Advancing the Gati and Osipow Model of Career Indecision in Professional Career Choice: Preliminary Report on the Development of the Specialty Indecision Scale, 2nd Edition

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Abstract

Introduction

The assessment of career indecision is an important step in the provision of career guidance and support. Students often experience difficulties in making career decisions ranging from lack of information about the process of career planning and information about themselves or about the world of work .to internal conflicts and external barriers that limit their decision making ability (Gati, Krausz, & Osipow, 1996). Recognizing that indecision exists and accurately identifying the source of that indecision early in the process of career counseling will assist students in making sound career choices.

Career indecision in the general population of high school and college students has long been a topic of interest in the field of vocational psychology. But less attention has been given to more homogeneous professional groups, such as students pursuing a medical degree. These individuals have completed a major hurdle in their choice of career, but continue to face difficulties related to choosing a specialty area to pursue. Longitudinal studies report that between 55% and 80% of medical students change their choice of specialty during medical school (Kazerooni, et al, 1997; Forouzan and Hojat, 1993; Zeldow, et al., 1992), and that even beyond medical school the percentage of residents changing to another major specialty ranges from 10% to 15% (David & Blosser, 1990; Singer, 1991; Wolfson, Robeson, & Veloski, 1991; Dial and Lindley, 1987; Davis,

et al, 1990; Tardiff, et al, 1986; and Weismann et al, 1980). Some authors contend that, because of the complexity of this decision, the lack of exposure to the numerous career options available to them, and the limited opportunities to fully explore and understand those options, this decision should not be made until after medical school has been completed (Schafer, Shore and Hearst, 2001).

A number of measures for assessing career indecision have been developed over the years (Levinson, et al, 1998). Gati, Krausz and Osipow (1996) developed a taxonomy of career decision-making difficulties containing three major difficulty categories and 10 subcategories: The first category, Lack of Readiness, contains four subcategories: Lack of Motivation, Indecisiveness, Dysfunctional Myths, and Lack of Knowledge About the Process. The second category involves Lack of Information in three subcategories: Self, Occupations, and Ways of Obtaining Information. The third major category, Inconsistent Information, contains three subcategories: Unreliable Information, Internal Conflicts, and External Conflicts. These difficulties occur at different stages in the career decision-making process, with Lack of Readiness tending to occur prior to making a career decision, and the major categories of Lack of Information and Inconsistent Information occurring during the career decision-making process itself. Their research has focused on the application of the taxonomy to high school and college students, but little research has addressed the decision making difficulties of professional students. Savickas and his colleagues (1985, 1986), utilizing a revision of the Career Decision Scale, developed the Specialty Indecision Scale, a 19-item instrument that measures four major areas of indecision: cognitive, conative, criterion, and implementation restraints on the decision-making process: A cognitive factor that describes information deficits, a conative factor that addresses emotional or affective barriers, and a third factor, named criterion

restraints, that addresses excessive standards or external conflicts that affect specialty choice.

The current study furthers the research of Gati and Savickas and their colleagues to develop a revised measure of career indecision for professional students in the field of medicine. Development and initial psychometric analysis of the Specialty Indecision Scale, 2nd Edition, are presented, along with some initial findings related to medical students' career decision-making difficulties.

Method

Specialty Indecision Scale, 2nd Edition

Items for the Specialty Indecision Scale, 2nd Edition, (SIS-2) were constructed following the content domain established by Gati, Krauss, and Osipow (1996), and by examining items from the Specialty Indecision Scale (Savickas, et al, 1986). Using these resources, especially the Gati, Krausz and Osipow taxonomy as guides, items were written that related to one or more of these taxonomies. Because the instrument was developed for medical students engaging in the selection of a medical specialty, and because there may be some career concerns that are unique to the field of medicine, items were written specifically for the medical profession. A total of 41 items were developed following these guidelines. After subsequent review by the authors and the original developers of the taxonomy many of the items were either revised or removed, yielding a total of 36 items. A Likert type response format was created ranging from 1 (Does not describe me at all) to 4 (Describes me well). Higher scores on the scale indicated that the item is an expressed career concern.

