The Physician Values in Practice Scale - Short Form: Development and Initial Validation

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Abstract

We conducted two studies to develop and test a short form of the 60-item Physician Values in Practice Scale (PVIPS, Hartung, Taber, & Richard, 2005). The PVIPS, which draws on the theory of work adjustment (Dawis & Lofquist, 1984) for its theoretical base, measures personal values specific to medical occupations. In Study 1, 217 first- and final-year medical students completed a web-based survey. Item analysis and exploratory factor analysis reduced the original PVIPS 60 items to 30. Validity was tested by examining the inter-factor correlations among and between the 60-item and 30-item subscales, and by examining bivariate correlations with gender and personality. In Study 2, a second sample of 316 first-year medical students responded to the 30-item shortened form. Confirmatory factor analysis confirmed six subscales measuring the same core values of prestige, service, autonomy, lifestyle, management, and scholarly pursuits that were assessed by the original 60-item version.

Key Words: Personal Values, Physician Values in Practice, Medical Career Choice

Medical specialty decision making is a complex process, which is influenced by a variety of intrinsic and extrinsic factors (Harris, Gavel, & Young, 2005), such as the decision-maker's interests (Carline & Greet, 1991; Scott et al., 2008), personality (Borges & Savickas, 2002), economic and family considerations (Lambert, Goldacre, Parkhouse, & Edwards, 1995; Rosenthal & Andrilla, 2005), work experiences, mentors (Harris et al., 2005) and values (Hojat et al., 1998). Choosing a medical specialty consistent with one's values is more likely to lead to a satisfying and productive medical career than choosing a specialty that goes against underlying beliefs (Eliason & Schubot, 1995). Further, considering values in combination with interests and personality has been found to promote greater satisfaction with medical specialty choice (Leong, Hardin, & Gaylor, 2005).

Values represent stable, long-lasting beliefs that are developed and reinforced through socialization with others, personal experiences, and engaging with social institutions (Schwartz, Verkasalo, Antonovsky, & Sagiv, 1997). Values serve as guiding principles in people's lives, and are important considerations when making a career-related decision (Rokeach, 1973; Schwartz, 1992; Super, Sverko, & Super, 1995). Substantial theory and research has produced conceptual models and led to the development of measures of values within the broad domain of work (Dawis & Lofquist, 1984; Super, 1970; Zytowski, 2004), and Hartung, Taber et al. (2005) have responded to calls for more contextual and occupation-specific values assessments by developing a values measure that is specific to the occupation of medical physician. The present study aimed to build on the work of Hartung, Taber et al. by developing and evaluating a shortened form of their scale that can be used when a brief measure is required.

Despite a large body of literature concerned with medical students' and medical graduates' specialty choices (Borges & Savickas, 2002; Hartung & Leong, 2005), and recommendations for researchers to investigate the role of values in specialty choice (e.g., Meurer, Bland, & Maldonado, 1996), few studies have examined the influence of values on medical specialty choice (e.g., Hojat et al., 1998; Schubot, Cayley, & Eliason, 1996). Recent studies that have identified preferences for specialties

having a “controllable lifestyle” (Dorsey, Jarjoura, & Rutecki, 2005; Schwartz et al., 1989) or that are “lifestyle friendly” (Harris et al., 2005; Newton, Grayson, & Thompson, 2005) indicate that lifestyle values and expectations are becoming increasingly influential in medical career decisions; a finding that reflects the growing number of women entering medicine and the reduction in average weekly hours worked (Australian Institute of Health and Welfare, 2005; McKinstry, 2008). In addition, other values such as social responsibility and service (Hojat et al., 1998; Martini, Veloski, Barzansky, Xu, & Fields, 1994; Schwartz, Haley, & Williams, 1990), benevolence (Eliason & Schubot, 1995; McFarland & Rhoades, 1998; Schubot et al., 1996), scholarly pursuits and autonomy (Rogers & Searle, 2008), income and prestige (Gorenflo, Ruffin, & Sheets, 1994; Rogers & Searle, 2008; Scott et al., 2008) also have a significant influence on medical specialty choice. There are currently medical workforce shortages worldwide, (e.g., shortages in rural areas and in some specialties such as surgery and general practice; Productivity Commission, 2005; Scott et al., 2008; Young & Leese, 1999), and the way medicine is being practised is changing (Australian Medical Workforce Advisory Committee, 2003), thus, identifying predictors of how, where and what our future doctors wish to practise has become increasingly important.

