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Title: Compassionate Healthcare Can Be Reliably Measured: The Schwartz Center Compassionate Care Scale

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Compassionate Healthcare Can Be Reliably Measured:

The Schwartz Center Compassionate Care Scale

Beth A. Lown, Steven J. Muncer, Raymond Chadwick

Abstract

Objective

Assess psychometric characteristics of an instrument to measure compassionate healthcare.

Methods

We used Cronbach's alpha to examine scale reliability, exploratory and confirmatory factor analysis to examine scale structure, and Mokken analysis to determine if items belonged to a unidimensional scale.

Results

Results indicated that both sets of items had strong reliability when used to rate individual physicians (Cronbach's α = .97 and .95). A one factor model was a good fit to both sets of items (χ^2(20) 35.23, p > .01, Tucker Lewis Index (TLI) = .98, Comparative Fit Index (CFI) = .99, Root Mean Square Error of Approximation (RMSEA) = .04, and χ2(20) 42.28, p > .01, TLI = .96, CFI = .97, RMSEA = .05. Mokken analysis also supported a unidimensional scale. Both sets of items correlated strongly with an overall measure of patient satisfaction with physicians.

Conclusions

A unidimensional patient-rated scale reliably measured hospital physicians' compassion and correlated significantly with patient satisfaction. Additional testing is required to assess its validity and reliability for other healthcare professionals and clinical settings.

Practice Implications

Measurement of compassionate healthcare is important to patients and healthcare professionals and should be included in research, educational assessment, and healthcare quality performance improvement programs.

1. Introduction

Compassionate care is when physicians, nurses, and other caregivers recognize and validate the concerns, pain, distress or suffering of patients and their families and take action to address them. Such care should not be reserved for end of life, but rather, offered whenever the need arises for patients and their families. Compassion is central to ethical codes across the health professions, and sustains those who offer it [1-3]. Most healthcare professionals identify compassion and caring as their most deeply felt personal and professional commitment, central to their organizational missions [4]. Similarly, feeling cared about and cared for is a critical aspect of patients' experiences with the healthcare system, and sustains those who are ill, injured and vulnerable. Without compassion, care may be impersonal and mechanistic, and will fail to address the unique aspects of a particular patient's needs and circumstances. Such care is not patient or family-centered, and is therefore of low quality.

Important ongoing efforts to improve care quality include required measurement and reporting of patients' care experiences. Examples include the Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys in the U.S. [5, 6] and the NHS Adult In-Patient Survey in England [7]. Uncompassionate care may result in low ratings of these publicly reported measures. This will have negative economic consequences; e.g. in the U.S., the hospital value-based purchasing program links a portion of hospitals' payment from the Centers

for Medicare and Medicaid Services to these results [8]. Feedback from these surveys can be used to improve care. However, translating feedback into actionable strategies has been challenging and variable across settings. Further, important aspects of compassionate care, e.g. emotional support and contextual knowledge of the patient, are not robustly represented in many patient experience surveys, which hampers performance improvement efforts (Table 1).

To better understand how U.S. patients and clinicians view the issue of compassionate care, the Schwartz Center for Compassionate Healthcare, a nonprofit organization in Boston, Massachusetts, commissioned five focus groups and a national telephone survey in 2010. We undertook this effort to assess the feasibility and potential value of measuring compassionate care. Results of this previously reported survey indicated that such measurement was both feasible and valuable [9]. Here we report our psychometric analysis of these survey questions and responses in order to create an instrument that can be used for performance improvement, education and research, the Schwartz Center Compassionate Care Scale (SCCCS).

2. Methods

2.1. Instrument development

The Schwartz Center first developed criteria to assess the compassionate care provided by physicians and other caregivers in 1998, as part of its work to recognize and highlight caregivers who demonstrate compassion for patients and families. The initial criteria were developed by a 20-member committee composed of individuals with diverse viewpoints and experience, including cancer survivors, individuals suffering from chronic pain and/or debilitating illnesses, family members of patients, and individuals working in healthcare policy

and advocacy. These criteria have been continuously used to assess the compassion of caregivers nominated and chosen for the Schwartz Center Compassionate Caregiver Award® since 1999.

In the summer of 2010, the Schwartz Center conducted two focus groups with patients, two focus groups with physicians, and one focus group with nurses in preparation for the development and fielding of a national survey of patients and physicians conducted in the fall of 2010. Qualitative information from the five focus groups was used to fine-tune the questions asked in the survey, including questions relating to the characteristics of compassionate caregivers and the provision of compassionate care.

