The development and initial validation of social cognitive career theory instruments to measure choice of medical specialty and practice location

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Abstract

Social cognitive career theory served as the basis for the instrument development for scales assessing self-efficacy, outcome expectations and goals to predict medical career choice. Lent and Brown's (2006) conceptualisation of social cognitive constructs guided the development of items to measure choice of medical specialty and practice location. Study 1 involved four stages: identification of attitudes and beliefs, generation of scale items, evaluation of scale items by a panel of experts, and a pilot study. The pilot study tested the item pool with 293 medical students and allowed item and exploratory factor analyses. Study 2 involved administering the scales to a second sample of 499 medical students. Confirmatory factor analysis assessed consistency and validity, and identified six psychometrically sound instruments. Initial validity for the scales is encouraging and further testing of these measures is expected to support their use. Implications for use in research are discussed.

Key Words: Career Choice, Medical Students, Practice Location, Scale Development, Social Cognitive Career Theory, Specialty Choice.

Introduction

Medical workforce shortages and mal-distributions world-wide make understanding how, where and what our future doctors wish to practise increasingly important. A great deal of attention has been devoted to the investigation of factors that influence medical career choice of both specialty and practice location. However, the majority of these studies have been criticised for having no theoretical basis (Dohn, 1996a; Meurer, Bland, & Maldonado, 1996; Mowbray, 1989) and for not using reliable instruments (Meurer et al., 1996). In recent years, this criticism has resurfaced with authors calling for the development of hypotheses and models based on theoretical frameworks to provide a foundation to advance scientific enquiry in the areas of medical education and medical career choice (Cook, Beckman, & Bordage, 2007; Cook, Bordage, & Schmidt, 2008; Lawson, Hoban, & Mazmanian, 2004; Wolf, 2004). Thus, we undertook the task of developing measures based on a sound conceptual framework that would further research into the medical career decision-making process and ultimately assist in predicting future medical workforce needs.

The task of choosing a specialty and practice location is a complex process dependent on a variety of factors. It involves exploration, decision-making and choice. The range of medical specialties and sub-specialty areas is vast and each requires different skills, talents and aptitudes. In fact, medicine offers more options for its practitioners than any other profession (Iserson, 2003). This makes it more difficult for medical students to decide on a specialty. Some medical students choose a specialty easily and early in their training, but the majority have difficulty deciding (Huebner, Royer, & Moore, 1981), with the greatest indecision occurring during the first two years of medical school when not enough information is available to make a decision (Leong & Geisler-Brenstein, 1991). Further, choosing a specialty has long-lasting consequences (Henry, Leong, & Robinson, 1992). Unlike nurses and other health care professionals, doctors cannot change their career paths

easily and are virtually locked into the field of medicine they initially choose for the rest of their careers. The only exception to this is when they pursue additional training in another field.

Thus, in making career choice decisions, medical students need to understand their abilities, interests and values, and consider the advantages and disadvantages of their choices. Social cognitive career theory (SCCT), derived primarily from Bandura's general social cognitive theory (Bandura, 1986), emphasises the means by which individuals exercise personal agency in the career development process. SCCT is one of the most influential new approaches in career development as it recognises that a variety of personal, contextual and behavioural variables play a key role in the development of career interests, abilities, goals and choice. To illustrate how this career model might apply to medical students' career decision making process, consider an example of two medical students, one male and one female, with identical entrance exam scores, interview scores and similar aspirations to become surgeons and work in a large city hospital. During the course of their training their career plans change as they learn more about themselves and their skills. The male medical student finds that he has confidence in his ability to use manual skills but also discovers that he is deeply interested in people and places a high value on the doctor/patient relationship. He decides to pursue a career as a General Practitioner in a small town where there is a greater opportunity to develop and use a broader range of clinical expertise. The female medical student has a strong interest in surgery but believes she would be unable to combine a career as a surgeon with having a family. She decides that she will pursue a career as an anaesthetist in a hospital located in her home town, so that she will have a more controllable lifestyle and access to family support.

