^{23,27-32,36} The research team envisioned the development of scales for physicians that would parallel the scales for nurses and provide a means to ultimately investigate similar and differing viewpoints of critical care nurses and physicians in valid and reliable ways.

This study proposed to (a) test 2 newly developed measures of physicians' perceptions of family presence during resuscitation; (b) examine the interrelationships of physicians' perceptions of risk, benefit, and self-confidence

related to family presence; and (c) identify characteristics that differentiated among physicians' perceptions and history of inviting or not inviting family presence during resuscitation. This study aimed to address limitations in previous research studies by (a) recruiting only physicians in an effort to keep physician data pure from the data of any other health care professionals and (b) obtaining an adequate sample size of physicians from across adult clinical specialties. This study did not compare physicians and nurses' perceptions of family presence.

METHODS

The research questions that guided this study were the following:

1. What are the psychometric properties of 2 new scales that measure physicians' perceptions related to family presence during resuscitation?
2. What are the relationships among physicians' perceptions of risk, benefit, and self-confidence related to family presence during resuscitation?
3. What are the characteristics that differentiate among physicians' perceptions and history of inviting or not inviting family presence during resuscitation?

Conceptual Definitions

Four conceptual definitions defined key variables in this study. Family presence during resuscitation, shortened to the term *family presence*, is the location of family in the patient care area that makes possible visual or physical contact with the patient during resuscitation events.¹ Resuscitations typically include chest compressions and/or efforts to maintain oxygenation. The conceptual definition of perceived risk is an individual's perceived susceptibility to a threat, such as inviting family to witness a resuscitation event. The conceptual definition of perceived benefit is an individual's assessment of the value of engaging in a behavior. The conceptual definition of self-confidence is a personal belief regarding one's own ability to perform a behavior, a term consistent with Bandura's³⁵ definition of efficacy expectations. These conceptual definitions guided the development of the instrumentation tested in this study.

Design, Setting, and Sample

Through a correlational design, a convenience sample of 195 physicians was recruited from a target population of physicians with full privileges at a 350-bed teaching hospital within a statewide health care system. The hospital did not have a policy about family presence during resuscitation; family presence was invited by physicians and/or nurses on a case-by-case basis and occurred with moderate frequency. A sample size of 180 to 250 was estimated

through power analysis to allow for optimal psychometric evaluation of the new scales.

Data Collection

Study information, including the 2 new scales, was distributed in hard copy form at hospital meetings of attending physicians, residents, and interns. Participants completed and returned data collection forms anonymously, which constituted informed consent. Two institutional review boards approved the study.

Study Measures

The 2 new scales tested in this study were the 22-item Physicians' Family Presence (PFP) Risk-Benefit Scale and the 10-item PFP Self-confidence Scale. Items were developed from published literature, Bandura's³⁵ self-efficacy theory, this study's conceptual definitions, and physician interviews. The response formats were 5-point Likert scales (1, strongly disagree, to 5, strongly agree). The possible total range of scores on the PFP Risk-Benefit Scale was 22 to 110, and on the PFP Self-confidence Scale was 10 to 50. The PFP Risk-Benefit Scale was bipolar, with higher scores reflecting more perceived benefit and lower scores reflecting more perceived risk. No items specifically addressed parental presence at resuscitations of children, because both scales intended to measure perceptions related to the resuscitation of persons of all ages. An expert review by a panel of clinicians, statisticians, and academicians supported the content validity of both scales.

Participants also responded to 2 single items. One item asked, "How many times have you invited a family member to be present during a resuscitation effort?" The response options were never, less than 5 times, and more than 5 times. This single item was measured as a characteristic of physicians. A second single item queried the extent to which physicians agreed with the statement "I would be more anxious about doing things right if family members were present during resuscitation efforts" on a 5-point Likert scale (1, strongly disagree, to 5, strongly agree). This single item was designed to draw out physicians' concerns about performance anxiety, which have been noted in existing literature but have not been clearly quantified. Demographic characteristics measured were age, sex, ethnicity, and clinical specialty.

STATISTICAL ANALYSIS

The first research question was addressed by examining construct validity through principal axis factor analysis with varimax rotation and intercorrelations of total scale scores. Scree plots indicated the number of factors within each scale. Internal consistency reliability was evaluated by Cronbach α and item-to-total score correlations.

