Improving Social Work in Intensive Care Unit Palliative Care: Results of a Quality Improvement Intervention

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Abstract

Objective: The intensive care unit (ICU) is a focal point for decision making in end-of-life care. Social workers are involved in providing this care for patients and families. Our goal was to examine the social worker component of an intervention to improve interdisciplinary palliative care in the ICU.

Methods: The study took place at a 350-bed hospital with 65 ICU beds. We surveyed family members and social workers caring for patients who died in the ICU or within 30 hours of transfer from ICU. Clustered regression was used to assess the effect of the intervention on three outcomes: (1) families' satisfaction with social work, (2) social workers' reported palliative and supportive activities, and (3) social workers' satisfaction with meeting family needs.

Results: Of 590 eligible patients, 275 families completed surveys (response rate, 47%). Thirty-five social workers received 353 questionnaires concerning 353 unique patients and completed 283 (response rate, 80%). Social workers reported significant increase in the total number of activities for family members after the intervention. Some of the activities included addressing spiritual or religious needs, discussing disagreement among the family, and assuring family the patient would be kept comfortable. Neither social workers' satisfaction with meeting families' needs nor family ratings of social workers were higher after the intervention. Increased social worker experience and smaller social worker caseload were both associated with increased family satisfaction with social work.

Discussion: The increase in social worker-reported activities supports the value of the interdisciplinary intervention, but we did not demonstrate improvements in other outcomes. Increased social-worker experience and decreased social worker caseload were independently associated with better family ratings of social workers suggesting future directions for interventions to improve care by social workers. Future studies will need more powerful interventions or more sensitive outcome measures to document improvements in family-assessed outcomes.

Introduction

THE INTENSIVE CARE UNIT has become a focal point for decision making in hospital end-of-life care. Approximately 20% of deaths in the United States occur in the intensive care unit (ICU) or shortly after an ICU stay.¹ In some ICUs, up to 70% of those who die there have had life support withheld or withdrawn.² In the majority of ICU deaths, surrogates are asked to be involved in making decisions to withdraw life-sustaining treatment because many critically ill patients do not have decisional capacity at the time these decisions are made.³ Prior studies have shown a high burden of anxiety, depression, and posttraumatic stress disorder among family members of patients in the ICU.^{4,5} Oftentimes, social workers are involved in preparing family members for

these complex decision-making responsibilities.^{6,7} This process often requires social workers to attend to feelings of anxiety among family members.⁸ Social workers also address communication problems that are consistently cited by family members as their most important concerns.^{9,10} Therefore, social workers may have an opportunity to play an important role in improving family experiences of decision making as well as other aspects of palliative and end-of-life care.^{11,12}

Currently, social workers active in medical settings report that they have not received adequate training in end-of-life care, palliative care, or the ethical dilemmas that they confront.^{13,14} Some schools of social work have begun to address this problem by providing specialized courses and practice training in end-of-life care.^{15,16} In addition to these undergraduate- and graduate-level training programs, continuing

education programs are beginning to play an important role in preparing experienced social workers for these new challenges. However, the impact of continuing education programs on the practice behavior of social workers is understudied and their effectiveness has not been determined.¹⁷

This study examines the social worker component of an interdisciplinary hospital-based intervention designed to improve the experience of families of patients who died in or shortly after a stay in the ICU. In this article, we evaluate the effectiveness of the intervention using both family-assessed and social worker-assessed outcomes concerning social workers including (1) families' satisfaction with social workers' services, (2) the number and type of social workers' activities with families, and (3) social workers' satisfaction with meeting families' needs.

