**The Career Distress Scale: Using Rasch Measurement Theory
to Evaluate a Brief Measure of Career Distress**

Peter A. Creed¹, Michelle Hood¹, Anna Praskova¹, and Guido Makransky²

¹School of Applied Psychology and Menzies Health Institute Queensland

²Department of Psychology, University of Southern Denmark, Odense, Denmark

Paper can be cited as:

Creed, P. A., Hood, M., Praskova, A., & Makransky, G. (2016). The Career Distress Scale: Using Rasch measurement theory to evaluate a brief measure of career distress. *Journal of Career Assessment*.

Contact: Prof Peter Creed

School of Applied Psychology and Menzies Health Institute Queensland

Griffith University, Gold Coast, 4222

Australia

p.creed@griffith.edu.au

The Career Distress Scale: Using Rasch Measurement Theory
to Evaluate a Brief Measure of Career Distress

Abstract

Career distress is a common and painful outcome of many negative career experiences, such as career indecision, career compromise, and discovering career barriers. However, there are very few scales devised to assess career distress, and the two existing scales identified have psychometric weaknesses. The absence of a practical, validated scale to assess this construct restricts research related to career distress and limits practitioners who need to assess and treat it. Using a sample of 226 young adults (mean age 20.5 years), we employed item response theory to assess 12 existing career distress items for model fit, item bias, location dependency, dimensionality, reliability, response option suitability, and construct validity. Three of the 12 items examined were removed as they did not fit the Rasch model or were not invariant across groups. The remaining 9 items, which we combined into a scale labelled the Career Distress Scale, demonstrated excellent psychometric properties, meaning that both researchers and practitioners can use it with confidence. Continued validation is required, including testing its relationship to other nomological net variables, testing predictive validity, and assessing test-retest reliability.

Keywords: career distress, Rasch model, item response theory

Career distress is an important construct for understanding career development in young adults. It is a by-product of many career-related activities, including career indecision (Constantine & Flores, 2006; Lipshits-Braziler, Gati, & Tatar, 2015; Walker & Peterson, 2012), career compromise (Creed & Hughes, 2013), career problems (e.g., job loss; Saunders, Peterson, Sampson, & Reardon, 2000), career transitions (Creed & Blume, 2013), poor career preparation (Skorikov, 2007b), under-developed vocational identity (Skorikov, 2007a), perceptions of disruptive career barriers (Larson, Toulouse, Ngumba, Fitzpatrick, & Heppner, 1994), and career incongruence (e.g., between study direction and personality/interests; cf. Holland, 1997; Schwatken, 2014). From a theoretical perspective, career distress results when there is a failure to negotiate normative, career developmental tasks (Erikson, 1968; Havighurst, 1972; Kerpelman, Pittman, & Lamke, 1997), and distress, in turn, suppresses other career development processes, such as exploration and career decision-making (Skorikov, 2007a). Despite the importance of the construct, surprisingly few studies have examined it directly, and the nomological net supporting it is not fully understood. An important impediment to this research is the lack of a psychometrically-sound research tool suitable to assess career distress in young people who are in the process of deciding on, and pursuing, a career direction. The current study addressed this gap by evaluating the efficacy of a brief career distress scale derived from the 21-item Subjective Career Distress and Obstacles Subscale (Larson et al., 1994).

Career Distress

Career distress is distress that is specific to the career domain. It can be differentiated from distress relating to other specific domains (e.g., work, family) and to general or global distress, even though there is overlap among these constructs (Magee & St Arnaud, 2012). It includes a range of negative feelings, such as helplessness, depression, stress, lack of purpose, anxiety, blame, and despair, and can be very debilitating (Larson et al., 1994).

Career distress is a common cause of stress in educational settings, with up to 25% of students who are attending campus counselling services doing so for vocationally-related matters (Benton, Robertson, Tseng, Newton, & Benton, 2003).

Measurement of Career Distress

We found two scales that can be considered to be measures of career distress: the 20-item Korean Stress Inventory (Choi et al., 2011) and the 21-item Subjective Career Distress and Obstacles Subscale (Larson et al., 1994), although other occupational-specific (e.g., General Work Distress Scale; Nielson & MacDermid, 2005) and general distress scales (e.g., General Health Questionnaire; Goldberg & Williams, 1988) are available. Additionally, some studies that have examined the relationship between career-related variables and career distress have operationalised career distress using general mental ill-health scales. For example, Saunders et al. (2000) used the Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1979), Peng and Johanson (2006) used the State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983), and Constantine and Flores (2006) used the Brief Symptom Inventory (Derogatis, 2000), all of which variously tap the presence of depression, anxiety, and somatization. Some studies have also used amended mental ill-health scales, such as measuring career choice anxiety using a modified version of the State-Trait Anxiety Inventory (Weinstein, Healy, & Ender, 2002). Using general mental health and general distress scales to assess career-related distress, however, is likely to underestimate the concerns related to career development issues, as context-free measures of ill-health have weaker correlations with specific stressors (e.g., occupational stressors) than context-specific measures (Frone, 2008; for a general discussion see Blair & Hunt, 1986).

