Examining the Association Between Chaplain Care and Patient Experience

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Abstract

A developing body of evidence indicates that chaplain care is associated with higher levels of patient/family satisfaction with their hospital care. We examined the association between chaplain care and patient experience among patients at Rush University Medical Center in Chicago who responded to Hospital Consumer Assessment of Healthcare Providers and Systems and Press Ganey survey items between 2011 and 2017. Information about chaplain care was taken from the inpatients' electronic medical record. Our analyses included 11 741 patients, 26.5% of whom had received any chaplain care. Patients with lower self-rated health were more likely to have received chaplain care ($P < .001$). In bivariate analyses, chaplain care was associated with lower likelihood of reporting the highest score for 4 patient experience items ($P < .001$). In multi-variable models that adjusted for patient self-rated health and other factors, the association between chaplain care and the 4 patient experience items was nonsignificant. There was no effect modification for patient religious affiliation, self-rated health, or other demographic factors. The chaplain care-patient experience association may be more complex than has initially appeared, and further research is needed to help us better understand it.

Keywords

patient experience, patient satisfaction, HCAHPS, chaplain, spiritual care

Introduction

A growing number of studies demonstrates that attention to emotional and spiritual needs positively influences patient experience of care (1–4). Chaplains are the spiritual care specialists within health care trained to address the spiritual needs of patients/families from diverse religious backgrounds as well as those with no religious affiliation (5,6). A small but consistent body of evidence is developing that indicates that patients/families who receive chaplain care report higher levels of patient/family satisfaction (7–13). However, most of those studies were conducted with small samples, used surveys created by the investigators, and patient documentation of chaplain care which is not always reliable.

A recent study from Mount Sinai Hospital, a large urban academic medical center in New York City, brought additional rigor to this research (14). They used a substantial sample (N = 8978), 6 measures of patient experience from the standardized Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and Press Ganey survey used by many hospitals in the United States and by

using objective measures of chaplain care. Reviewing the electronic medical records (EMRs) of these patients, the investigators found that 5.6% had at least 1 visit from a chaplain. Further multivariable analysis showed that compared to patients who had not been visited by a chaplain, those who had any chaplain visits gave slightly higher

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ratings for all 6 of the patient experience items (all $P < .001$). These included higher ratings of satisfaction with the hospital and with overall care, of recommending the hospital to others, and of staff addressing the patients' spiritual and emotional needs.

In a second paper, the same investigators replicated their findings with a larger sample (N = 16 478) (15). In this study, they also examined the separate contributions to patient experience of chaplains' specific religious/spiritual care activities and general psychosocial care activities. Both components of chaplain care were associated with higher evaluations; the associations were slightly stronger for the chaplains' religious/spiritual care activities.

Building on this work, we sought to discover whether the findings of Marin and colleagues (14) would be similar in another large, urban, academic medical center, Rush University Medical Center in Chicago. As prior literature had not fully examined the role of patient characteristics on the chaplain care-patient experience association, we additionally sought to examine whether important patient characteristics mediated this association. We hypothesized that chaplain care may be more important for religious patients so we examined possible effect modification by religious affiliation. We also examined possible effect modification for 3 demographic factors that are known to be associated with religious involvement (age, gender, and race). In addition, in light of research about the important role of religion in coping with serious illness (16), we examined whether chaplain care had a differential effect on satisfaction for patients who reported poorer overall, mental, or emotional health.

We also examined whether chaplains' contributions to the interpersonal experience of care contributed to the chaplain care-patient experience association. Several studies have shown that patients have higher patient experience ratings when they feel treated with courtesy and respect and are listened to (17–19). Responding attentively, with compassion, and being sensitive to the emotional state of patients are suggested as important predictors of patient experience ratings (18). These care qualities are a core component of chaplain training so we hypothesized that chaplains' interpersonal skills could be part of the reason why chaplaincy care is associated with higher evaluations. To examine this, we planned to test whether patients' ratings of the degree staff addressed their emotional needs was a mediator of the chaplain care-patient experience association.

Methods

This study was a retrospective analysis examining the chaplain care-patient experience association among adults age 18 or older who received care at the 620 bed Rush University Medical Center between January 1, 2011, and July 31, 2017. The study cohort responded to the combined HCAHPS/Press Ganey survey after discharge using the standard HCAHPS "Mail Only" survey protocol (20). The survey data and some patient demographic variables were obtained from the Rush data warehouse. In cases where there were multiple surveys from the same patients, the data from the most recent survey were utilized. The institutional review board of Rush University Medical Center determined that the project did not require their review.