Method

Overview

We examined the effect of an interdisciplinary, multifaceted intervention designed to improve social workers' and other clinicians' ability to provide palliative and end-of-life care to critically ill patients and their family members. Using a "before-after" design, we evaluated the effect of the intervention on social worker services with questionnaires completed by both families and social workers. Families answered one question in which they assessed their satisfaction with social worker services. Social workers answered 14 questions about activities they or other team members conducted to support the families with whom they were working; they also answered 3 questions about their satisfaction with meeting these families' needs. Our goal was to use the intervention to improve the way social workers interacted with the ICU team and the families of patients receiving palliative care in the ICU. We hypothesized that a successful intervention would result in improved family satisfaction with social worker services, increased social worker-reported activities to support families and patients, and improved social worker satisfaction with having met family needs.

Intervention

The quality improvement intervention, "Integrating Palliative and Critical Care" (IPACC), had the goals of improving patient comfort, clinician-family communication and the family's experiences in the ICU. The intervention had five-components: (1) interdisciplinary clinician education in palliative care, (2) training ICU "palliative-care champions," (3) identification of ICU-specific barriers to palliative care, (4) feedback of ICU-specific family satisfaction data, and (5) provision of system supports such as standardized physician order forms.^{18,19} Social workers participated primarily in clinician training in palliative care, "palliative-care champion" development and feedback of family satisfaction data. The social worker local champions were trained to provide leadership in changing social work practice in the ICUs.

Because all medical-surgical social workers in the study hospital see at least some patients in the ICU, they were all targeted for the intervention. Attendance at training sessions varied, depending on scheduling needs. Social workers participated in training sessions in groups of 3-15 and in up to 3 interdisciplinary sessions with nurses, physicians, respiratory

therapists and spiritual care providers. These sessions covered six major topics: (1) principles of decision making about palliative care in the ICU, (2) communication with patients, families, and the ICU team, (3) pain and symptom management, (4) principles and practice of withdrawal of life support, (5) principles of spiritual care and bereavement support, and (6) principles of cross-cultural awareness and accommodation. The interdisciplinary group sessions included didactic training on these topics, training videos illustrating approaches to families, case presentations of discussions of palliative care with families, and ICU interdisciplinary group discussions.¹⁸ The information from the sessions was reinforced by a series of educational pamphlets provided to staff members and wall posters displayed in the ICUs.

Setting and social work staff

This study took place at a 350-bed Level I Trauma center with 65 ICU beds in 6 geographically distinct ICUs. The social work department in this hospital has been in place for 38 years and social workers provide service in the emergency department, intensive care units, medical-surgical units, outpatient clinics and other special programs. Approximately 20 full- and part-time social workers regularly cover the medical-surgical units.

Sample for outcome assessment

From July 2003 to March 2004 (preintervention), and December 2004 to October 2005 (postintervention), we examined hospital admission/discharge/transfer logs daily and identified all patients who had died in an ICU with a minimum stay of 6 hours before death. We also included patients who died within 30 hours of transfer from the ICU to another hospital location. We excluded patients who were in the ICU for less than 6 hours because social workers may not have had enough time to get involved in their care. Within 48 hours of an eligible patient's death, the social worker caring for the patient at the time of death received a questionnaire, a consent form and a coffee coupon incentive. Social workers received reminders at 1 week and, if they had not returned the questionnaire booklet, a second mailing of materials 3-4 weeks following distribution of the initial questionnaire.

Family questionnaires were mailed one month after a patient's death. Included in the packet were a cover letter, a consent form, a stamped return envelope, and a \$10 incentive payment. The cover letter asked that the one family member or friend most involved in the patient's care complete the questionnaire. Reminders included a card sent at 1 week after the initial mailing and a second packet sent at 4 to 6 weeks after the initial mailing.

Outcome measures

Family-assessed measures. In order to assess families' satisfaction with social worker services, we used an item from the validated Family Satisfaction in the ICU (FS-ICU) survey.²⁰ This questionnaire includes one question regarding social work staff: "How well did the ICU social workers assist and support you?" The response option uses a five-point Likert scale (excellent, very good, good, fair, and poor) with an additional choice of "not applicable." We also collected the following demographic information from families to enable

us to compare sample characteristics from the preintervention and postintervention period: age, gender, race or ethnicity, education, the family member's relationship to the patient and the number of years they had known the patient.