Career Distress Inventories

Career distress assessed by the 20-item Korean Stress Inventory (Choi et al., 2011) is operationalised as “a dynamic interaction between the individual and environment that is

appraised by the individual as taxing or exceeding his or her resources and jeopardizing his or her wellness” (p. 560; cf. Lazarus & Folkman, 1984). A sample item is “I feel anxious because I have not decided for sure what kind of career I want”. This multidimensional scale was developed for use with Korean college students. However, although it was originally conceptualized to have five factors, only four were identified using exploratory factor analysis (career ambiguity, lacking information, employment pressure, and external conflict). Additionally, these four factors could not be represented as a second-order factor of career distress, which potentially means that not all subscales are dimensions of career distress.

The only scale developed for use with English speaking young adults is the 21-item Subjective Career Distress and Obstacles Subscale, which was also based on the coping perspective (i.e., Lazarus & Folkman, 1984). The Subjective Career Distress and Obstacles Subscale is one of four subscales that makes up the 35-item Coping with Career Indecision Scale (Larson et al., 1994; the other subscales are active problem solving, self-efficacy, and career myths). It includes the 13 items written originally to assess distress related to difficulty with career decision making (e.g., “I feel stress or pressure to select a satisfying career”) and eight items to assess perceived obstacles to career progress (e.g., “Finances limit what career choices I make”). The content of the distress items covers a broad range of negative affect regarding career progress, including feelings of helplessness, being overwhelmed, anxiety, pressure, frustration, blame, wishful thinking, and worrying. The obstacle items cover content related to a diverse range of barriers that might impede career progress, including lack of knowledge, career indecision, competition from others, and financial pressure (see all items in Appendix). Content validity for the items was supported by them being developed by experts in the field (i.e., Larson et al., 1988), the developers’ reference to the career distress literature (e.g., Salamone, 1982), consulting with career planning specialists (Larsen et al., 1988), and piloting the items with young adults.

The Subjective Career Distress and Obstacles Subscale has been used in its full 21-item form assessing distress and obstacles (Kim & Karan, 2004; Larson & Majors, 1998; Larson et al., 1994; Lee, 2005), but, as far as we could determine, no studies have confirmed the factor structure as unidimensional. Creed and colleagues used 8-, 13-, and 14-item shortened versions as measures of career distress (Creed & Blume, 2013; Creed & Hood, 2015; Creed, Wamelink, & Hu, 2015; Praskova, Creed, & Hood, 2015). Justification for these abbreviated measures included that they were the highest loading items found in the initial exploratory factor analysis by Larson et al. (1994), that they had the strongest support for content validity for career distress, and that the original developers of the items (Larson et al., 1988) only wrote 13 items to specifically measure career distress. The internal reliabilities of these shortened versions were good to excellent (range .89 to .94), confirmatory factor analyses demonstrated that they were unidimensional, and in support of construct validity, they were related in expected ways to a broad range of other career variables, such as career goal-performance discrepancy, career planning, career exploration, feedback from significant others on career progress (Creed et al., 2015), career identity, perceived employability (Praskova et al., 2015), and life satisfaction (Creed & Blume, 2013).

Current Study

There is scarcity of brief scales suitable to assess career-related distress in English-speaking young people. In this study, we assessed the suitability of a shortened version of the 21-item Subjective Career Distress and Obstacles Subscale as a brief measure of career-related distress for use with young adults. We selected 12 items from the Subjective Career Distress and Obstacles Subscale for inclusion in the study. These were the 12 highest loading items reported by Larson et al. (1994) in the original exploratory factor analysis, which met, or nearly met, Hair, Anderson, Tatam, and Black's (2010) criterion for practical significance (i.e., factor loadings $> \pm .50$; the actual range of the 12 items was .49 to .85). To assess the

suitability of these items, we first conducted a confirmatory factor analysis to ensure the 12 items formed a unidimensional scale. Next, we assessed the individual items against the expectations of the Rasch measurement model (Rasch, 1960). Finally, to augment construct validity, we assessed convergent construct validity by correlating the resulting, brief career-related distress scale with scales for positive and negative affect (from the Positive and Negative Affect Schedule; Watson, Clark, & Tellegan., 1988). Identifying a psychometrically sound, brief measure of career distress will allow practitioners to screen young people for career-related concerns, and it will make it possible for researchers to confidently assess the construct, which should stimulate research into this important construct (Skorikov, 2007a).

Method

Participants

Participants were 226 young adults enrolled in a diverse range of undergraduate courses at a multi-campus university in SE Queensland, Australia. There were 151 young women (66.8%) and 75 young men, whose mean age was 20.50 years ($SD = 2.91$; range 18 to 29). Most were Caucasian nationals, consistent with the relatively homogenous composition of Australian tertiary institutions. On a self-report measure of academic achievement (Grade Point Average for last year of high school), 15% indicated *very high achievement*, 57% *high achievement*, and 25.7% *sound achievement* (5 did not answer this question). As a proxy for SES, we asked participants to indicate their current financial situation: 34% indicated that, compared to their university peers, they were *better off than others*, 46% were *about the same*, and 20% were *worse off than others* (1 did not answer this question). Finally, 65% reported they were *currently working as well as studying*.