This example highlights the three key variables in the SCCT model (i.e., self-efficacy, outcome expectations and goals), which have been described as the basic "building blocks" of

career development behaviour (Lent, Brown, & Hackett, 1996, p. 380). Self-efficacy is defined as judgements of capabilities to organise and execute courses of action; outcome expectations are the expected consequences of actions; and goals are defined as intentions to engage in a certain activity.

While SCCT has successfully been applied to specific occupational areas such as science, mathematics and engineering (e.g., Lent et al., 2001; Lent, Brown, Brenner, Lyons, & Treistman, 2003), it has not been applied to the medical career choice domain. Thus, there is no evidence whether self-efficacy, outcome expectations and goals can be reliably and validly measured in this particular domain. It is possible that the process of making medical practice choices is unique and different from other career decision making processes. The purpose of the present study was to develop reliable and valid instruments based on a career choice theory that would assess behavioural attitudes and intentions to choosing a medical specialty and a practice location as these were not available in the literature. Specifically, we aimed to develop and initially validate six scales that could be used to assess, in the context of SCCT theory, choice of specialty (self-efficacy, outcome expectations, goals) and choice of practice location (self-efficacy, outcome expectations, goals). The development of reliable instruments such as these will allow researchers and practitioners to better understand the factors that affect the career choice process of medical students and graduates. Standardised measures will also provide future researchers with a theoretical basis that will enable comparison of results across studies (Cook et al., 2007; Cook et al., 2008; Davis et al., 1990; Dohn, 1996b; Wolf, 2004).

The development and validation of the career choice measures followed a standard pattern for psychometric instruments. Study 1 involved four stages of development. Stage 1 identified attitudes and beliefs that were relevant to the domain of interest (i.e., choice of medical specialty and practice location). Stage 2 involved generating items for each of the

scales (i.e., self-efficacy, outcome expectations and goals). These two stages followed the guidelines conceptualised by Lent and Brown (2006) for constructing self-efficacy, outcome expectations and goals scales. In Stage 3 the items were evaluated by a panel of expert reviewers and revised, and at Stage 4 we pilot tested the item pool with a group of medical students to allow item and exploratory factor analysis. Study 2 involved administering the scales to a second sample of medical students to allow a confirmatory factor analysis to assess consistency and validity.

Study 1 – Instrument Development

Stage1: Identifying attitudes and beliefs

The purpose of Stage 1 was to carefully specify the domains of interest and to tailor the items to the criterion variables (Lent & Brown, 2006). To clarify the content of these constructs, data were collected from two sources - medical practitioners via a postal survey, and first year medical students via focus groups. In particular, this stage aimed to identify levels of challenge for the self-efficacy scales, realistic outcomes expected and goal-setting stages relative to each of the criterion variables - choice of medical specialty and choice of practice location.

Thirty-four doctors (27 males, 7 females) located in south-east Queensland, Australia responded to a questionnaire asking them to retrospectively list factors that gave them confidence to choose a specialty and practice location, the perceived advantages and disadvantages of their choice of specialty and practice location, and the steps taken towards deciding on a choice of specialty and practice location. In addition to this, thirteen first year medical students (7 males, 6 females) participated in focus groups. The focus groups were semi-structured and lasted 60 minutes. The groups were facilitated by the first author who had previous experience in focus group research and who was not involved in undergraduate activities at the medical school. Students were asked what would give them the confidence to

make a decision about their choice of specialty and practice location, what were the advantages and disadvantages they expected from choosing a particular specialty or practice location, and what were the steps they intended to take towards deciding on a choice of specialty and practice location. Responses were tape-recorded, transcribed into a Word document and analysed thematically.

