

Hlad'o, Petr; Ježek, Stanislav

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MEASUREMENT OF CAREER-SPECIFIC PARENTAL BEHAVIORS PERCEIVED BY CZECH ADOLESCENTS

PETR HLAĐO,
STANISLAV JEŽEK

Abstract

Parents are considered to be the main stakeholders for adolescents, helping them in their educational and career choices. Although theoretical and empirical studies have pointed out the links between career-specific parental behaviors and the career development of adolescents, there has been a lack of research in this area in the Czech Republic. One of the reasons is the absence of an instrument that would enable measurement of parental behaviors. Therefore, the aim of the present study is to provide a tool for measuring career-specific parental behaviors in the Czech environment—the Parent Career Behavior Checklist (PCBC)—to verify its psychometric properties and explore the associations between career-specific parental behaviors and selected demographic and school-related variables. The data collection took place in June 2017 and the participants were students in the Vysočina Region in vocational upper-secondary schools finishing with school-leaving examinations or apprenticeship certificates (N = 501). Participant age ranged from 15 to 21 years (M = 17.19, SD = 1.10). The results show that the Czech version of the PCBC is an internally consistent and structurally valid tool for measuring two dimensions of career-specific parental behavior—(psychosocial) support and (instrumental) action. It was confirmed that mothers were more engaged in educational or career choices than fathers; mothers having tertiary education was an advantage for adolescents, which is reflected in increased support and action; and lower levels of support and action were perceived by adolescents who for various reasons were living exclusively with their fathers.

Keywords

career-specific parental behaviors, parental support, parental behavior, Parent Career Behavior Checklist, family influences, educational choice, career choice

Introduction

During education at upper-secondary schools (ISCED 3), adolescents deal with a number of transitions, the handling of which may significantly affect their short- and long-term educational and career prospects (Nurmi, 2004; Blustein et al., 2002). One of the most important developmental tasks of adolescence is successful educational and career choices (Kracke, 1997). In the Czech environment, this decision is connected with, *inter alia*, the completion of upper-secondary education when an individual determines whether to continue his or her initial education or leave the education system and enter the labor market.

In secondary education fields of study completed with an apprenticeship certificate (ISCED 353) or a school-leaving examination (ISCED 354), students in the Czech Republic are trained for direct entry into the labor market. Nevertheless, more than one third of students (or rather apprentices) who have completed ISCED 353 secondary education, who are therefore not legally eligible for tertiary education, continue with follow-up courses (Trhlíková, 2014) and more than four fifths of students who have completed ISCED 354 secondary education apply for non-university or university tertiary education (MEYS, 2017). Individuals' decision-making process has been made more difficult by the low permeability and high selectivity of the Czech education system (Matějů & Straková, 2006).

However, some students who have completed vocational upper-secondary schools in the Czech Republic can be characterized by the fact that they do not aspire to and therefore do not attend tertiary education (ISCED 5–7), but immediately after completing school successfully or unsuccessfully enter the labor market. The success rate of the school-to-work transition can be assessed from the unemployment rate, which was 6.2% for graduates with ISCED 353 secondary education and 5.2% for those with ISCED 354 secondary education (MLSA, 2017). Another statistical data point is the NEET (young people Not in Education, Employment, or Training) unemployment rate, with more than 9% of young people aged 18–24 in this category in 2016 (Eurostat, 2017). Although the unemployment rate for people with upper-secondary schooling in the Czech Republic is relatively favorable compared to that of the EU-28, the Czech labor market can be considered as rapidly changing or even turbulent, with research indicating that some individuals leaving the education system have difficulties with the school-to-work transition (Doležalová et al., 2017). The ability to plan, implement, and manage educational and career choices has become more important than ever.

Previous research has shown that Czech adolescents want to make educational and career choices by themselves and have a high degree of

autonomy in the decision-making process, which is also attributed to them by their parents (Hlad'o, 2012). However, educational and career choices at the end of upper-secondary education are part of a process with unclear borders and a number of problematic moments (Ling & O'Brien, 2012). Some adolescents are not able to make independent decisions because they have low levels of motivation, readiness, or developmental traits (Hirschi & Lage, 2007; Super, 1990) or the decision-making process is too demanding for them (Gati, Krausz, & Osipow, 1996).

Although the decision adolescents have to make is not an irreversible act, any revision or change to the original decision is associated with the exertion of great effort and losses in personal and social areas. Difficulties prior to or during the course of educational and career choices can cause stress and tension, while avoidance or postponement of the decision-making process may result in the decision being made by someone else instead of the individual (Gati & Saka, 2001).

Therefore, parents remain a significant research subject in this area (Hlad'o, 2013; Bryant, Zvonkovic, & Reynolds, 2006). In accordance with the Systems Theory Framework of career development, the family, and in particular parents as its components, can be understood as a social system that is a significant source of informal learning (Patton & McMahon, 2014). In the Czech Republic, parents not only have the greatest influence on the decision-making process of adolescents in relation to their educational and career choices at the end of upper-secondary education, but also are a primary informal source of advice and information and mediate their career experience to their offspring (Hlad'o & Drahořovská, 2012). The role of Czech parents in this respect is similar to that in other countries where, according to numerous studies, parents are considered by adolescents as their main partners in both educational and career transitions (Mortimer, Zimmer-Gembeck, Holmes, & Shanahan, 2002). The risk is that parental help is not professional, is often attitudinal, and may be influenced by emotions (Dacko-Pikiewicz, 2014).

The present study

Although 20 years ago experts highlighted a lack of research in relation to the issue of how educational and career choices are made within a family (Reay & Ball, 1998), the number of published studies from outside the Czech Republic that have primarily focused on parental roles in the decision-making process is currently relatively high. This is evidenced, for example, by reviews that provide a comprehensive assessment of research conducted in the United States of America (Whiston & Keller, 2004; Schulenberg, Vondracek

& Crouter, 1984), Great Britain (White, 2007), and Germany (Görtz-Brose & Hüser, 2006). However, questions related to the role of the family in educational and career choices have been a neglected subject for the contemporary Czech education sciences and psychology. Earlier studies have shown some limitations: they were often based on a qualitative research design involving a small sample; they focused on lower-secondary school students, whose educational and career decision-making process has specifics distinct from that of upper-secondary school students; and they focused predominantly on exploring static family constructs (Hlad'o, 2015).

Theoretical and empirical studies have pointed to some links between parental behavior and the career development of adolescents (Keller & Whiston, 2008). Nevertheless, there has been a lack of research in this area in the Czech Republic. One of the reasons is that there are no instruments available in the Czech language that would enable examination of parental behaviors associated with the educational and career choices of adolescents. Therefore, the main aims of this study are: (1) to bring an instrument enabling measurement of career-specific parental behaviors into the Czech environment, (2) to verify its psychometric properties for Czech adolescents studying in vocational upper-secondary schools, and (3) to study how career-specific parental behaviors are related to selected demographic and school-related variables. The present study attempts to overcome the existing gap in relation to the role of parents in the educational and career choices of Czech adolescents.

Family background as a contextual factor for adolescents' career development

Research primarily focused on the study of static family constructs has suggested that family background is an important contextual factor that not only shapes the formative stages of career development, but also influences transitions within the educational context as well as the school-to-work transition (Guan et al., 2016).

Parental socioeconomic status (SES)

Parental SES, which has an influence on parental strategies and the degree of autonomy provided to adolescents as well as the level and quality of provided information important for the career decision-making process or formation of educational and career aspirations, has been an extensively studied variable (Hlad'o, 2015). Qualitative and quantitative sociological studies focusing on the way educational and career choices are made within the transition between lower and upper-secondary education (Katrňák, 2004; Reay & Ball,

1998) indicate different approaches and parental strategies for parents with higher and lower SES. Parents with higher SES are more active in educational and career choices, have a high level of control, and provide their offspring with less autonomy than is the case for parents with lower SES. Parents with lower SES do not seek to actively influence the future of their offspring and provide them with a high degree of autonomy in the decision-making process. This has been explained as being due to the fact that parents with lower SES are more likely to be insecure about educational and career choices and most of them do not feel competent enough to fulfill this role (Reay & Ball, 1998).