Item-to-total correlations greater than 0.2 indicated that the item should be retained in the scale.³⁷ The second research question was addressed through correlations and tests for differences appropriate to the level of data. The third research question was addressed through *t* tests and analyses of variance. Six negatively worded items were reversed scored. Significance was set at $P < .05$. Data analysis occurred through SPSS for Windows, version 18.0.

RESULTS

Sample Characteristics

The sample consisted of 195 physicians, primarily male, white, and younger than 40 years. Response rate was 78%. Family practice and internal medicine/critical care were the leading clinical specialties represented. No participants reported that they were pediatricians. Missing data on participants' characteristics ranged from 4.6% to 10.8%. More than three-fourths of the sample had never invited family to be present. Data on physicians' characteristics are presented in Table 1.

Research Question 1: What Are the Psychometric Properties of 2 New Scales That Measure Physicians' Perceptions Related to Family Presence During Resuscitation?

Descriptive data for the PFP Risk-Benefit Scale, PFP Self-confidence Scale, and single item on performance anxiety are reported in Table 2. Mean item scores on the PFP Risk-Benefit Scale and the PFP Self-confidence Scale are displayed in Tables 3 and 4, respectively.

Participants' scores on all items of the PFP Risk-Benefit Scale ranged from 1 to 5. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.92, and the Bartlett's test of sphericity was statistically significant ($\chi^2 = 3172.72$, $df = 231$, $P < .001$), confirming that it was appropriate to proceed with factor analysis of the data. An inspection of the factor loadings per principal axis computation and the scree plot revealed a single factor for the PFP Risk-Benefit Scale, explaining 48.71% of the variance. Factor loadings are reported in Table 3. Cronbach α was .95 for the 22-item PFP Risk-Benefit Scale. Deletion of any item would have reduced the Cronbach α . Item-to-total correlations ranged from 0.44 to 0.84.

Participants' scores on all items of the PFP Self-confidence Scale ranged from 1 to 5. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.89, and the Bartlett's test of sphericity was statistically significant ($\chi^2 = 1286.046$, $df = 45$, $P < .001$), confirming that it was appropriate to proceed with factor analysis of the self-confidence data. Factor loadings per principal axis com-

TABLE 1 Characteristics of Physician Sample (N = 195)

	n (%)
Age, y	
25-39	134 (68.7)
40 and older	41 (21.0)
Missing	20 (10.3)
Sex	
Female	59 (30.3)
Male	127 (65.1)
Missing	9 (4.6)
Ethnicity	
African American	4 (2.1)
Asian	25 (12.8)
White	143 (73.3)
Hispanic	3 (1.5)
Pacific Islander	1 (0.5)
Multiracial	1 (0.5)
Missing	18 (9.2)
Area of practice	
Family practice	59 (30.3)
Internal medicine/critical care	47 (24.1)
Surgery/anesthesia	24 (12.3)
Emergency	4 (2.1)
Radiology	4 (2.1)
Transitional interns	23 (11.8)
Pathology residents	8 (4.1)
Other	5 (2.6)
Missing	21 (10.8)
How many times have you invited family presence during resuscitation?	
Never	153 (78.5)
1 or more times	24 (12.4)
<5 times	18 (9.3)
5 times or more	6 (3.1)
Missing	18 (9.1)

putation with varimax rotation are reported in Table 4. An inspection of the factor loadings and scree plot revealed a single factor, explaining 56.36% of the variance in physicians' self-confidence. Cronbach α was .92 for the 10-item scale. Deletion of any item would have reduced the Cronbach α . Item-to-total correlations ranged from 0.51 to 0.83.

TABLE 2 Descriptive Data for Study Measures (N = 195)

Scale/Item	No. Items	Total Mean Score	SD	Actual Range/Possible Range of Item Scores	Cronbach α
Physicians' Family Presence Risk-Benefit Scale (N = 194)	22	2.82	0.725	1-5/1-5	.950
Physicians' Family Presence Self-confidence Scale (N = 185)	10	3.44	0.805	1-5/1-5	.916
Single item: "I would be more anxious about doing things right with family present" (N = 187)	1	3.87	0.999	1-5/1-5	—

Research Question 2: What Are the Relationships Among Physicians' Perceptions of Risk, Benefit, and Confidence Related to Family Presence During Resuscitation?

