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How Well Are We Supporting Hospice Staff? Initial Results of the Survey of Team Attitudes and Relationships (STAR) Validation Study

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Abstract

Despite the emotional and interpersonal challenges that hospice staff face in providing care to patients near the end of life, no systematic effort has been made to evaluate the work environment that hospices provide to their staff. The aim of this project was to develop a job satisfaction survey that could be used to evaluate the hospice work environment and, ultimately, to guide interventions to improve the work experience for hospice staff. A first draft of the Survey of Team Attitudes and Relationships (STAR) was developed through semi-structured interviews with an interdisciplinary sample of staff from nine hospices, and then refined with input from additional interviews and from an expert panel. The draft was tested on larger samples of staff (n = 160) from six hospices and revised with input from the expert panel. The final survey was tested with 599 staff from 10 hospices. The final survey contains 45 items in six domains: individual work rewards, teamwork, management support, organizational support, workload issues, and global assessment of job satisfaction. Items had excellent psychometric characteristics, with acceptable floor and ceiling effects. The overall STAR had a Cronbach's alpha of 0.93, indicating good homogeneity, and each domain had alpha values that are appropriate for between-group comparisons (range 0.74–0.84). These results suggest that the STAR offers a unique instrument to measure the work environment hospices provide to their staff. J Pain Symptom Manage 2007;34:350–358. © 2007 U.S. Cancer Pain Relief Committee. Published by Elsevier Inc. All rights reserved.

Key Words

Job satisfaction, Hospice care, End-of-life care, Work environment

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Introduction

Hospice care in the United States has grown into an important health care industry in the past 25 years. There are currently over 4100 unique hospice programs in operation, the great majority of which are Medicare certified.¹ These hospices served over 1,200,000 patients in 2005 and rely on a large and growing

workforce.¹ The staff employed by Medicare-certified hospices has increased steadily from 50,000 in 2001² to over 70,000 in 2005.¹

In other sectors of the health care industry, job satisfaction is a key measure of an organization's well-being, and is an essential part of human resources management. Job satisfaction surveys have been developed outside the health care industry to address general satisfaction, such as the Job Diagnostic Survey^{3,4} and the Job Descriptive Index.^{5,6} Other surveys that are widely used to assess job satisfaction in other health care areas include the McCloskey Mueller Satisfaction Scale⁷ and the Index of Work Satisfaction^{8,9} (for nurses), the Physician Worklife Survey,^{10,11} the Work Environment Scale-10^{12,13} (for psychiatric staff), the Nursing Home Administrator Job Satisfaction Questionnaire,¹³ and the Home Healthcare Nurses' Job Satisfaction Scale.¹⁴ These surveys have all been developed to fit with the unique needs and concerns of staff working in specific health care environments.

However, there is currently no survey that has been designed specifically for hospice staff. It is important to develop a hospice-specific survey because the work of hospice staff is very different from that of health care staff in other settings. For instance, the goals of hospice care and hospice's focus on comfort and palliation are unique. More importantly, the patient population is both unique and uniquely challenging. The median length of stay in hospice is less than one month, and 30% of patients die within seven days of admission.¹ This means that hospice staff, and particularly front line providers, face considerable emotional, clinical, and logistical challenges in providing care. These factors, together with the challenges of providing care in a variety of settings—in the patient's home, in a nursing home, and in an acute care ward—make hospice a unique work environment.

A hospice-specific survey is essential to the continued growth of the hospice industry because job satisfaction has broad implications for an organization's well-being. For instance, job satisfaction is often associated with staff morale and productivity,^{15–18} burnout,¹⁹ turnover,^{20,21} work quality,²² organizational performance,^{23,24} and many other outcomes. In addition, there is substantial evidence that

job satisfaction is related to the quality of care that patients receive.^{25,26} A hospice-specific measure of job satisfaction would offer substantial value to the hospice industry by providing a single index of workforce health. This index would help organizations such as the National Hospice and Palliative Care Organization (NHPCO) to promote quality initiatives that include workforce excellence. Therefore, the goal of this project was to develop a job satisfaction survey that addresses the unique needs and concerns of hospice staff.

