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Career Preparedness among Adolescents: A Review of Key Components and Directions for Future Research

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Highlights

- Empirical literature on career preparedness is reviewed
- A multidimensional conceptualization of career preparedness is proposed
- A meta-framework summarizes the predictors and outcomes of career preparedness
- Gaps in the empirical work on career preparedness are identified

Abstract

Adolescents and students are faced with the developmental task of becoming prepared for a career and master future career transitions. Existing research has investigated a range of concepts relating to career preparedness, including predictors and outcomes. However, this body of work is fragmented as a number of different conceptualizations and measurements related to career preparedness exist. Thus, the goal of this review is to provide an overview of the different concepts that have been used to describe and measure career preparedness. Based on a comprehensive review of empirical articles on maturity, readiness, adaptability, preparedness, and preparation, we propose an organizing framework of the diverse attitudes, knowledge and competencies, and behaviors required for career preparedness. We also review the empirical research on predictors and outcomes of career preparedness. We close by identifying issues in the conceptualization and measurement of different constructs and provide suggestions for future research, and implications for theory and practice.

Keywords: career preparedness; adolescents; students; maturity; readiness; adaptability.

Career Preparedness Among Adolescents: A Review of Key Components and Directions for Future Research

Preparing for a career is a key developmental task of adolescence (Savickas, 2002; Super, Savickas, & Super, 1996) and is a subject that has also been investigated in university students. A focus on these early career groups is especially relevant considering that individuals are increasingly spending a longer time in education, thereby delaying the entry to the working world (Ni Bhrolchain & Beaujouan, 2013). Adequate career preparedness is important because early career experiences influence future work experiences as laid out in the life-course perspective on career development (e.g., Super et al., 1996) and insufficient preparedness may cause vocational problems (Skorikov, 2007). Early work in this field largely aimed to identify the factors which contribute to an individual's vocational or career maturity (Super, 1955) and readiness (Phillips & Blustein, 1994) to make a well-founded career decision. More recently, research expanded this focus with constructs such as career adaptability (Savickas, 1997), preparation (Skorikov, 2007), and preparedness (Lent, 2013) that incorporate a number of aspects necessary to become prepared for a career.

The diversity of approaches to conceptualize career preparedness are valuable, yet it means that the research is largely dominated by individual studies—with the exception of reviews and meta-analyses for career maturity (Patton & Lokan, 2001; Prideaux & Creed, 2001) and career adaptability (Johnston, 2018; Rudolph, Lavine, & Zacher, 2017). However, upon closer inspection, it becomes apparent that this body of research is conceptually quite fragmented. Indeed, the jingle-jangle fallacy (Kelley, 1927) is quite apparent in this literature as researchers have used the same terms (e.g., career preparation) to refer to very different aspects of career preparedness (i.e., jingle fallacy). For example, in some studies preparedness includes academic preparation and noncognitive factors (Lombardi, Conley, Seburn, & Downs, 2013), whereas for others (Peterson, Sampson, Lenz & Reardon, 2002) career

preparedness includes the cognitive and affective factors related to making effective career decisions. Furthermore, different labels (e.g., career readiness, maturity) have been used to refer to identical aspects of career preparedness (i.e., jingle fallacy) such that the same measure (i.e. the career development inventory; Lokan, 1984) has been used to measure both readiness and maturity. The presence of the jingle-jangle fallacy is problematic, as it suggests that there is a lack of consensus in the field as to how these constructs should be defined, operationalized, and measured. This state of the literature makes it difficult to generalize results across studies, creates ambiguity about what it means to be prepared, and how to best conceptualize and assess career preparedness in research. As such, this state of research also hampers further empirical progress and reduces the ability to derive research-based interventions in career development practice.

To address the problem of conceptual fragmentation, we review the different concepts that have been used to describe how adolescents and students prepare for a career. First, we review the concepts of maturity, readiness, adaptability, preparedness, and preparation. Second, we present an overview of their associated conceptualizations and measurement. Third, we organize these diverse concepts and measures into a common framework of key components of career preparedness. Specifically, we propose that the term career preparedness is used as a higher-order umbrella term. Such an umbrella term does not replace more specific constructs (e.g., career adaptability), but instead allows for the organization and integration of various perspectives and measurement approaches. Based on a review of key measures and concepts, we define career preparedness as *the attitudes, knowledge, competencies, and behaviors necessary to deal with expected and unexpected career transitions and changes*. Fourth, we review the literature of predictors and outcomes of career preparedness. Fifth, we summarize the review findings into an integrative framework of career preparedness components, predictors, and outcomes. Finally, we conclude with a discussion of implications for future research and practice.

Our review makes three main contributions to the literature: First, by reviewing and organizing the terms of maturity, readiness, adaptability, preparedness, and preparation into a framework, we help to provide clarity to this heterogeneous literature. Second, our review can lay the foundation for future research and inform the development of career development interventions. Third, our review helps to identify gaps in the existing literature and make suggestions for further empirical research as well as recommendations for additional theoretical developments and practice applications.

Theoretical Approaches to Career Preparedness

Despite the variety in constructs pertaining to career preparedness, they all share some basic theoretical assumptions and roots suggesting that they can be meaningfully organized into a more general framework of career preparedness. From a theoretical perspective, the herein reviewed constructs represent a historical progression of key ideas related to vocational development and can be traced back to the life-span, life-space theory of career development (Super, 1990). This theory proposed that individuals needed to display sufficient maturity or readiness, and their associated attitudes and competencies, to manage career developmental tasks (Super, 1990). More recent thinking on preparedness builds on this earlier work by proposing adaptability as a replacement of career maturity (Savickas, 1997; Super & Knasel, 1981) and preparedness as a supplement to earlier conceptualizations focusing on career problem-solving (Lent, 2013). Also, some of the same aspects that were included in earlier notions of maturity and readiness are utilized in more recent conceptualizations of preparedness (e.g., confidence and planning, Skorikov, 2007).

Vocational or Career Maturity

The concept of maturity was first defined by Super as “the place reached on the continuum of vocational development from exploration to decline” (Super, 1955, p. 153). Thus, individuals need to display sufficient maturity to cope with the developmental tasks associated with a particular stage (Super et al., 1996). For example, in the exploration phase,

which includes adolescence and extends to age 24, the main task is to make a career choice which requires self and occupational exploration (Savickas, 2002). Thus, maturity in adolescence is evidenced by readiness for decision making and dealing with age-graded developmental tasks (Super et al., 1996).