The Physician Values in Practice Scale (PVIPS) was constructed to measure values specific to the practice of medicine (Hartung, Taber et al., 2005). The development of the PVIPS was guided by the theory of work adjustment (Dawis, 1991; Weiss, Dawis, & Lofquist, 1981), which proposes that an understanding and matching of one’s values to one’s work environment will increase fit between the individual and an organisation, and lead to job satisfaction. This theory focuses on six core values, which are measured by the Minnesota Importance Questionnaire (MIQ; Rounds, Henley, Dawis, Lofquist, & Weiss, 1981). These core values formed the basis for the values measured by the PVIPS, and include, along with their sub-domains, 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).

An initial pool of 169 items was generated for the PVIPS and reviewed by a panel of experts. Item analysis and exploratory factor analysis conducted over two studies resulted in a 38-item version of the scale. Based on outcomes of the initial study of the PVIPS (Hartung, Taber et al., 2005), subsequent development involved writing 22 additional items. This was aimed at increasing the reliability of the subscales, especially for the 4-item Lifestyle and 3-item Scholarly Pursuits subscales. An initial analysis of the 60-item version supported its basic psychometric properties (Hartung, Richard, & Early, 2005). Both the 38-item and 60-item versions include six subscales measuring the core values of prestige (a desire to be recognized by others as a top physician), service (a desire to care for others regardless of financial gains or other rewards), autonomy (a desire to have freedom, independence and control over work style, schedule and lives), lifestyle (a desire for a predictable and stable work schedule), management (a desire to supervise and have responsibility for others), and scholarly pursuits (a desire to engage in research and teaching activities (Hartung, 2004). Duffy, Borges, and Hartung (2009) recently reported sound internal reliability estimates for the six core values for the 38-item version ranging from .79 to .88.

An assessment of the 38-item and 60-item versions of the PVIPS, as presented in the scale's manual, indicated that there were three items in the 60-item version which loaded on an incorrect factor in the 38-item version. For example, the item "enjoy a prosperous lifestyle" loaded on prestige in the 60-item version, but loaded on autonomy in the 38-item version. These cross-over items raise concerns about the content validity of the 38-item version of the scale. Thus, the present study aimed to reconcile these inconsistencies across the two versions by developing a shortened form of the 60-item measure that would maintain coverage of the domain, retain adequate reliability and validity, retain item-consistency across the two versions, be useful for inclusion in surveys when brevity is most desirable and ultimately replace the existing 38-item measure with a short form with improved content validity.

To demonstrate divergent construct validity, we tested the shortened version of the PVIPS against the 5-factor model of personality, the most widely accepted model of personality structure (Goldberg, 1993). Personality and values are related psychological constructs; however, they are conceptually and empirically independent from one another (Olver & Mooradian, 2003; Roccas, Sagiv, Schwartz, & Knafo, 2002). Although both are relatively stable across time and context, they differ in a number of ways. Values are enduring goals, whereas traits are enduring dispositions. Values can be defined as what people consider important, while traits reflect how people behave (Roccas et al., 2002). To reflect divergent validity, we expected minimal relationship between the shortened version of the PVIPS and measures of personality.

We also tested the shortened version of the PVIPS against gender. While specific research into gender correlates of medical values is limited, women are more likely to choose general practice due to lifestyle considerations such as family circumstances, regular working hours and part time positions, and are more likely to place a higher value on service than men (American Medical Association, 1994; McFarland & Rhoades, 1998; Rogers, Searle, & Creed, 2009). Thus, we expected gender differences to be present in lifestyle and community service values.