Methods

The Survey of Team Attitudes and Relationships (STAR) was developed and modified in four stages: semi-structured interviews, expert panel input, pilot testing, and psychometric testing. Each of these stages is described below, emphasizing validity testing of the final version. This project was approved by the Institutional Review Board at the University of Pennsylvania and by the research committees of participating hospices, wherever applicable.

Semi-Structured Interviews and Survey Development

First, we conducted semi-structured interviews to define aspects of the hospice work environment that hospice staff believed influenced their job satisfaction. The sample for these interviews included 30 physicians, nurses, social workers, bereavement counselors, chaplains, volunteer coordinators, and administrators from nine geographically diverse hospice organizations. Individual interviews were conducted during site visits at two hospices and by telephone for the other seven hospices.

In these interviews, we asked participants to describe the main issues that they believed influenced their satisfaction with their work. Interviews began with general questions about job satisfaction, followed by questions about more specific positive and negative aspects of their work (e.g., workload, supervision, and so on). This combination of specific and general questions was used to ensure a thorough coverage of issues. Each participant's responses were recorded on an interview form

and highlights were confirmed with the participant at the conclusion of the interview.

Notes from the interviews were examined and key themes were extracted by two of the investigators (BQ and DC). This process yielded 98 unique issues that were then grouped into themes. Key themes are listed in Table 1. To define unique aspects of the hospice work environment, we compared these themes with items in four widely used job satisfaction surveys.^{4,6,8,27,28} Several issues identified were common to other surveys (e.g., communication, workload issues, coworker support, feedback, autonomy, and management support). In addition, these interviews also identified a variety of issues that are unique to hospice, such as time and support for processing patients' deaths and a range of issues related to teamwork and interdisciplinary collaboration. Subsequent survey development incorporated both issues that were common to other surveys and issues that appear to be unique to hospice employees.

We then used these issues to create 98 draft items. Six additional items that provide a global assessment of job satisfaction were modeled on items in the Job Satisfaction Index.²⁹ All items used a single statement followed by a 5-point Likert set of response options (Disagree Strongly; Disagree; Neither Agree Nor

Disagree; Agree; and Strongly Agree). Staff who participated in the initial interviews were contacted by phone to review each item for clarity, format, and consistency to their own comments in the interviews. Based on their input, items were deleted or combined to create a 67-item draft survey.

Initial Advisory Panel Review

An advisory panel composed of 10 hospice professionals was created to evaluate the draft survey (panel members are listed in the [Acknowledgments](#)). Panel members were asked to examine the survey for content and comprehension, and to evaluate each item's clarity and importance to the survey. Panelists were also asked to suggest additional items that should be added. Panelists' comments, additions, and deletions resulted in a revised 79-item draft.

Pilot Testing and Item Reduction

Hospices were recruited with the assistance of the Population-Based Palliative Care Research Network to participate in pilot testing and validity testing (described below). The draft survey was pilot-tested in two waves (55 and 105 participants, respectively), drawn from three different hospices in each wave. Between waves, we examined item response rates and for floor and ceiling effects. After the second wave, interitem correlations were also examined. These results were reviewed with the expert panel members, who identified redundant items that could be deleted. At this stage, the panel also identified items that would be out of a hospice's control, and these items were considered for deletion. Based on psychometric characteristics and panel input, the survey was reduced from 79 to 66 items after the first wave and to 45 items after the second wave.

Validity Testing

The final 45-item survey includes 34 items that address individual, management, organizational, and workload issues. Six other items comprise a global measurement of job satisfaction. Of the 45 items, 40 are relevant to all hospice staff, regardless of position, discipline, or job description. Five items were designed to assess issues that would be relevant only to

Table 1
**Key Themes That Influence Job Satisfaction
(from Semi-Structured Interviews)**

Interacting with patients in a time of need
Meaningful work
Professional commitment to hospice care
Good working relationship with other interdisciplinary team members
Good working relationship with management
Respect from others
Feeling valued, part of team
Team collaboration
Emotional support from coworkers
Acknowledgement/validation by management and the organization
Communication with team members
Feedback on performance
Organizational ethics
Well-defined roles in the interdisciplinary team (IDT)
Challenging work and work content
Growth and development, opportunity for promotion
Autonomy in daily work
Manageable workload and paperwork
Amount of driving required
Time and support allotted to recover from a difficult loss
Work hours
Vacation

clinical staff. The STAR instrument can be accessed at www.nhpc.org/STAR.