Subjects and Procedures

Students from U.S. allopathic medical schools served as subjects for this study, since the instrument was developed specifically for this population. A web based version of the instrument was developed, which included a demographic questionnaire. Subjects were identified by asking medical school student affairs deans in each of the 125 US medical schools, who possess the most up-to-date student contact information, to forward a request to their students to participate in the study. These students ranged in age from approximately 20 to 35 years old, and are considered at risk for having difficulty in making medical career decisions. Students were asked to visit the web site in question and complete the draft Specialty Indecision Scale, 2nd Edition. Results were automatically stored in a database on the server upon completion of the survey.

Analyses

Initial psychometric analysis of the results involved conducting factor analysis and cluster analysis of the resulting data. Cronbach's alpha, scale and item intercorrelations, and normative data were also calculated.

Results

Responses were collected from 1,581 students representing approximately 50 medical schools from across the United States. Some students did not complete the entire instrument, and after removing these incomplete responses, the remaining dataset contained 1,207 responses. Subjects ranged in age from 20-48 years old, with an average age of 25.9 years. There were 509 males (42%) and 698 females (58%). Seventy-seven percent (63%) of the respondents were Caucasian, 9.2% Asian (9.7%), 4.8% African American (7.3), and 2.7% were Hispanic (15.8). These percentages are generally representative of the racial and ethnic backgrounds of the medical student population.

The students were spread evenly across the four years of medical school (27.9% were first year students, 27.3% were second years, 25.1 third years, and 17.7 fourth years).

Table 1 presents the results of the principal components analysis (PCA), which yielded 7 factors, and accounted for approximately 53% of the total variance in the model.

Table 1. Principal Components Analysis of the SIS-2 using Varimax Rotation with Kaiser Normaliztion.

	Component						
	1	2	3	4	5	6	7
q24	.807						
q22	.769						
q11	.640						.324
q16	.636				.462		
q17	.602				.528		
q34	.593			.452			
q23		.748					
q25		.699					
q7		.638	.331				
q30		.599				.321	
q31		.565					
q4			.699				
q13	.384		.571	,			
q19			.565		.429		
q35		.316	.555				
q12			.540				
q14	.425		.515				
q36				.753			
q27				.680			
q33	.351			.649			
q21				.526			
q26				.478	.380		
q32				.378			
q18					.640		
q8					.578		
q9	.410		.305		.549		
q1		.317	.361		.421		
q10						.743	
q29						.671	
q20						.549	
q6						.541	
q15						.521	
q5							.743
q2	.317		.324				.573
q3							.489

To further understand the results cluster analysis was also conducted using the EXTREE method described by Gati, Krausz and Osipow (1996) in the development of the Decision-Making Difficulties Scale. The analysis also yielded seven factors, but

with some minor variations from the PCA. Five factors produced identical results for many of the items. One factor was formed in the PCA, but did not exist in the cluster analysis.

PCA Factor 1 contained five identical items (11, 16, 17, 22, and 24). Cluster analysis item 9 and PCA item 34 were removed from this scale. This factor was labeled Resources. PCA Factor 2 contained five identical items (7, 23, 25, 30, and 31). No other items loaded on this factor in either analysis. The factor was labeled Certainty. PCA Factor 3 contained six identical items (4, 1, 13, 14, 19, and 35) for an exact match. However because of the desire to limit the number items to five, item 14, with the lowest loading on the factor was removed, and the factor was given the label Readiness. PCA Factor 4, labeled Self-knowledge, contained four identical items (21, 27, 33, and 36) and two items not found in the cluster analysis, while the cluster analysis contained an additional item that did not load on this factor in the PCA. After examining these three items, item 32 was found to fit best with this item. The two remaining items (8 and 34) were removed. The four items that loaded on PCA Factor 5 (1, 8, 9, and 18) did not group together in the cluster analysis. These four items, along with item 26, formed a new scale, which was named Confidence. In the case of PCA Factor 6, five identical items were found (6, 10, 15, 20, and 29), and two items (item 3 and 32) wrapped around these items in the cluster analysis. These two items were removed from this factor, and the resulting scale was named Concerns. PCA Factor 7, with only three items loading on this factor, found only two identical items (2 and 5). Because of this and the lack of meaningful relationships among the remaining items in this analysis (items 3, 14, and 34) a seventh scale was not established. However, because the remaining items had important meaning to the overall decision making activities of medical students, they

were kept in the analysis as unscored items. The resulting instrument included six scales, each containing five items, and a remaining five items that did not fit together as a scale, but were identified as important to the goals of the instrument. These items were kept for consideration in the possible future development of new scales.