The Shapiro-Wilk tests of normality were not significant for the PFP Risk-Benefit Scale and PFP Self-confidence Scale. Therefore, parametric statistics were computed to address the second research question. Correlations among

the mean scores of the 2 scales and the single item on performance anxiety are reported in Table 5.

More than one-half of participating physicians disagreed or strongly disagreed with 3 items on the PFP Risk-Benefit Scale. Participants did not perceive family presence during resuscitation to be of benefit to nurses (58.8%) or physicians (60.4%), and 53.8% of participants disagreed or strongly disagreed with the item, "I would invite a family

TABLE 3 Item Means and Factor Loadings for Principal Axis Factor Analysis: Physicians' Family Presence Risk-Benefit Scale (N = 195)

Item Number	Item	Factor Loading	Item Mean (SD)
1	Family members should be given the option to be present when a loved one is being resuscitated.	0.759	3.28 (1.273)
2	Family members will panic if they witness a resuscitation effort.	−0.439	3.58 (0.815)
3	Family members will have difficulty adjusting to the long-term emotional impact of watching a resuscitation effort.	−0.549	3.44 (0.951)
4	The resuscitation team may develop a close relationship with family members who witness the efforts, as compared with family members who do not witness the efforts.	0.570	2.90 (1.019)
5	If my loved one were being resuscitated, I would want to be present in the room.	0.602	2.88 (1.343)
6	Patients do not want family members present during a resuscitation attempt.	−0.575	3.01 (0.823)
7	Family members who witness unsuccessful resuscitation efforts will have a better grieving process.	0.684	2.72 (0.73)
8	If my loved one were being resuscitated, I should be allowed to be present because I am a physician.	0.431	2.93 (1.162)
9	Family members will become disruptive if they witness resuscitation efforts.	−0.583	3.21 (0.826)
10	Family members who witness a resuscitation effort are more likely to sue.	−0.466	2.86 (0.911)
11	The resuscitation team will not function as well if family members are present in the room.	−0.720	3.16 (1.028)
12	I would invite a family member to come in to most resuscitation efforts of which I was in charge.	0.781	2.61 (1.187)
13	Family presence during resuscitation is beneficial to patients.	0.765	2.54 (0.963)
14	Family presence during resuscitation is beneficial to families.	0.853	2.84 (1.040)
15	Family presence during resuscitation is beneficial to nurses.	0.784	2.37 (0.897)
16	Family presence during resuscitation is beneficial to physicians.	0.825	2.34 (0.891)
17	Family presence during resuscitation should be a component of family-centered care.	0.860	2.88 (1.073)
18	Family presence during resuscitation will have a positive effect on patient ratings of satisfaction with hospital care.	0.808	2.84 (0.931)
19	Family presence during resuscitation will have a positive effect on family ratings of satisfaction with hospital care.	0.822	2.97 (0.953)
20	Family presence during resuscitation will have a positive effect on physician ratings of satisfaction in providing optimal patient/family care.	0.810	2.76 (0.926)
21	Family presence during resuscitation is a right that all patients should have.	0.676	3.42 (1.195)
22	Family presence during resuscitation is a right that all family members should have.	0.708	3.10 (1.254)

TABLE 4 Item Means and Factor Loadings for Principal Axis Factor Analysis: Physicians' Family Presence Self-confidence Scale (N = 175)

Item Number	Item	Factor Loading	Item Mean (SD)
1	I could communicate about the resuscitation effort to family members who are present.	0.613	3.34 (1.070)
2	I could order and/or administer drug therapies during resuscitation efforts with family members present.	0.866	3.69 (0.926)
3	I could order and/or perform electrical therapies during resuscitation efforts with family members present.	0.893	3.65 (0.940)
4	I could deliver chest compressions during resuscitation efforts with family present.	0.797	3.97 (0.909)
5	I could communicate effectively with other health team members during resuscitation efforts with family members present.	0.807	3.53 (1.022)
6	I could maintain dignity of the patient during resuscitation efforts with family present.	0.529	3.28 (1.289)
7	I could intubate patients during resuscitation efforts with family members present.	0.874	3.55 (1.081)
8	I could place central lines during resuscitation efforts with family members present.	0.797	3.34 (1.127)
9	I could support family members emotionally during or after resuscitation efforts.	0.482	3.04 (1.210)
10	I could announce cessation of resuscitation efforts with family members present.	0.718	3.16 (1.158)

member to come in to most resuscitation efforts of which I was in charge.”

