

Manual

Physician Values in Practice Scale

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I. Introduction

Medical students often feel very concerned about choosing a specialty and ending up on a career path that is right for them. To deal with their concern, it is helpful for students to know their personal values, or what they see as important about their future careers in medicine. Because commitment to a career specialty depends more on values than on any other factor, such as interests or abilities, values may be a more valid and reliable predictor of a satisfying specialty choice (Rounds, 1990). The Physician Values in Practice Scale aims to provide a quick and reliable measure of personal values related to the practice of medicine. It thereby represents an important means of increasing self-awareness and consolidating a specialty choice.

Two types of measures have been identified in the literature that deals with work values (Dawis, 1991). The first type of values measure appraises the construct generally across the spectrum of human experience. The second type of values measure assesses values relative to a specific domain or context; typically the work, vocational, or occupational setting. Global and work-domain-specific values scales have proven useful for general life design, values clarification, and initial occupational decision making (Zytowski, 1994). Work values assessment in the form of psychometric scales has been criticized, however, for inadequately capturing and conveying the complexity of the construct (Krumboltz, Blando, Kim, & Reikowski, 1994). This proves especially true when applying measures that appraise values broadly and abstractly to situations such as medical specialty choice. Therefore, recognizing the situation-dependent nature of values, the Physician Values in Practice Scale was constructed to be both specific to the occupation of physician and distinctive to the context of activities in which persons working in that occupation engage. The scale thereby represents a third type of values measure, one that is context-specific, and provides a useful tool for promoting medical career development.

II. Test Materials

The Physician Values in Practice Scale contains 60 items, 38 scored and 22 test items, that require self-rating on a Likert-type response scale ranging from 1 (strongly disagree) to 5 (strongly agree). Each item is preceded by the stem "In my medical practice it will be important that I..." followed by a statement such as "be recognized as the best physician in my group." Responses are summed to yield measures of six core values found to be common among samples of medical students: Prestige, Service, Autonomy, Lifestyle, Management, and Scholarly Pursuits. These values can then be considered in terms of how they relate to particular specialty areas of medical practice. Simple instructions for responding to the Physician Values in Practice Scale are provided.

The Physician Values in Practice Scale is appropriate for use with medical students or resident physicians contemplating career specialty choices, dealing with issues of professionalism, or desiring personal values clarification for other purposes. The scale can be administered in either individual or group settings. The Physician Values in Practice Scale is presented in a four-page booklet or is also available for administration

via the Association of American Medical Colleges Careers in Medicine Program worldwide website at <http://services.aamc.org/careersinmedicine>. Interpretation is best provided within the framework of individual counseling with a professional who has a background in testing and measurement. Career counselors, medical student affairs personnel, medical educators and others involved in medical student career and professional development, and researchers potentially will find the Physician Values in Practice Scale useful.

III. Administration and Scoring

Administration

Individual or group administration of the Physician Values in Practice Scale by a professional or designee is easily accomplished. Following the instructions, responders should be directed to read carefully each one of the 60 statements and tell how much they agree or disagree with it by marking one of five numerical response options. Instruct test takers to indicate how they *actually* feel about the importance of these statements, not how they think they *should* feel. A rating of 1 indicates strong disagreement with the statement. A rating of 5 indicates strong agreement with the statement. A rating of 3 indicates feeling neutral about the item. Responders should be told to carefully read the instructions before they proceed. Most individuals will be able to complete the scale within a maximum time of 15 to 20 minutes, and many individuals will require less time to do so. The Physician Values in Practice Scale requires minimal to no supervision for administration and can also be easily self-administered. Professional guidance for interpreting the results is recommended.

Scoring and Normative Data

Scores for each one of the six scales result from summing the item ratings using the scoring scheme described in Table III.1. Raw scores represent the numerical sum of the item ratings for each scale and vary in range according to the number of items keyed to each subscale. Computing standard scores by dividing the raw score by the number of items contained in the subscale facilitates comparison of the relative importance of each of the six values measured.