Super's model of maturity included two dimensions: attitudes toward and competencies for developing a career (Super, 1955; Super et al., 1996). In the career context, attitudes capture an individual's thoughts and feelings towards making a career choice and entering the world of work (Crites, 1978). Based on the work of Super, Crites defined maturity as one's readiness for career decision-making (Crites, 1978; Crites & Savickas, 1996) and also included vocational choice competencies attitudes. Subsequent refinements of the maturity model specifically include attitudes towards planning and exploration and the competencies of decision making and occupational information or knowledge (Savickas, 2002). For this manuscript, we subsequently consider attitudes as the summary evaluations, situated on a continuum from negative to positive, of oneself, others, or a particular topic or subject (Petty, Priester, & Wegener, 1994).

Career Readiness

The term "readiness" has been defined in a number of ways. First, it can be seen as a synonym for maturity as it is part of the definition of maturity which is the readiness for making age-appropriate decisions (Super et al., 1996). Second, it has been used in specific reference to career choice readiness, in which the developmental processes of planning, exploring, and deciding are known collectively as readiness (Phillips & Blustein, 1994). Third, the cognitive information processing (CIP) theory considers readiness for career problem-solving and decision-making as the capability of an individual to make appropriate career choices, while considering contextual influencing factors (Peterson et al., 2002). CIP theory suggests that there are three key knowledge or competence factors in making a career choice; self-knowledge, occupational knowledge, and decision-making competence (Peterson

et al., 2002). In addition, the metacognitions of self-talk, self-awareness, and monitoring and controlling are required for the successful regulation of self- and occupational knowledge, and decision-making skills (Peterson et al., 2002).

Career Adaptability

Career adaptability was historically proposed as a replacement of the career maturity term (Savickas, 1997; Super & Knasel, 1981). Featuring prominently in career construction theory, adaptability is defined as “a psychosocial construct that denotes an individual’s readiness and resources for coping with current and imminent vocational development tasks, occupational transitions, and personal traumas” (Savickas, 2005, p. 51). The theoretical foundations of career adaptability proposed an adaptation sequence that includes a distinction between adaptivity (or adaptive readiness), adaptability resources, adapting responses, and adaptation results. Adaptivity includes trait-like psychological characteristics pertaining to one’s readiness and willingness to adapt (Rudolph et al., 2017). Adaptability resources are the self-regulation strengths or capacities that individuals use to cope with career related changes and include concern, control, curiosity, and confidence (Savickas, 1997; Savickas & Porfeli, 2012). Adapting responses are the behaviors individuals use in career development tasks such as planning or exploration (Rudolph et al., 2017). Adaptation results include indicators of fit, satisfaction, and well-being (Rudolph et al., 2017) and capture how well an individual has adapted. A review and meta-analysis on career adaptability (Johnston, 2018; Rudolph et al., 2017) showed significant relations among elements of this adaptation sequence but also that the distinction between these elements is not always straightforward.

Career Preparedness and Career Preparation

Career preparation can be seen as a developmental process that starts in childhood and continues into adulthood with adolescence characterized by exploration and career decision-making (Hartung, Porfeli & Vondracek, 2005; Super, 1957). Skorikov (2007) observed that there is a lack of clarity concerning the exact content of career preparation, but building on

career construction theory, proposed that career preparation be conceptualized as a combination of career decidedness, planning, and confidence. More recently Lent (2013) suggested that preparedness could be a supplement to planning and defined career preparedness as “a healthy state of vigilance regarding threats to one’s career well-being as well as alertness to resources and opportunities on which one can capitalize” (p. 302). He proposed that individuals are increasingly facing unexpected events and obstacles which individuals need to be prepared for, but cannot plan for (Lent, 2013).

Measurement of Career Preparedness

As we have argued above, the career preparedness literature sometimes uses the same terms to refer to very different aspects of preparedness, or at times uses different labels to refer to conceptually identical aspects of preparedness. We hence took a bottom up approach to examine the terms maturity, readiness, adaptability, preparedness, and preparation have been conceptualized and measured in empirical studies. That is, we identified the measures used for each term as well as if particular dimensions or total scores were used.

Literature Search and Coding of Articles

To identify the different measurements of career preparedness used in the literature, we conducted a literature search covering peer-reviewed published articles. The literature search was conducted with SCOPUS, Web of Science, and PsycINFO to include articles published until the end of June 2019 and specified that the search terms *career maturity*, *vocational maturity*, *career readiness*, *career adaptability*, *career adaptabilities*, *career adapt-abilities*, *career preparedness*, or *career preparation* appeared in the abstract, title, or keywords. We did not limit our search to specific journals or research fields, but the articles needed to fulfill three criteria to be included for consideration: (1) published in English and after 2001; (2) quantitative empirical papers published in a peer-reviewed journal; and (3) included an adolescent or student (school and college / university) sample. We chose to limit our search to articles published after 2001 because two reviews on career maturity were

published in 2001 (Patton & Lokan, 2001; Prideaux & Creed, 2001). With this limitation, no *vocational maturity* articles were identified as the term *career maturity* replaced vocational maturity. For career adaptability, because a review (Johnston, 2018) and meta-analysis (Rudolph et al., 2017) were recently published that included studies up until May 2016, we only searched for articles published after this date. From the 149 articles included in the review and meta-analysis, we only included 76 studies in our review that used an adolescent or student sample. Applying our criteria for the other search terms, the search generated a result of 484 articles. We removed 256 papers that pertained to educational policy or curriculum design, as their main focus was not on conducting research focused on one of the search terms. Including the 76 articles on career adaptability from the review and meta-analysis, this left a final sample of 304 articles that were included in this review (see Appendix A for a full list of included articles).

In order to facilitate the analysis, we coded each article: (1) to identify the different conceptualizations of career preparedness, we identified which of the above listed search term(s) were included in an article and how the authors conceptualized and defined this term; (2) we identified which measures authors used along with the particular sub dimensions that were included; and as a basis for the later parts of this review we also (3) identified all the predictors and outcomes that were included as well as details pertaining to the measurement of these variables.

To code the articles, three of the authors and a research assistant each coded a subsample of articles. Once the first round of coding was completed, each coder worked on a second subsample of articles that they did not code themselves, to ensure the integrity of the coding. Whenever codings were unclear or inconsistent, two coders discussed the best approach for coding the articles until the discrepancies were resolved. Table 1 provides an overview of the most common career preparedness measures, operationalizations, and example papers (consult Appendix B for a more exhaustive list).

Key Components of Career Preparedness

After investigating the various measurements of career preparedness, we propose that different aspects of career preparedness can be meaningfully represented as focusing on (a) attitudes, (b) knowledge and competencies, and/or (c) behaviors, as indicated in Figure 1 and Table 1. This reflects the idea by Savickas (2005) that successful career development depends on the ABC's of career construction in terms of diverse attitudes, behaviors, and competencies that are needed to master vocational tasks, transitions, and challenges. Hence, we see career preparedness as an umbrella term that encompasses a range of more specific constructs (e.g., career maturity, career readiness, career adaptability), defined as *the attitudes, knowledge, competencies and behaviors necessary to deal with expected and unexpected work- or career-related transitions and changes*. This definition encompasses Lent's (2013) definition of career preparedness, but also extends the concept by integrating various concepts related to the field of career preparedness.