Research Question 3: What Are the Characteristics That Differentiate Among Physicians' Perceptions and History of Inviting or not Inviting Family Presence During Resuscitation?

Data on sex, age, ethnicity, clinical specialty, and the number of times participating physicians had invited family presence during resuscitation were analyzed to address the third research question. Because only a small minority of the sample had invited family presence less than 5 times (9.3%) and 5 times or more (3.1%), scores on this single item were clustered for further analysis as “invited at least once” (12.4%) and “never invited” (78.5%) (see Table 1). Three sets of results address the third research question.

First, the characteristics that differentiated among physicians' perceptions of risk, benefit, and self-confidence were clinical specialty and age. Sex and ethnicity did not differentiate among perceptions of risk, benefit, or self-confidence. Differences in total mean scores for the PFP Risk-Benefit Scale and PFP Self-confidence Scale across clinical specialties are reported in Table 6. Family practice physicians scored significantly higher on the PFP Risk-Benefit Scale compared with participants in internal medicine/critical care, surgery/anesthesia, and other specialty areas ($P = .031-.003$). Family practice physicians scored significantly higher on the PFP Self-confidence Scale compared with participants in other specialty areas, such as emergency department and radiology ($P < .001$).

Participants aged 25 to 39 years scored significantly higher on the PFP Risk-Benefit Scale compared with participants aged 40 and older ($t_{1,173} = 1.973$, $P < .05$). No significant age-related differences were noted for the PFP Self-confidence Scale.

Second, the characteristic that differentiated between physicians who had and had not invited family presence during resuscitation was sex. More female physicians than male physicians had invited family presence at least once (see Table 7). The number of times participants had invited family presence during resuscitation did not differ significantly by age, ethnicity, or clinical specialty.

TABLE 5 Pearson r Correlations Among Mean Scores for Physicians' Family Presence Risk-Benefit Scale, Physicians' Family Presence Self-confidence Scale, and Single Item for Performance Anxiety

Scale/Item	Physicians' Family Presence Risk-Benefit Scale (N = 194)	Physicians' Family Presence Self-confidence Scale (N = 185)
Physicians' Family Presence Risk-Benefit Scale (N = 194)	—	$r = 0.472^a$
Single item: “I would be more anxious about doing things right with family present during resuscitation” (N = 194)	$r = -0.052$	$r = -0.261^b$

^a $P = .01$. ^b $P = .001$.

TABLE 6 Analysis of Variance and Post Hoc Analysis on Differences in Mean Scores by Clinical Specialty

	Family Practice	Internal Medicine	Surgical/Anesthesia	Other	F	P
PFP Risk-Benefit Scale, mean (SD) score	3.12 (0.60)	2.63 (0.75)	2.62 (0.70)	2.76 (0.74)	5.582 (df = 3, 179)	.001
PFP Self-confidence Scale, mean (SD) score	3.75 (0.72)	3.53 (0.78)	3.39 (0.70)	3.17 (0.85)	5.234 (df = 3, 170)	.002
Post Hoc Analysis of Differences in PFP Risk-Benefit Scale Scores Among Areas of Clinical Specialty						
Area of Practice	Area of Practice Comparison	Mean Differences	Significance (P)	Confidence Interval		
Family practice	Internal medicine/critical care	0.48803	.003	0.1360-0.8401		
	Surgery/anesthesia	0.49641	.021	0.0589-0.9339		
	Other	0.35778	.031	0.0234-0.6922		
Internal medicine/critical care	Family practice	−0.48803	.003	−0.8401 to −0.2360		
	Surgery/anesthesia	0.00838	1.00	−0.4692 to 0.4860		
	Other	−0.13026	.818	0.5194-0.2589		
Surgery/anesthesia	Family practice	−0.49641	.021	−0.9339 to −0.0589		
	Internal medicine/critical care	−0.00838	1.00	−0.4860 to 0.4692		
	Other	−0.13864	.857	−0.6045 to 0.3273		
Other	Family practice	−0.35778	.031	−0.6922 to −0.0234		
	Internal medicine/critical care	0.13026	.818	−0.2589 to 0.5194		
	Surgery/anesthesia	0.13864	.857	−0.3273 to 0.6045		
Post Hoc Analysis of Differences in PFP Self-confidence Scale Scores Among Areas of Clinical Specialty						
Family Practice	Internal medicine/critical care	0.21168	.503	−0.1844 to 0.6077		
	Surgery/anesthesia	0.35919	.191	−0.1134 to 0.8317		
	Other	0.57684	.001	0.1793-0.9744		
Internal medicine/critical care	Family practice	−0.21168	.503	−0.6077 to 0.1844		
	Surgery/anesthesia	0.14751	.866	−0.3605 to 0.6555		
	Other	0.36516	.142	−0.0768 to 0.8071		
Surgery/anesthesia	Family practice	−0.35919	.191	−0.8317 to 0.1134		
	Internal medicine/critical care	−0.14751	.866	−0.6555 to 0.3605		
	Other	0.21765	.669	−0.2916 to 0.7270		
Other	Family practice	−0.57684	.001	−0.9744 to −0.1793		
	Internal medicine/critical care	−0.36516	.142	−0.8071 to 0.0768		
	Surgery/anesthesia	−0.21765	.669	−0.7270 to 0.2916		