Stage 2: Item Generation

Using an informal mode of content analysis, both practitioners' and students' statements were coded into categories and then divided into sub-categories where appropriate. Coding was revised and refined for the purpose of chunking information into smaller units and then common themes and patterns of relationships were produced. Next, an initial pool of items was generated for each of the constructs. Self-efficacy items were intended to reflect perceived confidence in making a choice. Generation of self-efficacy items was influenced by phrasing used in the Career Decision Making Self-efficacy Scale (Betz & Luzzo, 1996). Outcome expectations items were intended to reflect the possible consequences or hoped-for outcomes, and goal items were intended to reflect an intention to produce a particular outcome. Due to the narrow and overlapping content generated for the self-efficacy and goals scales, fewer items were developed for these than for the outcome expectations scales. Initially, seven items were constructed for each of the self-efficacy scales, 17 items for each of the outcome expectations scales and six items for each of the goals scales. The response format used with the self-efficacy scales was 1 *(No Confidence)* to 5 *(Complete Confidence)*. Response formats for the outcome expectations and goals scales were 1 *(Strongly Disagree*) to 6 *(Strongly Agree*).

Stage 3: Expert Review

A panel of nine experts who were skilled in scale construction, medical education and/or career development was asked to evaluate the content of the new research measures.

As it was important that representation from the target audience was included on the panel, two second year medical students were invited to be part of the review process. Reviewers were asked to rate the content of each item and were given a response format from 0 (*Not Meaningful)* to 4 *(Very Meaningful)*. Reviewers were also asked to make comments regarding wording, length of items, duplication of similar items, and the rating scale. Feedback included some minor changes to the wording, reordering of a few items, and the suggestion for the inclusion of an additional item for each of the self-efficacy scales. All suggested changes were incorporated. General comments from reviewers were that the scale items were clear, explicit, written in plain language and meaningful to the target audience.

Stage 4: Pilot Testing

The instruments were pilot tested on 293 medical students, a sample size considered sufficient to produce an accurate solution in exploratory factor analysis (Guadagnoli & Velicer, 1988; Rummel, 1970). The questions were administered as part of a larger survey investigating the career choices of medical students. Students responded to the questions using either a Web-based or paper-based survey format. The sample consisted of 113 males and 180 females, with 189 of these students enrolled in first year, 72 in second year and 32 enrolled in final year. The primary aim of this stage was to reduce each of the scales to a manageable number of items. As the scales were likely to be used in surveys containing other measures, it was desirable to keep the scales as brief as possible, somewhere between 5 and 10 items (Carmines & Zeller, 1979). The secondary aim was to test for construct validity.

As recommended by Kline (2000), item analysis was conducted first, followed by exploratory factor analysis. Distributions, gender differences, correlation matrices and inter-item total correlations were examined. Items that correlated $\leq$.3 with any other item in the same scale or correlated with other scale items $\geq$.8 were discarded. This resulted in three items being deleted from the outcome expectations specialty scale, one item from the self-

efficacy practice location scale, and one item from the outcome expectations practice location scale.

To produce meaningful distinctions between the factors by analysing only the shared variance between variables and to eliminate redundant or unclear items, the principal axis factoring method was used. The choice of specialty factor analysis and choice of practice location factor analysis each contained 28 and 29 items respectively. As the factors were expected to be correlated, a direct oblimin rotation was used. The Kaiser-Meyer-Olkin measure of sampling adequacy (.90, .91) and Barlett's Test of Sphericity was significant (F = 5409.41, $p < .001$; F = 5641.74, $p < .001$) for choice of specialty and choice of practice location, respectively, indicating the suitability of the data for factor analysis (Tabachnick & Fidell, 2001).