Internal consistency reliability estimates (coefficient alpha) for the scales were reported as .84 for Resources, .76 for Certainty, .67 for Readiness, .68 for Self-Knowledge, .70 for Self-Confidence, and .65 for Concerns. A Cronbach's alpha coefficient of .90 was found for the entire scale. One item, item 28, was removed from the instrument because it reduced lowered the overall reliability of the instrument.

Scale scores were calculated by adding the responses of the items. Total possible scores range from 5 to 20, and mean scores for the sample ranged from 8.28 on the Conflict Scale to 11.51 on Self-Confidence. No significant differences were found between subjects based on race and ethnic or racial background, but significant differences were found for subjects based on year in school for all scales except Concerns. Essentially mean scores tended to decrease over time, with first and second year students reporting significantly higher concerns than third and fourth year students on Readiness, Resources, Self-Knowledge, Certainty, and Self-Confidence.

Discussion

This study presents initial support for the development of the Specialty Indecision Scale, 2nd Edition. While the structure did not adhere to the taxonomy developed by Gati and Osipow, there was some overlap between the two models in terms of the types of difficulties encountered by students in making career decisions. The SIS-2 measures six areas of indecision: Readiness, Resources, Self-Knowledge, Concerns, Certainty, and Confidence. A seventh scale that addressed information about career and specialty

options was not supported, but the items were considered important enough to keep in the instrument as a starting point for the development of additional scales in the future. Reliability estimates are moderate to high for the scales, and the combination of factor analysis and cluster analysis contribute to a stronger understanding of the structure of indecision in this population of students. Some support for criterion related validity can be found in the examination of student ratings of the scales over time, indicating that as students advanced in school their indecision decreases. Savickas, et al, (1986) found similar results in a study of the original Specialty Indecision Scale.

This study found 6 factors, which diverges from the Gati and Osipow Taxonomy of Career Decision Making Difficulties. Findings here indicate that many of the Gati/Osipow factors were either merged in the current model or were split up and became parts of other newly created factors. In the current study Factor 1, labeled Resources, can be described as an inability to find information, resources, or guidance due to lack of guidance or lack of knowledge. Factor 2, labeled Certainty, refers to difficulty choosing between one or more specialties due to internal conflicts or dysfunctional behavior. Factor 3, Readiness, appears to represent an inability to make a decision due to lack of motivation or dysfunctional behavior. Factor 4, Self-Knowledge, measures a lack of information about one's interests, values, personality, and career goals. Factor 5, Confidence, addresses indecision due to psychosocial factors, and Factor 6, Concerns, measures an inability to decide due to internal and external conflicts and barriers.

We need to better understand the reasons for the differences between our factor structure and that of Gati and Osipow. One explanation may be that students in our study can be found at later stages of developmental in comparison to the student populations studied by Gati and his colleagues. The students in the current study are in advanced

educational programs, are somewhat older and perhaps more mature than their high school and undergraduate counterparts in the previous studies. In many respects they have already made some very important career decisions by choosing the field of medicine, and are further along in their exploration of possible career choices, and. In comparison to the Gati/Osipow taxonomy, some of the decision making difficulties that occur during the initial decision-making steps may have been overcome at the time of the involvement with this study.

The students involved in this study also may reflect a new stage of development, called "emerging adulthood," proposed by Arnett (2000). During this stage, the individual transitions from adolescence to adulthood and is allowed time to continue identity formation, engaging in more focused and serious explorations related to their career prior to becoming a true adult. While this is a plausible theory, more research is needed to support the premise.

The results presented here indicate that the SIS-2 can be a useful tool to practitioners who want to learn more about specialty indecision and to find ways to focus career counseling efforts on important areas as they aid students who are faced with the rigorous demands of an advanced professional degree. Researchers will also find this a useful measure for studying the Additional psychometric development is necessary further support the construct validity of the instrument, and to examine, with some revision of the items on the scale, of it's cross validation with other professional groups. Additional research and development is needed to provide guidelines for assessing and interpreting the results to students, and for providing feedback to students and practitioners for counseling interventions.

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