Abbreviation: PFP, Physicians' Family Presence.

Third, participating physicians who had invited family presence during resuscitation at least once scored significantly higher on the PFP Risk-Benefit Scale compared with participants who had never invited family presence during resuscitation (see Table 7, Figure 1). Physicians who had invited family presence during resuscitation

at least once scored significantly higher on the PFP Self-confidence Scale compared with participants who had never invited family presence during resuscitation (see Table 7, Figure 1). Participants who had invited family presence during resuscitation at least once perceived significantly less anxiety about doing things right with families present than

TABLE 7 Number of Times Participants Invited Family Presence by Mean Scale Scores and Physician Characteristics

	Never Invited Family Presence	Invited Family Presence More Than Once	Statistic	P
PFP Risk-Benefit Scale, mean (SD) score	2.73 (0.70) (N = 153)	3.19 (0.84) (N = 24)	$t = -2.90$.004
PFP Self-confidence Scale, mean (SD) score	3.38 (0.77) (N = 146)	3.84 (0.96) (N = 24)	$t = -2.60$.01
Anxious about doing things right	3.92 (0.921) (N = 153)	3.29 (1.429) (N = 24)	$t = 2.092$.046
Age, y				
25-39	N = 114 (87%)	N = 17 (13%)	$\chi^2 = 0.613$.434
40 and older	N = 32 (82.1%)	N = 7 (17.9%)		
Sex				
Male	N = 109 (93.2%)	N = 8 (6.8%)	$\chi^2 = 14.365$.001
Female	N = 38 (71.7%)	N = 15 (28.3%)		
Ethnicity				
Asian	N = 18 (81.8%)	N = 4 (18.2%)	$\chi^2 = 1.615$.446
White	N = 113 (85.6%)	N = 19 (14.4%)		
Other	N = 8 (100%)	N = 0 (0.0%)		
Clinical specialty				
Family practice	N = 44 (81.5%)	N = 10 (18.5%)	$\chi^2 = 2.745$.433
Internal medicine	N = 36 (83.7%)	N = 7 (16.3%)		
Surgical/anesthesia	N = 21 (95.5%)	N = 1 (4.5%)		
Other	N = 42 (87.5%)	N = 6 (12.5%)		

Abbreviation: PFP, Physicians' Family Presence.

physicians who had never invited family presence during resuscitation (see Table 7).

DISCUSSION

Interprofessional collaboration and communication during crisis events are associated with positive patient outcomes.³⁸⁻⁴⁰ Because physicians and nurses may hold diverse views of family presence,^{15,18,23} an awareness of colleagues' perceptions can enhance dialog and benefit all stakeholders.²⁴ This study conducted an evaluation of 2 new scales to measure physicians' perceptions of family presence so that resuscitation team members can have an understanding of each other's perspectives and can coordinate care delivery for patients in life-threatening situations.

To fill gaps in knowledge about physicians' perceptions related to family presence during resuscitation, this study sampled physicians only and did not combine physicians' data with responses from other health care professionals, as in previous research.^{4,19,20,23-25,27,29,34,41,42} The sample for this study was one of the few consisting of participants from multiple clinical areas, which provided a broader perspective on family presence during resuscitation than has been found in studies that sampled health care professionals from only 1 clinical area.