Social worker-assessed measures. Social workers completed a questionnaire packet containing the Activities and Communication with Families questionnaire, the Meeting Family Needs questionnaire, and items assessing their personal characteristics and demographics (e.g., their age, gender, race, or ethnicity, education, and their years of experience as a social worker and in the ICU). These questionnaires were developed and validated by the Harborview/University of Washington End-of-Life Care Research Program.^{21,22}

The Activities and Communication with Families questionnaire consists of 14 activities that social workers may complete to support and assist families (see Results for the list of activities). These activities include some of the therapeutic interventions conducted by social workers or other team members in the ICU. Respondents identified an activity as completed if either they provided it or knew it had been provided by someone else on the clinical team. If identified, the item was assigned a value of "1." A total activities score was created as the sum of all endorsed activities for each patient's family.

The Meeting Family Needs questionnaire completed by social workers has 4 items: how well the social worker met the family's physical needs, how well he/she met the family's emotional needs, how well he/she communicated with the family, and how well the health care team met the family's overall needs. The fourth question relates to team functioning and was not included in this analysis. Items are scored on a 0–10 scale, with 0 indicating "not at all satisfied," and 10 indicating "extremely satisfied." the total score for this study is the mean of the remaining three items for each respondent.

Reliability for the questionnaires was measured with Cronbach α , which was 0.85 for Activities and Communication with Families and 0.93 for Meeting Family Needs. These results confirmed a previous analysis of the reliability of these instruments conducted on the preintervention data.²²

Analyses

Data analyses were designed to explore the following three hypotheses: (1) family satisfaction with social workers would be rated higher in the postintervention period, (2) social workers would report more team activities after training, and (3) social worker scores on the satisfaction with meeting family needs index would be higher in the postintervention period. This third hypothesis examines the social workers' self-assessment of their performance in the preintervention and postintervention periods. We anticipated that the social workers would perform better after they were trained in palliative care and as a result they would feel more satisfied that they had met the families' needs. The improved performance would be reflected in higher satisfaction ratings in the postintervention period. Because social workers often provided care to more than one family, observations were not independent. We therefore used clustered regression analyses to control for correlated data with a pre–post variable as a predictor. Clustered regression was used to analyze all

questionnaire data, whether completed by families or by social workers. In both cases, clustering was by social worker.

We considered social worker characteristics that might play a role as confounders or covariates for inclusion in the regression analyses. To identify potential confounding variables, we examined the univariate associations between demographic characteristics of the social workers, the predictor variable (preintervention versus postintervention), and the outcome variables. Years as a social worker ($M = 11.9$, standard deviation [SD] = 7.9) was significantly associated ($p < 0.05$) with social worker satisfaction with meeting family needs, and with family satisfaction with the social worker. We also considered the total number of families seen by each social worker during the study period and created the variable "caseload" to capture this social worker characteristic. Caseload ($M = 10.0$, $SD = 13.3$) was significantly associated ($p < 0.05$) with three variables: (1) the pre–post indicator, (2) total reported social worker activities, and (3) the social worker characteristic "years as a social worker." The two variables, "years as a social worker" and "caseload," were included in the regression models to control for potential confounding with the pre–post indicator. We tested the three hypotheses using this same approach with each of these outcome variables.

As in a previous study,²² skewness for the mean score on the Meeting Family Needs scale was corrected by natural logarithm transformation. Therefore, predictor variables that have a positive association will have a negative sign in the regression.

Lastly, because this was a before–after study, we used independent sample t tests and analysis of variance to assess whether patients, families and social workers differed significantly on selected demographic characteristics in the preintervention and postintervention samples. The level for determining statistical significance for all tests was set at $p \leq 0.05$.