The purpose of this research was to construct a shortened version of the 60-item PVIPS and test its reliability and validity. This occurred over two studies. In Study 1, we conducted item analysis and exploratory factor analysis to identify items to be deleted. In Study 2, we used confirmatory factor analysis to test the factor structure identified in the exploratory factor analysis. As recommended by Smith, McCarthy, and Anderson (1995), we used data from a second, independent sample to run the confirmatory analyses. Validity of the shortened version of the PVIPS was tested by examining the inter-factor correlations among and between the subscales of the shortened version and the 60-item version, by testing the correlations between the shortened version and personality, and by testing the correlations between the shortened version and gender. We expected to find a strong positive relationship between the 30-item short form and the 60-item PVIPS, weak or negligible correlations

between personality and values, and positive correlations between females and lifestyle values and females and service values.

Study 1 – Item and Exploratory Factor Analyses

Method

Participants

Participants were 217 medical students (186 first-year and 31 final-year) from six Australian medical schools located across five Australian states and territories (Queensland, New South Wales, Australian Capital Territory, Victoria and South Australia) and representing both undergraduate and graduate entry programs. Students had a mean age of 22.7 years ($SD = 4.8$) and comprised 142 women (65%) and 75 men. The majority of students, 65%, were Caucasian; 30% reported an Asian background, and 5% indicated an African or Middle-eastern origin.

Materials

Physician Values in Practice Scale: The 60-item PVIPS consists of six subscales that measure values specific to the occupation of physician and the context of medical practice: prestige (11 items), service (9), autonomy (7), lifestyle (10), management (11) and scholarly pursuits (11) (Hartung, 2004). Participants respond using a 5-point response format with endpoints of 1 (*strongly disagree*) to 5 (*strongly agree*). Higher scores indicate higher levels of importance given to a particular value. Items are preceded by the statement, “In my medical practice it will be important that I...”. Sample items for each value are “...work in a specialty area that is highly esteemed in medicine” (prestige), “...volunteer in community groups” (service), “...work independently” (autonomy), “...work a predictable number of hours” (lifestyle), “...supervise a health care team” (management), and “...pursue scholarly research and writing” (scholarly pursuits). Hartung, Taber, and Richard (2005) demonstrated construct validity, by showing, for example, that medical students who were decided on pursuing a non-primary care specialty valued prestige and scholarly pursuits higher than students who wanted to pursue a primary care specialty. Hartung (2004) reported internal reliability coefficients for the 60-item version of .92

(scholarly pursuits), .88 (lifestyle), .88 (prestige), .88 (management), .85 (service), and .71 (autonomy), and mean inter-subscale correlations ranging from .31 to .56. The internal reliability coefficients for the 60-item version in the current study ranged from .72 to .92.

Personality: The NEO Five-Factor Inventory (Costa & McCrae, 1992) assessed the Big-Five personality characteristics of neuroticism, extraversion, openness to experience, agreeableness and conscientiousness. This 60-item inventory is the short form of the NEO Personality Inventory Revised, also developed by Costa and McCrae. The inventory includes five 12-item subscales, and employs a 5-point response format that ranges from 1 (*strongly disagree*) to 5 (*strongly agree*). It has a factor structure comparable with the full scale test (Saucier, 1998), satisfactory internal reliability coefficients for all subscales (ranging between .75 and .89), and considerable evidence supporting construct and criterion validity (Costa & McCrae, 1992). Internal reliability coefficients for the present sample ranged from .75 to .82.

Procedure

The PVIPS was administered as part of a longer web-based survey designed to assess the career intentions of Australian medical students. Participants were recruited via email and colour flyers that were distributed by the medical schools, and which explained the background and purpose of the study, listed the names of participating universities and provided instructions on how to access the on-line survey. Participants were not compensated for their involvement in the study. Ethical approval for the two studies was granted by the authors' human ethics committee and by the participating medical schools.