Modest normative group data are available at present for comparison. Appendix A lists mean scores obtained by a sample of medical students (N = 644) on each of the six scales (Hartung et al., in press). Scores are reported for five groups: women (n = 299), men (n = 329), students who have expressed a primary care specialty choice (n = 172), students who have expressed a non-primary care specialty choice (n = 210), and students who have expressed that they are undecided about their specialty choice (n = 262).

TABLE III.1. Scoring Scheme for the Physician Values in Practice Scale

<i>Scale</i>	<i>Sum ratings of item numbers</i>	<i>Raw score range</i>	<i>Standard score range (raw score divided by number of items)</i>
Prestige	1, 7, 13, 19, 24, 28, 31, 34, 36, 38	10 - 50	1-5
Service	2, 8, 14, 20, 25, 29, 32, 35, 37	9 - 45	1-5
Autonomy	3, 9, 15, 21, 26, 30, 33	7 - 35	1-5
Lifestyle	4, 10, 16, 22	4 – 20	1-5
Management	5, 11, 17, 23, 27	5 – 25	1-5
Scholarly Pursuits	6, 12, 18	3 – 15	1-5

IV. Interpretation

Comparisons can be made between an individual's scores and those of a norm group of medical students using Appendix A. Ipsative interpretations can also be made and may be preferred at the present time given the relative lack of normative data available for the measure. Ipsative interpretation involves observing trends or patterns among a given individual's scores and making interscale comparisons. To understand scores on the scales, begin by comparing the respondent's highest and lowest point values. Determine whether one score or set of scores stand out above the others. The scale or scales with the highest scores represent what the person considers most important in their career as a physician. At the item level, examine the content of the statements that the individual rated most and least highly to determine what this implies for the individual in terms of desired goals from their medical practice. As they explore and think about medical specialty options, they will want to find out whether the options they are considering will allow fulfillment of their core values. For example, a person scoring highest on the scale of Prestige will want to consider specialty options that allow for gaining recognition from others for their work and achieving a high level of status within the field of medicine. Scales on which individuals score lowest indicate that they probably find these areas of lesser importance. A summary of each of the six scales follows and may be used to facilitate interpretation.

Prestige High scores on the value of "Prestige" suggest a desire to be recognized by others as a top physician. Medical specialties related to Prestige afford high levels of

power, stature in the community and among peers, and achievement. Surgery and most subspecialty areas of practice typically provide high levels of prestige.

Service A high score on "Service" suggests a desire to care for others regardless of financial gains or other rewards. Individuals who score high on this value want to help others simply for the sake of helping. Medical specialties highly related to Service allow for contributing to the welfare of others. Primary care areas of medical practice may be associated highly with this value.

Autonomy High scorers on "Autonomy" want freedom, independence, and control over clinical decision making. They want to do things their own way, creatively, and with little constraint. Medical specialties typically related highly to Autonomy, such as pathology and radiology, allow working alone and in one's own way.

Lifestyle High scores on the value of "Lifestyle" indicate a desire for a predictable and stable work schedule. A high score on this value suggests someone who wants a controllable lifestyle; not wanting a lot of change, responsibility, or demands placed upon them. Medical specialty areas of practice that allow for routine, regularity, and predictability relate highly to this value.

Management A high score on "Management" suggests a desire to supervise and have responsibility for others. High scorers on Management seek administrative responsibilities and find meaning in planning the work of other people on the health-care team.

Scholarly Pursuits A high score on this value suggests a desire to engage in research and scholarship activities. Involvement in academic medicine, clinical or basic research, and teaching activities relates highly to this value.

V. Test Construction

Item Selection

The Physician Values in Practice Scale was constructed by tapping the content domain covered by existing values measures relative to six broad value orientations contained in a theoretical model: Achievement, Altruism, Autonomy, Status, Comfort, and Safety (Dawis, 1991). This theoretical model formed the basis for developing item-generating formulas because it provided specific definitional guidelines to follow in both writing individual items for the PVIPS and rationally keying those items to six specific composite scales (factors) and 14 subscales listed in parentheses as follows: Achievement (accomplishments and intellectual stimulation), Altruism (integrity, social service, and nurturance), Autonomy (variety/creativity and independence), Status (management of others and social status/prestige), Comfort (interpersonal comfort/associates and supervisory relations), and Safety (compensation, working

conditions/surroundings, and job security). The six values factors, 14 subscales, and sample items appear in Appendix B.