Results

Respondents

Five hundred ninety patients and families were eligible for inclusion in the study, with 253 in the preintervention period and 337 in the postintervention period. A total of 275 family members representing 275 unique patients returned questionnaires (preintervention, $n = 125$, postintervention, $n = 150$) for an overall response rate of 47%. Of these 275 families, 126 (46%) had a completed questionnaire from a social worker and also had answered the social worker item on the family questionnaire (preintervention, $n = 66$, postintervention, $n = 60$). This subsample was used to assess family satisfaction with social worker services and was used to compare patient and family characteristics in the preintervention and postintervention periods. Fewer of the postintervention family members were white (68%) as compared with the preintervention family members (83%). There were no significant differences between the preintervention and postintervention families on any of the other characteristics (Table 1).

A total of 35 social workers participated in the study (Table 2). They worked with and received questionnaires for 353 (60%) patients, and completed 283 questionnaires (preintervention, $n = 134$, postintervention, $n = 149$) for a response rate of 80%. Fifteen social workers participated in both

TABLE 1. CHARACTERISTICS OF PATIENTS AND FAMILIES (N = 126)

	Pre (n = 66)	Post (n = 60)	p
Patient Demographics			
Mean age (SD)	64.2 (16.8)	61.9 (17.4)	0.47
# Male (%)	45 (68)	43 (72)	0.57
Family demographics			
Mean age (SD)	56.3 (12.5)	55.3 (13.1)	0.65
# Years known patient (SD)	37.1 (16.3)	39.9 (13.7)	0.31
# Female (%)	38 (58)	42 (70)	0.11
# Caucasian (%)	55 (83)	41 (68)	0.05
# Spouse of patient (%)	36 (55)	26 (43)	0.21
# Child of patient (%)	18 (27)	16 (27)	0.94
Lived with patient (%)	30 (46)	22 (37)	0.36
# Level of education (%)			0.82
8th grade or less	1 (2)	1 (2)	
Some high school	3 (5)	3 (5)	
HS diploma or GED	15 (23)	12 (20)	
Some college or trade school	26 (39)	29 (48)	
4-year college degree	14 (21)	8 (13)	
Graduate or professional school	7 (11)	7 (12)	

SD, standard deviation.

preintervention and postintervention phases of the study and completed 241 questionnaires. Four social workers participated only in the preintervention period and 16 participated only in the postintervention period. With the exception of caseload, there were no significant differences in the characteristics of the three groups of social workers. Social workers who participated in both the preintervention and postintervention phases of the study worked with significantly more families (Table 2). The range of years of social worker experience was from 1 year to 27 years and the range in the number of study families seen by the social workers varied from 1 to 67.

Family satisfaction with social workers

In the clustered multivariate regression model identifying factors associated with family satisfaction with social workers, we found a trend toward decreased family satisfaction

associated with the intervention, but this trend did not achieve statistical significance ($p = 0.09$; Table 3). However, we also found that increased years as a social worker had a significant and positive effect on family satisfaction with social workers ($p = 0.001$) and increased caseload had a significant and negative effect on family satisfaction with social workers ($p = 0.01$; Table 3).

Social worker-reported activities

In the model related to social worker reported activities we also controlled for years as a social worker and caseload. The pre-post effect of the intervention was significantly associated with increased total social worker reported activities ($p = 0.03$; Table 3). Unadjusted clustered regression analyses were conducted on each of the activities to explore whether there were specific activities that increased after the intervention. A significant increase was found in 4 of the 14 reported activities in the post-intervention period. These activities were: (1) talk with the family about spiritual or religious needs, (2) talk with the family about it being all right to talk to or touch their loved one, (3) talk to the family about a disagreement among the family concerning the plan of care, and (4) assure the family that the patient would be kept comfortable (Table 4).

Social worker satisfaction with meeting the family needs

After controlling for years as a social worker and caseload, we found no significant association between the intervention and the social workers' ratings of their satisfaction with meeting the families needs (Table 3). While the overall model was not statistically significant ($p = 0.07$), the data suggested that increased years as a social worker is associated with increased social worker satisfaction with meeting the families' needs ($p = 0.02$).