2.2. Survey implementation

To ensure that patients included in the survey had sufficient experience with the healthcare system, we surveyed only individuals who had been recently hospitalized for at least three days. We used split sampling to maximize the number of questions that could be asked, to test different hypotheses and the impact of different question wording. This yielded two scales to which a total of 801 randomly selected individuals in a national sample responded. Survey methods and participant details have been previously reported [9].

3. Results

3.1. Analysis of ratings regarding the importance of specific compassionate behaviors

Participants were asked first to rate "On a scale of 1 to 10 how important is a doctor's ability to..." followed by the items listed in Table 2. Later in the same questionnaire they were asked also to rate their physician's performance on the same items. Half of the participants

answered questions 1 to 8 and the others answered questions 9 to 16. The Cronbach's alpha for the first eight items was acceptable at .83 [10]. The item-total correlations for the first eight items are also acceptable with the lowest correlation for item 6, "*Give you hope when the news is bad."* This item also had the highest number of missing responses (21 missing). The number of missing responses and relatively low item-total correlation may be because the question involves a qualification, in that there must be bad news for the question to apply and may not be applicable to all participants. Exploratory factor analysis (FA) using Principal Axis factoring (PAF) [11] with varimax rotation suggested that all 8 items load onto one factor which explains 42.64 percent of the variance. The lowest item loading of .48 also comes from item 6 and if this item is omitted the variance explained increases to 45.23 percent. Overall this confirms a one factor scale with either 7 or 8 items.

The same type of analysis was applied to items 9 to 16 (Table 1). On this occasion two items had a substantial number of missing responses. These were item 13, "*Show understanding for your cultural and religious beliefs"* (27) and item 16, "*Only involve you in decisions about your treatment when you want to be involved"* (20). These items also had the lowest mean score and the largest variance, which also suggests that they might be ambiguous. Similarly item 16 could be interpreted in different ways. The Cronbach's alpha for these 8 items is, however, still acceptable at .76[12]. Both items 13 and 16 have lower item-total correlations and if they are removed the alpha of the scale improves to .79 with 6 items. Exploratory FA using PAF with varimax rotation suggested that all 8 items load onto one factor which explains 34.58 percent of the variance. Items 13 (.42) and 16 (.41) have the lowest loading onto the

factor. When these items are omitted the remaining 6 items load onto one factor which explains 39.94 percent of the variance.

The majority of the 16 items performed well when being used as a rating of the importance of particular behaviors for doctors. Both sets of eight items have reasonable Cronbach's alpha[10, 11] and from the results of the factor analysis, can be seen as unidimensional. There are, however, three items with either lower completion rates, lower item-total correlation or factor loadings than would be ideal.

3.2. Analysis of ratings regarding demonstration of compassionate behaviors

The pattern of results is similar when the first eight items are being used to rate a particular physician's behavior. Item 6, however, was even more problematic when used in this way, with 77 patients not responding to this question. Cronbach's alpha overall was very high at .97; and although item 6 had the lowest item-total correlation, it was still acceptable at .82. The item, however, gets far too many missing responses. Overall 23 percent of participants fail to provide full responses to all eight items, and it is item 6 which is problematic for 85 percent of these respondents.

A confirmatory factor analysis was conducted on this data to test for a unifactorial structure with all of the first 8 items loading onto it. Confirmatory factor analysis (CFA) is particularly useful for determining what items are measuring, as it tests whether a proposed model fits the observed variance covariation matrix between items [13]. In this case the model being proposed is for one latent variable with all eight items loading onto it, as they are all measuring aspects of compassion. The fit indices for the model indicate whether this structure is appropriate [13]. The Satorra-Bentler corrected chi square was used as the data are based on

an ordinal scale [14]. The unifactorial model is a good fit to the data (Satorra-Bentler corrected $X^2(20) = 35.23$, $p >. 01$; CFI = 99; TLI = .98; RMSEA = .04) with factor loadings ranging from .82 for the hope-related item up to .94. Comparative Fit Index and Tucker Lewis Index value of greater than .95 and a Root Mean Square Error of Approximation value of less than 0.05 indicates good fit of the model to the data [13]. These results indicate that it is reasonable to treat the eight items as unidimensional and therefore that the items are measuring one latent construct.