The results drawn from this sample contributed in 3 ways to the scientific knowledge needed by critical care nurses. Specifically, the results offered (a) psychometric evidence on 2 new scales that physicians and nurses could use to gain insight into physicians' perspectives about family presence during resuscitation, (b) new information

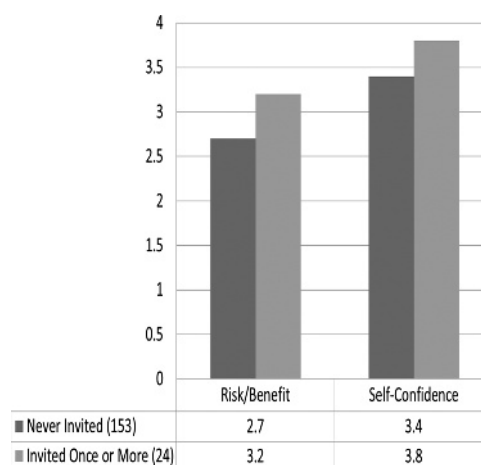


Figure 1. Mean scores on the Physicians' Family Presence Risk-Benefit Scale and Physicians' Family Presence Self-confidence Scale for physicians who have and have not invited family presence (N = 177).

on physicians' perceptions that has relevance for critical care nurses, and (c) a profile of characteristics that differentiated among physicians' perceptions and physicians' history of inviting family presence during resuscitation.

Psychometric Findings and Implications

This study was the first to assess the psychometric properties of 2 scales developed specifically to measure physicians' perceptions related to family presence during resuscitation. Results relative to the first research question supported the internal consistency reliability of the PFP Self-confidence Scale and PFP Risk-Benefit Scale through high Cronbach α and item-to-total correlations in the moderately high range for every item. The construct validity of both scales was supported by clear, singular factor structures that explained approximately half of the variance in data of both scales. Concurrent validity of both scales was supported by the moderate and significant correlations between the 2 scales in the expected direction.

The 2 scales could be further developed in 5 ways. First, scores on the PFP Self-confidence Scale could be compared with scores on a measure of global self-efficacy. However, experts have urged caution when comparing scores on contextual self-efficacy scales with scores on global self-efficacy scales.⁴³ Second, because every item on both scales elicited responses from participants that ranged from "strongly agree" to "strongly disagree," a ceiling effect could have been operating. Future tests of the new scales could offer a 7- or 10-point response scale and perhaps tap more extensively the full range of agreement and disagreement with the items. Third, although the PFP Risk-Benefit Scale and PFP Self-confidence Scale accounted for an acceptable percentage of variance in perceptions related to family presence, future development of the scales could include qualitative studies to identify perceptions not yet represented precisely on the PFP Risk-Benefit Scale, in an effort to explain more of the variance. In addition, the PFP Self-confidence Scale could be expanded to more fully reflect the 2 theoretical subconcepts of self-efficacy.^{35,43,44} Currently, the PFP Self-confidence Scale operationalizes only the subconcept of efficacy expectations, which are persons' beliefs regarding their ability to perform a behavior. The PFP Self-confidence Scale does not operationalize the subconcept of outcome expectations, which are beliefs that desired outcomes will result if persons perform a behavior. Last, the factor structure of the 2 scales could be tested in a sample large enough to allow for a confirmatory factor analysis.^{37,45}

After further testing, the PFP Risk-Benefit Scale and PFP Self-confidence Scale may help create more new knowledge about family presence during resuscitation from physicians' perspectives. For example, the scales could be used to measure physicians' perceptions (a) before and after an

educational offering or after an actual family presence during resuscitation event,^{46,47} (b) as a self-evaluation to heighten self-awareness, and (c) to identify physicians with positive perceptions who could mentor peers who are less experienced in family presence, less confident, or reluctant to enact professional guidelines recommending family presence. From inspecting physician responses to these 2 scales, interprofessional resuscitation teams could learn what physicians perceive regarding family presence during resuscitation and could plan with physicians the interventions needed to ameliorate physicians' concerns.

Perceptual Findings and Implications

Item mean scores on the PFP Risk-Benefit Scale indicated that participating physicians perceived family presence as a patient's right and believed that families should have the option of being present during resuscitations. However, more than half disagreed that they would invite families into resuscitations when they were in charge. Participating physicians in this study indicated moderately high anxiety about family presence during resuscitation. Therefore, a closer analysis of the results of this study is warranted to provide critical care nurses, as well as other colleagues, new insight and promote effective collaboration during life-threatening events.