Sample. The validity sample was drawn from staff at 10 hospices throughout the country and ranged in size from 16 to 264 employees. Most hospices (66.7%) served a mix of urban and rural patients and approximately half (55.6%) were free-standing. All hospices included in the sample were not-for-profit. All paid staff at each of the hospice facilities were eligible to participate in the survey. This sample included both clinical and nonclinical staff, as well as full-time, part-time, and contract staff. Although volunteer coordinators were included in the sample, volunteers were not included because we felt that the issues relevant to volunteers were likely to be very different from those relevant to paid staff.

Data Collection. The final survey was sent to each hospice via electronic mail for distribution to staff. Surveys were printed on-site, distributed and completed anonymously. Staff either mailed the completed surveys directly to the study office in a sealed envelope or dropped them in a lock box to be returned in a single packet. Each hospice provided organizational data for the previous fiscal year, including staff turnover, average caseload, and total number of employees.

STAR Scoring and Analysis. To calculate the STAR's overall score and domain scores, each item's response is assigned a value from zero (worst possible response) to four (best possible response). The domain scores and total score are then calculated as the mean of the items in the domain and entire survey, respectively, and a higher score indicates greater satisfaction. Because only clinical staff completed the 5-item clinical practice domain, the overall mean score is based on 45 items for clinical staff and on 40 items for nonclinical staff.

Descriptive statistics were used to examine the STAR's psychometric properties. Factor analysis with varimax rotation was used to define the STAR's domain structure.³⁰ Additional tests were performed to analyze patterns in the data, differences in scores between hospices, and validity of survey scores. All data analysis used STATA software version 8.0 (Stata Co., College Station, TX).

Results

Of the total number of employees at all 10 hospices ($n = 957$), 599 surveys were returned (63% overall, range 50–84% at each hospice). There was no significant difference in response rates among the 10 hospices. Participant characteristics are described in Table 2.

Table 2
Characteristics of Participants in Final Testing Phase ($n = 599$)^a

	Number (%)
Sex ($n = 582$) ^a	
Female	528 (90.7)
Age (yr) ($n = 575$) ^a	
Less than 20	0 (0.0)
20–30	34 (5.9)
31–40	95 (16.5)
41–50	165 (28.7)
51–60	218 (37.9)
Over 60	63 (11.0)
Race ($n = 575$) ^a	
White or Caucasian	540 (93.9)
Black or African American	12 (2.1)
Asian	4 (0.7)
American Indian or Alaska native	3 (0.5)
Pacific Islander or native Hawaiian	0 (0.0)
Other	16 (2.8)
Primary occupation ($n = 570$) ^a	
Nurse	251 (44.0)
Social worker	64 (11.2)
Bereavement counselor	14 (2.5)
Nursing assistant	46 (8.1)
Volunteer coordinator	14 (2.5)
Physician	5 (0.9)
Chaplain/pastoral counselor	32 (5.6)
Administration	93 (16.3)
Physical therapist	1 (0.2)
Other	50 (8.8)
Hours of work/week for organization ($n = 579$) ^a	
Less than 20	44 (7.6)
20–29	79 (13.7)
30–39	103 (17.8)
40–49	308 (53.2)
50–59	32 (5.5)
Over 60	13 (2.3)
Annual salary ($n = 554$) ^a	
Less than \$25,000	120 (21.7)
\$25,000–\$50,000	273 (49.3)
\$50,001–\$75,000	133 (24.0)
\$75,001–\$100,000	23 (4.2)
Over \$100,000	5 (0.9)
Work history with present organization (yr) ($n = 576$) ^a	
Less than 1	93 (16.2)
1–2	95 (16.5)
3–5	177 (30.7)
6–10	103 (17.9)
11–20	98 (17.0)
Over 20	10 (1.7)

^aSample size varies by item because of missing data.