An initial pool of 169 items was developed for approximately 12 items per scale. An independent national panel of 13 Ph.D.- and M.D.-level experts skilled in values scale construction, human values in medicine, multicultural issues, and medical ethics representing the fields of vocational psychology, medicine, and medical education reviewed the content of these 169 items. Based on their reviews a final selection of 10 items per scale was made for a total of 140 items. A Likert-type scale response format was set up ranging from 1 ("strongly disagree") to 5 ("strongly agree") for rating each item. Each item was preceded by the stem: "In my medical practice it will be important that I..." followed by a statement such as "be recognized as the best physician in my group." Higher scores on any scale purported to indicate greater importance ascribed to the corresponding value. Empirical analyses of these items guided the final selection of 38 scored items included in the measure (Hartung et al., in press).

Reliability

Based on a sample of 644 medical students, internal consistency reliability estimates (coefficient alpha) for the scales were reported as .88 for Prestige, .87 for Service, .84 for Autonomy, .86 for Lifestyle, .77 for Management, and .79 for Scholarly Pursuits (Hartung et al., in press). A mean Cronbach's alpha coefficient of .83 with all alphas > .75 for the six identified factors indicates moderate to high levels of internal consistency reliability for the measure. Mean inter-item correlations for each of the six scales ranged from .42 for Prestige items to .64 for Lifestyle items. These moderate-level correlations suggested that the items are sufficiently homogenous without being redundant. No test-retest reliability data are available at the present time.

Factor Structure

Appendix C contains the results of a factor analysis of the Physician Values in Practice Scale reported by Hartung et al. (in press). Six factors were extracted with alpha factoring and varimax rotation. This method of extraction was chosen to allow for sufficiently homogeneous subscales. The total model accounted for 60.79% of the variance. The six factors were named: Prestige (10 items, 23.26% of variance), Service (9 items, 15.13% of variance), Autonomy (7 items, 9.19% of variance), Lifestyle (4 items, 5.08% of variance), Management (5 items, 4.36 % of variance), and Scholarly Pursuits (3 items, 3.76% of variance).

Validity

Two studies reported by Hartung et al. (in press) provided initial evidence for the content and construct validity of the items and scales. Content validity was established by using a theoretical model and expert analysis to generate a 140-item preliminary physician career values scale. Exploratory factor analysis produced a six-factor model conceptually comparable to dimensions of the original model used to guide development of the measure, thereby covering the range of core values identified in the literature (Dawis, 1991). Items that were intended to appraise a particular values construct interrelate in such a way as to support their homogeneity, suggesting that items keyed to a scale are

measuring the same construct. Moderate-to-low magnitude correlations between scales suggest that the scales overlap yet seem unique enough to measure distinct value constructs.

Prestige has been found to correlate positively with Management (.50) Autonomy (.36) and Scholarly Pursuits (.34) (Hartung et al., in press). This suggests that individuals highly desirous of recognition and esteem may seek and obtain such status through supervising others, practicing medicine creatively and in their own way, and by engaging in academic, scientific, and scholarly activities. Weaker positive relationships between Prestige and Lifestyle (.17) and Service (.13) seem to indicate that wanting to be held in high regard by others relates only somewhat to a desire for minimizing demands made on one's time or caring for others without regard for rewards.

A moderate interrelationship between Service and Autonomy (.55) suggests that wanting to practice medicine in a way that helps others without concern for reward involves doing so creatively and in one's own way. Having few time or other demands, supervising others, and being a scholar/researcher/academician seem much less important relative to Service. A moderate relationship between Autonomy and Lifestyle (.48) points to freedom and independence concomitant to practicing with a sense of stability in terms of schedule and time demands. Management and Scholarly Pursuits relate significantly (.39) suggesting that administering and supervising others may extend to the domain of scientific and academic work.