We also conducted a Mokken analysis on the eight item rating scale [15]. Mokken analysis is a nonparametric item response theory approach that can be used to investigate undimensionality in multi-item questionnaires [16]. It is particularly useful when the data is not normally distributed as is the case here, and when designing unidimensional scales. None of the homogeneity coefficients of scalability fell below the threshold of .3, and all were above .4, which means that the items are sufficiently homogeneous to form a single scale [17].

The problem of missing responses is evident when the second set of eight items are examined. Seventy-six participants failed to respond to item 13, and 34 do not respond to item 16, which confirms the previous results suggesting that these items might be ambiguous. Most importantly, however, one hundred and twenty participants either offered no opinion or replied "don't know" or refused to respond to item 11, "*Apologize if he or she makes a mistake*." It is interesting to note that only 13 participants failed to respond when asked to rate the importance of this for doctors. The Cronbach's alpha for the scale is .95. The three items with most non-responses have the lowest item-total correlations. Only 57 percent of participants provided full responses to the full 8 item scale.

A CFA was conducted on this data to test for a unifactorial structure with all 8 items loading onto it. The model overall is not as good a fit as for the first eight items, but is still a reasonably good fit to the data (Satorra-Bentler corrected $X^2(20) = 42,28$, $p <. 01$; CFI = .97; TLI = .96; RMSEA = .05) with factor loadings ranging from .71 item 16 to .86 for item 15. These results suggest that the eight items can be seen as unidimensional. It is, however, important to note that three of the items are problematic in that some participants were not able to respond to them, which seriously reduced the complete responses to the scale. A Mokken analysis on the eight item rating scale also supported unidimensionality. None of the homogeneity coefficients of scalability fell below the threshold of .3 and all were above .4, which means that the items are sufficiently homogeneous to form a single scale. The items with the lowest scalability coefficients were items 13 and 16.

3.3 Correlations of ratings of patient satisfaction with ratings of physicians' compassionate behaviors

Participants were asked to rate their overall satisfaction with their most recent hospitalization on a four point scale ranging from not at all satisfied to very satisfied. Given the problems with items 6, 11, 13 and 16 for this data set, these items were omitted from the remaining analysis. The total score on the first set of compassion items correlated significantly with this item $r(354) = .54$. The total score on the second set of items also correlated significantly with this item $r(350) = .61$.

Participants were also asked four questions about their treatment by doctors in their recent hospitalization (Table 3). These four questions have a Cronbach's alpha of .87 when used as a scale. There is a significant and strong correlation between the total on the first set of

compassion items and the total on these items (r(354) = -.73), and also for the second set of compassion items (r(350) = .66). Lastly participants were asked 'Did you have one doctor who was in charge of your medical care while you were in hospital?' Those who had one doctor scored significantly higher on both the first set of items ($t(343) = 5.74$, $p < .001$), and the second set of items ($t(341) = 6.74$, $p < .001$). These results suggest that the sets of items are measuring something similar and that it is the compassion shown by the doctors.

We selected 12 items for inclusion in the Schwartz Center Compassionate Care Scale (SCCCS), omitting problematic items. (Table 4).

4. Discussion and conclusions

Preliminary analysis shows that our scale demonstrates excellent reliability and measures patients' perceptions of a unidimensional factor related to compassionate care by hospital physicians. Further testing is needed to see if the items demonstrate similar characteristics when used to assess the behaviors of other health professionals and in other clinical settings. Patient ratings of compassion were significantly higher when they had one doctor in charge of their care, and ratings of compassion and satisfaction were strongly correlated. This supports the concepts that continuity of relationships is important, and that compassion is a valued quality of care.

Healthcare professionals, patients and families are united in their desire for compassionate healthcare. Aside from being the right thing to do and an enduring professional commitment, emerging evidence supports the assertion that patient-clinician relationships, empathy and compassion improve health and may lower costs of care. Observational studies have shown that diabetic patients of physicians with high self-reported empathy scores had

better diabetic control and fewer admissions for serious metabolic complications than patients of physicians with lower scores [18.19]. Physicians who explored illness experience and disease, understood the whole person, and found common ground generated lower expenditures on diagnostic tests [20]. Similarly, patients' satisfaction with hospital staff interactions about their discharge needs and concerns were significantly correlated with lower hospital readmission rates [21]. A recent systematic review and meta-analysis of randomized controlled trials of interventions to improve the patient-clinician relationship showed small but significant effects on health outcomes for patients with asthma, obesity, and lower respiratory infections [22].

While patients' perceptions of the frequency of some communication acts are measured by existing surveys of hospital care, patients' perceptions of the quality of attention to their socioemotional concerns and needs, and preferences for involvement in decisions are not uniformly assessed [6].