Results

Item Analysis

We conducted item analysis, first, by examining the distribution of each item, second, by examining inter-item and item-total correlations within each of the six subscales, and, third, by conducting t-tests to identify any items that clearly reflected gender bias by being responded to

differently by male and female participants (Kline, 2000). Items were identified for deletion if their distribution was clearly non-normal indicating floor or ceiling effects, if they had high correlations ($r \geq .80$) with other items indicating item redundancy, if they had weak correlations ($r \leq .3$) with their subscale totals indicating poor loading, and if clear gender bias was identified in the responses. These procedures resulted in 23 items being identified for deletion. Many items met multiple criteria for deletion, although specifically, 12 items had floor or ceiling effects, five had corrected item-totals $\leq .3$, and nine revealed significant gender differences. Two of the 23 deleted items came from the service subscale, three each were from prestige and autonomy, four were from management, five from lifestyle and six came from scholarly pursuits. After deleting these items, we examined each subscale and confirmed that adequate domain coverage remained for each.

Exploratory Factor Analysis

We included the remaining 37 items in a principal axis factor analysis, and used a direct oblimin rotation as the factors were expected to be correlated. For this analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy was .84 and Barlett's Test of Sphericity was significant at $F = 3191.57$, $p < .001$, indicating the data were suitable for factor analysis. An item was retained if it loaded ($> .4$) on the factor for which it was originally written, and had no substantial cross-loadings. Items that loaded on an incorrect factor, had multiple loadings, or did not load, were identified for deletion (Kline, 2000). Five items had multiple loadings and were identified for deletion. This left four 5-item scales and two 6-item scales. To achieve consistency across all of the reduced scales, we removed the lowest loading item from the two 6-item scales, which then left six scales each with five items. After eliminating these seven items (2 from service, 2 from management, 3 from prestige), a six-factor solution, with all factor loadings $\geq .4$ and no cross-loadings $\geq .3$, was identified. The six factors accounted for 62% of the variance. See Table 1 for factor loadings, eigenvalues and percentage of variance explained. See Table 2 for summary data and internal reliability coefficients for both the 60-item and 30-item scales. Internal reliability coefficients for the 30-item subscales ranged from .71

(autonomy) to .90 (scholarly pursuits), which were comparable to the 60-item subscales, which ranged from .72 (autonomy) to .92 (scholarly pursuits).

Validity

To test the validity of the 30-item PVIPS, we assessed the inter-factor correlations of the 30-item version, assessed the correlations between the corresponding scales for the 30-item and 60-item versions, tested the correlations between the factors of the 30-item version and personality, and tested the correlations between the factors of the 30-item version and gender.

The inter-correlations among the six factors of the 30-item version ranged from .03 to .53. This is consistent with the results from the factor analysis that suggest that the scales are independent; although the correlations also indicate that there is some overlap, at least among some of the scales. See Table 3. These associations are consistent with the those found in the current study for the 60-item version, and consistent with those found in the PVIPS manual for the 60-item scale (Hartung, 2004). Further, many of the factors for the 30-item scale were inter-related in ways that could be expected. For example, prestige was moderately correlated with management (.53), but weakly correlated with scholarly pursuits (.28), lifestyle (.20), and service (.14). Service also was moderately correlated with management (.32), but weakly correlated with autonomy (.21), scholarly pursuits (.18) and lifestyle (.16), and management was weakly correlated with lifestyle (.16). These associations were consistent with the associations found for the 60-item version.

Correlations between the respective scales of the 30-item and 60-item versions ranged from .88 to .95, with the average among the correlations being .93, suggesting there would be high consistency in measurement between the two versions. Absolute correlations between the values scales and the personality scales of the NEO-FFI were all weak to negligible (zero to .18 for the 30-item version; .01 to .15 for the 60-item version), indicating little overlap between the values and personality constructs and supporting construct validity of the 30-item version. Associations between the values scales and gender were consistent across the two versions of the PVIPS, with absolute correlations ranging from

.03 to .12 for the 30-item version, and from .01 to .16 for the 60-item version. Correlations were consistent with expectations and consistent with previous research (e.g., women valuing service and lifestyle more than men).