The criteria used to identify factors included eigenvalues greater than 1.0, examination of the scree plot, extent of item loadings, the presence of cross-loadings, and the conceptual meaningfulness of factors (Stevens, 1996; Tabachnick & Fidell, 2001). Thus, taking into consideration the guidelines and decision rules that advocate .30 as the minimum level for a factor loading and .40 as a more important factor loading (Hair, Anderson, Tatham, & Black, 1995; Kline, 2000), an item was retained only if it was originally written for that particular scale and if it loaded ($\geq$.40) on that factor alone. Items designed to measure one construct but showing their highest loading on another, had a multiple loading, or weak loading (<.40) were eliminated. Examination of the pattern matrix revealed a four factor solution for both outcomes; the outcome expectations scales split into two separate factors. Interpretation of this rotated pattern matrix revealed that for choice of specialty, items relating to professional outcome expectations loaded on one factor and items relating to lifestyle expectations loaded on another factor. This also occurred for choice of practice location with one difference. Items relating to both professional and family expectations loaded on one factor and items relating

to lifestyle expectations loaded on the second factor. The final 25 items and their factor loadings for choice of specialty and choice of practice location are reported in Table 1 and Table 2, respectively. This process resulted in a 7-item instrument for each of the self-efficacy measures, an 8-item instrument for each of the professional outcome expectations measures, a 4-item instrument for each of the lifestyle outcome expectations measures, and a 6-item instrument for each of the goals measures. Eigenvalues, percentage of variance explained before rotation and inter-factor correlations are presented in Table 3. Summary data and internal reliability coefficients are reported in Table 4.

Insert Table 1, 2, 3 and 4 Near Here

Study 2 – Initial Validity Data

Confirmatory Factor Analyses

Participants in this study were 499 medical students: 322 were in the first year of their medical degree, while 177 were final year students. There were 329 females (66%) and 170 males (34%), whose average age was 24.32 years (*SD* = 5.36). Students were recruited from 11 Australian Universities and had responded to a larger Web-based survey as part of a study examining the preferred destinations and specialties of medical students.

We used confirmatory factor analyses (CFA; AMOS Version 4.0; Arbuckle & Wothke, 1995) to test the factor structure of the two sets of scales identified in Study 1, that is, medical specialty (self-efficacy, outcome expectations [two factors], goals) and practice location (self-efficacy, outcome expectations [two factors], goals). In a CFA, an a priori structure is posited and the adequacy of how well the obtained data fits this structure is tested. We tested two models (one model for medical specialty; one model for practice location), where we allowed the clusters of items identified in the EFA in Study 1 to load onto four latent variables (one each for self-efficacy and goals, and two for outcome expectations); that is, the six goal items, seven self-efficacy items, eight outcome expectations (professional) and

four outcome expectations (lifestyle) were allowed to load onto their respective latent factors, and the correlations among the four factors were freely estimated.

Model fit was assessed using the χ^2 test statistic, the Goodness of Fit (GFI), Tucker-Lewis (TLI) and Comparative Fit (CFI) indices, and the Root Mean Square Error of Approximation (RMSEA; Byrne, 2001). As the χ^2 test statistic is sensitive to sample size (the more participants, the higher the χ^2 value), it has been recommended that it be used with caution (Medsker, Williams, & Holahan, 1994), and to consider a χ^2 value two to three times greater than the degrees of freedom as acceptable (Carmines & McIver, 1981). Modification indices were also examined to assess possible improvement to the fit of the models being tested, and in some cases correlations between residuals were included (Byrne, 2001). Correlated error terms can be used to correct for method effect that results when similar response formats are used for survey items (Jöreskog & Sörbom, 1989). Values for the GFI, TLI and CFI range from 0 to 1, with estimates of .9 or above indicating an acceptable measure of fit. The RMSEA index has a lower boundary of zero, with values of less than .08 indicating an acceptable error of approximation (Byrne, 2001). The results of the CFA were that all of the factor loadings were significant ($p < .05$), and the goodness of fit indices indicated acceptable fit to the data for both models. The results of all analyses are reported in Table 5.

