

# What do clinicians derive from partnering with their patients? A reliable and valid measure of “personal meaning in patient care”

Gail Geller<sup>a,b,c,d,\*</sup>, Barbara A. Bernhardt<sup>e</sup>, Joseph Carrese<sup>a,b</sup>,  
Cynda H. Rushton<sup>a,d,f</sup>, Ken Kolodner<sup>g</sup>

<sup>a</sup> Berman Institute of Bioethics, Johns Hopkins University, Baltimore, MD, USA

<sup>b</sup> Department of Medicine, Johns Hopkins University School of Medicine, Baltimore, MD, USA

<sup>c</sup> Department of Health, Behavior & Society, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD, USA

<sup>d</sup> Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore, MD, USA

<sup>e</sup> Department of Medicine, University of Pennsylvania, Philadelphia, PA, USA

<sup>f</sup> School of Nursing, Johns Hopkins University, Baltimore, MD, USA

<sup>g</sup> Baltimore, MD, USA

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## Abstract

**Objective:** Burnout is high among clinicians and may relate to loss of “meaning” in patient care. We sought to develop and validate a measure of “personal meaning” that practitioners derive from patient care.

**Methods:** As part of a larger study of well-being among genetics professionals, we conducted three focus groups of clinical genetics professionals: physicians, nurses and genetic counselors ( $N = 29$ ). Participants were asked: “What gives you meaning in patient care?” Eight themes were identified, converted into Likert items, and included in a questionnaire. Next, we mailed the questionnaire to clinical geneticists, genetic counselors and genetic nurses ( $N = 480$ ) randomly selected from mailing lists of their professional associations. Results were subjected to exploratory factor analysis. The survey also included validated scales of burnout and professional satisfaction, and a 1-item measure of gratitude, to assess predictive validity.

**Results:** 214 eligible providers completed the survey out of an estimated 348 eligible (61% response rate). Factor analysis resulted in a unidimensional scale consisting of 6-items with an alpha of 0.82 and an eigen value of 3.2. Factor loadings ranged from 0.69–0.77. The mean total score was 18.1 (S.D. 3.7) out of a possible high score of 24. Higher meaning scores were associated with being female ( $p = 0.044$ ), a nurse ( $p < 0.001$ ), and in practice longer ( $p = 0.006$ ). Meaning scores were inversely correlated with burnout ( $p < 0.001$ ), and positively correlated with gratitude ( $p < 0.001$ ) and professional satisfaction ( $p < 0.022$ ).

**Conclusion:** The 6-item “personal meaning in patient care” scale demonstrates high reliability and predictive validity in a select group of health professionals. Future research should validate this scale in a broader population of clinicians.

**Practice implications:** The scale could be useful in identifying providers at risk of burnout, and in evaluating interventions designed to counteract burnout, enhance meaning and improve communication and partnership between providers and patients.

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**Keywords:** Burnout; Professional satisfaction; Meaning; Physicians; Nurses; Genetic counselors; Provider–patient communication; Scale development; Genetic service providers

## 1. Introduction

The practice of medicine has been described as a “profession in retreat, plagued by...deep personal dissatisfaction” [1]. This dissatisfaction, or lack of fulfillment [2], exists among various members of the health care team and has been attributed to a range of external factors including the growth of managed care [3], heavy clinical workloads [4,5], constraints on physicians’ clinical autonomy [6,7], the malpractice crisis

\* Corresponding author at: Department of Medicine & Berman Institute of Bioethics, Johns Hopkins University, 624 N. Broadway, Room 350, Baltimore, MD 21205, USA. Tel.: +1 410 955 7894; fax: +1 410 614 9567.

E-mail address: ggeller@jhmi.edu (G. Geller).

[8], changes in the scope of care that physicians are expected to provide [9], and increased patient expectations for effective treatments or cures [5]. Lack of fulfillment is a known risk factor for burnout [2,10–12] and for leaving patient care [13].

It has been suggested that practitioners can sustain and renew themselves, and guard against burnout, through the process of rediscovering meaning and commitment [14–20].

If that is true, and in light of increasing rates of burnout among clinicians, [11,21–24] and external changes in the health care delivery system over which they have little control, greater attention should be paid to recognizing and reconnecting with what is most meaningful in patient care. One type of meaningful experience for clinicians involves humanistic interactions with patients that are reaffirming [25]. Suchman and Matthews use the term “connexional dimension” to describe what Remen refers to as meaning, and define it as a “drive to reach beyond the boundaries of the self, to feel connected once again to other people and to the world” [26].