Career-decided students interested in non-primary care oriented specialties have scored higher on Prestige and Scholarly Pursuits than a group of students with expressed interests in primary-care oriented medical practice (Hartung et al., in press). These findings are consistent with research indicating that such values are more strongly endorsed by student aspirants to and physicians working in highly specialized and technical medicine than they are by those inclined to the more people- and service-oriented primary care areas of practice (DeWitt, Curtis, & Burke, 1998; Hojat, Brigham, Gottheil, Xu, Glaser, & Veloski, 1998).

VI. Summary

This manual reports on the construction and initial validation of the Physician Values in Practice Scale, which appears capable of measuring a significant, relatively broad, and inclusive domain of values pertinent to individuals who have specified and begun to implement physician as an occupational choice. The instrument demonstrates acceptable levels of internal consistency reliability among its items and scales. Factor analysis indicates an underlying six-factor structure consistent with a theoretical model of values (Dawis, 1991). Initial and limited normative data are available for groups of medical students by gender and expressed career specialty choice status of primary care medicine, non-primary care medicine, and undecided. Moderate-to-low magnitude correlations between scales suggest that the scales overlap yet seem unique enough to measure distinct value constructs. The PVIPS shows promise as a values measure for medical

students and physicians encountering career specialty and medical practice style decisions.

Appendix A

Medical Student Normative Data: Average Scores by Gender and Expressed Specialty Choice

<u>Scale</u>	Women (n= 299)	Men (n = 329)	PC (n = 172)	Non-PC (n = 210)	Undecided (n = 262)
	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>	<u>M</u>
Prestige	2.9	3.1	2.8	3.6	3.1
Service	3.6	3.5	3.6	3.5	3.5
Autonomy	3.9	3.7	3.6	3.8	3.7
Lifestyle	3.6	3.8	3.6	3.5	3.6
Management	2.7	2.9	2.8	2.9	2.8
Scholarly Pursuits	2.7	2.9	2.6	2.9	2.9

Note. Values presented as standard scores, computed by dividing raw scores by the number of items per scale. Primary care = students decided on a generalist medical specialty, Non-PC = students decided on a specialist area of medical practice, Undecided = students with no expressed choice of medical specialty.

Appendix B

Initial Composite Scales, Subscales, and Sample Items for the Physician Values in Practice Scale

<i>Composite scale</i>	<i>Subscales</i>	<i>Sample Item*</i>
Achievement	Accomplishments Intellectual stimulation	accomplish a great deal. participate in academic medicine.
Altruism	Integrity Social service Nurturance	treat all of my patients fairly. provide indigent care. earn the trust of my patients.
Autonomy	Variety/Creativeness	take a creative approach to patient care.
Status	Independence Management of others Social status/Prestige	work as a solo practitioner. be the “boss” of the health-care team. obtain recognition for excellence from the local medical society.
Comfort	Interpersonal comfort/ Associates Supervisory relations	relate comfortably with my physician colleagues. have access to health-care managers and administrators.
Safety	Compensation Working conditions/ Surroundings Job security	afford the latest medical technology and equipment. keep a flexible work schedule. prevent malpractice lawsuits.

*The stem for each item is “In my medical practice it will be important that I...”

Appendix C

Exploratory Factor Analysis with Alpha Factoring and Varimax Rotation and Means, Standard Deviations, and Skewness of Physician Values in Practice Scale Items

Factor	1	2	3	4	5	6	<i>M</i>	<i>SD</i>	Skewness	
1. Prestige										
1.	be recognized as the best physician in my group.	<u>.69</u>	.15	.01	-.01	.01	.13	3.12	1.10	-.11
7.	be known as a physician's physician.	<u>.47</u>	.27	.15	.01	.01	.12	3.25	1.02	-.08
13.	concentrate on a highly specialized area of treatment/care.	<u>.44</u>	.00	.27	.00	.01	.12	3.10	1.07	-.04
19.	obtain recognition for excellence from the local medical society.	<u>.59</u>	.36	.11	.00	.00	.01	3.28	1.04	-.25
24.	obtain the perks that go along with my position.	<u>.58</u>	.00	.28	.30	.01	-.10	3.32	1.04	-.17
28.	work in a prestigious specialty area of medicine.	<u>.71</u>	-.18	.00	.00	.18	.36	2.68	1.12	.29
31.	achieve high social status.	<u>.74</u>	-.01	-.01	.01	.28	.01	2.84	1.08	.15
34.	work in a specialty area that is highly esteemed in medicine.	<u>.74</u>	-.18	.00	.00	.22	.26	2.72	1.14	.25
36.	make financial gains/earn a lot of money.	<u>.61</u>	-.19	.23	.22	.13	-.12 .29	3.25	1.08	-
38.	accomplish more than my peers.	<u>.62</u>	.00	-.01	.00	.27	.14	2.76	.97	.20