Hypothesis 1. A higher degree of career-specific parental behavior is perceived by adolescents whose mothers (H1a) and fathers (H1b) have completed a higher level of education.

Family structure

The structure and size of a family and the resulting aspects of maternal and paternal influence are important family background factors reflected in educational and career choices. Although there have not been many studies examining the specific role mothers and fathers play in educational and career choices, it is clear that both psychosocial support and activities aimed at action are more likely to be provided by mothers, who are more committed to the decision-making process (Paloş & Drobot, 2010). Adolescents also rely more on advice from their mothers (Tucker, Barber, & Eccles, 2001). Some studies have shown that mothers provide support and action in the form of positive feedback, verbal encouragement, promotion of autonomy, and discussion about educational and career choices more often to girls than to boys (Dietrich & Kracke, 2009; Turner, Alliman-Brissett, Lapan, Udipi, & Ergun, 2003; Paa & McWhirter, 2000). The finding that girls experience greater attention from parents can be explained by their higher social interaction, namely the more frequent and deeper communication among girls and parents, especially mothers (Dietrich & Kracke, 2009).

Hypothesis 2. From the point of view of adolescents, mothers are more engaged than fathers when it comes to the educational and career choices of their offspring.

Hypothesis 3. Girls perceive a higher degree of career-specific parental behaviors than boys.

The aforementioned research also reveals that adolescents are primarily affected by parents of the same gender and only secondarily by parents of the opposite gender (Kniveton, 2004; Tucker, Barber, & Eccles, 2001; Paa &

McWhirter, 2000). It has been shown that a child's birth order plays an important role as well because a younger child in a family is more affected by the mother, whereas an older child is more affected by the father. It is disputable whether this foreign knowledge is valid also for Czech families, as in recent years we can see a new trend where parenting is far more conscious for many men and the originally traditional family roles are often redistributed: the man takes over the function of caregiver and the woman becomes the breadwinner (Masáková, 2011).

Hypothesis 4. When deciding on the educational and career choices of their offspring, mothers are more involved with daughters (H4a) and fathers are more involved with sons (H4b).

Hypothesis 5. Boys perceive a higher degree of career-specific parental behaviors in an engaged father (H5a), whereas girls perceive a higher degree of career-specific parental behaviors in an engaged mother (H5b).

Knowledge about the roles of mothers and fathers in always-married and divorced families is of importance, as well. Single-parent families suffer from a lack of social support, experience more negative life events, and have difficulty securing their basic financial needs, which may be reflected in educational approaches and parental interest in offspring (Conger, Ge, Elder, Lorenz, & Simons, 1994). Research suggests that while adolescents rely on their mothers' advice when it comes to their educational and career choices and life plans in both always-married and divorced families, adolescents from divorced families rely on their fathers' advice less often than adolescents from always-married families (Tucker, Barber, & Eccles, 2001). In research focusing specifically on fathers, it was found that adolescents in divorced families regardless of gender received less advice from their fathers and were less satisfied with such support.

Hypothesis 6. Adolescents who are in joint physical care (H6a), living only with their father (H6b), or living only with their mother (H6c) perceive a lower degree of career-specific parental behaviors than adolescents living together with their father and mother.

Family process variables and their consequences

Other research has focused on family process variables, the study of which has proven that the quality of the relationship between parents and adolescents influences a number of cognitive processes related to the adolescents' career

development and career decision-making process. The career development of adolescents is positively influenced by open family communication, active parental involvement in their lives, development of adolescent responsibilities, promotion of autonomy, and provision of specific career advice and assistance (Young, Friesen, & Dillabough, 1991). Favorable interactions in a family lead to a higher level of autonomy and risk-taking in getting to know the world of work (Altman, 1997) and the creation of relatively stable vocational interests and career goals (Johnson, Buboltz, & Nichols, 1999), while the absence of parental support in educational and career choices leads to the inability to develop and follow specific educational and career goals (Kerka, 2000) and career indecision (Chope, 2005). Some studies have shown that family functioning, emotional support, positive interactions, communication, and role models in families have more important impacts on educational and career choices than family structure, parental education, and parental employment status do (Trusty, Watts & Erdman, 1997; Penick & Jepsen, 1992).

Career-related parental support and career-specific parental behaviors

Recently, a great deal of attention has been paid to research of *career-related parental support* and *career-specific parental behaviors*. Both constructs are very similar.

Career-related parental support is defined as a specific behavior with the purpose of assisting in career issues provided to an individual by a parent. It can take the form of instrumental action, verbal encouragement, socio-emotional support, or the provision of career role models, resources, or opportunities for self-knowledge and orientation in the world of work and its opportunities (Guan et al., 2015; Turner & Lapan, 2002).

Career-specific parental behaviors are connected not only with parental support, but also with specific actions carried out by parents with the aim of their offspring's career development (Dietrich & Kracke, 2009). Dietrich and Kracke (2009) distinguished three aspects of parental behaviors: support, interference, and lack of engagement. Parental *support* is associated mainly with the incitement of career knowledge, such as searching for information, acquiring work experience, and providing advice. *Interference* means that parents monitor and affect through their interventions the educational and career aspirations of their offspring, or alternatively that they are overly engaged in the career decision-making process. *Lack of engagement* is a behavior that manifests in a low level of parental involvement in the career development of adolescents. It may be caused by a real lack of interest, the low importance that parents attribute to educational and career choices, or an inability to cope with this task due to the lack of parental competence or work overload.

Although implemented research has not made clear the way in which career-related parental support and career-specific parental behavior change over time, some evidence suggests that parents are the most involved in the educational and career choices of their offspring before the end of upper-secondary school (Dietrich & Salmela-Aro, 2013). It can therefore be assumed that with the approaching end of studies, parents get more engaged in this area.

Hypothesis 7. Adolescents in higher grades of their studies perceive a higher degree of career-specific parental behaviors than adolescents in lower grades.

The importance of parental support and behaviors

Empirical studies have shown that the cognitive, affective, and behavioral factors of parenting are important prerequisites for the career development of adolescents (Bryant, Zvonkovic, & Reynolds, 2006). Perceived parental support, supportive parental behavior, and the parent–adolescent relationship are important sources and predictors of career decision-making self-efficacy (Garcia, Restubog, Bordia, Bordia, & Roxas, 2015), vocational identity (Tracey, Lent, Brown, Soresi, & Nota, 2006), vocational self-concept (Savickas, 2005), career interests (Turner, Steward, & Lapman, 2004), and career aspirations (Cheng & Yuen, 2011). They are also positively associated with career self-exploration (Kanten, Kanten, & Yeşiltaş, 2016), active career exploration (Noack, Kracke, Gniewosz, & Dietrich, 2010; Neuenschwander, 2008), shaping of career goals (Dietrich & Salmela-Aro, 2013), and self-confidence and motivation to achieve goals (Ginevra, Nota, & Ferrari, 2015; Garcia, Restubog, Toledano, Tolentino, & Rafferty, 2011). In addition, many studies have found a positive relationship between parental support and career adaptability (Guan et al., 2016, 2015; Hirschi, 2009).

Both support and action are particularly important for career self-exploration, often distinguished by anxiety, uncertainty, and indecision (Super, Savickas, & Super, 1996). Guan et al. (2016), based on an integration of career construction theory and cognitive evaluation theory, supposed that parental support is a contextual factor influencing career decision-making self-efficacy and the ability to make autonomous, independent, and free career decisions. Parental support therefore provides significant resources to facilitate fulfilling career developmental tasks in the form of suitable educational and career choices and setting and achieving career goals.