This renewed call for connecting is a hallmark of the recent attention to relationship-centered care [27,28] and partnership [29] between clinicians and their patients. This literature emphasizes the reciprocal nature of all health care relationships and the importance of self-awareness in establishing partnerships with patients [30]. Self-aware partnerships enable clinicians to be “present” to their patients’ suffering and pain even when cure is not possible. Hartrick [31] suggests that a model of relationship-centered care will involve an active concern for and about others with a focus on *being with* the other person.

The connexional dimension of care described above is different from empathy. Whereas empathy is directed toward patients in response to a recognition of their emotions [32], connecting implies mutuality, with potential benefits experienced by both parties. This mutual form of connecting is not instigated only through suffering but also involves sharing the positive aspects of the situation or relationship. Connecting in this way enables clinicians to create meaning by engaging them in a purpose beyond themselves. Through this connection, the clinician is gratified by the healing capacity of simply being present with a patient. Naef describes this human-to-human relationship that involves listening to, being present and attending to the authenticity of the experience or situation as “bearing witness” [19]. Without such a connection, the demands of being a health care practitioner can be overwhelming and draining [26]. By contrast, when clinicians are able to connect with their patients and receive all that patients have to offer, they describe feelings of gratitude [25,33,34]. Although feeling grateful and deriving meaning from interactions with patients are likely to be components of professional satisfaction among health care practitioners, these constructs have not been incorporated into satisfaction measures [35].

While measures of empathy [36,37], burnout [38,39] and professional satisfaction [35] have been developed and validated among several types of health care practitioners, only one measure of meaning has been developed and it focuses on the specific role that nurses play in pediatric oncology settings rather than on their personal interactions with patients

[17]. We could find no valid and widely applicable tool that describes the nature of *personal* meaning that different kinds of health care practitioners derive from their work with patients. Amid suggestions that clinicians learn to cultivate this sense of meaning, educational interventions are proliferating [2,4,20,40,41]. Evaluation of such programs requires a way to measure meaning. The purpose of this research was to develop and establish the reliability and validity of a scale for measuring personal meaning in patient care.

## 2. Methods

The data reported in this paper were collected as part of a larger study of moral distress and suffering among genetics professionals. The overall study was reviewed and approved by the Johns Hopkins University School of Medicine IRB. Item development, psychometric testing and scale revision were accomplished in 3 phases.

### 2.1. Phase 1: item development

The first phase, the development of items for the scale, was accomplished through three focus groups of clinical genetics professionals: physicians, nurses and genetic counselors. Focus groups were held at the 2004 annual meetings of the American Society of Human Genetics (ASHG), the International Society of Nurses in Genetics (ISONG), and the National Society of Genetic Counselors (NSGC), respectively. Participants were recruited from among individuals registered to attend their professional meeting. Recruitment strategies differed slightly for each group of practitioners. For ASHG members, we needed to identify those physicians who were primarily involved in patient care (as opposed to research). We therefore cross-referenced the list of physicians certified in clinical genetics by the American Board of Medical Genetics (ABMG) with the list of ASHG registrants. We then sent a personalized letter to a random sample of 100 clinical geneticists on this list. For nurses in genetics, the President of ISONG sent an e-mail to all individuals registered to attend that meeting. For genetic counselors, a notice was posted on the listserv of the National Society of Genetic Counselors. Both the personalized letters and the listserv notice requested that those who were interested in participating contact us. Individuals who indicated an interest in taking part in a focus group were then sent a form asking respondents their gender, ethnicity, years in practice, type of practice (pediatrics, adult genetics, prenatal genetics, etc), and their availability to attend a group at specifically indicated times. The groups were scheduled during times that were convenient for the largest number of potential participants. Twenty-nine individuals participated, of whom five were men and all were white.

The content and scope of the focus group discussion guide was informed by the literature on distress, suffering and meaning among health care practitioners [20], and by our own preliminary work [40]. In addition, at the outset of the project, we convened a meeting of the entire study team to contribute to the development of the focus group guide. The guide was semi-

structured and included a brief introduction, a series of questions about sources and consequences of distress among genetics professionals, and the following questions that have been suggested by Reich [42] to guide professionals as they make sense of their own suffering: (1) How do I see myself as a healer in the face of profound suffering and loss; (2) How have I grown personally and/or professionally as a result of these distressing experiences; (3) What gives meaning to me personally; and (4) What gives meaning to my work?

Each focus group lasted approximately 2 h. Participants were offered a \$50 incentive for their participation and served a light meal. All groups were co-facilitated by two of the study team members. The focus group discussions were transcribed by a court stenographer. The transcripts were independently reviewed by three co-investigators to identify the responses to the questions about “meaning in patient care”.

## 2.2. Phase 2: survey development and administration

In the next phase of the project, each response was converted into a discrete item for inclusion in a questionnaire using a Likert format and a four-point scale. For each item, the questionnaire asked respondents to what extent they “derived a sense of personal meaning in their work with patients”. Response categories ranged from 1 = “not at all” to 4 = “a great deal”.