First, many of the measures reviewed above were used as measures of *attitudes* in the sense that they measure an individual's thoughts and feelings towards making a career choice and entering the world of work (Crites, 1978). In the case of the career preparedness research, numerous measures (e.g., CMI, CMI-R, CDI, and the CDI-A) all include an attitudes dimension. In contrast to overall measures of attitudes, some specific measures of targeted attitudes exist (e.g., career planning scale, Skorikov, 2007), or authors chose to use a subscale of a measure (e.g., CDI, CDI-A, and the CFI) that targets a specific attitude. Similarly, authors used the CAAS to provide a score for the individual attitudes of concern, control, curiosity, and confidence (also known as adaptability resources). As there are several measures for specific individual attitudes (e.g., planning, exploration, (un)certainty, (in)decisiveness, adaptability resources, outcome expectations, decision-making self-efficacy, career locus of control, and dysfunctional beliefs), we chose to list these attitudes separately in Figure 1.

Second, a number of widely used measures (e.g., CMI, CMI-R, CDI, and CDI-A) included subscales that measure *knowledge and competencies*, that is, skills and abilities central to career development, which can be influenced and developed by the individual (Akkermans et al., 2013). Once again, sometimes authors chose to use total scores of career development knowledge using the CDI or CDI-A (a combination of knowledge of decision-making and knowledge of world of work) or career maturity competence, using the CMI-R. Other times, specific subscales or specific measures of other knowledge and competencies, such as, knowledge of decision-making were used. Sometimes a lack of this knowledge or information was measured. Other measures focused specifically on decision-making competence, or the lack thereof. Lastly, a number of other knowledge and competencies were frequently measured by custom items or infrequently occurring measures.

Third, a number of measures targeted at capturing *behaviors* were included by authors such as self and environment exploration. Here authors were clearly interested in the behavior of exploration in that measures asked, for example, whether or not individuals had actually engaged in an exploration behavior, such as gathering information about interesting career paths (e.g., Hirschi et al., 2015). This is distinct from the attitude of exploration presented above which captures an individual's willingness to engage exploration. Similarly, one study included a behavioral measure of career planning (e.g., "I have discussed my career plans with a career counsellor", Jawarneh, 2016). These behaviors of exploring and planning are also known as adapting responses (Hirschi et al., 2015; Rudolph et al., 2017). Additionally, career preparedness behaviors and actions (e.g., actively seeking career-related support) and implementing career information (e.g., starting an educational program after career exploration) are also included in the category of career preparedness behaviors.

Predictors and Outcomes of Career Preparedness

Based on the systematic review and integration described above, we set out to investigate which variables were investigated in empirical research as predictors and

outcomes of various career preparedness aspects. To do so, in a first step, two of the authors considered which predictors and outcomes of career preparedness were frequently investigated, and identified possible higher-order categories of predictors and outcomes. We considered variables as predictors and outcomes if they were labelled as such by the authors of each study. In a second step, predictors and outcomes of career preparedness were grouped into the higher-order categories. In the following section we describe the results by illustrating the general mechanisms of the predictors and outcomes of career preparedness.

Predictors of Career Preparedness

Contextual predictors of career preparedness. Based on the reviewed studies, three categories of contextual predictors of career preparedness emerged: (1) family characteristics, (2) receiving social support from others, and (3) participation in a career intervention.

Family background. The family background plays an important role, as higher household income and parental education allow adolescents to seize more opportunities to develop career preparedness (Lee, Rojewski, & Hill, 2013; Bae, 2017). Such a household may invest more resources into the development of an adolescents' career, by providing more funds for education (Yon et al., 2012) and by providing a psychologically stable household (Murphy, Marelich, Herbeck, & Cook, 2016; Kim & Oh, 2013). As a result, adolescents may experience more freedom to explore and prepare for their career.

Social support. The development of career preparedness occurs within the bounds of a social environment, where teachers, friends, and family provide emotional support and career guidance. Parents can take an active interest in their children's future career by for example talking with them about their vocational interests and abilities (e.g., Perry, Liu, & Pabian, 2010; Amarnani, Garcia, Restubog, Bordia, & Bordia, 2016; Bae, 2017; Guan et al., 2016). Additionally, parents may offer networking opportunities for their children and provide emotional support during difficult times (e.g., dealing with rejection in job search). Similar support may be offered from sources such as teachers or counsellors (e.g., Perry et al., 2010),

institutional support (e.g., Clair et al., 2017), peers (e.g., Yon et al., 2012), and during classes (Lazarides, Rohowski, Ohlemann, & Ittel, 2016). As a whole, social support assists the development of career preparedness attitudes (e.g., Öztemel & Yıldız-Akyol, 2019; Ataç, Dirik, & Tetik, 2017) and helps adolescents to be more engaged in the process of making a career decision (Hirschi, Niles, & Akos, 2011).

Career interventions. Career interventions can help to systematically increase one or more facets of career preparedness. Adolescents may be assisted in engaging in career exploration behaviors, learn more about the world of work, or learn about career decision strategies to increase self-efficacy. Interventions may be carried out in the form of a career choice intervention (e.g., Koivisto, Vinokur, & Vuori, 2011), a career training (e.g., Koen, Klehe, & Van Vianen, 2012), a career education module, course or program (e.g., Eryilmaz & Kara, 2018; Park, 2015b), or a peer counselling program (Wong, Chui, Chan, Ting, & Lam, 2016). Interventions enhancing adolescents' general psychological functioning or health, such as a cognitive-behavioral group therapy (Lim et al., 2010) or health interventions (Werch et al., 2008) also affect career preparedness in a positive way.

Individual predictors of career preparedness. Five categories of individual predictors of career preparedness emerged: (1) demographic characteristics, (2) educational attainment and school achievement, (3) personality and individual differences, (4) career related attitudes and motivations, and (5) work experience.

Demographic characteristics. Patton and Creed (2002) have noted that female adolescents may engage earlier than men in career exploration and career choices, but this difference diminishes with age. Some studies in our review support this assertion (e.g., Patton & Creed, 2002; Bae, 2017), whereas others have not (e.g., Lee, 2001; Tian & Fan, 2014). However, with progressing age, adolescents become more interested in their future careers and as such experience an increase in career preparedness (e.g., Creed & Patton, 2003; Patton & Creed, 2002). Country of origin (e.g., Clair et al., 2017; Xiao, Newmann, & Chu, 2018),

race (Clair et al., 2017), personal income, and unemployment status (Strauser et al., 2015) may provide more or fewer opportunities and resources to develop career preparedness.