For cases with negative configurations of the aforementioned family variables, some studies conducted with a focus on adolescents have shown unfavorable consequences in the form of career decision-making difficulties (Dietrich & Kracke, 2009; Santos, 2001). When adolescents are not supported

by their parents, they do not receive clear guidance, their parents do not articulate expectations, and they do not get enough feedback from their parents, they may have problems planning or setting their career goals, which may lead to less effort and slower progress in their decision-making process (Farkas & Grolnick, 2010).

Based on an analysis of a wide range of previous research, Dietrich and Kracke (2009) determined that the following aspects of parental behavior are beneficial for the career development of adolescents: parents creating space for adolescents to decide independently, providing orientation and instrumental support, encouraging adolescents to explore their vocational interests and abilities, exploring career opportunities, and directing adolescents so that relevant experience is reflected in their decision. Such parental behavior motivates adolescents to systematically prepare the steps of their decision-making process (Phillips, Blustein, Jobin-Davis, & White, 2002; Schultheiss, Kress, Manzi, & Glasscock, 2001).

Interesting findings have been made among Romanian upper-secondary students (Paloş & Drobot, 2010). Parents preferred to provide their offspring with psychosocial support during their educational and career decision-making by encouraging and supporting their decisions through discussions in which they, among other things, showed an interest in the direction and activities of their offspring rather than directing their parenting behavior towards action that would make the decision-making process easier (e.g., providing informational materials, participating in informational events, testing study skills and opportunities). The reason for this was probably the high time investment required because parents first need to get the necessary information and materials and subsequently attend various organized events with their offspring.

Tools available to measure parental support and behaviors

Career-Related Parent Support Scale

Available research suggests that several relevant instruments to measure career-related parental support and behavior have been developed abroad. One of them is the Career-Related Parent Support Scale (CRPSS; Turner et al., 2003), which is designed to assess perceived parental support in the field of educational and career development. The authors constructed this instrument on the basis of the theory that there are four sources of career decision-making self-efficacy (Bandura, 1977). The questionnaire consisting of a total of 27 items connected with an adolescent's career development on a 5-point Likert scale measures four dimensions that assess parental support in instrumental assistance, career-related modeling, verbal encouragement,

and emotional support. The CRPSS was verified in the United States on a sample of 293 disadvantaged students in the 7th and 8th grades at public secondary schools. Internal consistency as measured with Cronbach's alpha ranged from 0.78 to 0.85 for subscales (Turner et al., 2003). Other research has given the internal consistency of the instrument ranging from 0.66 to 0.93 (e.g., Guan et al., 2016; Garcia et al., 2015, 2011; Michael, Most, & Cinamon, 2013).

Parental Career-Related Behaviors

Another available instrument is the Parental Career-Related Behaviors (PCB) (Dietrich & Kracke, 2009), which was constructed based on a synthesis of findings from earlier qualitative research and theories related to career-specific parental behaviors. The tool consists of 15 items that on a 4-point Likert scale measuring three dimensions – parental support, interference, and lack of engagement. The PCB was verified on a sample of 359 German adolescents aged 15–18 who attended the 8th to 10th grades at secondary schools at the time of data collection. Internal consistency as measured by Cronbach's alpha was adequate for all subscales and ranged from 0.68 to 0.93 (Dietrich & Kracke, 2009).

Parent Career Behavior Checklist (PCBC)

The PCBC was developed for research purposes to measure the construct of career-specific parental behaviors (Keller & Whiston, 2008; for more detail, see the chapter *Measures*), which was based on theoretical knowledge of parental influence on the career development of adolescents. Its specificity compared to other available tools is that recipients do not express themselves in relation to parental behaviors in general, but only in relation to the parent or other person in the parental role who is the most engaged in career issues in their family.

Methods

Participants

The participants were 501 students in full-time education at public vocational upper-secondary schools (ISCED 353, 354) in the Vysočina Region: 168 boys (33.5%) and 333 girls (66.5%) aged 15–21 ($M = 17.19$ years; $SD = 1.10$). The participants were attending the 1st through 4th years (35.5% 1st year, 30.5% 2nd year, 30.1% 3rd year, 3.8% 4th year). Moreover, 57.9% of the participants were studying a field completed by a school-leaving examination and 42.1% one completed by an apprenticeship certificate. The participants studied a wide range of fields of study (e.g., business economics, hospitality

and tourism, nursing, sport management, cosmetics, construction, gastronomy, and training to be a hairdresser, salesclerk, electrician, plumber, tinsmith, carpenter, joiner, auto mechanic, agricultural machinery technician, agricultural producer/farmer).

Procedure

First, the principals of all public vocational upper-secondary schools in the Vysočina Region (CZ061) were contacted by e-mail using the e-mail addresses listed in the Register of Schools and School Facilities for the 2016/2017 school year. The Vysočina Region had been chosen deliberately because it is an industrial and agricultural area and at the time of data collection it had the 5th highest unemployment rate (3.80%) of all 14 regions (Czech Statistical Office, 2017). In total, 4 of the 27 approached schools agreed to participate in the research. Data collection took place in June 2017 via a self-reported questionnaire. The questionnaire was administered in electronic form during ICT lessons. Completing the questionnaire was completely voluntary. When students were filling in the questionnaires, a trained teacher was present to provide assistance to participants when necessary.

In the introduction to the questionnaire, basic information on the research and instructions for filling in the questionnaire were presented. Since the survey objectives were broader than in the present study, the questionnaire was composed of tools that are not subject to analysis in this study. The participants completed the tools in the following order: (1) Career Adapt-Abilities Scale–International Form 2.0 (Savickas & Porfeli, 2012), (2) Teacher Support Scale (Metheny, McWhirter, & O’Neil, 2008), (3) PCBC (Keller & Whiston, 2008), (4) Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988), and (5) a demographic and school-related questionnaire. A total of 516 participants filled in the questionnaires; 15 questionnaires were not included due to incompleteness.

Measures

PCBC (Keller & Whiston, 2008). The PCBC was developed to measure career-specific parental behaviors. The original tool had 23 items that measured two dimensions, *support* and *action*, on a 5-point Likert scale from 1 (*never*) to 5 (*very often*). At the beginning of the questionnaire, respondents are asked to select one parent or person in the role of parent to be the subject of their responses. They are to choose the person who they think is the most engaged in their educational or career choices. Subsequently, the respondents comment on a list of statements. The PCBC was verified on a sample of 293 students in the 6th to 8th grades in three secondary schools in the Midwest of the United States, individuals aged 11–15 years. The internal consistency of the original instrument as measured by Cronbach’s alpha

was 0.93 for the total scale, 0.90 for the support subscale, and 0.89 for the action subscale (Keller & Whiston, 2008).

In order to develop a Czech version of the PCBC (PCBC-CZ), we included all 30 items originally proposed by the authors (Appendix A) so that we could exclude items that do not function well and maintain the questionnaire length needed to achieve sufficient internal consistency. The English version was first translated into Czech by a professional translator and adapted to the context of the Czech education system and the specifics of the educational and career choices for recipients studying at vocational upper-secondary schools. The back translation of the tool into English was done by a bilingual translator. After removal of ambiguities, a final Czech translation was created. In the final Czech version there are 15 items, the selection of which is described in the section containing the results. The *psychosocial support* (support) scale consists of 7 items with internal consistency $\omega = 0.92$ (Raykov, 2001) (Cronbach's alpha = 0.93). The *instrumental action* (action) scale consists of 8 items with internal consistency $\omega = 0.89$ (Cronbach's alpha = 0.91).

Demographic and school-related questionnaire (DSRQ). The DSRQ was used to determine (1) demographic characteristics including participant age, gender, family structure, and parental education; and (2) school-related characteristics including year of school, completion of study, satisfaction with the upper-secondary school choice, grades, repetition of a year, and early work experience. The DSRQ was designed for research purposes.