Using the mailing lists generated by the professional organizations, 300 genetics professionals were randomly selected to receive a self-administered questionnaire. The sample of 300 was comprised of three groups of 100 clinical geneticists (out of 1006 ABMG-certified clinical geneticists), 100 genetic counselors (out of 1450 members of NSGC) and 100 genetic nurses (out of 300 members of ISONG). We excluded those who participated in the focus groups. Since males are underrepresented among genetic counselors, the list of counselors was stratified by gender so that we could oversample males. The mailing contained a cover letter explaining the purpose of the study, an 8-page questionnaire, a self-addressed stamped envelope, and a \$1 token of our appreciation for completing the questionnaire. The cover letter asked potential participants to complete and return the enclosed questionnaire in the self-addressed stamped envelope provided. The cover page of the questionnaire asked respondents if they (1) cared for patients within the last year (an eligibility criterion) and (2) if they were willing to complete the questionnaire. Respondents were instructed to return the questionnaire even if they were ineligible or unwilling to participate in the study. One month after the initial mailing, in order to increase our sample size, we drew a different random sample of 180 potential respondents from the same population and conducted another mailing (total  $N = 480$ ).

The survey took approximately 20 min to complete and included questions about years in practice, work setting and demographic characteristics (gender, ethnicity, age, and marital status). We hypothesized that those in practice longer and those who spend more time with patients would have higher meaning. In addition, the survey included two other measures for potential use in assessing the predictive validity of the

“meaning” scale. First, we included the Maslach Burnout Inventory (MBI), the most widely used measure of burnout. The MBI [38] is a 22-item Likert scale that assesses the extent of three aspects of the burnout syndrome: emotional exhaustion, depersonalization and lack of personal accomplishment. Reliability coefficients, using Cronbach’s alpha, are 0.90 for emotional exhaustion, 0.79 for depersonalization and 0.71 for personal accomplishment. Second, we included the following single item measure of “gratitude”: “Thinking about your patient care experience overall, how frequently have you felt grateful?” Response categories ranged from “1 = not at all” to “4 = often”.

Based on the literature [16–20,25,26,29], we hypothesized a statistically significant inverse relationship between “meaning” and burnout, and a statistically significant positive association between “meaning” and “gratitude”. As a measure of discriminant validity, we included the global measures component of the Physician Job Satisfaction scale [35] which consists of 12 items comprising three, 4-item subscales (job satisfaction, career satisfaction and specialty satisfaction), with Cronbach’s alphas of 0.82, 0.85 and 0.80, respectively. We hypothesized that there might be some correlation between “meaning” and “professional satisfaction” but it would be weak.

## 2.3. Phase 3: statistical analysis and psychometric testing of the meaning scale

Upon receipt of all surveys, frequency distributions for all variables were examined for evidence of inconsistencies in response patterns and outliers prior to statistical analysis. We examined all continuous variables for evidence of non-normality using normal probability plots and measures such as skewness and kurtosis. Further, to guard against influential data points, non-parametric statistics were used to confirm parametric results. No differences between parametric and non-parametric analyses were observed.

In order to develop the meaning scale, we first examined all meaning-related items for evidence of sufficient variability. We also examined the mean sampling adequacy (MSA) of all items. We considered an MSA of 0.65 as a minimum requirement [43]. An Eigen value of 1.0 was set as the minimum to extract a factor. We considered values  $\geq 0.40$  to represent a clear loading on a factor, and values of 0.35–0.39 to represent borderline loading. We considered loadings of  $\geq 0.40$  on two or more factors to represent straddling. If multiple factors emerged from principal components analysis, we planned on using two rotations (varimax and promax). Further description of the decisions made in conducting the factor analysis is provided in the “exploratory factor analysis” section. To evaluate reliability, we computed Cronbach’s alpha and examined whether the scale alpha increased with the omission of any single item. Decisions to omit or include specific items were based on the change in the alpha and weak item-to-total correlations along with theoretical considerations. A total “personal meaning in patient care” score was created by summing the responses to each item.

