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RESEARCH METHODOLOGY

Healthcare Team Vitality Instrument (HTVI): developing a tool assessing healthcare team functioning

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Abstract

Title. Healthcare Team Vitality Instrument (HTVI): developing a tool assessing healthcare team functioning.

Aim. This paper is a report of a study conducted to refine, shorten and validate the Healthcare Team Vitality Instrument.

Background. The Healthcare Team Vitality Instrument was developed to assess team vitality of nurses as well as other licensed and unlicensed personnel working as part of healthcare teams in inpatient hospital units. This instrument was necessary for two reasons. First, other commonly used instruments assess characteristics of Registered Nurses or perceptions about and characteristics of the organizations in which they work, but not these factors in combination with critical factors of interdisciplinary team functioning and collaboration. Second, a short tool for repeated, regular measurement of team vitality was needed to track the impact of changes to improve work environments.

Method. Revisions to the Healthcare Team Vitality Instrument occurred in two phases. Phase 1 entailed collecting preliminary data and conducting cognitive interviews to refine the initial items. During Phase 2, the factor structure of the Healthcare Team Vitality Instrument was identified and a brief form developed and validated. Data were collected in 2006 and 2007.

Findings. Exploratory factor analyses suggested a four-factor solution with the following dimensions: (1) support structures, (2) engagement and empowerment, (3) patient care transitions and (4) team communication.

Conclusion. The Healthcare Team Vitality Instrument can contribute both to better management practices and advancing knowledge to promote retention of nurses, and to some extent other healthcare professionals, as well as efforts to transform the acute healthcare work environment.

Keywords: healthcare, Healthcare Team Vitality Instrument, instrument development, nurse vitality, team functioning
Introduction

Healthcare professionals in acute care settings face many challenges in delivering safe, high quality care in a manner that promotes professional vitality and joy in work. Critical workforce shortages, increasing severity and complexity of patient illness, time demands and lack of information technology integration combine with sub-optimized communication strategies to create stressful work cultures. The complexity of these challenges requires healthcare providers to create collaborative work environments that encourage individuals to speak up if they have a safety concern and to engage in improving their work processes to enhance patient care. The landmark Institute of Medicine (IOM) publication entitled Keeping Patients Safe: Transforming the Work Environment of Nurses (IOM, Committee on the Work Environment for Nurses and Patient Safety 2004) outlines key strategies for addressing issues of patient safety through optimizing team functioning, ensuring safe patient care transitions (transfer of patient care from one provider to another), and improving communication among care givers.

In addition to IOM’s strategies for promoting patient safety through the work environment, Vincent et al. (1998) offer a framework for understanding and preventing adverse events in health care. This framework elucidates factors at multiple levels of the healthcare system that have an impact on clinical practice, including the clinical team. At the team-level, communication, supervision, seeking help and team structure might be important factors in assessing risk for adverse events. With the identification of these factors, Vincent et al. suggest that survey instruments can be developed with an emphasis on team characteristics, which are often overlooked with a managerial approach towards patient safety. With the focus on team characteristics, the daily challenges and practices are brought to the forefront. Despite the necessity for this type of assessment, a limited number of appropriate instruments exist (Sexton et al. 2006).

The Healthcare Team Vitality Instrument (HTVI) is one such tool that assesses team collaboration and patient safety, with a specific emphasis on team vitality. The conceptual framework used to develop the HTVI includes improving the work environment and patient care activities of frontline staff through: (1) enhancing the safety and reliability of patient care, (2) improving patient-centred care, (3) reducing waste and (4) increasing team vitality and joy in work. In this context, team vitality refers to ‘a joyful and supportive environment that nurtures professional formation and career development’, within which ‘effective care teams continually strive for excellence’ (Rutherford et al. 2004, p. 2). The HTVI was initially developed to assess team vitality of nurses and other personnel working on inpatient medical-surgical units. Such an instrument was necessary for two reasons. First, the focus of the National Quality Foundation endorsed Nursing Work Index (NWI), the most commonly used instrument, relates to characteristics of Registered Nurses and the organizations in which they work, but does not address team characteristics, such as team vitality. Second, a shorter tool for repeated, regular measurement of team vitality at the unit level was needed to assess the impact of interventions. The purpose of this research was to refine, shorten and validate the HTVI.