The primary predictor variable in this study was any chaplain care versus none during the hospitalization. In additional analyses, we tested the effect of total minutes of chaplain care on patient experience in 4 categories: 0, 1 to 15, 16 to 30, and 31+ minutes. Chaplain visits were conducted by members of the Department of Religion, Health and Human Values, which included professional, board-certified chaplains as well as students in the Department's Clinical Pastoral Education program. The majority of chaplain visits were initiated by staff referrals, protocols, and chaplain rounds. Information about chaplains' care was obtained from the patients' EMR.

The primary outcomes were responses to 2 HCAPHS items: (a) Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay? (rate 0-10) and (b) Would you recommend this hospital to your friends and family? (definitely no, probably no, probably yes, and definitely yes) (21). In additional analyses, we examined the association between chaplaincy care and 2 Press Ganey items: (a) Overall rating of care given at the hospital (very poor, poor, fair, good, and very good) and (b) Likelihood of your recommending this hospital to others (very poor, poor, fair, good, and very good) (22). For all 4 items, the Likert-type response scale was converted to dichotomous variables with the most positive response compared to all the others, the so-called top-box methodology which allowed for consistency in reporting and analysis of differences with the HCAHPS item format. We chose to use a top-box methodology because our data were negatively skewed. Also, HCAHPS results are publicly reported in this format (23).

Other variables were used to describe the sample, to adjust for potential confounding factors, and to examine possible effect modifiers and mediators. These variables were age, gender, race/ethnicity (dichotomized to non-Hispanic white and other), education (dichotomized to ≤ high school/some college and college graduate/>4 years in college), language (subdivided into English, Spanish, and other), religious affiliation (dichotomized to yes and no), emergency department admission (yes and no), self-report of overall health status (excellent, very good, good, fair, and poor), self-report of mental or emotional health status (excellent, very good, good, fair, and poor), length of stay (days), and the Press Ganey item degree to which hospital staff addressed your emotional needs (very poor, poor, fair, good, and very good). All these variables except age, gender, and religious affiliation were taken from responses to the HCAHPS/Press Ganey surveys. Information about age, gender, and religious affiliation were taken from the patient EMR. Where information about race, ethnicity, and

language was missing from the HCAHPS/Press Ganey surveys, that information was taken from the patient EMR.

The analysis began with a description of patient characteristics and an examination of their association with receiving any chaplain care. Differences between the 2 groups (any chaplain care vs none) were analyzed using t tests for continuous variables and χ^2 tests for categorical variables. Differences in top-box scores for the 2 chaplain care groups on the 4 patient experience items were examined using χ^2 tests since we treated these variables categorically.

We estimated a series of logistic regressions equations to examine the association between chaplain care (any vs none) and each patient experience item with adjustment for covariates. The first model adjusted for demographic and medical covariates. The second model added patients' self-rated overall and mental or emotional health. In an additional series of models, we examined possible interaction effects between chaplain care and demographic factors (age, gender, race, and religious affiliation) or self-rated overall and mental or emotional health. Assuming that we found chaplain care was associated with patient experience, we planned to test whether patient reports of the degree staff addressed emotional needs was a possible mediator of the chaplain care-patient experience association. We planned to use the Sobel test to examine possible mediation.

To examine the association between extent (minutes) of chaplain care and the 2 HCAPHS items, we used the same 2 models described above. All the data analyses were performed with SPSS version 22.

Results

Within the study period, 15 350 patients responded to the HCAHPS/Press Ganey survey (with a response rate of 20%) (24). After excluding the patients with missing values on any of the variables, the sample size was reduced to N = 11 741. Patients who were included were younger (M = 58.9 [15.4] vs M = 62 [15.84], $P \le .001$), had a slightly shorter length of stay (M = 4.14 [4.59] vs M = 4.44 [5.06], $P = .001$), had a slightly higher score on the Press Ganey potential moderating item about the degree staff addressed emotional needs (M = 4.55 [0.71] vs M = 4.37 [0.88], $P \le .001$), had slightly higher scores on the HCAHPS outcome items 1 and 2 (respectively, M = 9.21 [1.34] vs M = 8.95 [1.81]; M = 3.81 [0.48] vs M = 3.72 [0.62]; $P \le .001$), and the Press Ganey outcome items 1 and 2 (respectively, M = 4.74 [0.56] vs M = 4.66 [0.69]; M = 4.73 [0.63] vs M = 4.63 [0.78]; $P \le .001$). Those who were included were also slightly more men (78% vs 76.5%), more non-Hispanic white patients (66.6% vs 60.1%), fewer Spanish-speaking patients (5% vs 7.9%), and more religiously unaffiliated patients (24.6% vs 20.5%), all significant at $P \le .001$.