Educational attainment and school achievement. High performing and achieving students may have a stronger focus on preparing themselves for further education and thereby develop career preparedness sooner than their counterparts (e.g., Hardré & Hackett, 2015; Tian & Fan, 2014; Creed, Patton, & Prideaux, 2007). For example, Creed et al. (2007) found that higher levels of self-reported school achievement at grade eight was related to more career planning and exploration two years later.

Personality and individual differences. Personality can be broadly defined as stable individual differences in behavior, thought, and emotion (e.g., John & Srivastava, 1999), and plays an important role in the development of career preparedness. For instance, Savickas (2013) describes the psychological trait of adaptivity, which helps to deal with uncertain tasks during the development of career preparedness. Hence, a variety of personality characteristics such as the big five traits (e.g., Stringer, Kerpelman, & Skorikov, 2012; Li et al., 2015; Sverko & Babarvic, 2019), core self-evaluations (Hirschi et al., 2015), proactive personality (Hirschi et al., 2015; Park, 2015a), hope or optimism (e.g., Buyukgoze-Kavas, 2016; Wilkins et al., 2014), emotional intelligence (Celik & Storme, 2018), adjustment or cognitive flexibility, reflecting a person's flexibility and willingness to change (Chong & Leong, 2017; Stringer et al., 2012), self-esteem (e.g., Ataç et al., 2017; Janeiro, 2010), and various aspects of self-efficacy like general self-efficacy (Yon et al., 2012) coping efficacy (Murphy et al., 2016), learning efficacy (Tsai, Hsu, & Yang, 2017), and decision-making style or thinking style (e.g., Hardin & Leong, 2004), and future time perspective (Janeiro, 2010) have been found to predict career preparedness in adolescents. Conversely, problematic personality traits like externality of control (Hirschi et al., 2011) or negative affectivity and social inhibition (Yates, Wong, Strauser, & Sears, 2017) may inhibit the development of career preparedness.

In addition, cognitive representations of personality, like self-concept or identity (e.g., Hughes, 2011) can predict differences in adolescents' career preparedness. Lastly, some studies found that stable individual differences in mental representations of the self in relation to significant others, that is, attachment style predicted career preparedness (e.g., Lee & Hughey, 2001).

Career-related attitudes and motivation. Adolescents who possess favorable career-related attitudes and motivations may have clearer ideas about which career path they want to pursue, and as a result develop more career preparedness. These attitudes and motivations include career goals (e.g., Clair et al., 2017), career interests in terms of interest elevation and differentiation (Jaensch, Hirschi, & Spurk, 2016), work values (Yon et al., 2012), perceived fit between interests and the characteristics of an individual's (expected) work environment (Patton & Creed, 2007), work commitment (Creed & Patton, 2003), or calling (Douglass, & Duffy, 2014; Hirschi & Herrmann, 2013), which have been found to predict career preparedness.

Work experiences. Having real experiences in the world of work is a way to foster career preparedness, as these experiences provide meaningful learning experiences which may inform future career paths (e.g., Flouri & Buchanan, 2002; Creed et al., 2007; Xiao, Newman, & Chu, 2018). For example, increasing work experience from grade eight to ten was accompanied by an increase in career planning and exploration among Australian high school students (Creed et al., 2007).

Outcomes of Career Preparedness

Career- and education-related outcomes. Achieving career preparedness ideally leads to favorable career outcomes as described by the career adaptability sequence (Rudolph et al., 2017), such as having more employment success (Pan et al., 2018), and satisfaction with their present career choice and persistence in their career choice (Amarnani et al., 2018; Kleiman et al., 2004). For those who did not make a school-to-work transition yet, career preparedness is

related to more engagement in career information-seeking (Shevlin & Millar, 2006), positive career-related outcomes such as clearer occupational plans (Busacca & Taber, 2002), higher occupational status expectations (Patton & Creed, 2007), stronger entrepreneurial intentions (Tolentino, Sedoglavich, Lu, Garcia, & Restubog, 2014) increased vocational commitment, as well as identification with the vocational commitment over time (Negru-Subtirica, Pop, & Crocetti, 2015), and more job offers (Kwok, Adams, & Feng, 2012). Similarly, studies showed that career preparedness is related to positive academic outcomes, such as increased academic performance (Oliveira et al., 2017; Perry et al., 2010), academic satisfaction (2015; Tak & Lee, 2003), and retention in STEM majors (Belser, Prescod, Daire, Dagley, & Young, 2017).

Well-being outcomes. As alluded to in the introduction, preparing for a career is a key developmental task (e.g., Super, Savickas, & Super, 1996) and as such is positively related to indicators of adolescents' well-being, such as emotional stability (Stringer et al., 2012), positive affect (Konstam, Celen-Demirtas, Tomek, & Sweeney, 2015), life satisfaction (e.g., Kim, Ahn, & Fouad, 2016; Konstam et al., 2015; Tak & Lee, 2003), or effective functioning (Savickas, Briddick, & Watkins, 2002). For example, Skorikov (2007) reports that career planning, career confidence, and an absence of career indecision to be predictors of well-being such as social adaptation, emotional stability, life-satisfaction, and self-actualization. Additionally, career preparedness was inversely related to depression and anxiety.

Other outcomes. Career preparedness was also found to influence other outcomes such as adolescents' self-esteem (Skorikov, 2007), interpersonal and future orientations (Savickas et al., 2002) or internal success beliefs (Janeiro & Marques, 2010). For example, Janeiro and Marques (2010) found that career planning and career exploration were positively correlated with a future orientation, internal success, and self-esteem.

An Integrative Framework of Career Preparedness Components, Predictors, and Outcomes

Summarizing the previous sections, we provide an integrative framework which aims to summarize the reviewed predictors and outcomes of career preparedness (Figure 2). Leaning on the social-cognitive model of career self-management (Lent et al., 2016), we propose a reciprocal relation between the three career preparedness components of attitudes, knowledge and competencies, and behaviors, where knowledge and competencies (e.g., knowledge of decision-making), and attitudes (e.g., curiosity) lead to action behaviors (e.g., exploration behavior). Based on Super and Hall (1978) we also presume that these behaviors in turn affect changes in knowledge and competencies (e.g., world of work knowledge), and attitudes (e.g., career decision-making self-efficacy). Career preparedness behaviors lead to different outcomes (e.g., job offers/rejections), which act as a feedback mechanism, leading to changes in career preparedness.