Discussion

The intent of the intervention evaluated here was to provide a variety of interdisciplinary training opportunities that would incorporate palliative care principles into the daily care of patients and their families, thereby improving palliative care practice by the entire ICU team. The data presented here describe the effectiveness of this intervention on improving the quality of care delivered or reported by social workers for

TABLE 2. CHARACTERISTICS OF SOCIAL WORKERS (N = 35)

Social worker characteristic	All (n = 35)	Pre only (n = 4)	Post only (n = 16)	Pre and post (n = 15)	p ^a
# Female (%)	29 (83)	4 (100)	12 (75)	13 (87)	0.46
# White and non-Hispanic (%)	30 (86)	4 (100)	15 (94)	12 (80)	0.39
# MSW (%)	33 (94)	4 (100)	15 (94)	14 (93)	0.34
Mean age (SD)	41.9 (10.4)	45.3 (8.3)	42.8 (10.4)	40.2 (11.3)	0.65
Mean years as a SW (SD)	11.9 (7.9)	18.3 (8.4)	12.0 (7.6)	10.3 (7.6)	0.20
Mean years working in ICU (SD)	3.4 (2.4)	2.6 (2.6)	3.1 (2.1)	3.9 (2.7)	0.52
Mean year degree completed (SD)	1992 (9.7)	1985 (8.2)	1994 (8.6)	1992 (10.6)	0.21
Mean caseload (SD)	10.0 (13.3)	2.8 (1.5)	3.2 (3.3)	19.1 (16.1)	0.001

^aProbability of a significant difference in the last three columns.
SD, standard deviation; ICU, intensive care unit.

TABLE 3. CLUSTERED REGRESSION ANALYSES FOR THREE MODELS USING ALL THIRTY-FIVE SOCIAL WORKERS ($N=283$ PATIENTS)

<i>Outcome variables</i> <i>Predictor variables</i>	<i>B</i>	<i>SE B</i>	β	r^2	<i>p</i>
Outcome 1: Family Satisfaction with social workers				0.08	0.0001
Prepost	−0.22	0.12	−0.09		0.09
Years as a SW	0.04	0.01	0.28		0.001
Caseload	−0.01	0.003	−0.16		0.01
Outcome 2: Total social worker activities				0.06	0.05
Prepost	1.52	0.69	0.20		0.03
Years as a SW	0.003	0.07	0.01		0.96
Caseload	−0.02	0.02	−0.13		0.24
Outcome 3: Social worker satisfaction ^a with meeting family needs				0.09	0.07
Prepost	−0.20	0.20	−0.16		0.33
Years as a SW	−0.02	0.01	−0.31		0.02
Caseload	0.002	0.002	0.10		0.24

^aThe signs of the results for Outcome 3 are reversed due to natural log transformation.

Bold text signifies p value ≤ 0.05 .

patients who died in or shortly after a stay in the ICU and their families.¹⁸

The positive pre-post change seen in the total social worker- and reported activities supports the hypothesis that social workers provided or were aware of more activities after the intervention. Of the 14 activities that we measured, 4 were significantly more frequent in the postintervention period (see Results). These are all activities which address aspects of high-quality palliative care practice including pain and symptom control, provision of emotional support and responsive communication.

To obtain significant improvement in important activities, social worker training programs will need to identify specific areas in which social workers need additional training. For example, our data suggest that experienced social workers may already be practicing at a high level of competence in such areas as talking about feelings, discussing what the patient would have wanted and talking about what the patient

valued in life. A needs assessment is an important prerequisite for this type of training program.²³

The hypothesis that family ratings would improve with a successful intervention was not supported by the findings and, in fact, there was a trend toward less satisfaction. Since this finding did not achieve statistical significance, it is not possible to draw a definitive conclusion that families were less satisfied. However, if this finding was indicative of a true association, it seems less likely that training in palliative care would be associated with decreased family satisfaction and more likely that the family satisfaction scale we used was not specific enough. There is some evidence to suggest that families of patients perceive the hospital social worker's primary role as the practical aspects of medical care, such as discharge planning, coordinating services in the community and resolving financial problems. This perception may perhaps lead families to overlook the social worker's skill in addressing emotional problems²⁴ and may result in ambiguity when