Of the 11 741 patients, 3117 (26.5%) were visited by a chaplain at least once. The chaplain care ranged from 1 to 41 visits with a median number of 2 visits (interquartile range [IQR] 1-3). The time a chaplain spent with a patient ranged from 1 to 1025 minutes, with a median of 30 minutes (IQR 15-65). There were significant differences between those with and without any chaplain visits for most of the patient characteristics (Table 1). Patients visited by chaplains were older, more often non-Hispanic black or Hispanic, reported lower levels of education, had a religious affiliation, had more often entered the hospital through the emergency department (ED), reported lower overall and emotional health status, and had a longer length of stay.

Bivariate analyses of percentages of patients reporting a top-box or a lower score on the 2 HCAHPS items are shown in Table 2. Compared to patients with no chaplain visits, among patients who had received any chaplain visits the proportion who gave a top-box score on both of the HCAHPS items was slightly lower. A similar pattern of findings was seen for the 2 Press Ganey outcome items (Supplementary Table 1).

For HCAHPS item 1, in logistic regression models adjusting for demographic and other factors, patients who were visited by a chaplain had decreased odds of providing a top-box evaluation score (Table 3, model 1, odds ratio [OR] = 0.796, 95% confidence interval [CI]: 0.716-0.885). When the variables overall health status and mental or emotional health status were added to the model, the chaplain care-patient experience association became nonsignificant (Table 3, model 2, OR = 0.909, 95% CI: 0.815-1.014). We found no significant effects for tests of variation in the chaplain care-patient experience association for patient age, race, religious affiliation, or self-rated health. However, we found that there were gender differences (Table 3, model 3). Specifically, for women, the proportion who provided a top-box rating was the same (79%) regardless of whether any chaplain care was received. In contrast for men, the proportion who gave a top-box evaluation was lower among those who received any chaplain care (79%) than among those who did not (84%).

We found similar results for the main effect of chaplain care for HCAHPS item 2 (Table 3) and the 2 Press Ganey items (Supplementary Table 2). We again found no significant effects for tests of variation in the chaplain care-patient experience association for patient age, gender, race, religious affiliation, or self-rated health.

In addition to the above analyses, we also tested whether the extent of chaplain care (total minutes) was associated with the 2 HCAPHS items. We found similar results for the main effect of chaplain care: lower odds of a top-box evaluation score for patients with any number of minutes compared to those with no chaplain care (Supplementary Table 3, model 1). Again, when the self-rated health variables were added to the model, the associations between chaplain minutes and patient experience became nonsignificant (Supplementary Table 3, model 2).

In models adjusted for demographic factors and the self-rated health variables, there was no association between chaplain care (any vs none) and the possible mediator the degree staff addressed emotional needs (Supplementary Table 4).

Table 1. Patient Characteristics.

Variable	Values	Total Sample, n (%) N = 11 741	Any Chaplain Care, n (%) N = 3117	No Chaplain Care, n (%) N = 8624	P
Age	Mean (SD)	58.9 (15.4)	62 (14.9)	57.8 (15.4)	<.001
Gender	Male	4984 (42.4)	1311 (42.1)	3673 (42.6)	.311
	Female	6757 (57.6)	1806 (57.9)	4951 (57.4)	
Race/ethnicity	Non-Hispanic white	7818 (66.6)	1903 (61.1)	5915 (68.6)	<.001
	Other	3923 (33.4)	1214 (38.9)	2709 (31.4)	
Education	≤High school/some college	6945 (59.2)	2067 (66.3)	4878 (56.6)	<.001
	College graduate/>4 years in college	4796 (40.8)	1050 (33.7)	3746 (43.4)	
Language	English	10 826 (92.2)	2850 (91.4)	7976 (92.5)	<.001
	Spanish	591 (5)	198 (6.4)	393 (4.6)	
	Other	324 (2.8)	69 (2.2)	255 (3)	
Religious affiliation	Affiliated	8854 (75.4)	2528 (85.5)	6188 (71.8)	<.001
	Unaffiliated	2887 (24.6)	451 (14.5)	2436 (28.2)	
Emergency department admission	Yes	3403 (29)	1307 (41.9)	2096 (24.3)	<.001
	No	8338 (71)	1810 (58.1)	6528 (75.7)	
Overall health status	Poor	509 (4.3)	276 (8.9)	233 (2.7)	<.001
	Fair	1903 (16.2)	808 (25.9)	1095 (12.7)	
	Good	4008 (34.1)	1113 (35.7)	2895 (33.6)	
	Very good	3663 (31.2)	642 (20.6)	3023 (35.1)	
	Excellent	1656 (14.1)	278 (8.9)	1378 (16.0)	
Mental or emotional health status	Poor	154 (1.3)	65 (2.1)	89 (1)	<.001
	Fair	986 (8.4)	431 (13.8)	555 (6.4)	
	Good	2619 (22.3)	841 (27)	1778 (20.6)	
	Very good	3939 (33.5)	980 (31.4)	2959 (34.3)	
	Excellent	4043 (34.4)	800 (25.7)	3243 (37.6)	
Length of stay	Mean (SD)	4.14 (4.6)	6.47 (6.6)	3.3 (3.2)	<.001
Degree staff addressed emotional needs (score 1-5)	Mean (SD)	4.55 (0.7)	4.50 (0.7)	4.56 (0.7)	<.001