Table 1  
Demographic and practice characteristics of sample by discipline

	Total (n = 214)	Clinical geneticists (n = 72)	Genetic counselors (n = 82)	Genetic nurses (n = 58)
Age (years, mean $\pm$ S.E.)	44 $\pm$ 0.79	52 $\pm$ 0.99	35 $\pm$ 0.91	49 $\pm$ 1.2
Gender (%)				
Female	74.8	45.8	84.2	96.7
Male	25.2	54.2	15.8	3.3
Marital Status (%)				
Married/partnered	80.6	88.6	71.9	83.1
Not married/partnered	19.4	11.4	28.1	16.9
Ethnic/racial background (%)				
White, non-hispanic	87.3	90.1	84.2	88.1
Other	12.7	9.9	15.8	11.9
Time seeing patients (% $\pm$ S.E.)	62% $\pm$ 1.96	56% $\pm$ 3.23	72% $\pm$ 2.56	57% $\pm$ 4.41
Years in practice (%)				
<5	18.4	5.6	37.8	6.9
5–10	17.9	11.1	26.8	13.8
11–20	30.7	44.4	24.4	22.4
$\geq$ 21	33.0	38.9	11.0	56.9
Subspecialty (%)				
Prenatal only	16.2	8.5	27.5	9.4
Pediatric only	13.2	23.9	6.3	9.4
Adult only	2.5	2.8	1.3	3.8
Cancer only	11.8	1.4	13.8	22.6
Mixture	56.4	63.4	51.3	54.7
Type of practice setting				
University hospital	53.8	66.7	50.0	43.1
Non-university or hospital-based practice	46.2	33.3	50.0	56.9

To demonstrate predictive validity of the “meaning” scale, we computed Pearson and Spearman correlations with burnout, gratitude and professional satisfaction. Associations between “meaning” and various demographic and practice characteristics were determined using standard bivariate analyses (chi-square, correlations, *t*-tests or ANOVAs depending on the level of measurement). For ANOVAs, we conducted multiple comparisons of groups (e.g. meaning by discipline) using Dunnett’s test only when the overall *F* test was significant at 0.05. For all additional analyses, statistical significance was set at *p* = 0.05. SAS Version 8.2 was used for all analysis [44].

### 3. Results

#### 3.1. Response rates, demographics and practice characteristics

A total of 343 surveys were returned out of the original 480 (a 71.5% return). Of these 343 returned surveys, 94 were ineligible (primarily because they did not provide patient care) and 35 declined to participate. Based on 214 completed surveys, the overall survey response rate was conservatively estimated to be 55% (214 of 386: 480—94 ineligible, 386 eligible), ranging from 60% among genetic counselors to 52% among medical geneticists. This 55% response rate is almost certainly an underestimate as it assumes that the remaining 137 subjects who did not return a survey (480–343 = 137) were all eligible. An alternative and arguably more reasonable

assumption is that at least the same rate of ineligibility (27.4%) would apply for the 137 subjects (*n* = 38) who failed to return a survey. Furthermore, it is probably safe to assume that subjects were more likely to return a form if they were eligible. We calculate our adjusted response rate as 61.5% (214 completed surveys of 348 eligible: 480 samples, 94 known to be ineligible, 38 estimated to be ineligible, 348 eligible).

The demographic and clinical characteristics of the sample are summarized in Table 1 broken down by discipline. The majority of responding genetic counselors and nurses were female, while gender was fairly evenly distributed among clinical geneticists. For all three disciplines, the majority of respondents were married and white. The mean age was 44.4 (S.D. =  $\pm$ 11.3), with clinical geneticists and nurses being older and genetic counselors younger than average. The majority of clinical geneticists and nurses have been in practice more than 10 years whereas the majority of genetic counselors, who tend to be younger, have been in practice less than 10 years. The majority of respondents reported a mixed practice of prenatal, pediatric and adult (including cancer) patients. Among respondents who reported seeing only one type of patient, clinical geneticists were more likely to see pediatric patients (24%), genetic counselors were more likely to see prenatal patients (28%) and nurses were more likely to see cancer patients (23%). The majority of clinical geneticists worked in academic medical centers, the majority of nurses worked in non-university based practices and genetic counselors were evenly split between the two types of practice settings.

Table 2  
Factor analysis of the “meaning” scale

Item	Factor loadings	Final scale
1. Patients entrusting me with their stories	0.71	0.74
2. Offering patients a protected environment in which to relax and reflect	0.71	0.71
3. Feeling deep connections with my patients	0.78	0.77
4. Empowering patients <sup>a</sup>	0.55	–
5. Being with people in their most vulnerable state	0.70	0.71
6. “Bearing witness” to events in the lives of my patients and their families	0.72	0.74
7. Taking away a little of my patients’ loneliness	0.68	0.69
8. Making a difference in the lives of my patients <sup>b</sup>	–	–
Overall Cronbach’s alpha	0.82	0.82

<sup>a</sup> Deleted from final scale because of lowest item-to-total correlation and factor loading, and Cronbach’s alpha was equivalent without it.

<sup>b</sup> Deleted prior to factor analysis due to poor variability.