The mean total score on the PFP Risk-Benefit Scale indicated that physicians perceived slightly more risk than benefit related to family presence during resuscitation. Item mean scores showed that no potential benefits rated greater than the 3.0 midpoint for responses on the PFP Risk-Benefit Scale. The benefits perceived most strongly were a positive effect on family satisfaction and the potential development of a close relationship with family members who witness the efforts. Research findings from previous studies have not explicated these 2 benefits or measured the magnitude of them from physicians' perspectives.

Item means of 4 perceived risks revealed particular concerns of physicians, specifically that families may panic, become disruptive, negatively impact the resuscitation team, and have trouble adjusting long-term. These perceived risks paralleled those found in previous research with samples that included physicians but did not sample physicians exclusively.^{17,19,21,23}

Participants in this study shared with physicians in other studies the concern of litigation if families were present.^{7,18,19,21,42} Research has not documented an increased number of litigations following family presence during resuscitation. Conversely, some professionals have suggested that families may be less likely to sue after being present and witnessing that the team worked extensively on behalf of their loved one.^{18,19}

The total mean score on the PFP Self-confidence Scale indicated that participating physicians perceived that they were confident in managing resuscitations with family

present. Means for all items were greater than the midpoint of 3.0 on the response scale. Physicians were most confident in performing medical interventions, such as intubating and delivering chest compressions. Physicians were least confident that they could emotionally support and communicate with the family, a finding not explicated in previous research studies.

More than two-thirds of the participants agreed or strongly agreed that they felt anxious during resuscitations with families present. Because three-fourths of the sample has not participated in family presence, perceived anxiety could have been related to imagining what it would be like. Participants who perceived more self-confidence in managing a resuscitation with families present were significantly less anxious about doing things right, especially if they had invited family presence during resuscitation at least once. In previous research, experience with family presence has varied in its effect on physicians' perceptions; sometimes, experience prompted more positively toned perceptions and sometimes more negatively toned perceptions.^{42,48,49} Physicians' reluctance to invite family presence during resuscitation then may be due to the greater magnitude of perceived risk than benefit, lack of confidence in communicating effectively with families, and lack of experience with family presence during resuscitation.

A key strategy that critical care nurses could offer to address physicians' perceived risks is the designation of a family facilitator. Family facilitators are widely recommended by experts and professional organizations.^{1,2,5,7,9,11,15,23,25,26} Facilitators are usually nurses who take responsibility for supporting and communicating with families as they witness the resuscitation and building the family's trust in the health care team. A facilitator narrates and interprets the resuscitation activities and guards against potential family disruptions.

Another strategy to address physicians' perceived risks is to develop interprofessional educational sessions that highlight research evidence and disband myths about family presence. Contrary to perceptions of physicians in this study and others, there is little evidence that families become overtly panicky and disruptive during resuscitations.^{15,33} Furthermore, evidence documents that families are not traumatized by witnessing resuscitations but are rather positive afterward.^{7,15,33,50} Education has improved nurses' perceptions and intention to invite family presence^{32,46,47}; the same may be true for physicians. Educational sessions could include role-playing and case studies to address misinformation about family presence. For example, evidence could be cited to show that key patient outcomes, such as the return of spontaneous circulation and survival to discharge, are similar in hospitals that do and do not support family presence during resuscitation.^{3,4,17,23}

Additional strategies to address physicians' perceived risks are (a) mock code rehearsals and simulations in which

resuscitation teams practice careful communication with families and other team members^{4,7,15}; (b) debriefing after family presence events to review strengths and weaknesses and plan for future events; (c) commitment from nurses to protect patients' bodily privacy and provide reassurance to patients, thus allowing physicians to focus solely on medical demands of the event^{15,20}; and (d) engaging physicians in the design and adoption of policies and procedures for family-witnessed resuscitations. Physicians often resist setting policies for family presence, preferring rather to decide on a case-by-case basis.^{15,51} However, as dialog and understanding increase among resuscitation team members, critical care nurses may help craft policies acceptable to multiple professional stakeholders.