TABLE 4. SUMMARY OF CLUSTERED LINEAR REGRESSION ANALYSIS FOR INDIVIDUAL SOCIAL WORKER REPORTED ACTIVITIES ($N=283$)

<i>Social worker activity</i>	<i>B</i>	<i>SE B</i>	β	<i>p value</i>
Tell family what to expect during conferences with the health care team members	0.09	0.06	0.09	0.16
Talk with the family about their spiritual or religious needs	0.20	0.08	0.21	0.02
Take actions to address spiritual or religious needs of the family	0.03	0.06	0.03	0.68
Talk with the family about specific cultural needs	0.09	0.05	0.10	0.09
Take actions to address the cultural needs of the family	−0.01	0.05	−0.02	0.80
Talk with the family about what the patient valued in life	0.12	0.12	0.11	0.33
Talk with the family about their feelings	0.14	0.08	0.19	0.06
Reminisce with the family about the patient	0.16	0.10	0.16	0.13
Talk with the family about it being all right to talk to or touch their loved one	0.14	0.06	0.15	0.03
Discuss with the family what the patient might have wanted if she/she were able to participate in the treatment decision-making process	0.11	0.09	0.09	0.22
Locate a private place or room for the family to talk among themselves	0.10	0.08	0.11	0.26
Talk with the family about any disagreement among the family concerning the plan of care	0.07	0.03	0.09	0.04
Support the decision the family made concerning the patient's care	0.16	0.09	0.18	0.07
Assure the family that the patient would be kept comfortable	0.24	0.08	0.24	0.005

Bold text signifies p value ≤ 0.05 .

asked to provide ratings. The interdisciplinary intervention could also have placed more responsibility for family care on other disciplines such as nurses and spiritual care. Future interdisciplinary interventions should monitor the families' understanding of social work services and the potential for differential effects across disciplines.

Years as a social worker and social worker caseload were each significantly associated with family satisfaction with social workers. Families rated social workers with more experience higher and they rated social workers with larger caseloads lower. The association of increased family satisfaction with increased years of experience suggests that prior social work experience is an important factor to consider when designing future palliative care interventions. In this study, social workers averaged nearly 12 years prior experience as social workers and may have been functioning at a high level of proficiency prior to our intervention. It is possible that listening and interpersonal communication skills may have been stronger in the more experienced social workers. This experience appears to have had more effect on the families than what the social workers learned in the intervention. Prior experience has been previously identified as a variable that will influence training performance outcomes.²⁵ Our results appear to support this earlier finding and reinforce the need to incorporate experience in social worker education and training and to clarify the role of prior experience in interventions involving social workers.

The finding that increased ICU caseload was associated with decreased family satisfaction suggests that managing social worker caseload may be an important tool for improving family experience of social worker care. This finding supports prior studies suggesting that a high caseload may be an obstacle to delivering services and high caseload has been associated negatively with social worker satisfaction with meeting families' needs.^{22,26} A large caseload in the ICU may limit the time a social worker can allocate per family and reduce the social worker's ability to meet their needs; this may partially explain why we found no significant increase in time-consuming activities such as talking with the family about their feelings, reminiscing with the family about the patient, discussing what the patient would have wanted and preparing a family for a family conference. Future studies will need to examine whether and how caseload influences the outcomes of palliative care interventions.

The hypothesis that the social workers' satisfaction with how well they met the family's needs would improve after a successful intervention was also not supported. Like family satisfaction, social workers' prior experience had a significant effect on self-reported satisfaction with how well they met the families' needs. More experienced social workers rated themselves more highly on the Meeting Family Needs questionnaire than did less experienced social workers. In this study, we are not able to determine what aspect of their experience contributed to these positive assessments. However, anecdotal evidence suggests that some inexperienced social workers may feel disappointment that they cannot do more for families of dying patients and may not give themselves credit for more intangible accomplishments such as providing an empathic presence, cultivating meaning and helping to facilitate the expression of feelings.²⁷ More experienced social workers may appreciate such outcomes and be more satisfied with a limited intervention. Future studies will need to assess

whether improved self-assessment, when accompanied by increased experience, is associated with other markers of increased quality of care.