Psychometric Characteristics

The overall STAR score (Fig. 1) appeared to be normally distributed (mean 2.85, median 2.87, and range 1.0–4.0) and this impression was confirmed by the Shapiro-Wilk test (Fig. 1). Overall items had a very low frequency of missing data (nonclinical items: mean 0.4% and range 0.2–1.0%; clinical items: mean 0.6% and range 0.0–1.2%). All items had <10% of responses in the worst possible category and all but one had <40% in the best possible category.

Domain Scores

The entire STAR survey (45 items) had a Cronbach's alpha of 0.93, which indicates a high level of homogeneity. This in turn suggests that all of the STAR items may in fact represent a single domain. However, we chose to divide the items into multiple domains to make the results of the STAR more useful in guiding interventions in particular areas (e.g., workload). Two sequential processes were used to group items into domains. First, items were organized based on apparent similarity and common themes. These groupings were tested with the expert panel and rearranged as appropriate. Next, we measured the degree of homogeneity within each domain, and correlations among related items in different domains. Spearman's correlations were first run to examine the relationship between variables.

This process divided the 45 items into six domains: 1) work rewards (nine items, Cronbach's alpha = 0.74); 2) teamwork (eight items, 0.83); 3) management support (four items, 0.75); 4) organizational support (seven items, 0.79); 5) workload (11 items, 0.78, six items for nonclinical staff, alpha = 0.71); and 6) global satisfaction (six items, 0.84). The overall STAR score was highly correlated with each of the six

domain scores (work rewards, Spearman's rho 0.81, $P < 0.001$; teamwork, 0.70, $P < 0.001$; management support, 0.79, $P < 0.001$; organizational support, 0.83, $P < 0.001$; workload, 0.74, $P < 0.001$; and global satisfaction, 0.73, $P < 0.001$).

Each of the six domain subscales assesses different aspects of the hospice work environment. For instance, the work rewards domain assesses the job's meaningfulness for hospice staff. To measure work rewards, items were included that evaluate the fit between a person's skills and job requirements, degree of autonomy, and opportunities for advancement. The teamwork domain measures an employee's comfort level in working with other hospice staff. Items included in the teamwork domain focus on interdisciplinary interactions common to hospice work, including communication, collaboration, boundaries, and respect among staff.

The management support domain assesses staff's perceptions of how well the organization's management and leadership are able to meet staff needs. These items measure management's knowledge about daily activities, working relationships with superiors, and a sense of appreciation for the employees' contributions. The organizational support domain assesses employees' views of the hospice organizational and management structure. These items assess staff perceptions of opportunities for advancement, feedback on performance, and organizational policies.

The workload domain is composed of clinical and nonclinical hospice work characteristics. Items measuring nonclinical workload assess frustration about the amount of paperwork necessary to do one's job, work hours, and flexibility in work schedule. Additional workload items for clinical staff assess support for working with patients and the ability to process difficult deaths. Finally, the global satisfaction domain assesses an employee's general view of his or her job. Items in this domain were modified from the Job Satisfaction Index²⁹ to reflect work in a health care environment.

Factor Analysis

Next, we used exploratory factor analysis with varimax rotation to determine how well the factor structure fit with the six domains.

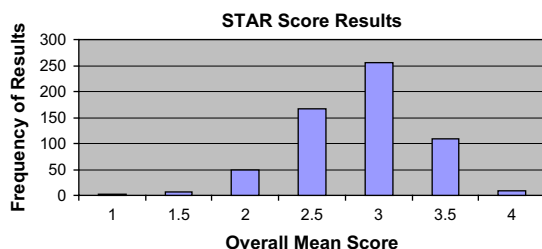


Fig. 1. Distribution of STAR scores.

A six-factor solution was selected based on three criteria: factors required to explain 90% of the variance, the Scree test, and the Joliffe criterion (factors with Eigenvalues >0.7).³¹ Only three of the 45 items did not load onto the factor in which they were originally placed (community appreciation of hospice; personal contribution to the organization's success; and ability to voice ethical concerns about a patient's care plan). However, these three items had a complex factor structure and each had higher correlations with the domains in which they had been placed than they did with the domain that was suggested by the factor loadings. Therefore, despite imperfect loadings, these three items were retained in the domains to which they had been assigned based on expert panel input. Distributions of each domain subscale are described in Table 3.