Analysis

Considering the only preliminary findings for the original PCBC, we used both exploratory and confirmatory analyses to determine the optimal model for the PCBC-CZ. After establishing measurement invariance across gender and school, we extended the measurement model to test the hypotheses about variables affecting the two latent factors. We used the R software environment for our statistical analyses (R Core Team, 2017), relying on the following packages: lavaan (version 0.6-1.1214, Rosseel, 2012), psych (v. 1.7.8, Revelle, 2017), and semTools (v. 0.4-14).

Development of the PCBC-CZ

Descriptive statistics

Table 1 presents descriptive statistics for the 30 PCBC-CZ candidate items and Appendix B presents estimated polychoric correlations among items. Because the items are ordinal with only five response options, we use polychoric correlations as the basis for all subsequent analyses. Correlations

among items were positive and moderate except for item 18, which had a negative correlation with most other items. Because item 18 was not reverse coded, a plausible explanation is that its wording was too complicated and conditioned. Keller and Whiston (2008) found item 18 “complexly determined.”

Table 1
Descriptive statistics for PCBC-CZ candidate items.

	<i>M</i>	<i>SD</i>	Frequencies					Relative frequencies				
			1	2	3	4	5	1	2	3	4	5
PCBC01	3.87	1.09	16	45	103	163	174	3.2	9.0	20.6	32.5	34.7
PCBC02	3.43	1.19	42	62	139	154	104	8.4	12.4	27.7	30.7	20.8
PCBC03	2.61	1.40	160	84	112	82	63	31.9	16.8	22.4	16.4	12.6
PCBC04	4.22	0.97	9	25	64	152	251	1.8	5.0	12.8	30.3	50.1
PCBC05	3.42	1.23	45	62	151	124	119	9.0	12.4	30.1	24.8	23.8
PCBC06	3.72	1.27	46	39	100	139	177	9.2	7.8	20.0	27.7	35.3
PCBC07	3.45	1.28	52	67	112	143	127	10.4	13.4	22.4	28.5	25.4
PCBC08	3.85	1.09	19	37	119	153	173	3.8	7.4	23.8	30.5	34.5
PCBC09	3.23	1.24	58	79	142	136	86	11.6	15.8	28.3	27.2	17.2
PCBC10	3.06	1.34	87	88	123	115	88	17.4	17.6	24.6	23.0	17.6
PCBC11	3.95	1.15	24	36	94	136	211	4.8	7.2	18.8	27.2	42.1
PCBC12	3.87	1.17	25	46	90	149	191	5.0	9.2	18.0	29.7	38.1
PCBC13	3.20	1.30	68	78	138	119	98	13.6	15.6	27.5	23.8	19.6
PCBC14	2.94	1.35	102	86	127	110	76	20.4	17.2	25.4	22.0	15.2
PCBC15	3.45	1.26	51	62	119	148	121	10.2	12.4	23.8	29.5	24.2
PCBC16	3.19	1.41	94	67	99	130	111	18.8	13.4	19.8	26.0	22.2
PCBC17	3.41	1.36	63	71	109	114	144	12.6	14.2	21.8	22.8	28.7
PCBC18	2.92	1.46	114	100	109	66	112	22.8	20.0	21.8	13.2	22.4
PCBC19	1.98	1.32	284	60	74	47	36	56.7	12.0	14.8	9.4	7.2
PCBC20	2.94	1.30	93	90	146	100	72	18.6	18.0	29.1	20.0	14.4
PCBC21	3.99	1.20	26	38	90	106	241	5.2	7.6	18.0	21.2	48.1
PCBC22	3.22	1.30	72	65	141	127	96	14.4	13.0	28.1	25.4	19.2
PCBC23	3.86	1.17	28	39	95	151	188	5.6	7.8	19.0	30.1	37.5
PCBC24	3.52	1.19	38	55	136	152	120	7.6	11.0	27.2	30.3	24.0
PCBC25	3.35	1.24	52	65	145	132	107	10.4	13.0	28.9	26.4	21.4
PCBC26	3.12	1.37	92	75	109	132	93	18.4	15.0	21.8	26.4	18.6
PCBC27	3.62	1.12	25	54	133	164	125	5.0	10.8	26.6	32.7	25.0
PCBC28	4.13	1.09	15	36	70	126	254	3.0	7.2	14.0	25.2	50.7
PCBC29	3.44	1.32	61	56	122	128	134	12.2	11.2	24.4	25.6	26.8
PCBC30	3.72	1.21	36	49	94	163	159	7.2	9.8	18.8	32.5	31.7

Note. For all items, min = 1, max = 5, *N* = 501. Items selected for the final version of the PCBC-CZ are in italics.

Exploratory factor analysis (EFA)

Parallel analysis of the 30 items suggested that the associations among the items may have been due to as many as four factors. Velicer's minimum average partial test and the lowest Bayesian information criterion also suggested four factors. According to Kaiser's criterion, three factors should be sufficient to describe the data. All criteria indicated that there were more than the two theoretically expected factors. Consequently, we estimated three minimum residual EFA models with two, three, and four factors to see which items empirically tended to load the extra factors. Loadings from oblique geomin rotations and communalities are presented in Table 2.

The two-factor solution showed that the second factor loaded highly on item 18, on items that had lower correlations with the majority of the remaining items (5, 8, 26), and on several items representing the parental "actions" constructs. The two factors had a correlation coefficient of 0.45. With three factors, the expected "actions" factor separated from the extraneous factor of items 18, 26, 8, and 5. What these items share is the expression of high expectations from parents. This may reflect a cultural difference – while expressing high expectations may be a generally used form of showing support in the USA, it is not so in the Czech Republic. The correlation coefficient for factor 1, representing parental support, and factor 3, representing high expectations, was only 0.25. The four-factor solution did not bring much further clarification because the fourth factor only singled out item 19, which asked about visiting a school counselor. More than one half of respondents selected "never," which reflects the problematic situation of school-provided career services in the Czech Republic.

Items for the PCBC-CZ were selected from the first two factors based on their loadings and an absence of salient cross-loading. To represent the *support* factor, we selected items 4, 11, 12, 21, 23, 28, 29, and 30. To represent the *action* factor, we selected items 2, 3, 9, 10, 13, 14, 15, 16, 20, and 22.

Table 2

Oblique geomin rotated loadings and communalities from 2-, 3-, and 4-factor EFA.

	F1	F2	h ²	F1	F2	F3	h ²	F1	F2	F3	F4	h ²
PCBC01	.71	.03	.52	.56	.26	-.12	.53	.55	.27	-.09	-.06	.53
PCBC02	.43	.43	.54	.08	.77	-.07	.63	.06	.77	.00	-.07	.65
PCBC03	.28	.52	.48	-.07	.79	.00	.56	-.03	.73	.01	.09	.55
PCBC04	.84	-.14	.62	.79	.03	-.12	.61	.72	.12	-.02	-.26	.66
PCBC05	-.07	.66	.40	-.01	.12	.64	.50	-.04	.20	.64	.02	.53
PCBC06	.42	.25	.33	.32	.25	.11	.33	.26	.33	.18	-.16	.37
PCBC07	.23	.47	.36	.07	.45	.19	.36	.00	.54	.28	-.15	.44
PCBC08	-.08	.45	.18	.09	-.15	.62	.34	.01	-.03	.77	-.20	.54
PCBC09	.26	.55	.50	.07	.53	.22	.50	.05	.56	.25	-.02	.52
PCBC10	.40	.39	.45	.10	.66	-.04	.50	.11	.63	.00	.01	.50
PCBC11	.79	.07	.67	.64	.27	-.08	.67	.62	.30	-.03	-.09	.68
PCBC12	.87	-.04	.72	.71	.24	-.16	.72	.70	.25	-.14	-.07	.72
PCBC13	.42	.53	.65	.06	.82	.00	.73	.06	.80	.04	.00	.73
PCBC14	.28	.65	.66	-.05	.80	.13	.71	-.04	.79	.16	.04	.72
PCBC15	.56	.38	.65	.31	.57	.02	.67	.33	.55	.02	.05	.67
PCBC16	.36	.41	.42	.10	.59	.03	.45	.15	.52	-.01	.14	.46
PCBC17	.36	.31	.32	.29	.23	.19	.32	.34	.18	.11	.18	.34
PCBC18	.14	-.71	.43	.05	-.08	-.74	.59	.01	-.09	-.61	-.24	.57
PCBC19	-.09	.59	.31	-.27	.53	.24	.31	-.14	.37	.02	.56	.51
PCBC20	.31	.50	.48	.09	.56	.14	.49	.18	.45	.01	.34	.55
PCBC21	.78	-.05	.58	.81	-.06	.04	.60	.82	-.07	-.02	.06	.61
PCBC22	.54	.42	.67	.28	.61	.03	.69	.36	.51	-.06	.25	.72
PCBC23	.89	-.03	.76	.89	-.02	.03	.79	.89	.00	.01	-.01	.79
PCBC24	.66	.25	.64	.60	.19	.17	.66	.63	.17	.10	.12	.66
PCBC25	.57	.23	.50	.56	.09	.22	.52	.61	.06	.12	.18	.54
PCBC26	-.08	.68	.42	.04	.02	.76	.61	.11	-.03	.58	.39	.64
PCBC27	.52	.28	.47	.53	.08	.28	.51	.57	.05	.17	.19	.52
PCBC28	.84	-.22	.59	.96	-.28	.01	.66	.91	-.20	.04	-.15	.66
PCBC29	.76	.04	.60	.78	-.02	.10	.63	.82	-.06	.02	.14	.66
PCBC30	.81	.03	.67	.80	.02	.06	.69	.59	.02	.04	.21	.70