Measures

Career distress. These were the 12 highest loading items from the 21-item Subjective Career Distress and Obstacles Subscale from the Coping with Career Indecision Scale

(Larson et al., 1994). All 12 items reflected “negative feelings directed at the career decision-making process including helplessness, depression, stress, wishful thinking, avoidance, lack of purpose, anxiety, blame, procrastination, indecisiveness, obsessions, and despair” (Larson et al., 1994, p. 95). A sample item was “I often feel down or depressed about selecting a major or a career” (see Appendix for all items¹). Responses were indicated on a 6-point Likert-like response format (1 = *strongly disagree* to 6 = *strongly agree*). Higher scores reflected greater career distress. Previous studies have reported high internal reliability for shortened versions (e.g., .93; Creed & Hughes, 2013) and found support for construct validity (e.g., positive correlations with career compromise and negative ones with career development strategies; Creed & Hughes, 2013). Cronbach alpha for our sample was .90.

Scale validation measures. We included two additional scales to test the construct validity of the Career Distress Scale. These were the positive affect and negative affect subscales from the Positive and Negative Affect Schedule (PANAS; Watson et al., 1988). These two 10-item subscales were devised to assess self-rated mood, with negative affect assessing general subjective distress, and positive affect assessing enthusiasm and pleasurable engagement. Finding a positive correlation between the Career Distress Scale and negative affect would support convergent construct validity, as the two constructs, by definition, share overlap. Finding a negative correlation with positive affect would also support convergent validity, as low positive affect is characterised by lack of enthusiasm, dissatisfaction, and discouragement, which has overlap with distress.

Respondents indicated the extent to which they were experiencing positive and negative moods by rating 20 descriptors (e.g., active, alert, enthusiastic, inspired, and interested for PA, and afraid, hostile, irritable, jittery, and upset for NA), using a 6-point Likert-like

---

¹ Note that some items were modified to suit the Australian sample; for example, the item “I often feel down or depressed about selecting a major or a career” was changed to “I often feel down or depressed about selecting a career”, as the term “major” is not widely used in this country.

response format (1 = *strongly agree* to 6 = *strongly disagree*), where higher scores reflected higher levels of each construct. The PANAS scales have been used previously with young adults, where internal reliability coefficients have been high ($\alpha > .80$), and, supporting validity, the scales have related to other constructs in expected directions (e.g., negative affect associated positively with negative work expectations, and positive affect associated positively with positive work expectations; Porfeli, Lee, & Weigold, 2012). Cronbach alphas for our sample were .86 (positive) and .85 (negative).

Procedure

The study was approved by the university's ethics committee. Students were recruited during their first year of study by advertising in classes and on departmental websites, and by approaching them on campus. Prior to administration, the paper-and-pencil questionnaire was piloted with students from the target population to ensure it was easy to read and meaningful. Those who agreed to be in the study could opt to enter a draw to win a \$50 store voucher.

Data analysis. The 12 items from the Subjective Career Distress and Obstacles Subscale are considered to be unifactorial (Larson et al., 1994) and have been applied in this way (e.g., Creed et al., 2015; Praskova, Creed, & Hood, 2015). However, as a first step, we used confirmatory factor analysis to confirm that our items formed a unidimensional scale, which is an assumption of RASCH analysis. Next, we assessed how well the 12 items met the expectations of the Rasch measurement model (Rasch, 1960). We used the RUMM 2030 program (Andrich, Sheridan, & Luo, 2010), which was devised to assess unidimensional Rasch measurement models. The program uses a partial credit model, which assumes that distances between response options are not uniform (Masters, 1982).

The Rasch model predicts expected responses to individual items when they are functioning optimally. The obtained responses are then tested against these predictions, and a variety of fit statistics are used to assess the predicted/obtained fit. Steps for conducting

Rasch analyses have been described in detail elsewhere (Pallant & Tennant, 2007; Tennant & Conaghan, 2007; Tennant, McKenna, & Hagell, 2004) and are not repeated here. These resources provide procedures for assessing model fit (item-person interaction, item-trait interaction, individual item fit, individual person fit), internal reliability (Person Separation Index), suitability of response options (response category thresholds), item bias (differential item functioning), inter-item correlations (location dependency), and dimensionality. As the aim of the study was to identify well-functioning items to be retained in a final scale that could reliably and validly assess career distress, where Rasch model criteria were not met, items were identified for removal. In this way, we sought to identify items that could constitute a Career Distress Scale that was internally reliable and had support for validity.

Results

Confirmatory Factor Analysis

Confirmatory factor analysis (AMOS V21) was used to validate the unidimensionality of the 12-items. In this analysis, all items were allowed to load freely on a single latent variable of career distress. Fit statistics used were chi-square (χ^2 ; with a sample size ≤ 250 and 12 observed variables, a significant p value is expected; Hair et al., 2010), the normed chi-square (χ^2/df ; < 3.0 suggests a good fit), the Comparative Fit Index (CFI to be $\geq .95$), and the Root Mean-Square Error of Approximation (RMSEA $< .08$). The fit for a 1-factor model met these criteria: $\chi^2(53) = 98.77$, $p < .001$, $\chi^2/df = 1.86$, CFI = .97, and RMSEA = .06, when one pair of residuals was allowed to correlate (Item 1, “I often feel down or depressed about selecting a career”, and Item 2, “I often feel a sense of helplessness in selecting and planning my career”). All factor loadings were significant at $p < .001$, and ranged from .34 to .80. The weakest factor loading (.34) was for Item 12 (“I spend time every day thinking about selecting a career, and what I might do about it”). This item also had the weakest factor loading in the original exploratory factor analysis reported by Larson et al. (1994). The range of factor loadings with

Item 12 excluded was .52 to .80. This result suggests that the 12 items can be represented as a single latent factor, and be assessed against the Rasch model.