Drawing on the social-cognitive model of career self-management (Lent et al., 2016), we moreover conceptualize the reviewed more distal individual (e.g., personality) and contextual factors (e.g., family background) as predictors of career preparedness. These more distal predictors may further influence more proximal personal and contextual influences on career preparedness in the current career context (e.g., career barriers; Park, 2015; disability status; Reid Yates, Wong, Strauser, & Sears, 2017; social support; Rogers, Creed, & Glendon, 2008), and may also support or interfere with career actions (i.e., moderate the effects of actions on outcomes).

Discussion

Given the presence of the jingle-jangle fallacy and conceptual fragmentation in the career preparedness literature, the main aim of this review was to provide an overview of the different concepts that have been used to describe how adolescents and students become prepared for a career. To achieve this, we reviewed the different conceptualizations and

measurements of career preparedness, and presented an organizing framework of career preparedness, including its predictors and outcomes. This integration helps to provide conceptual clarity to the field which is important to facilitate communication, improve empirical analysis, and increase innovation in the field (Suddaby, 2010). We close this review with a list of issues and recommendations for future career preparedness research (see Table 2), and a discussion of theoretical and practical implications.

Theoretical Implications

Apart from the identified methodological aspects described in Table 2, addressing some substantive issues will contribute to advance the theoretical development of career preparedness. For example, Lent (2013) proposed that individuals also need to display preparedness for barrier management and identifying social support. Thus, in the exploration phase, adolescents should also be concerned with identifying potential barriers, considering the likelihood of encountering these barriers, and preparing coping strategies, while also looking to actively develop resources and identify sources of social support (Lent, Brown, & Hackett, 2002). To test these assumptions, more empirical research is needed that focuses on barrier management and identifying social support as proactive career resource building behaviors that form an essential part of successful career development (Hirschi et al., 2018)

Secondly, it will be important to think about the complex, dynamic, and reciprocal relations between attitudes, knowledge and competencies, and behaviors. Indeed, some studies have examined the relations between aspects of career preparedness (e.g., Creed & Patton, 2003; Gaffner & Hazler, 2002; Hirschi et al., 2015; Punch, Creed, & Hyde, 2005). For example, Creed and Patton (2003) showed that career preparedness attitudes (decidedness and self-efficacy) predicted career maturity attitudes (planning and exploration combined) and that career decidedness predicted career maturity knowledge (knowledge of decision-making and knowledge of world of work combined). Thus, we need more dynamic theories on career

preparedness that can account for relations between different aspects of preparedness and possible feedback loops.

Importantly, while this review focused on adolescents and students, we suggest that career preparedness is relevant throughout one's career and as such, our multidimensional conceptualization and definition of career preparedness, as well as our suggestions for future research can also be applied with older populations. Because individuals need to be prepared for different career challenges throughout the life-course (i.e., making a career choice for adolescents and preparing for retirement for older workers) the content of career preparedness in terms of attitudes, knowledge, competencies, and behaviors remains highly relevant.

Implications for Practice

We suggest that the organizing framework proposed in this article will be a useful tool for career counseling practitioners, because the notion of preparedness is not limited to specific pre-defined tasks, such as making a career decision. Rather, as our review and framework illustrate, the notion of career preparedness is applicable to both predictable and unpredictable career transitions and changes. Our review can be used to guide the development and implementation of career guidance and counselling interventions that are focused on specific aspects of career preparedness. Here, practitioners could apply a select battery of questionnaires to assess relevant facets of career preparedness in order to identify strengths and weaknesses. This would allow practitioners to tailor an effective intervention based on the client's specific needs, for example, pertaining to improving career attitudes (e.g., curiosity) or career competencies (e.g., knowledge of decision-making). Attitudinal aspects may be improved by identifying strengths or reflecting on the importance of work, whereas knowledge and competencies may be strengthened by providing career education modules, which provide information about job search strategies or career opportunities.

Relevant behaviors may be practiced in safe environments (e.g., roleplay), where specific phases of an upcoming career transition or change (e.g., job interview, first day on a new job) can be experienced without the fear of negative consequences.

The identified categories of predictors of career preparedness in the framework can also be targeted to boost career preparedness in preventative interventions, while also providing a comprehensive reference point for developing preparedness in response to unexpected events. For example, the intervention by Koivisto, Vinokur, and Vuori (2011) included modules on lifelong learning and stress inoculation training to prepare the participants for career future which may include many changes, which can be riddled by barriers and setbacks. To assess the effectiveness of interventions it is recommended to not only examine changes in career preparedness, but to also examine the changes in the outcomes of career preparedness.

Conclusion

By reviewing conceptualizations and empirical research of career preparedness, we provided an organization of the diverse literature that can serve as a reference point for future research. The comprehensive framework of predictors and outcomes of career preparedness that we presented offers a succinct summary of existing research of preparedness and helps to clarify opportunities for future research. We also hope that this article lays a foundation for future theoretical and empirical work on career preparedness not only in adolescents and students, but also in adults.

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Table 1

Overview of Most Frequent Career Preparedness Measures and Classification into Attitudes, Knowledge and Competencies, and Behavior

Scale	Authors	Operationalization	Dimensions of career preparedness	Example papers
Career Maturity Inventory (CMI); Career Maturity Inventory Revised (CMI-R)	Crites, 1978; Crites & Savickas, 1996	The CMI-R consists of an <i>attitude scale</i> (25 items) and <i>competence test</i> (25 items). The original inventory (CMI) consists of 75 items, and is seldomly used. The <i>attitude scale</i> assesses attitudes towards decision-making, whereas the <i>competence test</i> assesses comprehension and problem-solving abilities in regards to career decision-making.	Attitudes; knowledge and competencies	Busacca & Taber (2002); Creed et al., (2007)
Career Development Inventory (CDI); Career Development Inventory-Australia (CDI-A)	Thompson et al., 1981; Lokan, 1984	The CDI measures two broad aspects, namely <i>career development attitude</i> (CDA; 28 items) and <i>career development knowledge</i> (CDK; 44 items). CDK assesses decision-making skills and knowledge about the world of work; CDA assesses attitudes towards career planning and exploration. The <i>Career Development Inventory-Australia</i> has been used the most in research.	Attitudes; knowledge and competencies	Creed et al., (2002); Janeiro (2010); Rogers, Creed, & Glendon (2008)
Career Factors Inventory (CFI)	Chartrand, Robbins, Morrill, & Boggs, 1990	The CFI (21 items) measures four dimensions of the career decision-making process, which are grouped into <i>information needs</i> and <i>decision needs</i> . Information needs are comprised of <i>need for career information</i> (6 items) and <i>need for self-knowledge</i> (4 items). Decision needs include <i>career choice anxiety</i> (6 items) and <i>generalized indecisiveness</i> (5 items).	Attitudes; knowledge and competencies	Talib & Aun, 2009; Gaffner & Hazler, 2002
Career Thoughts Inventory (CTI)	Peterson et al., 2002	The CTI (48 items) assesses dysfunctional thinking as it interferes with the career decision-making process or as it inhibits career problem solving. It is comprised of the	Attitudes; knowledge and competencies	Belser et al., (2017); Yates et al., (2017)