Confirmatory factor analysis (CFA)

Although we entered an exploratory mode of analysis due to a lack of precise expectations and a need for a brief measure, we decided to use CFA models to elaborate on the EFA findings. The 18-item, 2-factor model with correlated factors and no residual covariances was specified and estimated in lavaan using the weighted least squares means- and variance-adjusted estimator with ordinal items. The model fit the data acceptably ($\chi^2|134| = 396, p < 0.001$, CFI = 0.97, RMSEA = 0.083, SRMR = 0.051). Standardized loadings on the support factor ranged from 0.74 to 0.88 and on the action factor from 0.67 to 0.86. The correlation coefficient for the factors was high at 0.75.

Internal consistency was very high for both support (Raykov $\omega = 0.94$) and action (Raykov $\omega = 0.92$). With respect to the high correlation between the factors, the factors could be treated as two facets of a single construct. In such a case, hierarchical $\omega = 0.97$. We felt this high internal consistency enabled us to further abbreviate the measure. We dropped item 28 from the *support* factor for its tendency to cross-load with the *action* factor. From the *action* factor, we dropped items 15 and 22, again for cross-loading.

Thus, the final PCBC-CZ includes 15 items (Figure 1) – 7 representing the *support* factor and 8 representing the *action* factor. The reduced 15-item, 2-factor model with correlated factors and no residual covariances fit the data well ($\chi^2|89| = 169, p < 0.001, CFI = 0.98, RMSEA = 0.065, SRMR = 0.039$). Standardized loadings on the support factor ranged from 0.76 to 0.88 and on the action factor from 0.68 to 0.88. The correlation coefficient for the factors decreased a bit but was still high at 0.72. Internal consistency was still high for support (Raykov $\omega = .93$), action (Raykov $\omega = .89$), and the overall scale (Raykov $\omega = .94$). Because the model approximately met the assumptions for Cronbach's alpha, it is meaningful to express the internal consistencies as Cronbach's alphas: 0.93 for the support subscale, 0.91 for the action subscale, and 0.94 for the overall scale.

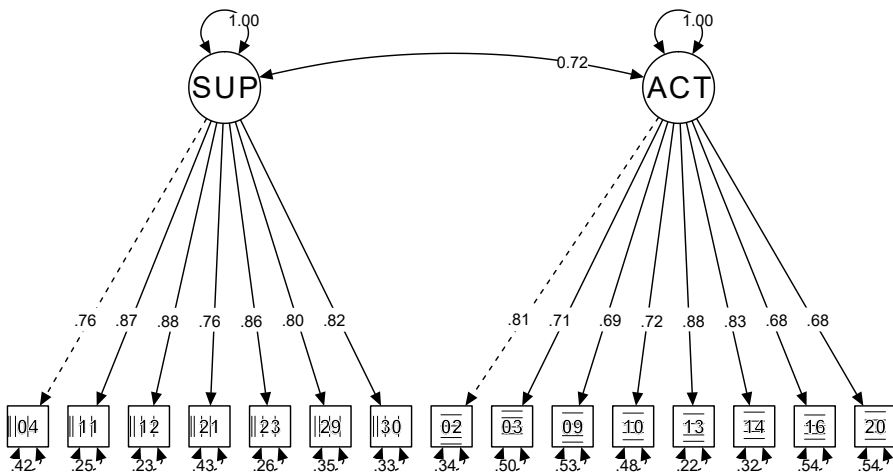


Figure 1. Hierarchical confirmatory factor model.

Measurement invariance

To be able to compare groups (subpopulations) on latent scores, it is necessary to ensure that the measurement model is the same, invariant, across subpopulations. Without invariance, we cannot be certain we are measuring the same construct across subpopulations. Conventionally, if the factor loadings are invariant across groups, we can compare the correlations of the measured constructs with other constructs across groups. We call this weak metric invariance, and in this condition we cannot compare the means of the latent variables across groups. If the loadings and thresholds (intercepts) are invariant across groups, we can compare the means of the latent variables (strong invariance or scalar invariance). Finally, if also the residuals are invariant, we can compare ordinary summation scores across groups (strict invariance).

We looked at measurement invariance with respect to three variables present in our data. We looked at the school the participants were attending, their gender, and the target parent's gender. To check for invariance, we estimated a series of multigroup models in which we stepwise constrained sets of parameters to be equal across groups to see if the model fit significantly decreased.

With respect to the school, the two-factor measurement model appeared to be invariant even up to strict invariance (Table 3). However, this finding is limited due to the small sample in which the smallest of the four schools had slightly over 60 respondents. This forced us to treat the items as continuous to estimate the models. However, the model complexity was too high for this sample size, which shows in the negative scaled χ^2 differences between strong and strict invariance, high RMSEA in the most relaxed models, and CFI being rounded to 1 in the strong invariance model. From the information criteria, we can see that the model was improving with a decreasing number of free parameters and that even the most restricted model fit the data reasonably well.

Table 3

Fit of models testing measurement invariance with respect to school.

	df	AIC	BIC	χ^2	$\Delta\chi^2$	Δ df	$p(\Delta\chi^2)$	CFI	RMSEA
Configural	356	20,800	21,576	760.6				0.981	0.082
Weak	395	20,759	21,371	797.5	38.71	39	0.48	0.961	0.112
Strong	434	20,712	21,159	828.1	30.79	39	0.82	1.000	0.005
Strict	479	20,704	20,962	910.5	*	45		0.996	0.032
Equal means	485	20,705	20,937	923.3	*	6		0.991	0.047

Note. * means the scaling factor was estimated as negative and the scaled χ^2 difference could not be estimated.

Invariance with respect to gender could be assessed without estimation issues because gender splits the sample into only two groups. The measurement model met the requirement for weak invariance, but with strong invariance we found a significant decrease in model fit (Table 4). This decrease was nevertheless small as evidenced by the only marginal decrease in scaled CFI by 0.003 and even a decrease in scaled RMSEA by 0.002. The thresholds the fixing of which caused the significant difference in χ^2 for the model were the thresholds of items 4 and 16, reflecting small but significant ($p < 0.05$) gender differences in the distribution of responses. Considering the small size of the difference and the facts that CFI remained the same across the more constrained models and that RMSEA even increased by a small amount, we can conclude that the measurement model was strictly invariant with respect to gender, allowing us to use summation scores to compare the mean levels of parental support and action.

Table 4

Fit of models testing measurement invariance with respect to respondent gender.