Initial Rasch Analysis

Model fit. Three overall model fit statistics were assessed: two item-person interaction terms (items fit and persons fit, which are expressed as z-scores, and which should have a mean of around 0 and a *SD* of 1 for a good model fit) and an item-trait interaction term (expressed as a χ^2 statistic, with a non-significant χ^2 indicating the required invariance across the trait). Additional to these overall model fit statistics, individual item-fit and individual person-fit statistics (expressed as residuals, with those $< \pm 2.50$ indicating adequate fit, and a χ^2 statistic, with a significant χ^2 indicating misfit). Individual item-misfit also can be examined graphically. First, category thresholds can be inspected to evaluate if the response options are operating as expected (i.e., that each item utilises the full range of response options, with the response option corresponding to the level of trait being assessed having the highest likelihood of being endorsed). Second, the observed model can be plotted against the expected model curve (i.e., the item characteristic curve; ICC), with a good fit reflected in a close fit between the observed and expected curves. Person-fit statistics also are examined, as individuals who respond differently to expectations can contribute to item misfit and might lead to erroneous decision-making (e.g., related to retaining or discarding an item). Because the above procedures involve conducting multiple analyses, Bonferroni corrections are applied to adjust individual probability values.

Model fit statistics for the 12 items used in the analyses suggested a misfit between the obtained data and expected model. The fit residual mean for items was 0.43, and the *SD* was 2.85, which is well above the 1.5 *SD* expected for a good fit. The respective figures for person fit were -0.42 and 1.69, again with the *SD* above what is expected. Consistent with these results, the item-trait interaction χ^2 statistic was significant, $\chi^2(df = 36) = 124.31, p <$

.001. When the individual person-fit statistics were examined, no cases had residuals > 2.50 , so none was dropped at this point, and we examined individual item-fit.

Two items showed misfit to model expectations, with fit residual values $> \pm 2.5$ and $p < .004$ (Bonferroni adjusted level): Item 2 (“I often feel a sense of helplessness in selecting and planning my career”; fit residual = -2.6 , $p = .002$) and Item 12 (“I spend time every day thinking about selecting a career, and what I might do about it”; fit residual = 8.41 , $p < .001$). There were no disordered thresholds based on the threshold map, although, as expected, there was variability in threshold distances among items. When we examined the ICCs for Items 2 and 12, we found a misfit between the observed and expected curves, with the Item 2 model under-estimating the obtained values at the highest level, and the Item 12 model under-estimating at the lower levels and over-estimating at the higher levels (See Figures 1 and 2).

Item bias. Item bias reflects differential item functioning (DIF) by different groups within a population (e.g., men responding differently to women). This can be assessed by splitting the sample by the characteristic of interest and testing if items differ across different levels of the trait for each level of the characteristic. This can be examined statistically (using ANOVAs with Bonferroni correction) and graphically (by plotting overlapping ICC curves). Two types of DIF can be identified: uniform (where differences are uniform across all levels of the trait) and non-uniform (when a difference occurs at some but not all levels of a trait). We assessed DIF for gender (male and female), whether respondents were working as well as studying (working and not working), academic achievement (very high achievement, high achievement, and sound achievement), and SES (better off than others, about the same, and worse off than others). For gender, Item 3 (“I tend to procrastinate or avoid deciding on a career”) showed both uniform ($p < .001$) and non-uniform differential item functioning ($p < .001$; Bonferroni adjustment is $p = .001$). In general, males endorsed this item more strongly

than females (i.e., uniform DIF), and especially at the second category (i.e., non-uniform DIF). No DIF was identified for the other three grouping categories.

Person separation. The Person Separation Index (PSI) in the RASCH model is an indicator of how well a group of items is able to differentiate individuals with different levels of the trait. It can be interpreted in a similar fashion to Cronbach's alpha, where alpha levels $> .70$ are considered acceptable for research purposes (Nunnally & Bernstein, 1994). The PSI for the 12 items was .89 (with and without extreme scores); Cronbach's alpha was .90 (with and without extremes).

Local dependency. Local dependency among items occurs when the response to one item is influenced by the response to another item. Inter-item correlations among residuals $> .30$ are considered problematic. Only one pair of items met this criteria, with a high residual correlation of $r = .61$ between Item 1 ("I often feel down or depressed about selecting a career") and Item 2 ("I often feel a sense of helplessness in selecting and planning my career"). This was consistent with the CFA, where the model fit was improved when the residuals for these two items were allowed to covary.