Validity Testing

Although the primary goal of this phase of the STAR's development was to define its psychometric characteristics and domain structure, this sample also offered an opportunity to begin to assess the validity of STAR scores as a measure of job satisfaction. Because there is no "gold standard" measure of job satisfaction in hospice, we used four overlapping approaches to collect preliminary evidence of the STAR's validity and usefulness as a measure of job satisfaction.

First, we evaluated the STAR's ability to distinguish among hospice organizations. Given the diversity of hospices in this sample, we expected that these hospices would have different STAR scores. As expected, the STAR's

score varied among the hospices in this sample (range 2.7–3.1; Kruskal Wallis $P=0.005$). Most domain scores also varied among hospices (work rewards, range 2.8–3.2, $P=0.003$; teamwork, 2.8–3.3, $P=0.025$; management, 2.8–3.5, $P=0.001$; workload, 2.3–2.8, $P<0.001$; and global assessment of satisfaction, 2.8–3.3, $P=0.003$). A trend toward differences in perceptions of organizational support was not significant (range 2.6–3.0, $P=0.097$).

Second, we examined the correlations between each domain score and the global satisfaction domain score (described above). Because the global domain was adapted from an existing instrument that has been validated in numerous settings (although not in hospice), it offers a standard against which items can be assessed. Global satisfaction scores were highly correlated with all five of the more specific scale scores (work rewards, 0.65, $P<0.001$; teamwork, 0.45, $P<0.001$; management support, 0.52, $P<0.001$; organizational support, 0.52, $P<0.001$; workload, 0.40, $P<0.001$).

Third, we examined associations between the STAR score and selected organizational characteristics. For instance, because previous work has shown that job satisfaction is inversely associated with organizational size,^{32–34} we examined the association between organization level STAR scores and hospice size, measured as the total number of employees in the organization and by the number of patients served/month. In this analysis, hospices with a smaller workforce had higher overall STAR scores (-0.73 , $P=0.016$). Workforce size was also correlated with four of six domain scores (work rewards, -0.72 , $P=0.019$;

Table 3
Results for Six Domain Subscale Scores

Domain	Number of Items in Domain	Mean Score (Standard Deviation)	Median	Range of Scores
Global assessment of satisfaction ($n=598$) ^a	6	2.90 (0.67)	2.8	0.3–4.0
Individual work rewards ($n=598$) ^a	9	2.94 (0.50)	3.0	1.1–4.0
Teamwork ($n=598$) ^a	8	2.99 (0.52)	3.0	0.9–4.0
Management support ($n=595$) ^a	4	3.02 (0.70)	3.0	0.3–4.0
Organizational support ($n=598$) ^a	7	2.73 (0.57)	2.7	0.7–4.0
Workload—nonclinical and clinical duties ($n=598$) ^a	11	2.46 (0.58)	2.5	0.2–4.0
Workload—nonclinical duties only ($n=598$) ^a	6	2.46 (0.65)	2.5	0.2–4.0
Workload—clinical duties only ($n=484$) ^{a,b}	5	2.43 (0.61)	2.6	0.4–4.0

0 = strongly disagree, 1 = disagree, 2 = neither agree nor disagree, 3 = agree, 4 = strongly agree.

^aSample size varies by item because of missing data.

^bSample size is lower because items contain responses from clinical employees only.

teamwork, -0.66 , $P=0.038$; organizational support, -0.83 , $P=0.003$; and management support, -0.70 , $P=0.025$). Correlations with the two remaining domains were not statistically significant (workload, -0.61 , $P=0.060$ and global satisfaction, -0.53 , $P=0.117$).

Similarly, as expected, the number of patients served/month showed a strong inverse correlation with the overall STAR score (Spearman's $\rho = -0.78$, $P=0.013$). All six domain scores also showed similar inverse correlations (work rewards, -0.82 , $P=0.007$; teamwork, -0.72 , $P=0.030$; management support, -0.80 , $P=0.010$; organizational support, -0.78 , $P=0.013$; workload, -0.78 , $P=0.013$; and global satisfaction, -0.67 , $P=0.049$).