Background

Existing knowledge related to healthcare team survey tools

For nearly 20 years, the NWI- Revised (NWI-R) has been the most widely used job satisfaction survey tool in nursing (Aiken & Patrician 2000; Upenieks 2002, 2003). The original NWI tool (Kramer & Hafner 1989) was designed from organizational characteristics identified from an extensive list of job satisfaction and work-value instruments. The tool measured the following dimensions for staff nurses: job satisfaction, work values related to job satisfaction, work values related to perceived productivity, and perception of an environment conducive to quality nursing care. Aiken and Patrician (2000) revised the NWI to assess whether certain characteristics were present in the nursing practice environment. The tool was reduced from 65 questions to 56 items, and included three subscales characterizing an environment supportive of professional nursing practice: nurse–physician relationships, control over practice setting and autonomy (Li et al. 2007). Lake (2002) selected 48 of the 65 NWI items to measure nursing practice environments and conducted an exploratory factor analysis from Kramer & Hafner’s 1989. Findings revealed a 31-item 5-factor solution that included the following dimensions: staffing and resource adequacy, collegial nurse–physician relations, nurse manager leadership, nursing foundation for quality of care and nurse participation in hospital affairs (Lake 2002; Li et al. 2007).

Another commonly used tool is the Conditions of Work Effectiveness Questionnaire. This scale, based on Kanter’s theory, assesses frontline nurse empowerment. Kanter’s theory of structural empowerment promotes enhancing worker engagement through providing structures that enhance opportunity, information, support and resources through both formal and informal systems (Kanter 1979; Spence-Laschinger & Finegan 2005). Originally developed by Kanter and revised by Laschinger, the 20-item instrument...
consists of four subscales: information, support, resources and opportunity. An overall empowerment score is obtained by adding the means of the four subscales (Spence-Laschinger & Finegan 2005).

Other survey instruments measure collaboration and satisfaction about care decisions, communication between nurse and physician leaders, as well as teamwork among critical care nurses and physicians. Most of these instruments focus on Registered Nurses in critical care areas [e.g. intensive care units (ICU)] or on team perspectives on the safety climate.

Baggs et al. (1999) used an instrument entitled Collaboration and Satisfaction about Care Decisions to measure providers’ perceptions of collaboration associated with making patient transfer decisions. Six items on the scale address critical attributes of collaboration and one item is a global measure of collaboration. The instrument also contains two items measuring satisfaction with decision-making and decisions made. Content and construct validity and reliability for the scale have been demonstrated (Baggs 1994).

Thomas et al. (2003) adapted an ICU Management Attitudes Questionnaire from the Flight Management Attitudes Questionnaire and its predecessor, the Cockpit Management Attitudes Questionnaire. The tool measures nurses’ and physicians’ perceptions of teamwork within the critical care areas. A national study was used to demonstrate evidence for the reliability and validity of a set of measures to assess collaborative communication between nurses and physicians in the ICU setting (Shortell et al. 1991). The tool measures cohesiveness, communication, leadership and problem-solving/conflict management within and between the physicians and nurse groups. This tool was later used in a study testing an intervention to enhance collaborative communication among nurse and physician leaders in two diverse ICU (Boyle & Kochinda 2004).

The Agency for Healthcare Research and Quality (AHRQ) is responsible for developing the Hospital Survey of Patient Safety, the Safety Attitudes Questionnaire and the Teamwork and Safety Climate Survey. All of these are the most widely used tools by the healthcare industry to measure caregiver attitudes about patient safety-related domains (Sorra & Nieva 2004; Sexton et al. 2006).