Test Revision

During these analyses we identified three problematic items. Item 2 ("I often feel a sense of helplessness in selecting and planning my career") and Item 12 ("I spend time every day thinking about selecting a career, and what I might do about it") were misfitting items, and Item 3 ("I tend to procrastinate or avoid deciding on a career") showed both uniform and non-uniform DIF. Item 2 also had a high residual inter-item correlation with Item 1 ("I often feel down or depressed about selecting a career"). As these three items did not fit the RASCH model expectations, we removed them, and reassessed the fit of the remaining nine items.

Rasch Analysis for Revised Scale

Model fit statistics for the nine items were much improved: the fit residual mean for items fit was 0.29 with an *SD* of 1.04, and for persons fit these were -0.45 and 1.45, respectively, which were within acceptable bounds (i.e., $SD < 1.50$). After applying a Bonferroni correction ($.05/9 = .006$), the item-trait interaction χ^2 statistic was not significant, $\chi^2(df = 27) = 46.25, p = .01$. When the individual person-fit statistics were examined, no individual cases had residuals > 2.50 , and, similarly, there was no item misfit when we inspected the individual item-fit results. There were no disordered thresholds suggested by the threshold map (see Figure 4). No DIF (uniform or non-uniform) was found for any item for any of the categories examined. No inter-item correlations among residuals (local dependency) were problematic. Finally, the PSI was .86 (.87 with extreme scores) and Cronbach's alpha was .87 (.88 with extremes).

Unidimensionality of the 9-item scale. As all nine items met the expectations of the Rasch measurement model, we assessed if these items met the criteria for unidimensionality, which is an assumption underpinning scale measurement. This was assessed in RUMM2030 using a principal components analysis with varimax rotation of residuals. The procedure involves forming two subgroups of items based on the first principal component (one made up of the highest loading positive loading items and the other of the highest loading negative items), estimating separate person measures for each of the two extreme item sets, and then comparing the estimates on a person-by-person basis using paired-sample *t*-tests to determine the proportion of cases that differ significantly. Differences were identified for only 12 cases out of 226 (5.31%). As the 95% confidence intervals around the *t*-test results contained .05 [CIs: .03 to .08], we concluded that these results indicated support for unidimensionality.

Targeting of the 9-item scale. It is important to determine if measures are appropriate for the populations targeted (in our case, career distress for young adults); for example, to avoid using scales that result in floor or ceiling effects. Figure 5 shows the Person-Item Threshold

Distribution, where the distribution of participants is displayed in the top half, and the distribution of item thresholds is displayed in the bottom half. The average mean person location value was -1.03 ($SD = 1.22$), indicating that the scale was reasonably well-targeted, with respondents scoring, on average, just below the average of the scale mean (i.e., zero). Items were spread across the whole distribution of respondents, although the less difficult items (items to the left of the distribution) were under-represented and only respondents at the extremes (potentially outliers) were poorly represented by items. The Item Map (Figure 6), which shows the career distress construct distribution (on the left) and the items (on the right), provides details on items that are easier to endorse (items towards the bottom; e.g., Item 6) and items that are more difficult to endorse towards the top (e.g., Item 4). The value after the decimal point for Item 4 (.5) indicates that the transition from the fourth response point (*agree somewhat*) to the fifth (*agree*) is the most difficult to make; thus, the hardest item to endorse is Item 4 (“I think that I should make a career decision as soon as possible, but I can’t and this makes me anxious”) at the fifth threshold (*agree*).

Convergent construct validity. Last, we assessed convergent validity of the 9-item Career Distress Scale by correlating it with the PANAS positive affect and negative affect subscales using the correlation function in SPSS Version 22. The Career Distress Scale was associated positively with negative affect ($r = .45, p < .001$) and negatively with positive affect ($r = -.34, p < .001$); that is, in the directions expected, supporting construct validity of the 9-item scale. We also assessed the bivariate relationship with age (age DIF was not assessed in the Rasch analysis as there were no sensible groupings for this sample). This correlation was trivial ($r = -.10, p = .13$), suggesting different age groups did not respond differently to the scale.

Discussion

Career distress is a potential outcome of making poor progress on career developmental tasks (Erikson, 19668; Havighurst, 1972). It is related to a range of career impediments, including poor career preparation (Skorikov, 2007b), an inability to make career-related decisions (Lipshits-Braziler et al., 2015; Walker & Peterson, 2012), and having to compromise on a career direction (Creed & Hughes, 2013). Additionally, it likely hinders ongoing career development by inhibiting important career-related actions, such as exploration and planning (Skorikov, 2007a). That there are so few validated scales to assess distress in the career domain is a serious gap in the literature. This limits researchers from including the career distress construct when assessing career development models or examining correlates of career development processes; it also restricts practitioners who might want to identify individuals who are struggling with career-related tasks.