Insert Table 5 Near Here

Discussion

This study was designed to respond to recommendations in the medical literature for theory-based measures to predict future medical workforce practice choices. While a few previous studies have based hypotheses and assumptions within a theoretical framework, for example, self-determination theory (Williams, Saizow, Ross, & Deci, 1997; Williams, Weiner, Markakis, Reeve, & Deci, 1994), the theory of reasoned action (Chandarana, Loncke,

& Conlon, 1989; Gorenflo, Ruffin, & Sheets, 1994; Montano, Neighbor, Carline, Wright, & Phillips, 1988), and decision theory (Reed, Jernstedt, & Reber, 2001), SCCT has not been applied to the medical career choice domain before now. This is unfortunate, as the SCCT choice model provides a sound conceptualisation that has the potential to generate useful empirical findings that could be used as a basis for future medical practice specialty and practice location workforce decisions and planning.

Results of the current study indicate that the newly developed SCCT scale measures have sound internal reliability and encouraging initial validity. Content validity was established by basing the items within the SCCT theoretical model and using an expert review panel to assess the meaningfulness of the scale items. Construct validity was established by demonstrating factorial independence, initially with an exploratory factor analysis, and then with a confirmatory factor analysis using a second sample of students. Internal reliability and validity goals were both met while keeping the final scale lengths manageable (scales range from 4-8 items), which will allow their use with other measures in future research. One unforeseen outcome of the factor analysis process was the identification of two outcome expectations scales (i.e., lifestyle outcome expectations and professional outcome expectations) for both choice of specialty and choice of practice location. However, both scales are considered meaningful to the area of study, as having the capacity to measure future medical practitioners' personal and professional expectations will allow for more detailed analyses when considering specialty and location outcomes.

As "quality of assessment provides the bases for stringent empirical tests of theory" (Bandura, 1995, p.16), it is expected that these new measures will contribute to accurately describing the processes associated with specialty choice and practice location and be instrumental in providing information to assist medical workforce planners understand trends, contexts and the progressions involved in medical career choice preferences. With these

measures, a more complete point of view of medical students' career decision-making processes will be possible as they allow investigation of students' attitudes and beliefs about choosing a medical specialty and a practice location from within a widely used conceptual framework. These SCCT scale measures show considerable promise, consequently, other researchers should use them with confidence.

The study has a number of limitations that need to be considered. First, while we conducted focus groups at the beginning of the study, we relied on same-time, self-report data. Future research could usefully continue to test the validity of the scales by examining their relationship with prospective measures and with measures from other sources. Second, the SCCT proposes a process model, whereby self-efficacy and outcome expectations are causal antecedents of goals. The validity of the scales will be further enhanced if these temporal relationships are successfully demonstrated. Finally, we devised the scales working with Australian medical students; they need to be tested on students from other countries to determine their application outside of this country.

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Table 1

Principal Axis Factor Estimates of the Oblique (Direct Oblimin) Factor Loadings for the Self-efficacy, Outcome Expectations and Goals Scales Predicting Choice of Specialty; (N = 293).

Item	Factor			
	1	2	3	4
Self-efficacy				
How confident are you at this stage of your training that you could:				
1. Choose a specialty that will fulfil your expectations and goals	**.83**	-.01	-.06	.05
2. Choose a specialty that will fit well with your personality (e.g., being an extrovert/introvert)	**.81**	-.03	-.05	-.00
3. Choose a specialty that will enable you to live the type of lifestyle you desire	**.78**	.07	.07	-.08
4. Choose a specialty that will fit your interests and abilities.	**.69**	-.10	-.04	.11
5. Decide what you are and are not ready to sacrifice in order to choose a specialty	**.66**	.00	.14	-.03
6. Decide what you value most in a medical career (e.g., relationships with patients, prestige or technical skills, etc).	**.66**	-.03	-.05	.07
7. Locate valid and accurate information to help you choose between equally desirable specialties	**.60**	-.05	-.01	.02
Outcome Expectations (Professional)				
When thinking about the type of specialty that you are interested in (e.g. surgery, pathology, general practice) how much do you expect at this stage of your training, that your choice of specialty will:				
1. Be intellectually stimulating	.09	**-.86**	-.10	-.03
2. Provide you with work satisfaction	.02	**-.84**	-.01	-.03
3. Allow you interaction with your colleagues	-.03	**-.82**	.03	-.02
4. Let you practice clinical skills that best suit your perceived abilities	.03	**-.81**	-.09	.12
5. Provide you with a good income	-.03	**-.71**	.06	-07
6. Allow you to perform a broad spectrum of work	.02	**-.70**	.09	.05
7. Be compatible with your interests	-.02	**-.70**	-.04	.04
8. Allow you to achieve your desired professional success	.07	**-.66**	.14	.05