Finally, we looked for associations between the STAR score and rates of staff turnover because previous studies have shown that satisfaction is a strong predictor of turnover and turnover intentions.³⁵⁻³⁷ Among the 10 participating hospices, those with higher global satisfaction scores reported lower annual staff turnover rates (Spearman's $\rho = -0.73$, $P=0.03$). Similar trends were noted for overall STAR scores and domain scores, but did not reach statistical significance.

Discussion

Although most other areas of health care have job satisfaction surveys that have been tailored to the needs and concerns of their staff, no such instrument has been developed for the growing hospice industry. Because hospice staff face unique issues and concerns, existing surveys may not adequately capture their experiences and job satisfaction. The STAR instrument offers one way in which hospices can assess the satisfaction of their staff, and includes both general elements of job satisfaction and elements that are specific to hospice care.

The data reported here, although preliminary, provide strong evidence of the STAR's potential usefulness as an industry-wide staff satisfaction tool. For instance, the input of expert panel members and the results of extensive pilot testing ensure good content validity. In addition, the very low frequency of missing data indicates that the final survey is easily understood by both clinical and nonclinical staff. The STAR also has excellent psychometric

properties, including a clear factor structure, a normal distribution, and an absence of significant floor or ceiling effects. In particular, it is important to note that the overall score and all domains have Cronbach's alphas that are greater than 0.70, which is the generally accepted threshold for between-group comparisons.³⁸

These data also provide preliminary evidence of the STAR's validity. For instance, STAR scores varied significantly among hospices in this sample. In addition, domain scores were all significantly correlated with the previously validated global job satisfaction domain.²⁹ Finally, the overall STAR score and/or domain scores were associated with several key organizational variables, including annual staff turnover.

Although these results support the more widespread use of the STAR, there are several limitations of this initial study that should be noted. First, as with any preliminary test of an instrument, this sample may not be representative of all hospice employees. Nor are these hospice organizations representative of all hospices in the US. For instance, these hospices were all not-for-profit, although another study is underway to evaluate the STAR in a more diverse sample of hospices, including for-profit organizations. Second, the sample size for this validation study was also relatively small, which limits our ability to detect associations and between-group differences. In particular, a larger number of hospices would have made it possible to detect more subtle relationships between staff satisfaction and organizational characteristics such as job turnover. This, too, is the focus of ongoing research.

Nevertheless, these results provide a solid foundation of evidence to support the STAR's use as a measure of employee satisfaction and organizational well-being. The STAR is a core element of the NHPCO's quality initiative, and provides the key metric of that program's Workforce Excellence domain. As NHPCO makes the STAR available for use, there are at least two ways in which its results can help to guide workforce improvements in the hospice industry. First, the STAR can provide feedback to individual hospices about potential areas for improvement, and can help them to evaluate the impact of workforce interventions. Second, on a larger scale, the STAR

will provide a framework for voluntary benchmarking efforts and comparisons between hospices. These sorts of comparisons, modeled on NHPCO's Family Evaluation of Hospice Care, will make it possible for hospices to compare their results with those of similar hospices.³⁹ Ultimately, NHPCO's support for benchmarking will include tools and shared resources for improvement that are designed around STAR items and domains.

This development process cannot happen overnight, and it may take several years for the hospice industry to develop a system of job satisfaction measurement that rivals those of other health care sectors. But this goal is essential if the hospice industry is to develop into a well-rounded field with robust techniques of measurement and methods for improvement. As a first step in this process, NHPCO will make the STAR available online to members in 2007, with feedback available on a rolling basis. As experience with the STAR grows, the STAR results will be used to support benchmarking efforts, improvement collaboratives, and toolkits and resources for improvement. These efforts, together with other parallel projects that comprise NHPCO's Quality Partner Initiative, will help to ensure that the hospice industry is able to sustain its current rate of growth while continuing to provide high-quality care to patients and their families.

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