	<i>df</i>	χ^2	$\Delta\chi^2$	Δ df	$p(\Delta\chi^2)$	CFI	RMSEA
Configural	178	236.7				0.979	0.069
Weak	191	246.5	8.95	13	0.77	0.980	0.066
Strong	234	305.8	67.41	43	0.01	0.977	0.064
Strict	249	330.1	8.64	15	0.90	0.980	0.058
Equal means	251	429.0	2.72	2	0.26	0.978	0.060

Similarly, the measurement model appears to be invariant with respect to the gender of the target parent (Table 5). The PCBC-CZ items thus appear to have had the same meaning when they were used to describe maternal and paternal behavior.

Table 5

Fit of models testing measurement invariance with respect to target parent gender.

	<i>df</i>	χ^2	$\Delta\chi^2$	Δ df	$p(\Delta\chi^2)$	CFI	RMSEA
Configural	178	223.2				0.984	0.061
Weak	191	235.9	13.55	13	0.41	0.983	0.060
Strong	234	277.6	35.80	43	0.77	0.982	0.055
Strict	249	301.1	7.38	15	0.95	0.984	0.050
Equal means	251	317.1	0.33	2	0.85	0.989	0.042

Tests of hypotheses

All hypotheses were tested on the two latent factors of the PCBC-CZ by extending the basic measurement model. Although strict measurement invariance was established with respect to several variables and summation scores could have been used, it was still preferable to test the hypotheses on latent scores within a structural equation modeling framework because the latent factors contained less measurement error and were closer to a normal distribution. Specifically, the summation score of the support dimension was moderately negatively skewed (skew = -0.84 , $SE = 0.04$) whereas the predicted factor score had a skew of only -0.23 ($SE = 0.03$). In all subsequent tests, the latent variables were standardized to have a mean of 0 (in the reference group) and variance of 1.

The effect of parental education

We tested Hypothesis 1 by including parental education as a manifest predictor of latent support and action. Parental education was recoded into the three categories of low (ISCED 244, 253, 353), medium (ISCED 344, 354), and high (ISCED 550, 640, 650, 740, 840) and converted to dummy variables with low education as the reference category. Table 6 presents the frequencies of the recoded education variables. In the model, latent support and action were regressed on the dummy variables representing education. With standardized latent variables, the regression coefficients express the mean difference between the indicated and reference education in multiples of the latent variable standard deviations (SD), i.e. Cohen's d . Separate models were estimated for maternal education and paternal education.

The effect of maternal education on support was small with a difference of $0.14 SD$ between low and middle education ($\xi = 1.4$, $p = 0.17$) and a difference of $0.30 SD$ between low and high education ($\xi = 2.0$, $p = 0.046$). The effect of maternal education on action was more pronounced with a difference of $0.16 SD$ between low and middle education ($\xi = 1.5$, $p = 0.13$) and a large difference of $0.63 SD$ between low and high education ($\xi = 4.3$, $p < 0.001$). Maternal education explained about 1.1% of the variance in support and 4.1% of the variance in action.

The effect of paternal education on support was small with a difference of $0.12 SD$ between low and middle education ($\xi = 1.1$, $p = 0.28$) and a difference of $0.17 SD$ between low and high education ($\xi = 0.9$, $p = 0.34$). The effect of paternal education on action was also small with a difference of $0.15 SD$ between low and middle education ($\xi = 1.4$, $p = 0.16$) and a near zero difference of $0.005 SD$ between low and high education ($z = 0.03$, $p = 0.98$). Paternal education explained less than 1% of the variance in support and action.

Table 6
Frequencies of parental education.

Education	Mothers		Fathers	
	N	%	N	%
Low	206	41.12	258	51.50
Middle	206	41.12	149	29.74
High	65	12.97	45	8.98
Missing	24	4.79	49	9.78
Total	501	100.00	501	100.00

Parental engagement

Judging from the frequency of respondents' choosing their mother as the more engaged parent ($n = 415$, 83%) rather than their father or step-father ($n = 78$, 16%; other responses $n = 8$, 2%) the hypothesis about higher maternal engagement appears to be supported. Although male and female respondents differed in the proportion of choosing their mother as the more engaged parent, both genders chose their mother more frequently (males 73%, females 90%, $\chi^2 [1, N = 493] = 20.7, p < 0.001$).

We could also test whether the evaluations of mothers in the PCBC-CZ differed from those of fathers. One test of this hypothesis was already provided by the previous model testing measurement invariance with respect to parent gender. The "equal means" model fixed the means of both factors, support and action, to be the same for fathers and mothers. The model fit did not decrease significantly ($\chi^2 |2| = 0.33, p = 0.84$, both CFI and RMSEA increased), meaning that there were no significant differences in reported support or action between mothers and fathers.

We also tested these differences by including target-parent gender (coded 1 for fathers and 0 for mothers) in the measurement model as we had with education. We included respondent gender because the respondents tended to evaluate same-gender parents slightly differently. Table 7 reports the results of the regression part of the model. Female recipients' mean level of paternal support was estimated to be 0.20 *SD* lower than that of maternal support ($\beta = 1.1, p = 0.29$). For male respondents, the difference was only 0.06 *SD* smaller (n.s.). Female respondents' mean level of paternal action was estimated to be 0.27 *SD* lower than that of maternal action ($\beta = 1.5, p = 0.14$). For male respondents, the difference was smaller by 0.18 *SD* (n.s.). In summary, there were no significant mean differences in support or action between mothers and fathers and the interaction between respondent gender and target-parent gender was small and non-significant.

Table 7
Effects of parent and respondent gender on support and action.

	<i>b</i>	SE	ξ	<i>p</i>	95% CI L	95% CI H	Cohen's <i>d</i>
support							
Male respondent	-0.18	0.12	-1.5	0.13	-0.40	0.05	-0.17
Father	-0.20	0.19	-1.1	0.29	-0.56	0.17	-0.20
Male*Father	0.06	0.27	0.2	0.84	-0.47	0.58	0.06
action							
Male respondent	0.22	0.12	1.9	0.05	-0.00	0.45	0.22
Father	-0.27	0.18	-1.5	0.14	-0.62	0.09	-0.27
Male*Father	0.18	0.27	0.7	0.49	-0.34	0.71	0.18

Note. Cohen's *d* is latent-variable-standardized *b*. The reference categories are female and mother.

Family structure

We also considered the structure of the adolescent's family (Table 8). Most adolescents reported living in a complete family ($n = 344$, 69%) or a family where one of the parents is a step parent ($n = 62$, 12%). Only 48 (10%) adolescents reported living with only their mother and 11 (2%) with only their father. A small proportion ($n = 12$, 5%) reported switching households under a joint physical custody arrangement after a divorce. Using a multigroup extension of the model reported in Table 8, we found no significant difference between a model where the regression coefficients were allowed to differ between complete families (group 1) and all other family structures (group 2) and a model where they were constrained to be equal across groups ($\chi^2|6| = 2.2$, $p = 0.91$). In both groups, the effects of target-parent gender remained non-significant.

In the multigroup model for family structure, we could also look at the mean levels of support and action. Adolescents from complete families reported mean action 0.41 *SD* higher than that for respondents from other types of families ($\xi = 3.1$, $p = 0.002$). The difference in the means of the support factor was 0.20 *SD* ($\xi = 1.2$, $p = 0.22$). To test the differences in family structures in more detail, we recoded family structure to dummy variables with complete family as the reference category and used the dummy variables as predictors in the PCBC-CZ measurement model. Since some of the family structures and gender were not independent, adolescent gender was included to be able to control for it. Although all family structures showed a lower mean on both factors than complete families, only one difference was significant and large and that was the difference between the respondents living with only their father and respondents from complete families. Despite the small size of the "father only" group ($n = 12$), the difference was significant for both factors.

Table 8
Effects of family structure on support and action.