		<i>decision-making confusion</i> (14 items), <i>commitment anxiety</i> (10 items), <i>external conflict</i> (5 items) subscales.		
Career Decision Making Difficulties Questionnaire	Gati, Krausz, & Osipow, 1996	The CDDQ (44 items) assesses the <i>lack of readiness</i> , <i>lack of information</i> and <i>inconsistent information</i> .	Attitudes; knowledge and competencies	Gaffner & Hazler (2002); Kleiman et al. (2004)
Career Adapt-Abilities Scale (CAAS)	Savickas & Porfeli, 2012	The CAAS (24 items) assesses the four career adaptability resources <i>concern</i> , <i>control</i> , <i>curiosity</i> , and <i>confidence</i> (6 items each), which help manage occupational transitions, developmental tasks, and work traumas.	Attitudes	Atac, Dirik, & Tetik (2018); Sverko & Babarovic (2019)
Student Career Construction Inventory (SCCI)	Savickas, Porfeli, Hilton, & Savickas, 2018	The SCCI (18 items), assesses career adapting responses, which have been laid out in the theoretical model of career adaptation (Savickas, 2013). The SCCI is comprised of four scales, which assess <i>crystallizing</i> a vocational self-concept (6 items), <i>exploring</i> to gather information about occupations (3 items), <i>deciding</i> to commit to an occupational choice (5 items), and <i>preparing</i> to implement that choice (4 items).	Behaviors	Sverko & Babarovic (2019); Fouad et al. (2016)
Career Preparation Behaviors Scale	Blau, 1993	The scale (6 items) is a sub-scale of a more general job search behavior scale (16 items) and assesses the amount of <i>preparatory job search behavior</i> that an individual has engaged in.	Behaviors	Tsai et al., (2017); Choi & Kim (2013)
Career Futures Inventory	Rottinghaus et al., 2005	The CFI (25 items) measures three factors of career self-management: <i>career adaptability</i> (11 items), <i>career optimism</i> (11 items) and <i>perceived knowledge of the employment market</i> (3 items).	Attitudes; knowledge and competencies	Jordan, Gessnitzer, & Kauffeld (2017); Rottinghaus et al. (2017)
CMI Form C	Savickas &	The CMI Form C (24 items) gives a total score for career	Attitudes	Cardoso, Janeiro,

	Porfeli, 2011	choice readiness. Three scale scores reflect <i>adaptability resources</i> (concern, curiosity, and confidence; 6 items each) and a score for <i>consultation</i> (6 items) that reflects an individual's relational style in making occupational choices.		& Duarte (2018); Chi, Leuty, Bullock-Yowell, & Dahlen (2018)
Career Decision Making Self-Efficacy Scale – Short Form	Betz, Klein & Taylor, 1996	The CDMSE (25 items) assesses the <i>confidence regarding the ability to make career-oriented decisions</i> .	Attitudes	Perry, Liu, & Pabian (2010); Creed, Prideaux, & Patton (2005)
Career Exploration Survey	Stumpf et al., 1983	The CES (62) measures a variety of constructs related to career exploration. The sub-scales include <i>environment exploration</i> (6 items), <i>self-exploration</i> (5 items), <i>intended-systematic exploration</i> (3 items), <i>frequency of seeking career information</i> (1 item), <i>amount of information</i> (3 items), <i>number of occupations considered</i> (1 item), <i>focus on how sure one feels in one's preference of an occupation, job, and organization</i> (5 items), <i>satisfaction with information</i> (6 items), <i>explorational stress</i> (3 items), <i>decisional stress</i> (4 items), <i>employment outlook</i> (3 items), <i>certainty of career exploration outcome</i> (3 items), <i>external search instrumentality</i> (3 items), <i>internal search instrumentality</i> (4 items), <i>method instrumentality</i> (4 items), and <i>importance of obtaining preferred position</i> (5 items).	Behaviors	Hirschi, Niles, & Akos (2011); Li et al., (2015).
Career Decision Scale	Osipow, 1987	Consists of two subscales, the CDS-Indecision scale (CDS-I; 16 items) and the CDS-Certainty scale (CDS-C; 2 items). The CDS-I assesses <i>career indecision</i> and the CDS-C indicates the <i>degree of certainty</i> after having made a career decision.	Attitudes; knowledge and competencies	Skorikov (2007); Stinger, Kerpelman, & Skorikov (2011); Creed, Prideaux, & Patton (2005)

Table 2

Summary of Recommendations for Improving Research on Career Preparedness

Issue	Recommendations
Lack of clarity concerning which aspects of career preparedness are measured, in the sense that (1) researchers use total scores for multidimensional scales and (2) researchers use scales that are not unidimensional.	<ul style="list-style-type: none"> (1) Only use total score when a scale is unidimensional. (2) Treat different aspects of career preparedness as separate dimensions and use an appropriate measure.
Lack of clarity concerning; (1) which aspect of career preparedness is of interest; (2) how these aspects were defined; and (3) the choice of a corresponding measure.	<ul style="list-style-type: none"> (1) Clearly state which aspect of preparedness is of interest. (2) Give a clear definition of this aspect that is connected to theory. (3) Choose the appropriate measure.
Lack of longitudinal research on the predictors and outcomes of career preparedness.	<ul style="list-style-type: none"> (1) Conduct more longitudinal research on career preparedness. (2) Conduct research on the trajectory of career preparedness.
Lack of research that includes mediators and moderators.	<ul style="list-style-type: none"> (1) Conduct research that includes mediators and moderators. (2) Give attention to theory development that accounts for mediators and moderators.
Lack of research on objective real-world outcomes.	<ul style="list-style-type: none"> (1) Conduct research that includes objective real-world outcomes such as educational and job success outcomes.