Aggregate data are not available from the ABMG and ISONG that would allow us to assess the representativeness of the clinical geneticist and nurse respondents, but some aggregate data are available from the NSGC with regard to genetic counselors [45]. Although only 5% of genetic counselors are male, 14% of responding genetic counselors were male, indicating that our efforts to oversample males were successful. Our sample of genetic counselors was representative of counselors overall with respect to the number in years of practice, race and practice setting.

### 3.2. Factor analysis (convergent validity), item reduction and reliability

As summarized in Table 2, 8 items were identified from the focus groups. Item #8 was deleted because it lacked sufficient variability. The remaining seven items were subjected to an exploratory factor analysis. The overall mean sampling adequacy was 0.82. The MSA of individual variables was satisfactory (MSA  $\geq$  0.78). Factor analysis performed on the remaining 7 items yielded only one factor: “being with” patients, with an eigen value of 3.2. A primary goal of scale development is to reduce the item pool to the most parsimonious number without sacrificing the validity of the scale. As a first step, we identified items that could be omitted without resulting in substantial reductions in the level of the Cronbach’s alpha. The overall alpha of the “meaning” scale was 0.82. This alpha was maintained by omitting item 4, which also had the lowest item-total correlations. The elimination of this item did not reduce the internal consistency of the overall scale. This item was also qualitatively different from the other items in that it reflected “doing for” patients rather than “being with” them. The final, unidimensional scale consisted of 6-items with an alpha of 0.82. Factor loadings were quite close in magnitude with very little spread (0.69–0.77). A total “finding personal meaning in patient care” score were created by summing the responses to each item. The mean total score was 18.1 (S.D. 3.7) out of a possible high score of 24. The distribution of the final scale approximates a normal distribution. The mean scores for scale items ranged from 2.6 to 3.3. In order to maximize the sample size for additional analysis, we used mean substitution for one subject who had missing data on a single item from the scale.

### 3.3. Discriminant and predictive validity of the “meaning” scale

Further examination of the validity of the 6-item “meaning” scale was conducted by assessing the ability of the instrument to discriminate between subgroups of the sample with presumed differences in the degree to which they are likely to “connect” with their patients or, in other ways, derive “meaning” from their work. As shown in Table 3, women had higher “meaning” scores than men ( $p = 0.044$ ) and nurses had higher meaning scores than clinical geneticists and genetic counselors ( $p < 0.001$ ). Treated as a continuous variable, percent time seeing patients was not significantly related to meaning ( $r = -0.01$ ;  $p = 0.929$ ). However, based on a scatterplot of the two variables, we observed what appeared to be an inverted U-shaped relationship. As seen in Table 3, collapsing percent time seeing patients in percent quartiles, we can observe this U-shaped relationship ( $\eta^2 = 0.207$ ,  $p = 0.027$ ). Those with the lowest meaning scores were found in the lowest and highest percentile quartiles ( $p < 0.031$ ). A quadratic contrast (comparing the lowest and highest groups combined

Table 3

Discriminant validity: relationship of meaning with demographics<sup>a</sup> and practice characteristics

	N	%	Meaning scores		
			Mean	S.E.	p
Gender					
Female	160	75	17.8	0.31	=0.044
Male	54	25	16.4	0.41	
Discipline					
Clinical geneticist	72	34	17.5	0.42	<0.001
Genetic counselor	82	38	17.4	0.40	
Genetic nurse	58	27	19.7	0.46	
Time seeing patients (%)					
<25	43	21	17.6	0.56	=0.031 <sup>a</sup>
26–50	43	21	19.3	0.57	
51–75	42	20	18.8	0.56	
$\geq$ 76	81	39	17.5	0.41	

<sup>a</sup> Using multiple comparisons, meaning scores for the <25 category were significantly lower than scores for the 26–50 category ( $p = 0.033$ ). Meaning scores for the  $\geq$ 76 category were lower than scores for the 26–50 category ( $p = 0.011$ ) and 51–75 category ( $p = 0.058$ ).



Table 4

Predictive validity: relationship of meaning with burnout, gratitude and satisfaction scales as well as years in practice

	Pearson correlations with Meaning	
	<i>r</i>	<i>p</i>
Burnout		
Overall	−0.31	<0.001
Emotional exhaustion	−0.13	=0.067
Depersonalization	−0.29	<0.001
Professional accomplishment	−0.44	<0.001
Gratitude	0.34	<0.001
Professional satisfaction	0.16	=0.022
Years in practice	0.19	=0.006

with the middle two groups combined) was statistically significant [ $F = 8.62$  (d.f. = 1204),  $p = 0.004$ ].