	<i>b</i>	SE	ζ	<i>p</i>	95% CI L	95% CI H	Cohen's <i>d</i>
<i>support</i>							
With mother	-0.06	0.17	-0.38	0.71	-0.39	0.26	-0.06
With father	-0.88	0.29	-3.03	0.002	-1.45	-0.31	-0.87
With parent and step-parent	-0.20	0.14	-1.42	0.16	-0.48	0.08	-0.20
Joint physical custody	-0.21	0.36	-0.58	0.56	-0.92	0.50	-0.21
Male	-0.14	0.10	-1.37	0.17	-0.35	0.06	-0.14
<i>action</i>							
With mother	-0.28	0.18	-1.54	0.12	-0.63	0.08	-0.27
With father	-0.72	0.32	-2.26	0.02	-1.34	-0.10	-0.71
With parent and step-parent	-0.26	0.14	-1.83	0.07	-0.53	0.02	-0.25
Joint physical custody	-0.49	0.36	-1.36	0.18	-1.20	0.22	-0.48
Male	0.28	0.10	2.69	0.01	0.08	0.48	0.27

Note. Cohen's *d* is latent-variable-standardized *b*. The reference categories are female and complete family.

Adolescent gender

We also hypothesized a recipient-gender effect on the support and action factors. Again, the invariance tests reported above contain an omnibus test of the hypothesis that males and females have the same means for both factors and the result was that the model with means fixed as equal across groups did not fit significantly worse than a model with free means ($\chi^2|6| = 2.7$, $p = 0.26$). Having established measurement invariance with respect to respondent gender, we could add gender as predictor to the measurement model and directly test its effect on the factors. Males reported slightly lower mean support than females with a difference of 0.17 *SD* ($\zeta = 1.6$, $p = 0.10$) and a higher mean action with a difference of 0.24 *SD* ($\zeta = 2.4$, $p = 0.02$). A similar conclusion can be drawn from the tests of the previous hypotheses on target-parent gender and family structure where respondent gender had no effect on support and a small effect on action.

Year of study

To test the hypothesis that the support and action factors would increase with grade, we added grade as a manifest predictor to the measurement model. Because gender and grade were not independent, we also included respondent gender in the regression. The results presented in Table 9 show no effect of grade on either support or action.

Table 9
Effects of grade on support and action.

	<i>b</i>	SE	ξ	<i>p</i>	95% CI L	95% CI H	Cohen's <i>d</i>
support							
Grade	-0.01	0.05	-0.2	0.80	-0.11	0.08	-0.01
Male	-0.15	0.10	-1.6	0.10	-0.34	-0.03	-0.18
action							
Grade	-0.05	0.05	-1.0	0.30	-0.13	0.04	-0.06
Male	0.16	0.09	1.9	0.06	-0.00	0.33	0.20

Note. Cohen's *d* is latent-variable-standardized *b*. The reference category is female.

Discussion and conclusion

Parents are considered to be an important source of support and action for adolescents in the area of educational and career choices. However, this subject has been neglected in Czech educational and psychological research. One of the possible reasons is the absence of an instrument that would enable measurement of parental behaviors. The first objective of the present study has therefore been to bring into the Czech environment a tool for measuring career-specific parental behaviors. The PCBC (Keller & Whiston, 2008) has been chosen from the available tools presented above with respect to the measured construct and it was translated into the Czech language. The PCBC, as opposed to other instruments, offers identification of the particular person in a given family who is the most engaged in the educational and career choices and to whom the responses can be explicitly related. Similar available tools are limited by the fact that they cannot capture differences in the career-specific behaviors of fathers and mothers, although it is well known that there are differences in relationships in connection with not only the gender of the children, but also the gender of the parents (Collins & Laursen, 2004).

The second objective was to verify the psychometric properties of the chosen tool. The results have shown that the PCBC-CZ was internally consistent and showed adequate factor validity for measuring two dimensions of career-specific parental behaviors. Using EFA and CFA, items were selected representing factors we believe to be equivalent to those measured by the original PCBC. The relationship between the factors and their indicators (items) appears to be invariant across respondent gender, and type of school, and evaluated parent gender. The support scale in the Czech version of the tool identifies psychosocial support, i.e. whether parents encourage their children in their educational and career choices, provide them with emotional

support, express interest in them and their inner world, support them in their educational and career goals, and so on. The action scale identifies the instrumental assistance of parents. It includes, for example, getting acquainted with available information sources, providing specific career information, participating in informational events, motivating and encouraging their children to actively acquire the information needed to make a rational decision for their educational and career choices, and being engaged in their children's completing school duties. Although Czech adolescents want their parents to interfere in their educational and career choices in a minimal way, at the same time they expect their parents to provide them with the necessary support and action in their decision-making process. Through the eyes of adolescents, the support and action of their parents are seen through the provision of emotional support, encouragement, and advice and information (Hlađo, 2013). Adolescents require emotional and instrumental engagement from their parents as a necessary resource for gaining self-confidence and the motivation to pursue educational and career goals and career exploration (Guan et al., 2016). Based on the psychometric properties of the PCBC-CZ, it can be said that this tool enables effective measurement of the given area.

The third objective was to explore associations between career-specific parental behaviors and selected demographic and school-related variables. Based on studies that determined that middle-class parents and parents with higher professional education were more active in relation to educational and career choices, we assumed that a higher degree of career-specific parental behaviors would be perceived by adolescents whose mothers and fathers had completed higher education. Hypothesis 1 was supported by the data only partially, in the case of the mother's education (Hypothesis 1a), but not supported in the case of the father's education (Hypothesis 1b). It turned out that maternal tertiary education represented an advantage for adolescents, which, in comparison with mothers with lower education, was reflected in higher levels of perceived support and action.

In line with the findings of a number of studies, it was also determined that mothers were more engaged in the process of the educational and career choices of young Czech students in vocational upper-secondary schools than fathers were, and therefore Hypothesis 2 was supported by the data. Although boys and girls varied in the relative proportion of indicating their mother as the family member most engaged in their educational and career choices, adolescents of both genders indicated their mother more often than their father. Hypothesis 4, based on earlier empirical findings that mothers are more involved with daughters and fathers are more involved with sons in educational and career choices, was not supported by our data. The data also did not support Hypothesis 5 that boys would perceive a higher degree of career-specific parental behaviors in an engaged father, while girls would

perceive it in an engaged mother. It turned out that at the time when adolescents were considering their educational and career choices and making important decisions in this area, they gained support and action predominantly from their mothers. The role of the mother in the family when making a further educational and career choice has therefore been stable for a long time and it does not seem that a redistribution of roles between men and women has occurred in this area in Czech families. In younger individuals, the high level of engagement of mothers in educational and career choices can be explained by their traditional maternal role, their social nature, and the amount of time they devote to their children (Bryant, Zvonkovic, & Reynolds, 2006). The facts that mothers have more time than fathers and that they are in direct interaction with their offspring can play an important role, too (Coltrane & Adams, 2001). The answer to the question of why mothers play a central role in educational and career choices not only for adolescents studying at lower-secondary schools, but also for offspring who are already studying at upper-secondary schools requires further research.

The findings on the influence of parental gender complement the important conclusion that perceived support and action provided by mothers and fathers did not differ. In other words, when the father was more engaged in educational and career choices in the family, the adolescents were as positive about him concerning both factors as was the case when mothers were more engaged. In this respect, it was therefore not important whether the mother or father was more engaged in educational and career choices in the family since their career-specific parental behaviors and their effects were most likely to be similar.

As mentioned above, previous studies focused on the study of career-specific parental behaviors from the point of view of gender rather sporadically (Dietrich & Kracke, 2009). Based on the available findings, we assumed that parents would provide a higher level of support and action to girls than to boys for such reasons as because parents have higher educational aspirations for girls than for boys (Ashby & Schoon, 2010). However, Hypothesis 3 was not supported by the data.