Components of Career Preparedness

Attitudes

Career planning
 Career exploration
 Career (un)certainty
 Career decidedness / indecision
 Concern
 Control
 Curiosity
 Confidence
 Outcome expectations
 Decision making self-efficacy
 Career locus of control
 Dysfunctional beliefs

Other attitudes (e.g. readiness to make a career decision; readiness to engage in vocational development behaviors)

Knowledge and Competencies

Knowledge of decision-making
 (Lack of) knowledge of preferred occupation
 (Lack of) knowledge of world of work
 Decision-making competence
 Other knowledge and competencies (e.g. career research skills; generating occupational options)

Behaviors

Self-exploration
 Environment exploration
 Career planning
 Decision making
 Adapting responses (e.g., career exploration)
 Career preparation actions and behaviors (e.g., seek career support)
 Implementation of career information (e.g., start an educational program)

Figure 1. Integrative framework of career preparedness as consisting of different attitudes, knowledge and competencies, and behaviors. Career planning and exploration appear in both the categories of attitudes and behaviors because they are conceptualized/operationalized as attitudes or behaviors in different studies.

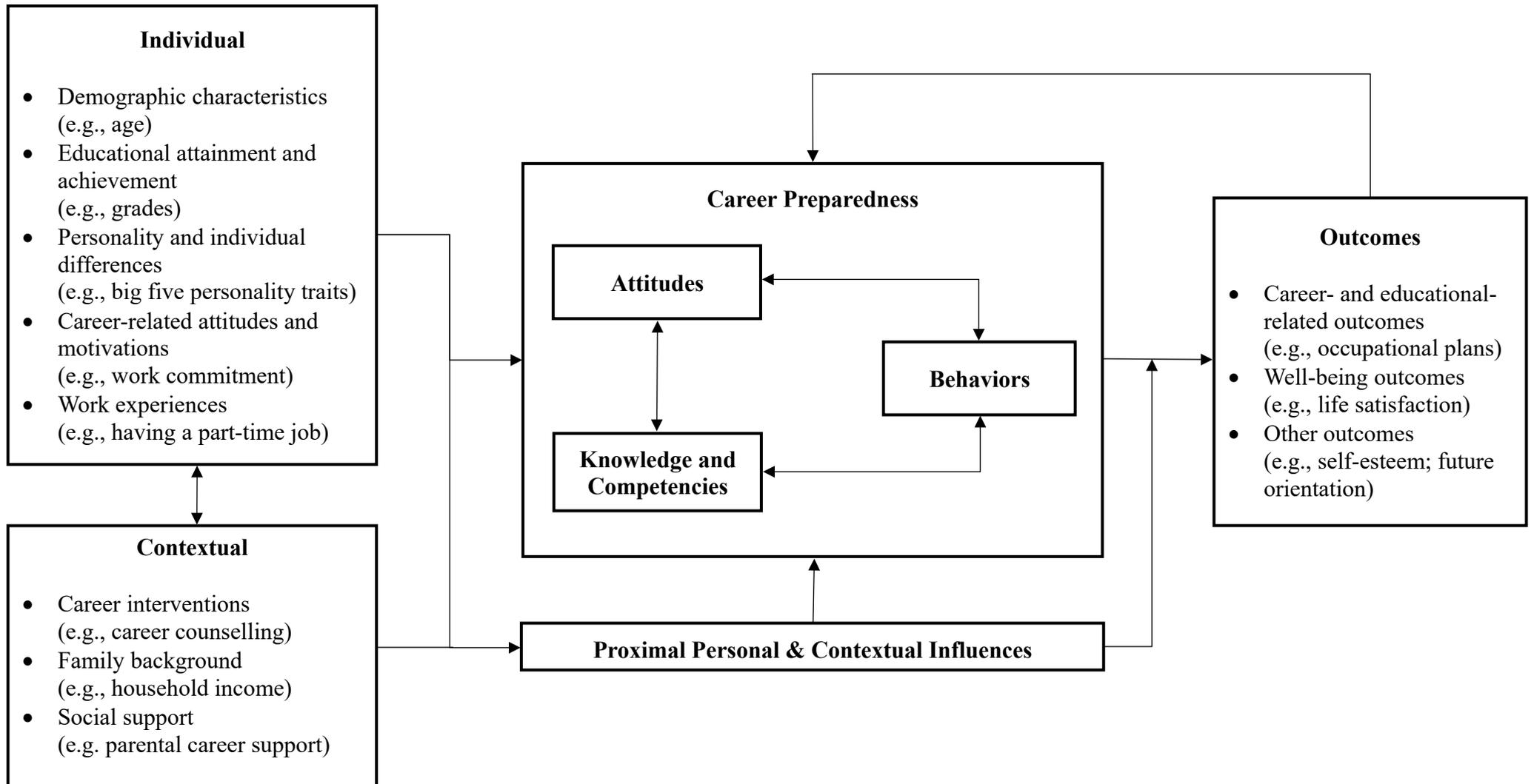


Figure 2. Integrative framework on predictors and outcomes of career preparedness.

Appendix A

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Appendix B

Table B1

Classification of Measures and Dimensions Used in the Career Preparedness Literature into Attitudes, Knowledge and Competencies, and Behaviors.

Assessed constructs	Corresponding Measures	Example papers
Career preparedness attitudes		
Career maturity attitudes (total score) ^a	CMI (Crites, 1978); CMI-R (Crites & Savickas, 1996); CDI-A (Lokan, 1984); CDI (Thompson et al., 1981); Chinese career maturity inventory (Zhang, Rong, & Guan, 2006); medical career development inventory (Savickas, 1984); career maturity attitude scale (Han & Lee, 1997); Korean career maturity inventory (Jang, Lim, & Song, 1992); NYPI study (Kim & Oh, 2013).	Busacca & Taber (2002); Creed & Patton (2003); Creed et al., (2007); Punch et al., (2005); Kornspan & Etzel (2001).
Career planning ^b	CDI; CDI-A; career planning scale (Skorikov, 2007); career planning scale (Abele & Wiese, 2008); KELS (Kim, Ryu, & Kim, 2006); childhood career development scale (Schultheiss & Stead, 2004); career planning ability questionnaire (Abd-Hanid, 2007); Taiwanese career attitude maturity inventory (Huang, 2001); career readiness scale (Chui, 2012); Positive attitude toward career planning scale (Koivisto et al., 2011).	Creed et al., (2002); Hirschi et al., (2011); Hughes (2011); Jaensch et al., (2016); Janeiro (2010); Koivisto et al., (2011); Patton & Creed (2002); Perry et al., (2010); Stringer et al., (2012); Wong et al., (2016).
Career exploration ^c	Career exploration (Kracke, 2001); CDI; CDI-A; Taiwanese career attitude maturity inventory.	Hughes (2011); Rogers et al., (2008); Savickas et al., (2002); Wu & Chang (2009).
Career (un)certainty	Career decision scale (Osipow, 1987); vocational certainty scale (Santos, 2007); daidalos inventory (Dybwad, 2008).	Creed et al., (2002); Punch et al., (2005).