This review of existing healthcare team survey tools suggests that critical determinants of satisfaction among frontline staff include the dimensions of engagement and empowerment, perception of an environment conducive to safe and high quality care, effective communication and team collaboration. These dimensions were included in the development of the HTVI. Despite the research related to components of professional satisfaction and engagement, team vitality is not typically assessed. Team vitality is critical to promote retention of nurses and other health professionals. Additionally, assessing team vitality will aid efforts to transform the acute healthcare work environment.

The study

Aim

The aim of this study was to refine and shorten the HTVI. As part of this aim, we assessed the convergent validity and factor structure of the HTVI.

Design

This multi-method study was primarily quantitative, with a qualitative component. The study was conducted in two phases. Phase 1 included cognitive interviews and cross-sectional surveys. Phase 1 respondents either: (1) completed the HTVI and a cognitive interview or (2) completed the HTVI along with other healthcare team questionnaires. Based on results from cognitive interviews and convergent validity tests during Phase 1, the original HTVI was revised. As part of Phase 2, respondents completed a cross-sectional survey – the revised HTVI. During Phase 2, the factor structure of the revised HTVI was tested and validated. All data were collected during 2006 and 2007 in the United States of America (USA).

Participants

Participants involved in the cognitive interviews as part of Phase 1 were from a regional community hospital in the Midwest of the USA and a large academic medical centre on the West coast. For the cognitive interviews, the population of interest was a convenience sample of Registered Nurses and ancillary providers from the two institutions. The sampling approach for this portion of the study was purposive. The number of participants included in qualitative analysis may be limited as the investigators search for themes indicative of the phenomena under study.

Respondents completing the HTVI and other healthcare team questionnaires as part of Phase 1 were from various medical-surgical units from diverse hospital settings (e.g. academic centres, community hospitals). These units were sampled from six study sites, which included regional community hospitals in the South and Midwest, a Veterans’ Affairs Hospital in the South, and academic medical centres in the East and Midwest. Participants included a convenience sample of front line nurses, physicians, and other ancillary healthcare providers from the participating hospital sites.
The target sample size was approximately 400 healthcare providers.

The Phase 2 sample was the same as for the survey component during Phase 1. Again, the target sample size was approximately 400 healthcare providers. The Phase 2 sample was selected without regard to participation in Phase 1; in other words, Phase 2 participants might also have taken part in Phase 1 of the study.

Data collection

To construct the original 20-item HTVI, we adapted the wording of selected questions from many different instruments (Buckingham & Coffman 1999; Aiken & Patrician 2000, Sorra & Nieva 2004; Sexton et al. 2006). Seven questions were related to engagement of the workforce; six assessed the level of teamwork across various healthcare providers and departments; three were related to the physical layout of the work setting; and four were associated with safety issues within the work environment. All items had a 5-point Likert response set (1, strongly disagree and 5, strongly agree) such that higher scores indicated better team vitality.

Data collection for this study occurred in two phases. Phase 1 entailed a cognitive interview of healthcare providers about how accurately each question of the survey tool measured what it was intended to measure – in other words, ‘When you answered this question, what did you think you were being asked?’ Participants who were interested in participating in this first phase of the research study were asked to complete the HTVI before being interviewed. The length of interviews ranged from 30 to 60 minutes.

Additionally, to test convergent validity during Phase 1, the original HTVI was administered along with condensed forms of the AHRQ’s Hospital Survey of Patient Safety and the NWI-R. These two instruments were selected since they are widely used in healthcare and have some related (or overlapping) content and purpose. The Hospital Survey of Patient Safety measures similar content related to a safe and positive work environment (Sorra & Nieva 2004). For the purposes of this study, the condensed version of the Hospital Survey of Patient Safety included 22 items drawn from 11 of the scale’s 12 dimensions (no items assessing ‘nonpunitive response to error’ were included). The NWI-R measures similar staff nurse engagement and team collaboration content as depicted in the HTVI. Similarly, the condensed form of the NWI-R only consisted of 20 items to reduce the length and measure only the three applicable subscales of autonomy, nurse control over the practice setting, and relations between nurses and physicians.