5. Practice Implications

As researchers and educators gain clarity about definitions and measurement of compassion and relational aspects of care that are important to patients, they will be better equipped to identify variables that influence them and to create educational, quality improvement and systemic interventions in partnership with patients, families and communities to improve these aspects of healthcare. We urge the inclusion of compassionate care elements in national patient experience surveys using items developed through usual standardized protocols. We encourage others to test the SCCCS in research, educational assessment, and healthcare quality performance improvement programs in diverse clinical settings, and to correlate this data with clinical and organizational outcomes.

Competing interests: Beth Lown, MD is an employee of the Schwartz Center for Compassionate Healthcare, a nonprofit 501C organization in the United States. Drs. Muncer and Chadwick report no competing interests.

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Table 1. Comparison of survey items related to compassionate care

Hospital-Consumer Assessment of Health Providers and Systems [6]	**Schwartz Center Compassionate Care Survey Items** How successfully did your doctor:
-How often did doctors/nurses explain things in a way you could understand?	-Convey information to you in a way that was understandable
-How often did doctors listen carefully to you?	-Listen attentively to you
	-Gain your trust
	-Always involve you in decisions about your treatment
	-Strive to understand your emotional needs -Express sensitivity, caring and compassion for your situation -Comfortably discuss sensitive, emotional or psychological issues -Communicate test results in a timely and sensitive manner
-How often did the hospital staff do everything they could to help you with	

your pain?	
-Staff took my preferences and those of my family or caregiver into account in deciding what my healthcare needs would be when I left	-Consider the effect of your illness on you, your family, and the people most important to you
	-Treat you as a person not just a disease -Show understanding for your cultural or religious beliefs
-How often did doctors/nurses treat you with courtesy and respect?	-Show respect for you, your family and those important to you
	-Spend enough time with you

Legend: Included are items related to bi-directional communication, trust, patient involvement, emotional support, responsiveness to pain, contextual understanding of the patient and family and “whole person” knowledge, respect and time. Questions related to access, hospital environment (cleanliness, noise, privacy); operations and procedures, and discharge information are omitted.

Table 2. Corrected summary of reliability and factor loadings for items measuring the importance of aspects of compassionate care

Item content	Item total r	Factor Loading
1. Express sensitivity, caring and compassion for your situation	.71	.77
2. Strive to understand your emotional needs	.57	.61
3. Consider the effect of your illness on you, your family, and the people most important to you	.59	.65
4. Listen attentively to you	.65	.74
5. Convey information to you in a way that was understandable	.64	.71
6. Give you hope, even if / when the news was bad	.45	.47
7. Gain your trust	.53	.61
8. Always involve you in decisions about your treatment	.53	.61
9. Comfortably discuss sensitive, emotional or psychological issues	.60	.68
10. Treat you as a person not just a disease	.60	.70
11. Apologize if he or she makes a mistake	.47	.56
12. Show respect for you, your family and those important to you	.57	.69
13. Show understanding for your cultural and religious beliefs	.38	.42
14. Communicate test results in a timely and sensitive manner	.45	.56
15. Spend enough time with you	.52	.59

16. Only involve you in decisions about your treatment when you want to be involved	.37	.41

Table 3: Summary of reliability for other questions about treatment by doctors

	Item content	Item total r
1.	How satisfied were you with the process by which your condition was diagnosed?	.70
2.	And thinking about the diagnosis that led to your hospitalization, how satisfied were you with how the diagnosis of your medical condition was explained to you?	.72
3.	Looking back, how satisfied were you with the medical care you received from the doctors who took care of you while you were in the hospital?	.73
4.	How satisfied were you with the communication and emotional support you received from your doctors during your time in hospital.	.74

Table 4: Schwartz Center Compassionate Care Scale

On a scale of 1 to 10, where 1 is not at all successful and 10 is very successful, how successfully did your doctor (or other healthcare provider):

1. Express sensitivity, caring and compassion for your situation
2. Strive to understand your emotional needs
3. Consider the effect of your illness on you, your family, and the people most important to you
4. Listen attentively to you
5. Convey information to you in a way that was understandable
6. Gain your trust
7. Always involve you in decisions about your treatment
8. Comfortably discuss sensitive, emotional or psychological issues
9. Treat you as a person not just a disease
10. Show respect for you, your family and those important to you
11. Communicate test results in a timely and sensitive manner
12. Spend enough time with you

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