Construct validity of the medical specialty preference inventory: A critical analysis ☆

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ARTICLE INFO

ABSTRACT

The Medical Specialty Preference Inventory (MSPI; Zimny, G.H. (1979). Manual for the Medical Specialty Preference Inventory. St. Louis, MO: St. Louis University School of Medicine), a measure of medical students' interests, was substantively and empirically examined to identify an underlying factor structure. A factor model for the original MSPI based on 38 factors in five general areas was evaluated on a national sample of 1014 medical students and yielded poor fit to the data. Exploratory factor analyses at the item level utilizing the full pool of MSPI items produced an 11 factor solution with 88 items. Subscales were identified within this model and an 11–18 higher-order model and an 18 sub-scale model also were proposed. The relative fits of the three models were evaluated by confirmatory factor analysis with the 18 sub-scale model shown to be superior. This model was cross-validated on a separate sample of 1016 medical students and fit the data well. All sub-scales exhibited adequate internal consistency across samples. These findings support the need for a revised MSPI based on 18 scales. Implications of these findings for MSPI scoring practices are discussed along with future directions.

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1. Introduction

Career specialty choice has gained increasing attention in Vocational Psychology as evidenced by a recent special issue of the *Journal of Vocational Behavior* (Hartung & Leong, 2005) dedicated to this topic. Career specialty choice involves choosing among options or specialties within an occupation, often a profession, rather than choosing a broader occupation in which to enter. Medical specialty choice has received much attention within the field of medicine, and, in particular, within medical training. Given the cost and intensity of medical training, there is considerable pressure on students to choose a specialty fairly early in their training. To assist students in this process, some researchers have examined variables such as academic performance, role model influence, and family history in attempting to identify factors that influence medical students' choice of specialty (Colquitt, 1993), while others began to focus on the assessment of attributes such as personality (Borges, Gibson, & Karnani, 2005; Borges & Savickas, 2002; McCaulley & Martin, 2000) and values (e.g., Hartung, Taber, & Richard, 2005). However, the most widely used approach to helping medical students choose their specialty has involved the measurement of interests (e.g., Athelstan & Paul, 1971; Borges, Savickas, & Jones, 2004; Elam, 1994; Leong, Hardin, & Gaylor, 2005; Meir & Engel, 1986).

In applying interest measures to medical specialty choice, efforts to match students' interests to specialties using existing measures, such as the Strong Vocational Interest Blank, have had only limited success (Athelstan & Paul, 1971; Borges et al., 2005; Campbell, 1966; Gough, 1979; Leong et al., 2005; Savickas, Brizzi, Brisbin, & Pethtel, 1988; Strong & Tucker, 1952). Further studies involving measures based on the broader Holland-based typology (Holland, 1997) have not been shown to be useful in differentiating specialties, despite some success when applied to examination of practice environments (Borges et al., 2004; Elam, 1994). This research suggests that the use of traditional approaches to assessing interests does not apply as effectively to more narrowly defined interests within a selected occupation.

Although the ability of interest inventories to accurately predict finer discriminations within the field of medicine has been questioned (Campbell, 1966), support has been found for measures that addresses content specific to the profession (Terwilliger, 1966; Zimny, 1979), particularly when the various activities in which practitioners engage are the focus of assessment. Although researchers have developed other measures for use with this population (e.g. Meir & Engel, 1986; Terwilliger, 1966), perhaps the most widely used measure of medical specialty interests has been the Medical Specialty Preference Inventory (MSPI; Zimny, 1979).

The original MSPI reported interests in 40 areas of medical practice grouped into five general content areas: Diseases and Problems, Procedures and Services, Patients, Knowledge, and Care and Treatment. It also yielded an overall preference score on each of six major medical specialties (Family Medicine, Internal Medicine, General Surgery, Obstetrics and Gynecology, Pediatrics, and Psychiatry), with higher scores indicating higher levels of interest in that specialty. Predictive validity of the MSPI was found to be in the 55% range (Borges et al., 2005; Glavin, Richard, & Savickas, 2007; Savickas et al., 1988; Zimny, 1980). Early research on the MSPI involved its expansion to other specialties (Zimny, Iserson, & Shephard, 1979), utilization by medical students (Zimny & Senturia, 1973) and analysis of gender differences (Zimny & Shelton, 1982). MSPI interests have been shown to relate positively to clinical performance (Walters, 1982), and physician job satisfaction has been found to be higher for those whose MSPI interests were congruent with their chosen specialty (Borges et al., 2005).

The second edition of the MSPI consists of 38 of the 40 original factors (Zimny, 2002) and has been adapted for the World Wide Web (Richard, 2005). The measure is composed of 150 items that assess interest in a variety of medical activities, conditions, and patient populations. MSPI items are rated on a Likert-type response scale from one to seven, representing low to high desirability, respectively. Items are combined into 38 factor scales, with two to five items per scale. Forty-six of the items are left unscored, serving as filler items. Zimny continued to group the 38 factors logically into the above five general (i.e., content) areas. Table 1 presents the five MSPI general content areas and 38 factor scales. Scoring the specialty preference scores involves use of a proto-type matching procedure, which occurs in two steps. The first step involves computing an average difference score for each of the 38 factor scales using scores of practicing physicians. The second step involves aggre-

Table 1
Original MSPI five general areas, thirty-eight factor scales, scale items, and sample 1 alphas.

Thirty-eight factor scales within five general areas	Items	α	Thirty-eight factor scales within five general areas	Items	α
Diseases & Problems			*Knowledge*		
1. Many major diseases	70, 81, 93	0.65	24. Knowledge of skeletal & muscular systems	49, 53	0.92
2. Infectious disease	61, 112	0.53	25. Knowledge of cir, res, dig, & exc systems	60, 71, 74, 84	0.82
3. Incurable & disabling diseases	2, 34, 94	0.72	26. Knowledge of anatomy and physiology	35, 45	0.51
4. Neural functions	40, 126, 138	0.80			
5. Reproductive functions	55, 117, 129	0.87	*Procedures & Services*		
6. Complex problems	51, 72, 104, 118	0.84	27. Extensive precise workups	18, 78, 121, 141	0.63
7. Life threatening problems	83, 133, 144	0.87	28. Laboratory tests	4, 29, 149	0.84
8. Psychosomatic problems	28, 56, 105, 134, 146	0.90	29. Proctoscopies & arteriograms	20, 150	0.40
9. Intimate personal problems	31, 44	0.85	30. Complex equipment	26, 90	0.89
10. Emotional reactions to illness	92, 106, 120, 131, 140	0.91	31. Use hands	50, 77	0.83
			32. High risk procedures	48, 96	0.85
Patients			33. Outpatient operative procedures	113, 115	0.77
11. Older aged patients	123, 135	0.63	34. Family information	14, 107, 125	0.76
12. Child & adolescent patients	109, 143	0.70	35. Socio-economic information	139, 142, 145	0.84
13. Dying patients	7, 24, 111	0.87	36. Rehabilitation services	62, 116	0.80
14. Many patients daily	6, 137	0.52	37. Social services	22, 99	0.85
			38. Psychological services	39, 46	0.86
Care & treatment					
15. Comprehensive care	43, 58, 73, 88	0.87			
16. Home health care	85, 148	0.65			
17. Preventative care	52, 64	0.83			
18. Genetic counseling	9, 47, 119	0.90			
19. Marital and sexual counseling	12, 16, 21	0.86			
20. Family planning counseling	33, 37, 69, 95	0.90			
21. Discuss personal relations	57, 79	0.71			
22. Patient participation	65, 97, 102	0.74			
23. Beneficial treatment results	36, 82	0.69			