Data collected during Phase 2 was used to assess the factor structure of the HTVI. The HTVI was administered solely 4–6 months after Phase 1 data collection. In the intervening period, the HTVI was revised based on the Phase 1 results. The revised HTVI was administered during Phase 2.

Ethical considerations

Institutional Review Board protocols were followed according to each institution’s guidelines for human subjects review. All participants agreed to complete the cognitive interview or survey(s) voluntarily.

Data analysis

Data analysis involved testing the convergent validity and factor structure of the HTVI.

Validity of HTVI

The HTVI was tested for convergent validity by correlating responses to the HTVI with responses to AHRQ Hospital Survey of Patient Safety and the NWI-R. Items on the original 20-item HTVI were mapped to items on either AHRQ Hospital Survey of Patient Safety or the NWI-R survey tool. Similar items across these measures were expected to be positively related to indicate that the items assess the same concept. Zero-order Pearson correlation coefficients were calculated.

Factor analysis of HTVI

To examine the underlying dimensions of the HTVI, we used common factor analysis (or principal factor analysis) to identify underlying latent dimensions (factors) from observed patterns of covariance. In the common factor model, responses on individual items are assumed to reflect a respondent’s standing on the underlying latent characteristic. Thus, if an individual is high on a characteristic, they should strongly endorse all items assessing that characteristic.

We sought a factor solution that was substantively meaningful in its representation of healthcare workers’ perspectives. Furthermore, the acceptable factor solution was required to be statistically valid. Statistical analyses were conducted in three stages. First, descriptive statistics were calculated. Second, we conducted an exploratory factor analysis to determine the factor structure and used multiple quantitative tests to determine its validity. Third, we tested this factor structure in a confirmatory factor analysis. These steps are discussed in detail below.

The frequency distributions of each variable were examined graphically for normality. For nearly all variables, skewness and kurtosis values were between −1 and 1. Responses to question 10 were not normal so were normalized.
Exploratory factor analysis and validity tests. Because we were initially uncertain about the number of dimensions, or factor structure, we first conducted an exploratory factor analysis to determine the optimal number of factors. The sample was randomly split into a ‘derivation’ and a ‘validation’ sample, and, factor analysis was conducted with both samples. We examined Scree plots and eigenvalues for solutions with 2–5 factors retained. Items were factor analysed (using principal axis factor extraction) and the resulting factors were rotated using both varimax (orthogonal or uncorrelated) and promax (oblique or correlated) rotations. These two methods yielded similar results; consequently, only the promax results are reported.

Factors in each solution were inspected for interpretability and reproducibility. We reviewed these potential solutions to discuss and reach consensus on which made clinical and conceptual sense. A factor was considered interpretable if it both had at least two clear marker variables (item loading above 0·40, and loading twice as great on one factor as on all others) and was substantively meaningful. Initial impressions of reproducibility were corroborated by formal quantitative tests of factor convergence using two approaches. First, the item loadings for each factor were correlated across the two samples. If the same variables have high (or low) loadings on the factor in both solutions (i.e. if the same variables are markers in both the derivation and validation samples), then there is a strong positive correlation between the two arrays. Second, factor-scoring weights were used to compare factor scores across the two samples. Factor-scoring weights are regression coefficients resulting from a model in which the factor is the outcome and the items are the predictors. The weights for each extracted factor can be applied to the standardized item responses to yield a score reflecting each respondent’s estimated position on the underlying dimension. If the factors from two different solutions are similar, they should generate similar factor-scoring weights – and very similar factor scores.

Confirmatory factor analysis. We conducted a confirmatory factor analysis in the validation sample. A confirmatory factor analysis differs from an exploratory factor analysis in that a particular factor structure is specified; both the number of factors and the items for each distinct factor are specified. The resulting fit statistics indicate the degree to which the hypothesized factor structure represents the observed data. Non-Normed Fit Index (NNFI; Bentler & Bonnet 1980), Comparative Fit Index (CFI; Bentler 1989) and the Root Mean Square Error of Approximation (RMSEA) fit indices are reported. The NNFI and CFI range from 0 to 1 and a value of 0·9 and greater is considered acceptable. RMSEA values between 0·05 and 0·08 indicate good model fit.