Career decidedness / indecision	Chinese career maturity inventory; KELS; my vocational situation (Holland, Daiger, & Power, 1980); EE index (Hirschi & Läge, 2007); CMI; commitment to career choice scale (Blustein, Ellis, & Devenis, 1989); career decision scale; career decision making difficulties questionnaire (Gati, Krausz, & Osipow, 1996); career decision making difficulties questionnaire – revised (Gati & Osipow, 2000); CFI (Chartrand et al., 1990); career maturity attitude scale.	Akos et al., (2004); Creed & Patton (2003); Dipeoulu et al., (2012); Hirschi et al., (2011); Jaensch et al., (2016); Kleiman et al., (2004); Patton & Creed (2007); Strauser et al., (2015); Skorikov (2007).
Confidence	Occupational self-efficacy scale (Rigotti, Schyns & Mohr, 2008); career planning confidence scale (McAuliffe et al., 2006); career self-efficacy (Caza, Brower, & Wayne, 2015); career confidence (Skorikov, 2007).	Hirschi & Hermann (2013); Jaensch et al., (2016).
Exploratory outcome expectations	Career exploratory outcome expectations scale (Oliveira et al., 2016).	Oliveira et al., (2017).
Decision making self-efficacy	Career decision making self-efficacy scale – short form (Betz, Klein & Taylor, 1996); career choice self-efficacy scale (Koivisto et al., 2011); career readiness scale.	Koivisto et al., (2011); Punch et al., (2005); Wong et al., (2016).
Career locus of control	Career locus of control scale (Millar & Shevlin, 2007); career development locus of control scale (Trice, Haire, & Elliot, 1989).	Kornspan & Etzel (2001).
Dysfunctional beliefs	Career decision making difficulties questionnaire; career decision making difficulties questionnaire revised.	Fan et al., (2014); Kleiman et al (2004).

Adaptability resources	Career adapt-abilities scale (Savickas & Porfeli, 2012); Career futures inventory (Rottinghaus et al., 2005); CMI Form C (Savickas & Porfeli, 2011)	Guan et al (2015); Corr & Mutinelli (2017); Chi, Leuty, Bullock-Yowell, & Dahlen (2018)
Other attitudes: e.g., career search self-efficacy; optimism; readiness to make a career decision; readiness to engage in vocational development behaviors; career preparation satisfaction; compromise, independence, involvement, orientation.	CMI; Chinese career maturity inventory; Taiwanese career attitude maturity inventory; medical career development inventory; occupational self-efficacy scale; multidimensional scale of perceived self-efficacy (Bandura, 1990); planned happenstance career inventory (Kim et al., 2014); custom items; career preparation satisfaction scale (Kim et al., 2016).	Hardré & Hackett (2015); Hardin & Leong (2004); Hirschi et al., (2015); Kim et al., (2016); Koivisto et al., (2011); Oliveira et al., (2017); Park (2015b); Wu & Chang (2009).
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Career preparedness knowledge and competencies		
Career development knowledge (total score)	CDI; CDI-A.	Creed & Patton (2003); Creed et al., (2007).
Career maturity competence (total score)	CMI-R.	Creed et al., (2007); Dipeolu et al., (2012).
Knowledge of decision making	CDI; CDI-A; career planning scale (Liptak, 2008).	Creed et al., (2002); Jawarneh (2016); Savickas et al., (2002).
Knowledge of preferred occupation	CDI; career planning scale (Liptak, 2008).	Jawarneh (2016); Smedley et al., (2003).
Knowledge of world of work	CDI; CDI-A; career planning scale (Liptak, 2008).	Creed et al (2002); Jawarneh (2016); Savickas et al., (2002).
Lack of information pertaining to self, occupations, stages of decision making, ways of obtaining additional information	Career decision making difficulties questionnaire-revised; career decision making difficulties questionnaire.	Gaffner & Hazler (2002); Kleiman et al., (2004).

Lack of decision-making competence	CTI (Peterson et al., 2002).	Belser et al., (2017); Yates et al., (2017).
Other: e.g., career research skills; generating occupational options; skills to access resources to support aspirations; integrating self and career information; acquisition of knowledge and skills pertaining to career development; preparedness for obstacles; career preparedness skills	Custom items; career planning confidence scale; career behaviors & knowledge scale (Casey Family Foundation, 2013).	Clair et al., (2017); Koivisto et al., (2011); Walker et al., (2010).
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Career preparedness behaviors		
Self-exploration ^d	Career exploration scale (Hirschi, 2009); Career exploration survey (Stumpf et al., 1983)	Hirschi et al., (2011); Hirschi et al., (2015); Li et al. (2015)
Environment exploration ^d	Career exploration scale (Hirschi, 2009); Career exploration survey (Stumpf et al., 1983)	Hirschi et al., (2011); Hirschi et al., (2015); Li et al., (2015).
Career exploration (self and environment exploration combined) ^d	KELS; childhood career exploration inventory (Oliveira et al., 2016); career exploratory behavior (Athanasou, 1986); career readiness scale.	Oliveira et al (2017); Shevlin & Millar (2006); Wong et al., (2016).
Career planning ^e	Career planning scale (Liptak, 2008).	Jawarneh (2016).
Career preparation actions and behaviors, and adapting responses (e.g., attending career lectures, participating in counselling, asking others about their jobs, looking for information about careers, sought career advice, sought career support)	Custom items; career preparation behavior scale (Kim, 2003); career preparation behaviors (Blau, 1993); college and career readiness counselling support scale (Lombardi et al., 2013).	Clair et al., (2017); Kim et al., (2016); McLoyd et al., (2011); Tsai et al., (2017); Werch et al., (2007).
Implementation of career information	Medical career development inventory; career planning	Jawarneh (2016).

(e.g., starting an educational program) scale.

Note. CMI = Career maturity inventory; CMI-R = Career maturity inventory revised; CDI = Career development inventory; CDI-A = Career development inventory Australia; NYPI = National youth policy institute (Korea); KELS = Korean educational longitudinal survey; CFI = Career factors inventory; CTI = Career thoughts inventory. All references included in this table appear in Appendix A. For the measures, a reference is only included the first time a measure appears. References are included again only when two scales have the same name.

^aWe group these attitudes together because either subscales were combined into a total score meaning it was not possible to distinguish individual attitudes from each other (e.g., CMI, CMI-R) or the items contained a mix of different attitudes. ^bWhen authors used these measures of career planning, they conceptualized and/or measured career planning as an attitude. ^cWhen authors used these measures of career exploration, they conceptualized and/or measured career exploration as an attitude. ^dWhen authors used these measures of exploration (self-, environment-, or a combination of the two), they conceptualized and/or measured exploration as a behavior. ^eWhen authors used this measure of planning they conceptualized and/or measured planning as a behavior.