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Predictive validity of the medical specialty preference inventory

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ABSTRACT

Medical schools can assist students by providing them with quality career counseling to help them choose a medical specialty. Many schools use interest inventories to help identify students' specialty interests. This study examined the predictive validity of one such inventory, the Medical Specialty Preference Inventory (MSPI). In a longitudinal design, we used discriminant function analysis to examine how well students' scores on the MSPI fit their chosen medical specialty one year later. The MSPI correctly predicted students' future medical specialty choice 58.1% of the time. These results can help career advisors interpret MSPI scores, and identify students' most likely medical specialty choice, as well as their second most likely choice.

1. Introduction

Medical students' specialty choice constitutes an important personal decision with far reaching consequences for individuals, and their families. Obtaining a medical degree requires the student to invest significant personal and economic resourses, and to delay transitions to work and family roles. State governments invest enormous resources to subsidize medical education at state institutions, and students mortgage their future to pay for the high costs of a medical education. Consequently, medical care providers, medical school faculty and staff, and students' families encourage medical students to think proactively and carefully about their future medical specialty choice.

Medical students choose a specialty for a variety of reasons, including experiences and exposure in medical school, academic performance in relevant clinical clerkships, personality attributes, and ratings of the content of medical practice (Reed, Jernstedt, & Reber, 2001). Unfortunately, students must often make this life-changing choice with inadequate information. Medical specialty counseling has developed over time to assist students in making specialty choices. Some career advisors use the Medical Specialty Preference Inventory (MSPI: Zimny, 1979) to facilitate the decision-making process.

The MSPI is an assessment of students' specialty interests and is used to inform their choice of medical specialty. In addition, the instrument can be used to assist physicians who are considering a medical specialty change at some point during residency. The original MSPI consisted of 199 items pertaining to medical activities and settings. Zimny (1979) asked a sample of physicians in each of six major medical specialties (Family Medicine, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Psychiatry, and Surgery) to rate the extent to which each item from the MSPI was characteristic of general practice in their specialties. This method avoided the inherent problem in using generic interests, which may co-vary across specialties, and therefore, fail to distinguish clearly between them. The authors considered this approach to be favorable because it relates the characteristics of the practice of the specialties themselves rather than the characteristics of the physicians who

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practice in those specialties. Subsequently, it compares the medical activities that students prefer to the activities that physician's in that specialty perform.

This approach has received support from the literature. Savickas, Brizzi, Brisbin, and Pethtel (1988) compared the predictive validity of the MSPI with another medical specialty preference inventory, the Medical Specialty Preference Scales (MSPS: Gough, 1979). Whereas the MSPI uses practitioner-based scales and contains items related to actual medical practice, the MSPS uses student-based scales and contains generic interest items. The results from two consecutive medical student cohorts found that the MSPI successfully predicted a student's specialty 59% of the time, whereas the MSPS successfully predicted a student's specialty 19% of the time. Furthermore, the prediction rate for the MSPS only slightly exceeded what one would expect to see by chance alone. These results suggest that practitioner-based scales containing items related to specific medical practice predict students' medical specialty choice better than student-based scales containing generic interest items.

The current study employed the MSPI 2nd edition, which Zimny revised and updated in 2002 (Zimny, 2002). This revision brought about a number of important changes including a reduction in the number of items and subscales. Although previous research demonstrated the strong predictive validity of the original version of the MSPI, the predictive power of the updated version has not been tested. Therefore, this study investigated the predictive validity of the MSPI 2nd edition.

2. Methodology

2.1. Participants

The participants were 506 medical students who completed the MSPI on the Association of American Medical Colleges' Careers in Medicine (CiM) website, which can be found at http://www.aamc.org/students/cim/. Careers in Medicine is a comprehensive career planning program available to all US and Canadian medical schools. To gain access to the site students must obtain a free token from their school liaison, usually the school's associate or assistant dean of student affairs. At registration users are presented with an IRB-approved informed consent statement that indicates any data stored in the CiM site may be used for research. While most schools actively provide access to the program, there are small number of schools that do not participate as actively as others. Registered users of the site represent approximately 55–65% of all enrolled medical students in US and Canadian medical schools. Once registered, students are free to use all of the confidential resources available on the site. Use of this site is voluntary as is the completion of the MSPI. The data were gathered from January 2005 to December 2006, while the respondents were in their final year of medical school, and contained 190 male students, and 316 female students. Respondents identified their race as follows: Caucasian (67%), Asian American/Pacific Islander (12%), African American (9%), Indian American (7%), Native American (1%), Other (2%), and Unknown (2%). Upon completion of medical school, and approximately one year later, students entered residency training for their chosen specialty. The time between completing the MSPI and reporting residency choice was approximately one year. Information about specialty choice was obtained from the AAMC's GME Track system containing resident census information for all training programs in the US. Those who were specified as active residents in one of six medical specialties (Family Medicine, Internal Medicine, Obstetrics and Gynecology, Pediatrics, Psychiatry, and Surgery) were selected for the purposes of this study.

2.2. Instrument

The MSPI measures medical interests, and is used to assist students in choosing a specialty. A 2002 revision of the MSPI resulted in a reduction in the number of items to 150. Of the 150 items, 104 are used for scoring purposes. The remaining 46 provide additional data intended for use in constructing future scales. MSPI items reflect job specific tasks that relate directly to medical practice. Students rate each item on a seven-point scale which reflects their degree of desirability for each item. A score of 1–2 indicates low desirability, 3–5 indicates moderate desirability, and 6–7 indicates high desirability. Differences between students' subscale scores and specialists' scores determine students' preference for each medical specialty. Students whose subscale scores are similar to specialist scores for the same subscales will receive a high preference score for that particular specialty. Scores are calculated for: Family Medicine (FAM), Obstetrics Gynecology (OBGYN), Surgery, Psychiatry (PSY), Pediatrics (PED), and Internal Medicine (MED). Higher scores indicate a greater preference for a specialty, while lower scores indicate less preference for a specialty. The instrument was self-administered on the internet, and preference scores were reported to participants immediately upon completion.

Zimny (1979) reported on the reliability and validity indices used in the initial development of the MSPI. Reliability was estimated in two separate analyses. In the first analysis, using the Spearman Brown formula, reliability estimates ranged from .74 (Pediatrics) to .93 (Family Medicine), and in the second analysis estimates ranged from .66 (Pediatrics) to .91 (Surgery). Most reliability estimates in both analyses fell in the .80s and .90s. Zimny also conducted a study on the predictive validity of the MSPI using National Resident Matching Program (NRMP) data (1980). The NRMP contains data about the initial specialty choice of medical students as they enter into residency training. He found that the level of predictive accuracy over all specialties ranged from about 50 to 55%. This range represents a level of prediction well above the conservative chance expectancy level of 17% accuracy, and indicates that a substantial relationship exists between specialty preference scores on the MSPI and subsequent specialty choice.