Results

Participant demographics

In total, 18 healthcare providers completed cognitive interviews as part of Phase 1. Fifteen participants were Registered Nurses, two were respiratory therapists and one was a physical therapist. Additionally, 439 participants completed survey packets. Of these participants, 54% were Registered Nurses, 21% assistive personnel (e.g. certified nursing assistants), 10% Licensed Vocational Nurses, 6% unit secretaries, 2% physicians and 7% identified other training backgrounds.

Phase 2 included 464 participants. Of these participants, 52% were Registered Nurses, 23% assistive personnel, 12% Licensed Vocational Nurses, 6% unit secretaries, 1% physicians and 6% identified other training backgrounds. No demographics were collected for either phase.

Phase 1 cognitive interviews and qualitative assessment

Cognitive interview data revealed that three questions out of the original 20-item questionnaire received inconsistent responses.

I have the information and support I need from other care team members to provide quality care to patients. Responses included variation in the meaning of ‘information’ and ‘support’. For example, respondents either focused on the information or support piece of the question, denoting inconsistency in the interpretation of the question. This question was revised to ‘Important patient care information is exchanged during shift changes’.

Care professionals communicate directly and professionally during patient hand-offs. Responses included variation in meaning of the question, such as communicating professionally with one another, accountability among healthcare team members during shift change, and/or the amount of information that is exchanged during hand-offs (i.e. patient care transition). This question was revised to ‘Care professionals communicate complete patient information during hand-offs’.

The leaders on this unit support my professional development. Responses included variation in the meaning of ‘professional development’. Respondents focused either on their release time for continuing education seminars or on on-going mentoring and support for professional growth and development. This question was removed from the HTVI.
Phase 1 convergent validity of HTVI

As a result of the convergent validity test, 10 items (of 20) moderately (> 0.50) to strongly (> 0.70) correlated with the AHRQ Hospital Survey of Patient Safety or the NWI-R survey tool. Six questions correlated with the AHRQ Hospital Survey of Patient Safety tool and four questions correlated with the NWI-R (see Table 1). At the conclusion of Phase 1, several items on the original 20-item HTVI were revised or slightly re-worded, and, one item was removed.

Phase 2 factor structure of the HTVI

Exploratory factor analysis

As part of Phase 2, an exploratory factor analysis was conducted using data from the revised 19-item HTVI (after splitting the sample into a derivation and validation subsample). Inspection of the exploratory factor analyses suggested that a 4-factor solution was optimal (Ten items showed considerable cross-loading or poor loadings and were omitted before the validation sample was factor analysed.) As shown in Table 2, all items loaded at least moderately strongly, and there was minimal cross-loading (with a cutoff score of 0.20 or higher). This model explained 58% of the variation in the sample.

The solution suggests that hospital workers’ vitality assessments fall into four distinct dimensions (mean score for the entire sample indicated in brackets): support structures (mean = 3.8); engagement and empowerment (mean = 3.8); patient care transitions (mean = 3.9); and team communication (mean = 4.3).

Two tests of factor agreement were used to verify that the solutions were measuring valid and reliable factors. First, item loadings for the retained 10 items were similar across the derivation and validation samples (zero-order Pearson correlation ranged from 0.89 to 0.98 for the four factors), thus confirming that the factor solutions in each half were measuring the same dimensions. Second, factor-scoring weights were used to compare factor scores in the two samples. For each respondent, two factor scores were computed for each factor, one using the weights from the derivation sample and the other from the validation sample. These factor scores were correlated and yielded Pearson correlations > 0.92, indicating a high level of replicability.

Confirmatory factor analysis

Further supporting the 4-factor solution, a confirmatory factor analysis was conducted in the validation sample. The model fit statistics suggest that the 4-factor model adequately fits the data (NNFI = 0.96, CFI = 0.98 and RMSEA = 0.06). The results of this analysis suggest that an abbreviated 10-item HTVI captures four dimensions of vitality and is a valid measure of vitality.