Further evaluation of the PFP-Risk Benefit Scale and the PFP-Self-confidence Scale could include testing among pediatricians, because no pediatricians chose to participate in this study. Although research has documented parents' desire to be present during a child's resuscitation efforts, providers' perceptions vary regarding parental presence.^{24,51,52} Little research has focused specifically on the perceptions of pediatricians.^{23,53} In addition, further testing of the scales could evaluate length of experience as a physician and physicians' specific role, such as intern, resident, or attending physician. Experience and professional role may influence physicians' perceptions related to family presence.^{23,28,29,54,55}

Physician Profiles and Implications

The results of this study identified characteristics of physicians who perceived more benefits than risks, who perceived higher self-confidence in managing family presence during resuscitation, and who had a history of inviting family presence during resuscitation. Participants in family practice and younger participants perceived more benefits than risks. Participants who had invited family practice also perceived more self-confidence in managing family presence during resuscitation, compared with other clinical specialties. More female physicians than male physicians had invited family presence at least once. Physicians who had a history of inviting family presence during resuscitation perceived more benefits, were more confident in their ability to manage resuscitations with families present, and were less anxious about doing things right during the resuscitation.

Previous research has not consistently clarified associations among physicians' characteristics and perceptions of family presence during resuscitation. Four studies in which physicians were included as part of the sample found sex, age, and clinical specialty differences that were not the same as those found in this study.^{18,21,23,26} Further investigations among pure physician samples may uncover a clearer profile of characteristics related to family presence during resuscitation.

Critical care nurses may look for physician champions who have had experience with family presence and who practice in clinical areas with a family-centered focus. Critical care nurses could encourage physicians who have experienced performance anxiety to consider a trial or pilot test. Then, perceptions could be reevaluated to see whether benefits and self-confidence increased after experiencing family presence, as suggested in this study and others.^{8,46,47} Implementation science literature suggests tailoring a new practice to a specific setting and piloting a small-scale project to assess barriers.⁵⁶ Barriers to family presence during resuscitation could be related to physicians' personal characteristics but could also be related to knowledge, attitudes, the environment, and the culture of an acute care setting.

Theoretical Implications

These study results suggest that, when physicians are confident in managing families during resuscitation, they may perceive more benefits and less risk. This same relationship also was found in samples of nurses.^{12,28-32,36} The positive relationship between self-confidence in performing a behavior and an expected positive benefit to the behavior is consistent with Bandura's³⁵ theory of self-efficacy, which asserted that efficacy expectations varied positively with outcome expectations. Self-confidence, as measured in this study, was conceptually parallel to efficacy expectations, whereas expected positive benefit was conceptually similar to outcome expectations in Bandura's³⁵ theory.⁴² Thus, this finding gave theoretical support to the construct validity of the PFP Self-confidence Scale and suggests that, if physicians' awareness of the benefits of family presence increased, physicians may feel more confident and invite family presence more often.

LIMITATIONS

The results of this study may be limited by the ethnic homogeneity of the sample; the nonrandom sample was almost three-fourths white. Because research has illuminated cultural and ethnic differences in physicians' perceptions of family presence,^{15,57-60} future studies can test the 2 new scales in ethnically diverse samples. The participants in this study had little experience with family presence; therefore, the scales should be tested in samples of physicians who have invited family presence more often. In addition, this study did not assess physicians' past experiences with resuscitations in general, which could have influenced perceptions.^{23,29,54} It is not known how many times physicians in this study participated in resuscitations, with or without family presence. Given the small number of participants who had experienced family presence during resuscitation, participants may have reported perceptions based on hypothetical events rather than actual experiences.

CONCLUSIONS

The results of this study provided initial support for 2 measures of physicians' perceptions of family presence during resuscitation. The new scales could be tested in diverse samples and may aid in the creation of further evidence to guide physicians and critical care nurses in maximizing collaborative, family-sensitive care during life-threatening events.

Although physician participants in this study perceived that family presence was a right of patients and should be offered to families, less than one-half intended to invite family presence during resuscitation. This finding was consistent with physicians' perceptions of more risks than benefits to family presence. The most strongly perceived risks were emotional trauma to families and potential disruption of the resuscitation efforts by distraught family members. Physicians were confident that they could manage resuscitations with families present, and physicians who were more self-confident also perceived more benefits and less risk. These results may stimulate interprofessional dialog and the design of innovative approaches to enhance critical care nurses, physicians, and families' crisis experiences.

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