We assessed the viability of 12 career distress items derived from the 21-item Subjective Career Distress and Obstacles Subscale (Larson et al., 1994) to form a unidimensional scale that could be used to assess the career distress construct. These 12 items reflected the construct of career distress as conceived and operationalised by Larson et al. (1988) and Larson et al. (1994), and were consistent with the definition provided by Choi et al. (2011), who devised the Korean Stress Inventory (i.e., distress results from appraisals that a situation taxes or exceeds a person's resources; cf. Lazarus & Folkman, 1984). The original developers of the Subjective Career Distress and Obstacles Subscale provided evidence supporting content validity of the 12 items (i.e., they were developed using experts, consulting young adults, and piloting; Larson et al., 1988; Larson et al., 1994). There was initial evidence of structural validity (i.e., the 12 distress items were the highest loading items in the original exploratory factor analysis conducted by Larson et al., 1994; several variations of the 12 items were shown to be unidimensional measures based on CFA; e.g., Creed et al., 2015; Praskova et al., 2015), and there was evidence for construct validity (i.e., career distress was

related in the expected directions to career discrepancy, career planning and exploration, career feedback, career identity, perceived employability, and life satisfaction; Creed & Blume, 2013; Creed et al., 2015; Praskova et al., 2015). Additionally, these various iterations of the scale demonstrated very good internal reliability (i.e., Cronbach's α s > .90).

The CFA that we conducted confirmed unidimensionality for the 12 items and supported our decision to select this number from the original factor analysis (i.e., the weakest loading item in our CFA, Item 12, was also the weakest loading item in the original Larson et al., 1994, study). However, when we tested the 12 items against the expectations of the Rasch model, three items were found wanting and were discarded (Items 2 and 12 showed misfit between obtained and expected ICC curves, local dependence was also found between Items 1 and 2 indicating redundancy, and Item 3 demonstrated both uniform and non-uniform DIF bias). Thus, we accepted a 9-item measure of career distress, which we labelled the Career Distress Scale.

The Career Distress Scale can be considered unidimensional, well-targeted to young adults, and to have sound internal reliability. No individual items showed misfit from Rasch model expectations and there were no disordered thresholds, suggesting the response options were operating as intended. Additionally, no item bias (DIF) was identified for gender, whether respondents were working as well as studying, academic achievement, and SES, and the total scale scores were unrelated to age of respondents. Finally, convergent construct validity was supported by finding expected associations with measures of negative and positive affect.

Limitations and future research

While the 12 items used to formulate the Career Distress Scale were drawn from an existing, longer scale (i.e., the 21-item Subjective Career Distress and Obstacles Subscale), and evidence for content and construct validity was provided for the items, these items, and the final 9-item Career Distress Scale, were not devised using comprehensive item/scale development

procedures (e.g., by using a test specification; cf. Rust & Golombok, 2014). Thus, future research needs to confirm that the Career Distress Scale provides satisfactory coverage for the construct of career distress. Our sample was drawn from one university and contained more young women than young men. While we found no relationship between the scale and a range of demographic variables, future studies should test the scale on other populations and assess bias using other demographic variables. We supported scale validity at the structural and construct level, but the scale needs to be assessed against other correlates, and, in particular, support for predictive validity needs to be generated. We were not able to provide test-retest reliability coefficients, but across-time studies will be able to add this. Rasch analysis has the potential to assess measurement invariance at different time points (i.e., test if the same construct is being assessed at Time A as at Time B; Makransky, Schnohr, Torsheim, & Currie, 2014), and, if confirmed, this would add greatly to the perceived usefulness of the scale as a measure of general career distress.

Conclusions

In conclusion, we anticipate that the availability of a brief, psychometrically sound, unidimensional measure of career distress will foster research in the career area. From a goal oriented perspective (e.g., Bandura, 1991; Carver & Scheier, 1990; Latham & Locke, 1991), people express agency by setting goals (or having them set by others), evaluating their progress towards these goals, and implementing strategies to increase their chances of achieving what they set out to do. When people evaluate their progress towards their goals and find a discrepancy between where they are (i.e., their current situation) and where they should be (i.e., what they should have achieved if they were going to meet their goal), the most proximal outcome is distress, which can range from mild to severe. It is this distress, which, in turn, drives behaviours that will lead to a reduction in cognitive dissonance (cf. Festinger, 1957). These behaviours might include changing strategies to improve the chances of achieving the

goal (e.g., working harder) or changing the goal itself (e.g., aiming lower). Distress then, is intimately related to goal management and progress, including goal management in the career domain (Kerpelman et al., 1997), and needs to be considered when evaluating career agency models.

From a practical perspective, the Career Distress Scale will be useful to career practitioners as it can be used as a screening device to identify clients who are struggling with career-related tasks, used as a discussion point to help explore career issues that are concerning to the client, or be used to evaluate interventions, either individual or educational, that seek to reduce distress related to poor career progress. High levels of career distress can alert the practitioner to a range of issues, including career indecision, dissatisfaction with career path chosen, perception of internal or external barriers to career progress, and having too much or too little career information to enable productive decision-making. Dealing with career distress and the underlying causes of it will benefit young people in the short term and allow them to progress their career development and identity, which will benefit them in the long term.