Study 2 – Confirmatory Factor Analysis of 30-item PVIP Scale

Method

To confirm the factor structure reported in Study 1, we conducted a second study involving a separate sample. In Study 2, we tested the factor structure of the 30-item PVIPS short form using confirmatory factor analysis.

Participants

A second sample of 316 first-year medical students from eleven Australian medical schools volunteered to participate in the study. There were 208 women (65.4%) and 110 men, whose average age was 23.3 years ($SD = 5.6$). Of these, 71% indicated they were Caucasian, 28% were Asian, and 1% indicated an African origin.

Materials

Physician Values in Practice Scale – Short Form: The 30-item version of the PVIPS described in Study 1, which contains 5-items in each of the six subscales, was used to measure the values related to medical practice. The internal reliability coefficients with this sample ranged from .66 to .90. See Table 4.

Procedure

Similar to Study 1, the PVIPS 30-item version was administered by web-survey as part of a longer assessment examining the preferred specialties and destinations of medical students. Participants were invited via a flyer and email distributed through the medical schools to take part in the study and did not receive compensation for completing the survey.

Results

Confirmatory Factor Analysis

We used confirmatory factor analysis procedures (AMOS, Arbuckle & Wothke, 1995) to test the factor structure of the 30-item PVIPS developed in Study 1. Confirmatory factor analysis assesses how adequately obtained data fit a proposed factor structure. We tested a 6-factor model, in which each cluster of five items identified in Study 1 was allowed to load freely on its respective latent factor. Correlations among the six factors were freely estimated. Model fit was assessed using the χ^2 statistic, the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The χ^2 and CFI indices compare the specified model to a model with complete independence, with a non-significant χ^2 and CFI values $> .90$ indicating a satisfactory fit (Byrne, 2001). The RMSEA estimates the error due to the approximate fit of the model, with RMSEA values below .05 to .08 indicating a satisfactory fit (Byrne). As the χ^2 statistic is sensitive to sample size, we also considered the χ^2/df value, with values two to three times greater than the degrees of freedom indicating an acceptable fit (Smith, McCarthy, & Anderson, 2000). The resultant fit statistics indicated a satisfactory fit to the data for the 6-factor model. While the χ^2 value was significant, $\chi^2(369) = 695.15, p < .01$, the χ^2/df value was 1.88, the CFI was .92 and the RMSEA was .05.

Discussion

In two studies, we reported on the development of a 30-item short form of the Physician Values in Practice Scale. The 30-item version was highly correlated with the 60-item version, and generated similar psychometric properties to the longer version, while also maintaining domain coverage for the six core values of prestige, service, scholarly pursuits, lifestyle, management, and autonomy. Internal reliability estimates for the 30-item version subscales were satisfactory to good, and ranged from .71 to .90 in Study 1, and from .66 to .90 in Study 2. These were comparable to the 60-item version, which generated internal reliability coefficients that ranged from .72 to .92 in Study 1. Construct validity for the 30-item version was demonstrated using exploratory and confirmatory factor analysis. The

shortened scale also demonstrated similar inter-factor correlations to the 60-item version, suggesting that the shortened version would function in a manner similar to the longer version. In addition to this, divergent validity with personality was demonstrated through the weak and negligible correlations the 30-item subscales had with the NEO-FFI scales. Last, while the associations between the 30-item version and gender were weak, correlations were in the expected direction.

The 30-item short form of the PVIPS has several advantages. As researchers often face limitations of time when collecting survey data, the 30-item PVIPS Short Form is brief, and in terms of administrative practicality, will be helpful in a research situation when time constraints due to the length of the survey do not permit use of the full version, and when researchers need to include measures of other constructs in their survey. Also, unlike the 38-item version of the PVIPS (Hartung, Taber et al., 2005), the items in each subscale of the 30-item version are all drawn from their respective subscale in the 60-item version.