As hypothesized, and as shown in Table 4, meaning scores were higher among individuals who had been in practice longer ( $p = 0.006$ ). There was a statistically significant inverse correlation between “meaning” and overall burnout ( $p < 0.0001$ ). Meaning was also inversely related to two of the burnout subscales: depersonalization ( $p < 0.001$ ) and professional accomplishment ( $p < 0.001$ ). There was a trend toward an association between the third subscale, emotional exhaustion, and meaning. Meaning scores were also positively correlated with professional satisfaction ( $p = 0.022$ ) and gratitude ( $p < 0.001$ ). We excluded respondents’ age from this analysis because it was highly correlated with years in practice and we believe that years in practice is the more relevant variable.

## 4. Discussion and conclusion

### 4.1. Discussion

This study provides evidence for the reliability and validity of a 6-item scale to measure “personal meaning in patient care” as experienced by practitioners in clinical genetics. In addition to its strong psychometric properties, the scale is correlated with various demographic and practice characteristics of our sample in ways that one might predict. For example, we were not surprised that women and nurses had higher meaning scores than men and other genetics professionals, respectively. Among the various factors that contribute to the development of meaning is forging deep connections with patients, and there is evidence of gender and disciplinary differences in clinician behaviors that are related to the establishment of such connections. It is well established that female physicians engage in more active partnership behaviors, listen more attentively, ask more questions, and have longer visits than do their male colleagues [46]. In addition, nurses trained in genetics are more likely than genetic counselors to report having established partnerships with their patients [47]. In our study, because nurses were predominantly female, gender and discipline are highly confounded. These relationships should be disentangled in future research.

We were also not surprised that meaning scores were higher among those in practice longer. We had hypothesized that those who derive personal meaning from their work would be more likely to remain in their jobs whereas those who struggle to find meaning would change career paths. Therefore, this finding likely reflects a self-selection process. By contrast, our initial finding that meaning scores were unrelated to the percentage of time that clinicians spend seeing patients was unexpected but explained by the inverted U-shape of the distribution. Further research is needed to explain why clinicians who spend a relatively small or relatively large percentage of their professional time seeing patients derive less personal meaning from patient care.

Findings from our assessment of the meaning scale’s validity lend support to theoretical claims about the relationship between meaning, burnout and gratitude, [16–20,25,26]. The predictive validity of the scale is demonstrated by its positive association with gratitude and its negative association with burnout. Evidence of the scale’s discriminant validity is its much weaker association with professional satisfaction. Professional satisfaction is typically characterized by factors such as intellectual stimulation, independence/autonomy, prestige and income [6,7,35]. These factors are different from the characteristics engendered by a meaningful connection with a patient. Although clinicians who find meaning in their work may also experience professional satisfaction, those who report satisfaction may be pleased with other parts of their career (e.g., income, prestige, intellectual stimulation) without necessarily experiencing meaning. Measures of professional satisfaction do not include items that reflect personal meaning. [35] If they did, our data might have revealed a stronger association between meaning and professional satisfaction. Therefore, our data support the suggestion that these two constructs are related but distinct [2].

Our findings are limited by several factors. First, the items reflecting “meaning” were identified by focus group participants who were all Caucasian and primarily female. This may partially explain higher meaning scores among women. A more demographically diverse group may have identified different sources of meaning. Second, the response rate for clinical geneticists and nurses was not as high as we had hoped. Since we were unable to obtain aggregate information to determine the representativeness of those samples, we do not know if respondents differed from non-respondents in meaningful ways. Third, we did not determine the test-retest reliability of our scale. The budget for the overall study precluded us from administering a second round of surveys to a subset of our first sample. Finally, our study was limited to genetics professionals. It may be that patient interactions in genetics evoke a qualitatively different kind of meaning for health professionals than other types of clinical interactions.

Despite these limitations, we believe our findings are robust and, for several reasons, might be replicable in clinical contexts outside of genetics. First, clinical genetics professionals – the focus of our study – arguably reflect a microcosm of health care practitioners. They include physicians, nurses and allied health care practitioners (genetic counselors). They provide care to

children and adults (including pregnant women), see patients who are ill and those who are well, and work in a variety of settings. [48,49] Furthermore, they see some patients only once for diagnosis or counseling, and others multiple times for on-going management. Therefore, the items in our scale may be relevant to clinicians who are not in genetics, including primary care practitioners who have longstanding relationships with their patients as well as those who serve as consultants.

Furthermore, the notion of meaning in providing patient care already exists in the clinical literature outside of genetics. In pediatric oncology, Steen et al demonstrated that nurses are able to remain in roles of high stress if they perceive their role to be of high meaning to them. [17] Palliative care nurses have shown high levels of commitment, meaning and purpose to their work and greater resilience than nurses in other specialties. [17,50] Oncologists who find meaning in their work are more likely to have high overall well-being and be satisfied with their careers. [4] Physicians in general internal medicine have reported on the importance of enhancing the meaning derived from clinical practice. [25,33,34] Therefore, the items in our scale are likely to be relevant to other types of clinicians.