References

- Andrich, D., Sheridan, B., & Luo, G. (2010). *Rasch models for measurement: RUMM2030*. Perth, Western Australia: RUMM Laboratory Pty Ltd.
- Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50, 248-287. doi:10.1016/0749-5978(91)90022-L
- Beck, A.T., Ward, C.H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571. doi:10.1001/archpsyc.1961.01710120031004
- Benton, S. A., Robertson, J. M., Tseng, W. C., Newton, F. B., & Benton, S. L. (2003). Changes in counseling center client problems across 13 years. *Professional Psychology: Research and Practice*, 34, 66-72. doi:10.1037/0735-7028.34.1.66

- Blair, J. D., & Hunt, J. G. (1986). Getting inside the head of the management researcher one more time. *Journal of Management*, 12, 147-166. doi:10.1177/014920638601200202
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97, 19-35. doi:10.1037/0033-295X.97.1.19
- Choi, B. Y., Park, H., Nam, S. K., Lee, J., Cho, D., & Lee, S. M. (2011). The development and initial psychometric evaluation of the Korean Career Stress Inventory for college students. *The Career Development Quarterly*, 59, 559-572. doi:10.1002/j.2161-0045.2011.tb00976.x
- Constantine, M. G., & Flores, L. Y. (2006). Psychological distress, perceived family conflict, and career development issues in college students of color. *Journal of Career Assessment*, 14, 354-369. doi:10.1177/1069072706286491
- Creed, P. A., & Blume, K. (2013). Compromise, well-being, and action behaviours in young adults in career transition. *Journal of Career Assessment*, 21, 3-19. doi:10.1177/1069072712453830
- Creed, P. A., & Hood, M. (2015). The development and initial validation of a scale to assess career goal discrepancies. *Journal of Career Assessment*, 23, 308-317. doi:10.1177/1069072714535175
- Creed, P. A., & Hughes, T. (2013). Career development strategies as moderators between career compromise and career outcomes in emerging adults. *Journal of Career Development*, 40, 146-163. doi:10.1177/0894845312437207
- Creed, P. A., Wamelink, T., & Hu, S. (2015). Antecedents and consequences to perceived career goal-progress discrepancies. *Journal of Vocational Behavior*, 87, 43-53. doi:10.1016/j.jvb.2014.12.001
- Derogatis, L. R. (2000). *BSI-18: Administration, scoring, and procedures manual*. Minneapolis, MN: National Computer Systems.

- Erikson, E. (1968). *Identity: Youth and crisis*. New York, NY: Norton.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Evanston, IL: Row Peterson.
- Frone, M. R. (2008). Are work stressors related to employee substance use? *Journal of Applied Psychology*, 93, 199-206. doi:10.1037/0021-9010.93.1.199
- Goldberg, D. & Williams, P. (1988). *A user's guide to the General Health Questionnaire*. Windsor, UK: NFER-Nelson.
- Hair Jr, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2010). *Multivariate data analysis* (7th Ed.). London, UK: Prentice-Hall International.
- Havighurst, R. J. (1972). *Developmental tasks and education*. New York, NY: McKay.
- Holland, J. L. (1997). *Making vocational choices: A theory of vocational personalities and work environments* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Kerpelman, J. L., Pittman, J. F., & Lamke, L. K. (1997). Toward a microprocess perspective on adolescent identity development: An identity control theory approach. *Journal of Adolescent Research*, 12, 325-346. doi:10.1177/0743554897123002
- Kim, J. H., & Karan, O. (2004). The relationships among sex, gender identity factors, and career-decision-situation-specified personality traits. *Asia Pacific Education Review*, 5, 39-49. Retrieved from <http://link.springer.com/article/10.1007%2F03026278>
- Larson, L. M., Heppner, P. P., Ham, T., & Dugan, K. (1988). Investigating multiple subtypes of career indecision through cluster analysis. *Journal of Counseling Psychology*, 35, 439-446. doi:10.1037/0022-0167.35.4.447
- Larson, L. M., & Majors, M. S. (1998). Applications of the coping with career indecision instrument with adolescents. *Journal of Career Assessment*, 6, 163-179. doi:10.1177/106907279800600204

Larson, L. M., Toulouse, A. L., Ngumba, W. E., Fitzpatrick, L. A., & Heppner, P. P. (1994).

The development and validation of coping with career indecision. *Journal of Career Assessment*, 2, 91-110. doi:10.1177/106907279400200201.

Latham, G. P., & Locke, E. A. (1991). Self-regulation through goal setting. *Organizational*

Behavior & Human Decision Processes, 50, 212-247. doi:10.1016/0749-978(91)90021-K

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY:

Springer.

Lee, K. H. (2005). Coping with career indecision: Differences between four career choice

types. *Journal of Career Development*, 31, 279-289. doi:10.1007/s1087-005-4741-0

Lipshits-Braziler, Y., Gati, I., & Tatar, M. (2015). Strategies for coping with career

indecision. *Journal of Career Assessment*. doi:10.1177/1069072714566795

Magee, W., & St-Arnaud, S. (2012). Models of the joint structure of domain-related and

global distress: Implications for the reconciliation of quality of life and mental health

perspectives. *Social Indicators Research*, 105, 161-185. doi:10.1007/s11205-010-9771-8

Makransky, G., Schnohr, C., Torsheim, T., & Currie, C. (2014). Equating the HBSC Family

Affluence Scale across survey years. *Quality of Life Research*, 23, 2899-2907.

doi:10.1007/s11136-014-0728-2

Masters, G. N. (1982). A Rasch model for partial credit scoring. *Psychometrika*, 47, 149-174.

doi:10.1007/BF02296272

Nielson, W. R., & MacDermid, J. C. (2005). Preliminary evaluation of the Generalized Work

Distress Scale in patients with work-related upper extremity disorders. *Journal of*

Occupational Rehabilitation, 15, 3-16. doi:10.1007/s10926-005-0869-9

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, NY:

McGraw-Hill.