Limitations and explanations

There are three primary potential explanations for our finding of limited improvement in outcomes with our intervention. First, it is possible that the intervention was ineffective at improving family- and social worker-assessed outcomes. Second, it is possible that family and social worker experiences were significantly improved, but the outcome measures that we used were not sufficiently sensitive to detect these differences. Finally, it is possible that the intervention was effective and the outcome measures were adequate, but that the sample size was too small to detect a clinically significant improvement.

These three explanations are not mutually exclusive and it is likely that each contributed to our findings. First, the effectiveness of the intervention on these social workers may be limited. The training provided instruction in general palliative care principles and was not directly linked to specific patient panels. Individualized and targeted training and instruction may be more easily and directly implemented. In addition, the effect of the overall IPACC quality improvement intervention had similar findings with no significant improvement in family ratings.¹⁸ This body of work suggests that improving family-level outcomes will require a more focused intervention targeted to social workers and family members.

Second, the sensitivity of our outcome measures may be inadequate. Our measure of family satisfaction with social workers was based on a single item from a survey of family satisfaction with ICU care. Future studies should consider a more detailed assessment of satisfaction with social worker care and also consider other measures of family outcomes such as improvement in anxiety and depression, relief of fears and concerns, the development of a time-of-death plan,²⁸ the resolution of ethical problems in treatment decision-making,²⁹ and respect for cultural death rituals such as same-day burial, body bathing, and death prayers.³⁰

Third, the power of this study may be insufficient. Our sample size was relatively small. One example of the limitation in the sample can be found in the small number of non-white families, which may have made it difficult to show a preintervention to postintervention difference in the two culture-related activities. Future studies may need larger sample sizes to detect clinically significant differences that are in the range of small to moderate effect sizes.

The study may also be limited by design factors. The before-after design does not control for temporal trends or other factors which may influence the outcome. We used independent sample *t* tests to assess differences between the pre- and post-intervention social worker samples, but other events or training may have occurred during the time period in which this study was conducted and influenced outcomes.

The interdisciplinary design of the overall study may have limited our ability to completely isolate the influence of the social workers. To capture all team activities, social workers were asked to record activities performed by other team members. The design also included a number of social workers who participated in only one portion of the study. We believe it is likely that these social workers behaved

similarly to those who participated in both parts of the study, but some differences in their work with families may have influenced the preintervention and postintervention family-level outcomes.

Finally, this project was conducted in one hospital with one group of social workers, limiting the generalizability of the findings. Further studies are needed at other institutions.

Implications for social work practice and research

This project suggests that social workers can successfully learn specific palliative care activities and skills in the ICU environment and incorporate them into their work with families. It remains unclear if the increase in the amount and variety of activities reported by social workers in our study affected the experiences of families in the ICU. Furthermore, future interventions should consider the influence of prior experience of social workers and social worker caseload in their design.

This type of evaluation research addresses an important area of social work palliative care research.³¹ Previous evaluations of palliative care training for social workers were conducted for two graduate school-based programs.¹⁵ Our study evaluated a continuing education intervention in an interdisciplinary workplace. A positive synergistic effect resulting from interdisciplinary work is considered a potential benefit of palliative care teamwork.³² Social workers can contribute to this teamwork and their involvement in future interdisciplinary workplace palliative care training programs is supported by the results of this study.

Acknowledgments

Funding was provided by an RO1 from the National Institute of Nursing Research (RO1-NR-05226) and a grant from The Robert Wood Johnson Foundation.

Author Disclosure Statement

No competing financial interests exist.

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