Item	Factor			
	1	2	3	4
Outcome Expectations (Lifestyle)				
When thinking about the type of specialty that you are interested in (e.g. surgery, pathology, general practice) how much do you expect at this stage of your training, that your choice of specialty will:				
1. Allow you to work the number of hours that you desire	-.03	-.01	**.85**	.03
2. Allow you to pursue leisure time activities/interests that you like	.00	-.15	**.83**	-.03
3. Allow you to have your desired work/recreational balance	.08	.15	**.73**	.09
4. Allow you to have your desired lifestyle	.02	-.26	**.65**	.00
Goals				
When you think about the type of specialty that you might choose (e.g., radiology, general practice, paediatrics), please indicate if, at this stage of your training, you agree or disagree with the following statements:				
1. I have a clear set of goals for my future with regard to choosing a specialty	.02	.10	.04	**.80**
2. I have discussed my goals in relation to my specialty choice with my family/partner	-.07	-.11	.00	**.65**
3. I am taking the steps needed to achieve my goal of choosing a specialty	.13	.02	.02	**.64**
4. I have examined my interests, values and abilities in detail to come up with my goal of choosing a specialty	.11	-.00	.01	**.61**
5. I have a set time frame in which to make a decision about my choice of specialty	.11	-.00	.00	**.61**
6. I am getting lots of support to achieve my goal of choosing a specialty	-.03	-.06	.06	**.60**

Table 2

Principal Axis Factor Estimates of the Oblique (Direct Oblimin) Factor Loadings for the Self-efficacy, Outcome Expectations and Goals Scales Predicting Choice of Practice Location; (N = 293).

Item	Factor			
	1	2	3	4
Outcome Expectations (Professional and Personal)				
When you think about the practice location that you might choose (e.g., capital city, other metropolitan centre, regional city/large town, rural area/small town or small/remote community), how much do you expect at this stage of your training that your choice of practice location will:				
1. Provide you with opportunities for professional advancement	**.84**	.08	.01	-.15
2. Allow you to have your desired professional success (e.g., income, respect)	**.79**	.04	.11	-.01
3. Have good support facilities and personnel available to you	**.77**	.01	.04	.11
4. Allow you to practice clinical skills that best suit your perceived abilities	**.64**	.06	.10	.08
5. Have work opportunities for your partner/spouse	**.57**	.00	.02	.14
6. Have good schools and educational opportunities for your children	**.57**	.07	-.16	.25
7. Provide you with support from colleagues	**.55**	.00	-.09	.23
8. Provide you with a good income	**.54**	-.04	.05	.05
Self-efficacy				
How confident are you at this stage of your training that you could:				
1. Choose a practice location that will fit your interests and abilities	.06	**.88**	-.90	-.04
2. Choose a practice location that will fulfil your expectations and goals	-.01	**.86**	.01	.00
3. Choose a practice location that will enable you to live the type of lifestyle you desire	.05	**.83**	-.02	-.03
4. Decide what you value most in a practice location (e.g., resources and facilities, support from colleagues, long-term relationships with patients, climate, etc.)	.06	**.78**	-.01	-.06
5. Select a practice location from a list of potential locations	-.08	**.71**	.02	.06
6. Locate valid and accurate information to help you choose between equally desirable practice locations	-.01	**.67**	.03	.05
7. Decide what you are and are not ready to sacrifice in order to choose a practice location	-.03	**.64**	.14	.01