The strengths of our study extend beyond its likely replicability. First, although a small, qualitative, study of nurses has suggested that meaning protects against burnout, [50] and a larger European study of human service workers from various sectors has demonstrated an inverse association between meaning and burnout, [39] our is the first study that describes and quantifies the *nature* of the personal meaning evoked by patient care. Second, whereas most of the literature on burnout, professional satisfaction and relationship-centered care has focused on a single clinical discipline (either medicine or nursing), our findings suggest that “personal meaning in patient care” crosses disciplinary lines and can be successfully measured in a diverse group of clinicians.

#### 4.2. Conclusion

The 6-item “personal meaning in patient care” scale demonstrates high reliability and predictive validity in a select group of health professionals. As measured by this scale, there is a strong inverse relationship between meaning and burnout. Meaning is also positively associated with gratitude and modestly associated with professional satisfaction. Future research should determine if these relationships hold up in a broader population of clinicians.

#### 4.3. Practice implications

A valid, reliable measure of “personal meaning in patient care” could have several uses. It could enable the identification of providers who might be at risk of burnout, the evaluation of educational interventions designed to counteract burnout and enhance meaning, and the development of a richer understanding of factors that influence provider–patient communication, partnership and satisfaction.

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#### References

- [1] Zuger A. Dissatisfaction with medical practice. *N Engl J Med* 2004;350:69–75.
- [2] Brown S, Gunderman RB. Enhancing the professional fulfillment of physicians. *Acad Med* 2006;81:577–82.
- [3] Donelan K, Blendon RJ, Lundberg GD, Calkins DR, Newhouse JP, Leape LL, Remler DK, Taylor H. The new medical marketplace: physicians' views. *Health Affairs* 1997;16:139–48.
- [4] Shanafelt TD, Novotny P, Johnson ME, Zhao X, Steensma DP, Lacy MQ, Rubin J, Sloan J. The well-being and personal wellness promotion strategies of medical oncologists in the North Central Cancer Treatment Group. *Oncology* 2005;68:23–32.
- [5] Sullivan P, Buske L. Results from CMA's huge physician survey point to a dispirited profession. *CMAJ* 1998;159:525–8.
- [6] Landon BE, Reschovsky J, Blumenthal D. Changes in career satisfaction among primary care and specialist physicians 1997–2001. *J Am Med Assoc* 2003;289:442–9.
- [7] Stoddard JJ, Hargraves JL, Reed M, Vratil A. Managed care, professional autonomy, and income: effects on physician career satisfaction. *J Gen Intern Med* 2001;16:675–84.
- [8] Mello MM, Studdert DM, Brennan TA. The new medical malpractice crisis. *N Engl J Med* 2003;348:2281–4.
- [9] Peter StRF, Reed MC, Kemper P, Blumenthal D. Changes in the scope of care provided by primary care physicians. *N Eng J Med* 1999;341:1980–5.
- [10] Coomber B, Barriball LK. Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: a review of the research literature. *Int J Nurs Stud* 2007;44:297–314.
- [11] Chopra SS, Sotile WM, Sotile MO. Physician burnout. *J Am Med Assoc* 2004;291:633.
- [12] Keeton K, Fenner DE, Johnson TR, Hayward RA. Predictors of physician career satisfaction, work-life balance, and burnout. *Obstet Gynecol* 2007;109:949–55.
- [13] Landon BE, Reschovsky JD, Pham HH, Blumenthal D. Leaving medicine: The consequences of physician dissatisfaction. *Med Care* 2006;44:234–42.
- [14] Madigan MM. Reclaiming the connectedness of medicine. *Adv Mind-Body Med* 1999;15.
- [15] Hatem CJ. Renewal in the practice of medicine. *Patient Educ Couns* 2006;62:299–301.
- [16] Remen RN. Recapturing the soul of medicine. *West Med J* 2001;174:4–5.
- [17] Steen B, Burghen E, Hinds PS, Srivastava DK, Tong X. Development and testing of the role-related meaning scale for staff in pediatric oncology. *Cancer Nurs* 2003;26:187–94.
- [18] Shanafelt TD. Finding meaning, balance, and personal satisfaction in the practice of oncology. *J Support Oncol* 2005;3:157–64.