Factor	1	2	3	4	5	6	<i>M</i>	<i>SD</i>		
						Skewness				
2. Service										
2.	serve on community boards.	.10	<u>.66</u>	.00	.00	.18	.00	3.31	.98	-.31
8.	consult with community agencies.	-.01	<u>.62</u>	.13	.00	.13	.00	3.36	.93	-.28
14.	speak to local organizations such as educational and religious groups.	.00	<u>.67</u>	.13	.16	.00	.00	3.56	1.02	-.53
20.	provide indigent care.	-.11	<u>.63</u>	.32	.01	.00	.00	3.72	.98	-.69
25.	help shape public policy about health issues.	.01	<u>.55</u>	.01	.01	.17	.29	3.40	1.00	-.43
29.	involve myself in the lives of my patients.	.00	<u>.49</u>	.27	.01	.00	.00	3.63	1.03	-.57
32.	innovate new ways of doing things.	.20	<u>.46</u>	.39	.01	.00	.36	3.63	.96	-.49
35.	share my talents and expertise with public health agencies.	.00	<u>.76</u>	.14	.12	.01	.18	3.57	1.00	-.51
37.	volunteer in community groups.	.00	<u>.76</u>	.18	.12	.00	.00	3.70	1.00	-.67
3. Autonomy										
3.	enjoy a prosperous lifestyle.	.48	.00	<u>.49</u>	.25	.00	-.12 .50	3.55	1.06	-
9.	control clinical decision making.	.12	.27	<u>.57</u>	.15	.00	.00	3.80	.94	-.67
15.	attend to the economic aspects of my work.	.14	.24	<u>.47</u>	.01	.24	-.01	3.53	1.00	-.48
21.	work at my own pace	.01	.23	<u>.65</u>	.34	-.01	.00	3.74	1.00	-.65

Factor	1	2	3	4	5	6	<i>M</i>	<i>SD</i>	Skewness
26.			<u>.64</u>	.33	-.01	.00	3.77	.97	-.63
30.			<u>.55</u>	.13	-.01	.19	3.82	1.02	-.81
33.			<u>.59</u>	.18	.00	.01	3.64	.95	-.45
4. Lifestyle									
4.			.24	<u>.78</u>	.00	.00	3.66	1.07	-.55
10.			.20	<u>.77</u>	.00	.00	3.61	1.04	-.51
16.			.12	<u>.82</u>	.00	-.01	3.54	1.08	-.30
22.			.18	<u>.65</u>	.00	.00	3.43	1.00	-.13
5. Management									
5.			.27	.00	<u>.66</u>	.01	3.11	1.00	-.16
11.			.00	-.01	<u>.70</u>	.13	2.74	.99	.06
17.			-.01	.00	<u>.70</u>	.18	2.75	.91	.30
23.			-.17	.00	<u>.74</u>	.22	2.61	.42	.20

Factor	1	2	3	4	5	6	<i>M</i>	<i>SD</i>	Skewness
27. supervise the work of other physicians.	.35	.17	-.01	.00	<u>.47</u>	.22	2.91	.93	.13
6. Scholarly Pursuits									
6. work as a physician scientist.	.01	.01	.01	-.11	.19	<u>.62</u>	2.88	1.16	.03
12. work in academic medicine.	.19	.15	.00	.00	.13	<u>.65</u>	2.89	1.04	-.03
18. engage in research activities.	.16	.00	.00	-.10	.17	<u>.77</u>	2.71	1.16	.30

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