Table 1 Pearson correlation coefficients (r) between HTVI items with AHRQ Hospital Survey of Patient Safety and Nursing Work Index-Revised (NWI-R) Questions

<table>
<thead>
<tr>
<th>Survey questions</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>HTVI – Staff members feel free to suggest ways to improve the way we do our work on this unit</td>
<td>0.52</td>
</tr>
<tr>
<td>AHRQ – My supervisor/manager seriously considers staff suggestions for improving patient safety</td>
<td>0.56</td>
</tr>
<tr>
<td>HTVI – Nurses, physicians, and other staff on this unit work as a high-functioning team</td>
<td>0.72</td>
</tr>
<tr>
<td>AHRQ – When a lot of work needs to be done quickly, we work together as a team to get the work done</td>
<td>0.62</td>
</tr>
<tr>
<td>HTVI – Staff members care about one another on this unit</td>
<td>0.52</td>
</tr>
<tr>
<td>AHRQ – On this unit, people treat each other with respect</td>
<td>0.52</td>
</tr>
<tr>
<td>HTVI – There are adequate numbers of experienced staff to care for patients on this unit</td>
<td>0.55</td>
</tr>
<tr>
<td>AHRQ – We have enough staff to handle the workload</td>
<td>0.67</td>
</tr>
<tr>
<td>HTVI – Staff members on this unit contribute to important decisions about patient care</td>
<td>0.58</td>
</tr>
<tr>
<td>AHRQ – Staff feel free to question the decisions or actions of those with more authority</td>
<td>0.66</td>
</tr>
<tr>
<td>HTVI – I am part of an effective work team that continuously strives for excellence even when the conditions are less than optimal</td>
<td>0.53</td>
</tr>
<tr>
<td>AHRQ – When a lot of work needs to be done quickly, we work together as a team to get the work done</td>
<td>0.66</td>
</tr>
<tr>
<td>HTVI – The support services to this unit are readily available to allow me to spend time with patients</td>
<td>0.55</td>
</tr>
<tr>
<td>NWI-R – Adequate support services allow me to spend time with my patients</td>
<td>0.89</td>
</tr>
<tr>
<td>HTVI – This unit works well with other departments in the hospital</td>
<td>0.96</td>
</tr>
<tr>
<td>NWI – Good working relationships with other hospital departments</td>
<td>0.98</td>
</tr>
<tr>
<td>HTVI – The work environment on this unit is pleasant, clean and organized</td>
<td>0.06</td>
</tr>
<tr>
<td>NWI-R – A work environment that is pleasant, attractive and comfortable</td>
<td>0.06</td>
</tr>
<tr>
<td>HTVI – If I have an idea about how to make things better on this unit, the managers and other staff are willing to try it</td>
<td>0.53</td>
</tr>
<tr>
<td>NWI-R – Support for new and innovative ideas about patient care</td>
<td>0.06</td>
</tr>
</tbody>
</table>

The remaining items in the original HTVI correlated below 0.50 and are not shown in the table.
The overall purpose of this study was to refine the HTVI to assess the dimensions of vitality and to validate the instrument. The study demonstrated that the HTVI is a valid instrument that measures the dimensions of vitality among healthcare providers in the acute care setting. The response rate represented a large sample size in both phases of the study and allowed for a thorough evaluation of the tool.

Study limitations
Minimal participation from physicians was a limitation of this study. Nurses (registered, licensed vocational) and nursing assistants comprised approximately 80% of the sample for both phases of the study. Thus, we cannot conclude that the revised HTVI is valid among physicians. Second, an inherent limitation of any study in which participants are volunteers is the potential for non-response bias. Non-respondent healthcare providers might have responded differently during the cognitive interviews and to the surveys.