- [19] Naef R. Bearing witness: a moral way of engaging in the nurse-person relationship. *Nurs Philos* 2006;7:146–56.
- [20] Fillion L, Dupuis R, Tremblay I, DeGrace GR, Greitbart W. Enhancing meaning in palliative care practice: a meaning-centered intervention to promote job satisfaction. *Palliat Support Care* 2006;4:333–44.
- [21] Gunderson L. Physician burnout. *Ann Intern Med* 2001;135:145–8.
- [22] Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 2002;136:358–67.
- [23] Thomas NK. Resident burnout. *J Am Med Assoc* 2004;292:2880–9.
- [24] Roach BL. Burnout and the nursing profession. *Health Care Superv* 1994;12:41–7.
- [25] Horowitz CR, Suchman AL, Branch WT, Frankel RM. What do doctors find meaningful about their work? *Ann Intern Med* 2003;138:772–5.
- [26] Suchman AL, Matthews DA. What makes the patient-doctor relationship therapeutic? Exploring the connexional dimension of medical care. *Ann Intern Med* 1988;108:125–30.
- [27] Tresolini CP, the Pew-Fetzer Task Force. Relationship-Centered Care. Report of the Pew-Fetzer Task Force on Advancing Psychosocial Health Education; 1994.
- [28] Beach MC, Inui T. Relationship centered care research network relationship-centered care: a constructive reframing. *J Gen Intern Med* 2006;21:S3–8.
- [29] Geller G. A “holistic” model of the healing relationship: what would that require of physicians? *Am J Bioethics* 2006;6:82–5.
- [30] Meier DE, Back AL, Morrison RS. The inner life of physicians and care of the seriously ill. *J Am Med Assoc* 2001;286:3007–14.
- [31] Hartrick G. Relational capacity: the foundation for interpersonal nursing practice. *J Adv Nurs* 1997;26:523–8.
- [32] Larson EB, Yao X. Clinical empathy as emotional labor in the patient-physician relationship. *J Am Med Assoc* 2005;293:1100–6.
- [33] Bayer R, Oppenheimer GM. Pioneers in AIDS care—reflections on the epidemic’s early years. *N Engl J Med* 2006;355:2273–5.
- [34] Kasman DL, Fryer-Edwards K, Braddock CH. Educating for professionalism: trainees’ emotional experiences on IM and pediatrics inpatient wards. *Acad Med* Jul 2003;78:730–41.
- [35] SGIM Career Satisfaction Study Group. Refining the measurement of physician job satisfaction: Results from the Physician Worklife Survey. *Med Care* 1999;37:1140–54.
- [36] Fields SK, Hojat M, Gonnella JS, Mangione S, Kane G, Magee M. Comparison of nurses and physicians on an operational measure of empathy. *Eval Health Prof* 2004;27:80–94.
- [37] Hojat M, Gonnella JS, Nasca TJ, Mangione S, Vergare M, Magee M. Physician empathy: definition, components, measurement, and relationship to gender and specialty. *Am J Psychiat* 2002;159:1563–9.
- [38] Maslach C. Maslach burnout inventory: manual; 1996.
- [39] Borritz M, Bultmann U, Rugulies R, Christensen KB, Villadsen E, Kristensen TS. Psychosocial work characteristics as predictors for burnout: findings from 3-year follow up of the PUMA Study. *J Occup Environ Med* Oct 2005;47:1015–25.
- [40] Rushton CH. Defining and addressing moral distress: tools for critical care nursing leaders. *AACN Adv Crit Care* 2006;17:161–8.
- [41] Dunn PM, Arnetz BB, Christensen JF, Homer L. Meeting the imperative to improve physician well-being: assessment of an innovative program. *J Gen Intern Med* 2007;22:1544–52.
- [42] Reich WT. Speaking of suffering: a moral account of compassion. *Soundings* 1989;72:83–108.
- [43] Tabachnik BG, Fidell LS. Using multivariate statistics, 4th ed., Needham Heights, MA: Allyn and Bacon; 2001.
- [44] SAS Institute Inc., SAS Version 8.2. Cary, NC: SAS Institute Inc.; 2004.
- [45] National Society of Genetic Counselors, Inc. Professional Status Survey 2006. Boston Information Solutions.
- [46] Roter DL, Hall JA. Physician gender and patient-centered communication: a critical review of empirical research. *Annu Rev Public Health* 2004;25:497–519.
- [47] Bernhardt BA, Geller G, Doksum T, Metz SA. Evaluation of nurses and genetic counselors as providers of education about breast cancer susceptibility testing. *Oncol Nurs Forum* 2000;27:33–9.
- [48] Bernhardt BA, Pyeritz RE. The organization and delivery of clinical genetics services. *Ped Clin Nh Am* 1992;39:1–12.
- [49] Cooksey JA, Forte G, Flanagan PA, Benkendorf J, Blitzer MG. The medical genetics workforce: an analysis of clinical geneticist subgroups. *Genet Med* 2006;8:603–14.
- [50] Ablett JR, Jones RS. Resilience and well-being in palliative care staff: a qualitative study of hospice nurses’ experience of work. *Psychooncology* 2007;16:733–40.