Item	Factor			
	1	2	3	4
Goals				
When you think about the practice location that you might choose (e.g., capital city, other metropolitan centre, regional city/large town, rural area/small town or small/remote community), please indicate if, at this stage of your training, you agree or disagree with the following statements:				
1. I have a clear set of goals for my future with regard to choosing a practice location	.00	.06	**.79**	-.06
2. I am taking the steps needed to achieve my goal of choosing a practice location	.01	.07	**.77**	.02
3. I have a set time frame in which to make a decision about my choice of practice location	.13	-.04	**.63**	-.01
4. I have discussed my goals in relation to my practice location options with my family/partner	-.17	.05	**.63**	.17
5. I am getting lots of support to achieve my goal of choosing a practice location	.07	.00	**.63**	-.08
6. I am carefully considering my interests and life values to come up with my goal of choosing a practice location	.03	.00	**.62**	.00
Outcome Expectations (Lifestyle)				
When you think about the practice location that you might choose (e.g., capital city, other metropolitan centre, regional city/large town, rural area/small town or small/remote community), how much do you expect at this stage of your training that your choice of practice location will:				
1. Allow you to pursue the leisure time activities or interests that you like	-.05	.02	.01	**.94**
2. Allow you to have your desired lifestyle	.19	.07	.00	**.67**
3. Allow you to have your desired work/recreational balance	.16	-.00	.04	**.63**
4. Have the resources and support that will allow you to work the number of hours that you desire	.23	.04	.06	**.60**

Table 3

Eigenvalues, Percentage of Variance Explained, Cronbach Alphas, and Inter-factor Correlations for Choice of Specialty and Choice of Practice Location; (N = 293).

Scale	Eigenvalue	Variance Explained	Correlations 1	2	3	4
Choice of Specialty						
Self-efficacy	8.37	33.51	-	-.28	.27	.58
Outcome Expectations (Professional)	3.80	15.21		-	-.37	-.27
Outcome Expectations (Lifestyle)	2.12	8.47			-	.31
Goals	1.66	6.64				-
Total Variance Explained		63.83				
Choice of Practice Location						
Outcome Expectations (Professional)	8.71	34.83	-	.34	.22	.63
Self-efficacy	4.01	16.04		-	.47	.24
Goals	2.14	8.56			-	.15
Outcome Expectations (Lifestyle)	1.16	4.62				-
Total Variance Explained		64.05				

Table 4
Summary Data for Scales with Sample 1 (N = 293) and Sample 2 (N = 499)

	Sample 1 (*N* = 293)				Sample 2 (*N* = 499)			
	M	*SD*	Range	Alpha	*M*	*SD*	Range	Alpha
Choice of Specialty								
Self-efficacy	22.53	5.17	7-35	.89	22.48	4.93	10-35	.86
Outcome Expectations (Professional)	31.70	5.36	8-40	.92	31.56	4.01	19-40	.84
Outcome Expectations (Lifestyle)	13.11	3.05	4-20	.87	12.57	3.15	4-20	.89
Goals	18.99	4.82	6-30	.83	17.65	5.53	6-30	.88
Choice of Practice Location								
Outcome Expectations (Professional)	30.37	4.76	13-40	.90	29.29	4.99	15-40	.89
Self-efficacy	22.65	5.34	8-35	.91	21.49	4.95	7-35	.90
Goals	19.45	4.84	6-30	.84	16.64	5.12	6-30	.88
Outcome Expectations (Lifestyle)	13.77	2.98	4-20	.89	13.55	3.00	6-20	.89

Table 5

Goodness of Fit Indices for Choice of Specialty and Practice Location scales of Self-efficacy, Outcome Expectations and Goals (N = 499).

Model	*df*	X^2	X^2/df	*GFI*	*TLI*	*CFI*	*RMSEA*
Choice of Specialty (25 items)	261	638.49***	2.45	.91	.94	.95	.05
Choice of Practice Location (25 items)	262	654.52***	2.50	.91	.94	.95	.06

*** = $p < .001$