- Pallant, J. F., & Tennant, A. (2007). An introduction to the Rasch measurement model: An example using the Hospital Anxiety and Depression Scale (HADS). *British Journal of Clinical Psychology, 46*, 1-18. doi:10.1348/014466506X96931
- Peng, H. & Johanson, R. E. (2006). Career maturity and state anxiety of Taiwanese college student athletes given cognitive career-oriented group counseling. *Psychological Reports, 99*, 805-812. doi:10.2466/PRO.99.3.805-812
- Porfeli, E. J., Lee, B., & Weigold, I. K. (2012). A multidimensional measure of work valences. *Journal of Vocational Behavior, 80*, 340-350. doi:10.1016/j.jvb.2011.09.004
- Praskova, A., Creed, P. A., & Hood, M. (2015). Career identity and the complex mediating relationships between career preparatory actions and career progress markers. *Journal of Vocational Behavior, 87*, 145-153. doi:10.1016/j.jvb.2015.01.001
- Rasch, G. (1960). *Probabilistic models for some intelligence and attainment tests*. Chicago, IL: University of Chicago Press.
- Rust, J., & Golombok, S. (2014). *Modern psychometrics: The science of psychological assessment*. London, UK: Routledge.
- Salamone, P. R. (1982). Difficult cases in career counseling: II. The indecisive client. *The Personnel and Guidance Journal, 60*, 496-500. doi:10.1002/j.2164-4918.1982.tb00703.x
- Saunders, D. E., Peterson, G. W., Sampson, J. P., & Reardon, R. C. (2000). Relation of depression and dysfunctional career thinking to career indecision. *Journal of Vocational Behavior, 56*, 288-298. doi:10.1006/jvbe.1999.1715
- Schwatken, S. (2014). *Incongruence and attitudes toward career counseling*. Graduate theses and dissertations. Paper 13701.
- Skorikov, V. B. (2007a). Adolescent career development and adjustment. In V. B. Skorikov & W. Patton (Eds.), *Career development in childhood and adolescence* (pp. 237-254). Rotterdam, The Netherlands: Sense Publishers.

- Skorikov, V. B. (2007b). Continuity in adolescent career preparation and its effects on adjustment. *Journal of Vocational Behavior*, 70, 8-24. doi:10.1016/j.jvb.2006.04.007
- Spielberger, C.D., Gorsuch, R.L., Lushene, R., Vagg, P.R., & Jacobs, G.A. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, CA: Consulting Psychologists Press.
- Tennant, A., & Conaghan, P. G. (2007). The Rasch measurement model in rheumatology: What is it and why use it? When should it be applied, and what should one look for in a Rasch paper? *Arthritis Care & Research*, 57, 1358-1362. doi:10.1002/art.23108
- Tennant, A., McKenna, S. P., & Hagell, P. (2004). Application of Rasch analysis in the development and application of quality of life instruments. *Value in Health*, 9 (Supplement, 1), 22-26. doi:10.1111/j.1524-4733.2004.7s106.x
- Walker, J. V., & Peterson, G. W. (2012). Career thoughts, indecision, and depression: Implications for mental health assessment in career counseling. *Journal of Career Assessment*, 20, 497-506. doi:10.1177/1069072712450010
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 47, 1063-1070. doi:10.1037/0022-3514.54.6.1063
- Weinstein, F. M., Healy, C. C., & Ender, P. B. (2002). Career choice anxiety, coping, and perceived control. *The Career Development Quarterly*, 50, 339-349. doi:10.1002/j.2161-0045.2002.tb00582.x

Figure 1. ICC for Item 2, indicating under-estimation at the highest level.

Figure 2. ICC for Item 12, indicating under-estimation at the lower levels and over-estimating at the higher levels.

Figure 3. Item 3 (“I tend to procrastinate or avoid deciding on a career”) demonstrated both uniform and non-uniform DIF, with males endorsing this item more strongly than females (Note: x-plots indicate males; o-plots indicate females).

Figure 4. Threshold distributions for the final nine items.

Figure 5. Person-Item Threshold Distribution

Figure 6. Item map

Appendix

1. I often feel down or depressed about selecting a career
2. I often feel a sense of helplessness in selecting and planning my career*
3. I tend to procrastinate or avoid deciding on a career*
4. I think that I should make a career decision as soon as possible, but I can't and this makes me anxious
5. I feel stress or pressure to select a satisfying career
6. I frequently blame myself for something I did or did not do in selecting a career
7. I tend to smooth over any career problem and pretend it does not exist
8. I often feel that my life lacks much purpose
9. I often hope that problems I have in selecting a career would just disappear
10. I don't have the special talents to follow my first career choice
11. An influential person doesn't approve of my career choice, which is hindering me from seeking that career
12. I spend time every day thinking about selecting a career, and what I might do about it*

* Items not included in the 9-item Career Distress Scale