Abbreviation: SD, standard deviation.

Table 2. Bivariate Association of Any Chaplain Care With Top-Box Score for HCAHPS Patient Experience Items.

Patient Experience Item	Rating	Total Sample, n (%) N = 11 741	Any Chaplain Care, n (%) N = 3117	No Chaplain Care, n (%) N = 8624	P
Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?	9-10	9454 (80.5)	2461 (79)	6993 (81.1)	.01
	0-8	2287 (19.5)	656 (21)	1631 (18.9)	
Would you recommend this hospital to your friends and family?	Definitely yes	9902 (84.3)	2576 (82.6)	7326 (84.9)	.001
	Definitely no—probably yes	1839 (15.7)	541 (17.4)	1298 (15.1)	

Abbreviations: CI, confidence interval; HCAHPS, Hospital Consumer Assessment of Healthcare Providers and Systems; OR, odds ratio.

Since we found that chaplain care was not associated with overall ratings of care nor with the possible mediator, there was no basis for proceeding to test whether the degree staff addressed emotional needs was a mediator of the association between chaplain care and overall ratings of care.

Discussion

In the bivariate analysis, chaplain care (any vs none) was associated with slightly lower proportions of top-box ratings for the 4 patient experience items. The statistical significance of these small differences is probably due to the large sample size. In the multivariate analyses, we found a significant negative association between chaplain care and patient experience that became nonsignificant as a result of confounding by the self-rated health variables. That is, patients with poorer self-rated health consistently provided lower evaluations of the overall hospital experience. In this study, we found that chaplains were much more likely to visit patients who rated their health as poor,

Table 3. Association of Any Chaplain Care and HCAHPS Patient Experience Items (N = 11 741).

Variable	Using any number from 0 to 10, where 0 is the worst hospital possible and 10 is the best hospital possible, what number would you use to rate this hospital during your stay?			Would you recommend this hospital to your friends and family?	
	Model 1 OR [95% CI]	Model 2 OR [95% CI]	Model 3 OR [95% CI]	Model 1 OR [95% CI]	Model 2 OR [95% CI]
Any Chaplain care	0.796[a] [0.716-0.885]	0.909 [0.815-1.014]	1.353 [0.985-1.860]	0.825[a] [0.736-0.924]	0.935 [0.832-1.050]
Age	1.011[a] [1.008-1.014]	1.013[a] [1.010-1.016]	1.013[a] [1.010-1.016]	1.005[a] [1.002-1.008]	1.007[a] [1.004-1.011]
Male	1.266[a] [1.150-1.394]	1.273[a] [1.155-1.403]	1.382[a] [1.232-1.551]	1.178[a] [1.062-1.307]	1.182[a] [1.065-1.313]
Non-white race	1.180[a] [1.058-1.394]	1.230[a] [1.102-1.373]	1.235[a] [1.106-1.378]	1.094 [0.973-1.231]	1.137[b] [1.010-1.280]
College graduate/>4 years in college	0.763[a] [0.693-0.839]	0.672[a] [0.609-0.742]	0.674[a] [0.610-0.743]	0.922 [0.830-1.024]	0.821[a] [0.738-0.914]
Language Spanish [vs English]	2.746[a] [1.995-3.781]	2.878[a] [2.087-3.969]	2.872[a] [2.083-3.959]	1.680[a] [1.264-2.232]	1.754[a] [1.317-1.396]
Language— Other [vs English]	0.873 [0.668-1.141]	0.906 [0.692-1.186]	0.907 [0.693-1.188]	0.991 [0.734-1.340]	1.031 [0.851-1.078]
Religious affiliation—none	0.911 [0.819-1.014]	0.915 [0.821-1.019]	0.917 [0.823-1.022]	0.953 [0.847-1.071]	0.958 [0.844-1.068]
Emergency department admission—yes	0.896[b] [0.804-0.999]	1.005 [0.900-1.122]	1.004 [0.899-1.122]	0.852[b] [0.759-0.956]	0.950 [1.084-1.068]
Overall health status		1.165[a] [1.100-1.233]	1.165[a] [1.100-1.233]		1.153[a] [1.084-1.226]
Mental or emotional health status		1.271[a] [1.203-1.344]	1.272[a] [1.204-1.345]		1.258[a] [1.185-1.334]
Any Chaplain care × gender			0.753[b] [0.609-0.931]		