Personal values play an important role in career planning and career decision making and have been shown to have a significant influence on medical specialty choice (e.g., Hojat et al., 1998). The brief form of the PVIPS will also be useful in career guidance and counselling situations. Medicine offers more specialty and sub-specialty areas than any other profession (Iserson, 2003) and students often require assistance in understanding their individual characteristics as they relate to a medical specialty. Consequently, students and graduates who seek career guidance can utilise the 30-item PVIPS to assess individual values and how they align with the work aspects and different characteristics of each medical specialty. Thus, the 30-item PVIPS can be considered a promising shortened version and we encourage both researchers and counsellors to use the 30-item version whenever practicable due to its improved content validity.

Limitations of these studies provide some opportunities for future research. First, the development of the brief form of the PVIPS was based on Australian students who were predominantly Caucasian. Future studies should test the usefulness of the scale on other, more diverse, populations.

Second, the reliability coefficient for the autonomy scale (.66) in Study 2 was below the generally agreed upon lower limit of .70. Future studies can assess the adequacy of the autonomy subscale and determine whether additional items need to be included to bolster its reliability. Third, we were able to assess several aspects of validity, but future studies need to add to this, and in particular, studies need to assess criterion validity for the scale. Last, we used fit statistic cut-offs that were recommended by Byrne (2001), but acknowledge that other authors recommend higher cut-offs (Hu & Bentler, 1999).

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Table 1

Factor Loadings for Management, Lifestyle, Scholarly Pursuits, Service, Autonomy and Prestige Items (N = 217).

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
1. Management						
Evaluate the work performance of others.	.84	.10	.06	-.06	-.07	-.09
Supervise the work of other doctors.	.77	-.15	-.05	.02	.05	.14
Direct the work of others.	.71	.01	.15	-.11	.02	.15
Oversee a large staff of health-care providers.	.53	-.02	.06	.00	.09	.26
Supervise a health care team.	.47	.08	-.04	.28	.04	-.03
2. Lifestyle						
Work a predictable number of hours.	.01	.88	-.02	.01	-.24	.14
Follow a work schedule that is predictable and stable.	-.02	.81	-.06	.02	.00	.09
Minimise the number of demands made on my time.	-.00	.63	.04	-.11	.20	.03
Regulate the amount of time I work.	-.02	.62	-.02	.09	.19	-.17
Keep a flexible work schedule.	.07	.48	.03	.03	.18	-.01
3. Scholarly Pursuits						
Pursue scholarly research and writing.	-.03	.01	.94	-.04	-.08	.01
Conduct independent research.	.09	.01	.81	-.03	.11	-.12
Engage in research activities.	-.00	-.02	.78	.01	-.01	-.06
Write grants for research projects.	-.04	-.05	.74	.09	.12	.07
Serve on editorial boards of scientific journals.	.04	.01	.72	.01	.00	.19
4. Service						
Volunteer in community groups.	-.13	-.06	.06	.76	.04	.15
Serve the local community.	-.08	.06	-.06	.75	.03	-.10
Help shape public policy about health issues.	.17	.00	.12	.53	.02	-.13
Consult with community agencies.	.02	.04	-.02	.52	-.09	-.02
Share my talents and expertise with public health agencies.	.23	-.02	.05	.48	.06	.11
5. Autonomy						
Work at my own pace and in my own way.	-.05	.16	.03	-.01	.67	-.15
Do my work the way I want to do it.	-.01	.03	-.04	-.09	.66	.10
Determine my own approach to medical care.	.06	.05	-.04	.15	.44	.23
Perform my work creatively.	.11	-.03	.12	.21	.43	.12
Work independently.	.05	.03	.16	-.05	.42	.02
6. Prestige						
Work in a specialty area that is highly esteemed in medicine.	.03	-.02	-.08	-.12	.18	.79
Be recognised as the best doctor in the group.	.03	.02	-.05	.00	-.02	.71
Concentrate on a highly specialised area of treatment/care.	.06	.03	.12	-.06	-.01	.64
Obtain recognition for excellence from the local medical society.	.06	.10	.13	.10	-.04	.62
Accomplish more than my peers.	.11	.07	.09	.13	.09	.59
Eigenvalues	7.29	3.45	2.63	2.43	1.49	1.40
% variance explained	24.31	11.49	8.75	8.10	4.97	4.66

Note: Loadings > .40 are in bold.