Discussion of results
A recent study of improvement projects in hospitals revealed that these often target staff empowerment, collaboration, patient transitions, and availability of necessary supplies and resources (Upenieks et al. 2008). As demonstrated in the present study, these elements comprise team vitality as measured with the HTVI. The revised 10-item HTVI is a useful tool for assessing effects of improvement projects or other innovations for frontline healthcare workers.

The dimensions of the HTVI identified in this study also correspond to dimensions in the NWI-R. Two of the four dimensions identified as part of the HTVI closely parallel the nurse–physician relationships and autonomy subscales of the NWI-R. However, the HTVI expands the relationship subscale to include communication among various healthcare providers. Additionally, the corresponding autonomy subscale in the HTVI includes engagement and empowerment. The two other subscales of the HTVI relate to patient care transitions and support structures, also representing critical areas of the current work climate that need to be repeatedly measured to ensure a safe patient transition between departments, shifts, and providers (IOM, Committee on the Work Environment for Nurses and Patient Safety 2004). The HTVI patient care transitions subscale measures similar content of the Hospital Survey of Patient Safety related to a safe and positive work environment, but at a much reduced level with fewer questions. The HTVI subscale of support structures concentrates on the work climate and essential equipment readily available to provide safe patient care.

The importance of team functioning, ensuring safe patient transitions between departments, improving communication among caregivers, and encouraging individuals to be engaged...
What is already known about this topic

- The Nursing Work Index-Revised is most often used in the nursing profession to measure the level of job satisfaction of Registered Nurses within a given healthcare setting.
- Various other survey instruments measure collaboration among nurses and physicians in critical care settings, as well as staff perceptions of patient safety culture.
- No single instrument measures multiple dimensions contributing to ‘joy in work’ that are pertinent to a wide array of healthcare providers and support personnel across various departments and units in an inpatient setting.

What this paper adds

- The Healthcare Team Vitality Instrument is a valid instrument that can be used by frontline staff and accurately assesses the four dimensions of support structures, engagement/empowerment, patient care transitions and team communication.
- The Healthcare Team Vitality Instrument is the latest iteration of an instrument based on current practice issues and has sound validity properties.

Implications for practice and/or policy

- The brief Healthcare Team Vitality Instrument can be used as part of organizational change efforts to track progress.
- This validated instrument can contribute both to better management practices and advancing knowledge to promote retention of nurses, and to some extent other healthcare professionals, as well as efforts to transform the acute healthcare work environment.

in the workplace are increasingly being recognized as strategies to transform the healthcare work environment into a safe hospital workplace (IOM, Committee on the Work Environment for Nurses and Patient Safety 2004). We and our colleagues in this field recommend a short survey instrument to measure these dimensions, decrease respondent burden and improve response rates. The HTVI is a valid instrument accurately assesses the four dimensions of support structures, engagement/empowerment, patient care transitions and team communication. The revised 10-item HTVI is the latest iteration of an instrument based on current practice issues and has sound validity properties. This type of accurate measurement data will contribute extensively to both better management practices and advancing knowledge to promote retention of nurses and other healthcare professionals, as well as efforts to transform the acute healthcare work environment.

Conclusions

The results of this study suggest that characteristics of the acute care hospital environment can be captured using the HTVI. As innovations and improvement projects are implemented on nursing units, the ability to quickly assess their effects on vitality is critical to staff retention and promoting patient safety. The brief 10-item HTVI provides a new measure to achieve this, and thus reduces the time burden of administering the scale on multiple occasions. Hospital and nurse managers can use the brief HTVI in a longitudinal manner and link the results to nursing turnover rates and to patient safety and quality outcomes. As a result, the findings could explain a hospital’s ability to retain staff and make changes to the work environment to promote retention.

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Conflict of interest

No conflict of interest has been declared by the authors.

Author contributions

VU and EL were responsible for the study conception and design; performed the data collection. VU, EL, MF and BD performed the data analysis; and responsible for the drafting of the manuscript. VU and BD made critical revisions to the paper for important intellectual content; and provided statistical expertise. VU obtained funding; provided administrative, technical or material support; supervised the study.
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