Abbreviations: CI, confidence interval; HCAHPS, Hospital Consumer Assessment of Healthcare Providers and Systems; OR, odds ratio.
[a]*P* > .005.
[b]*P* > .05,

fair, or good than those who rated their health as very good or excellent.

We found no significant effects for tests of variation except for gender for the HCAHPS item satisfaction with overall care. This finding was not replicated with the other 3 patient experience items in the study. Since there was no association between chaplain care, the patient experience items and degree staff addressed emotional needs, there was no basis for examining whether this was a mediator. All these analyses were repeated with the extent of chaplain care (minutes) with essentially similar findings.

In our study, the association between patient experience scores and variables such as gender (25,26), race/ethnicity (25), ED admission (26), and self-rated health (19,25,27–29) was consistent with what has often been reported in other research. Our findings are different, however, when we look at the influence of chaplain care on patient experience in comparison to the study of Marin and colleagues (14). They found a significantly positive association between chaplain care and patient experience. However, this effect was very small (for 3 items the mean differences ranged from 0.06 to 0.08) and their statistical significance was likely an artifact of the large sample that was studied. When comparing both samples, our sample had a higher percentage of patients with lower self-rated health (34.8% vs 25.5%), a factor that is associated with a lower evaluation. Also, in Marin and colleagues' study, 5.6% of the patients received a chaplain visit versus 26.5% in our sample, so patients with poorer self-rated health in our study were more likely to have a chaplain

visit and patients with good or excellent health were less likely to have a chaplain visit. While Marin and colleagues' study appears to be consistent with prior research, our findings suggest there may be important variation in the association between chaplain care and patient experience. Specifically, these associations might be dependent on key characteristics of the patients who complete the satisfaction surveys and on the spiritual care program of the hospital. More research is needed to examine potential variations in the association between chaplain care and patient experience and their possible predictors.

A limitation of our study is that the data about chaplaincy care depends on chaplains' own documentation in the patient EMR. There may be inconsistencies in this documentation, especially among chaplains in training (30). Secondly, in many cases, the patients who get the most extensive chaplaincy care are patients who die in the hospital and therefore do not complete a patient experience survey. Consequently, their evaluation is not included in this study. Thirdly, information about the mode of survey and severity of illness were not available and could not be used in our multivariable models.

We recommend that future research include the adjustment for mode of survey. Additionally, chaplain care may be especially important for patients/families facing serious illness. Our use of patient self-rated health only provided a crude test of whether the severity of illness plays a role in the chaplain care-patient experience association. Johnson and colleagues found that chaplain care was associated with

several measures of satisfaction for families whose loved one died in an intensive care unit (10). Providing care for patients and families at the end of life is frequently a priority for most chaplaincy programs. By not routinely surveying these families, health-care organizations likely underestimate the contribution of chaplain care to the patient/family experience of care in one of the most difficult situations they will ever face. Finally, we recommend using better measures of chaplain care than any versus none, focusing on specific types of chaplains care (10,15) and making use of the development of better descriptions of chaplain activities such as the Chaplain Taxonomy (31,15).

Conclusion

A body of research has shown that receiving spiritual care is associated with more positive reports by patients/families of their health-care experience. After adjusting for the confounding associated with self-rated health, our study found no association between chaplain care and patient experience among patients who were treated at Rush University Medical Center. The chaplain care-patient experience association may be more complex than that has initially appeared and further research is needed to help us better understand it.

Authors' Note

The Rush University Medical Center IRB determined that the project did not require their review.

Declaration of Conflicting Interests

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Supplemental Material

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