Table 2

Summary Data and Cronbach Alphas for 60-item and 30-item Scales with Sample 1 (N = 217)

Variables	60-item Values Scale				30-item Values Scale			
	<i>M</i>	<i>SD</i>	Range	Alpha	<i>M</i>	<i>SD</i>	Range	Alpha
1. Management	31.30	7.03	12-51	.88	14.75	3.52	5-25	.85
2. Lifestyle	39.24	5.34	25-50	.86	18.21	3.40	8-25	.83
3. Scholarly pursuits	31.95	8.56	13-54	.92	13.46	4.53	5-25	.90
4. Service	33.67	4.89	16-44	.82	19.29	2.84	9-25	.75
5. Autonomy	31.32	3.70	21-40	.72	19.00	2.78	12-25	.71
6. Prestige	33.90	8.65	11-55	.91	15.36	4.21	5-25	.85

Table 3

Bivariate Correlations among the 60-item and 30-item Scales, Personality, Gender and Age with Sample 1 (N = 217)

Variables	2	3	4	5	6	7	8	9	10	11	12	N	E	O	A	C	Gender	Age
<i>PVIPS 30-items</i>																		
1. Management	.16*	.41**	.32**	.35**	.53**	.88**	.24**	.42**	.30**	.34**	.61**	-.00	-.04	-.04	.02	-.00	-.08	-.02
2. Lifestyle	-	.03	.16*	.40**	.20**	.16*	.94**	.01	.21*	.36**	.19**	.04	-.06	-.01	.05	-.06	.10	-.03
3. Scholarly pursuits		-	.18	.26**	.28**	.45**	.07	.95**	.22**	.32**	.37**	.01	-.11	-.13	-.08	.11	-.05	.10
4. Service			-	.21**	.14*	.34**	.18**	.18**	.94**	.24**	.21**	.03	-.00	-.01	.04	-.03	.12	-.02
5. Autonomy				-	.36**	.38**	.40**	.20**	.26**	.93**	.39**	-.11	.01	-.00	.11	.06	.03	-.02
6. Prestige					-	.52**	.28**	.19**	.08	.35**	.93**	-.04	-.06	-.18**	-.03	.04	-.08	-.15*
<i>PVIPS 60-items</i>																		
7. Management						-	.22**	.49**	.34**	.33**	.62**	-.04	.07	-.12	-.01	-.04	-.10	-.07
8. Lifestyle							-	.04	.24**	.37**	.28**	.06	-.03	.02	.05	-.05	.15*	-.05
9. Scholarly pursuits								-	.22**	.26**	.29**	.02	-.15*	-.14*	-.07	-.09	-.10	.04
10. Service									-	.29**	.13	.02	-.03	-.01	.06	-.05	.16*	-.08
11. Autonomy										-	.40**	-.11	.02	.02	.13	.12	-.01	.03
12. Prestige											-	-.02	-.06	-.13	-.01	.04	-.09	-.14*

Note: N = Neuroticism, E = Extraversion, O = Openness to experience, A = Agreeableness, C = Conscientiousness; Gender coded 1 = female, 0 = male; * $p < .05$, ** $p < .01$

Table 4

Summary Data, Cronbach Alphas and Inter-factor Correlations for 30-item Scale with Sample 2 (N = 318)

Variables	<i>M</i>	<i>SD</i>	Range	Alpha	Correlations					
					1	2	3	4	5	6
1. Management	14.02	3.62	5-25	.89	-	.10	.38**	.17**	.16**	.53*
2. Lifestyle	16.52	3.03	8-25	.76		-	.09	.02	.42**	.13**
3. Scholarly pursuits	12.93	4.14	5-25	.90			-	.24**	.17**	.40**
4. Service	18.38	3.02	9-25	.79				-	.24**	.02
5. Autonomy	17.22	2.62	8-25	.66					-	.33**
6. Prestige	14.21	3.60	5-25	.79						-

* $p < .05$, ** $p < .01$