Earlier research has highlighted the problematic fulfillment of parental roles by mothers and fathers in divorced families. For this reason, we expected that adolescents living in always-married families would perceive a higher degree of career-specific parental behaviors than adolescents living in joint physical care, only with their father, or only with their mother. The data revealed that adolescents living in always-married families received greater support and action from their parents than was the case for individuals living in families with a different structure. However, Hypothesis 6 was supported by the data only partially. Statistically significantly lower levels of support and action were found only for adolescents who were living for various

reasons only with their father compared to those from dual-parent families (Hypothesis 6b). Adolescents who were living only with their father were therefore more at risk of not being given adequate parental support or action concerning educational and career choices, which is a finding corresponding with previous research. It is interesting that similar assumptions concerning individuals living only with their mother (Hypothesis 6c) and those in the joint physical care of both parents (Hypothesis 6a) were not supported. Although transformation of the family arrangement can lead to reduced possibilities for harmonizing family and work responsibilities, it was probably not reflected in the support and action provided by mothers. Mothers play their role in educational and career choices successfully in both always-married and divorced families regardless of whether they were raising their children alone or in joint physical care with the father (Tucker, Barber, & Eccles, 2001). Another positive effect identified by previous research in this area may have been reflected in joint physical care, as well (Barber, 1994). Fathers in divorced families who meet their offspring regularly discuss educational and career plans with them more often than fathers who are in irregular contact with their children. Regular contact with a father appears to be a protective factor with respect to career-specific parental behaviors.

The last tested hypothesis was that the degree of perceived career-specific parental behaviors would increase with higher grades. This assumption had been based on the fact that some longitudinal studies had found higher parental support in the period before the completion of studies (Dietrich & Salmela-Aro, 2013). However, Hypothesis 7 was not supported by the data. It was confirmed that making a decision for educational and career is not a one-off act, but a long-term process consisting of a number of partial decisions and choices (Hirschi & Läge, 2007). Continuous construction of the educational and career goals of adolescents and possible ways to achieve them can therefore be positively reflected in the perceived support and action provided by parents. When adolescents consider their future perspectives, they often discuss them with their parents, ask for advice or assistance, negotiate their current standpoint (Whiston & Keller, 2004), and constantly stimulate career-specific parental behaviors.

Limitations

The first limitation of the study is that the PCBC-CZ tool is based only on statements by adolescents, i.e. on their subjective assessment of career-specific parental behaviors. In order to make the statements objective and be able to see if parental behavior is perceived by all members of the family in the same way, it would be necessary to supplement the data with the opinions of the parents. Therefore, the next steps could be to prepare a pairing tool designed to detect career-specific parental behaviors separately in cooperation with the parents.

The second limitation is the cross-sectional design, which does not allow for assessment of the development of career-specific parental behaviors over time and drawing conclusions on whether parental behaviors influence the career development of adolescents, or, on the contrary, adolescents and their attributes influence parental behaviors. The solution when planning future research is to choose a longitudinal approach.

The third limitation can be seen in the homogeneous sample of students. Although this study has presented a tool for measuring career-specific parental behavior for Czech students in vocational upper-secondary schools, it is not clear whether the PCBC-CZ would have the same structure for other populations (e.g., students in lower-secondary schools or general upper-secondary schools, disadvantaged students). Likewise, this indicates a potential scope for further research.

It should also be considered that parental behavior is influenced by many individual, relational, social, cultural, environmental, and structural influences that have not been captured in this study. Further, with respect to tests of measurement invariance, our sample was not large enough to achieve statistical power high enough to identify small invariances. For the identification of those, a more extensive data set would be necessary. We had no data to assess the empirical, concurrent validity of the measure.

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Supplementary data

Supplementary data related to this study can be found at <https://doi.org/10.5817/SP2018-2-7>.

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Corresponding authors

Petr Hlaďo

Department of Educational Sciences, Faculty of Arts, Masaryk University, Brno, Czech Republic

E-mail: hlado@phil.muni.cz

Stanislav Ježek

Department of Psychology, Faculty of Social Studies, Masaryk University, Brno, Czech Republic

E-mail: stan@fss.muni.cz

Appendix A*Item wordings of Parent Career Behavior Checklist (PCBC).*

Item		Factor	Wording
PCBC	PCBC-CZ		
PCBC01			Můj rodič projevuje zájem o „teenagerovské“ problémy, které jsou pro mě důležité. <i>My parent expresses interest in various teenage issues that are important to me.</i>
PCBC02	PCBC-CZ01	Action	Můj rodič mi ukázal, kde mohu nalézt informace o školách či profesích. <i>My parent has shown me where to find information about colleges or careers in the library or bookstore.</i>
PCBC03	PCBC-CZ02	Action	Můj rodič mi doporučil, abych si udělal/a test zájmů nebo test zaměřený na volbu vzdělávací či profesní cesty. <i>My parent has encouraged me to take interest assessments or career tests offered by my school.</i>
PCBC04	PCBC-CZ03	Support	Můj rodič mě povzbuzuje, abych činil/a vlastní rozhodnutí. <i>My parent encourages me to make my own decisions.</i>
PCBC05			Můj rodič mi říká, že má na moje vzdělání nebo povolání vysoká očekávání. <i>My parent tells me he/she has high expectations for my career.</i>
PCBC06			Můj rodič šetří peníze na mé vzdělání. <i>My parent is saving money for my college education.</i>

PCBC07			Můj rodič mě přesvědčil, abych zvažoval/a více různých studijních nebo profesních alternativ. <i>My parent has encouraged me to consider many different educational and career options.</i>
PCBC08			Můj rodič mi říká, že ode mne očekává dobré známky ve škole. <i>My parent tells me he/she expects me to get good grades in school.</i>
PCBC09	PCBC-CZ04	Action	Můj rodič mi vypráví o konkrétních profesích. <i>My parent tells me about specific careers.</i>
PCBC10	PCBC-CZ05	Action	Můj rodič mi pomáhá se školními úkoly nebo se studiem. <i>My parent helps me with my homework or studying.</i>
PCBC11	PCBC-CZ06	Support	Můj rodič se snaží, abych se cítil/a lépe, když se mu svěřím, že mám obavy nebo starosti týkající se volby vzdělávací nebo profesní cesty. <i>My parent helps me feel better when I tell him/her I am worried or concerned about choosing a career.</i>
PCBC12	PCBC-CZ07	Support	Můj rodič se upřímně snaží pochopit mé myšlenky, pocity a názory týkající se různých témat. <i>My parent really tries to understand my thoughts, feelings and opinions about various topics.</i>
PCBC13	PCBC-CZ08	Action	Můj rodič mi poskytl informace o konkrétních profesích (ať již v písemné podobě, na internetu nebo jině). <i>My parent has given me written material about specific careers.</i>
PCBC14	PCBC-CZ09	Action	Můj rodič mi poskytl informace o konkrétních školách, na kterých bych mohl/a po ukončení střední školy pokračovat (ať již v písemné podobě, na internetu nebo jině). <i>My parent has given me written material about specific colleges.</i>
PCBC15			Můj rodič se mnou hovořil o tom, jak se vypořádat s náročným rozhodováním. <i>My parent has talked to me about the steps involved in making difficult decisions.</i>
PCBC16	PCBC-CZ10	Action	Můj rodič se se mnou zúčastnil akce, nabízené mou školou nebo jinou institucí, jež byla zaměřena na oblast spojenou s volbou vzdělávací nebo profesní cesty. <i>My parent has participated with me in a structured career development workshop offered by my school, church, etc.</i>
PCBC17			Můj rodič mě podporuje, abych se zapojil/a do mimoškolních aktivit (např. sportovní, umělecké či jiné kroužky). <i>My parent has encouraged me to be involved in extra-curricular activities (sports, music, church).</i>

PCBC18			Můj rodič mi řekl, že by byl zklamaný, kdybych nepokračoval/a ve vzdělávání či nevykonával/a profesi, kterou pro mě považuje za nejlepší. <i>My parent says he/she would be disappointed if I did not enter a specific career he/she wants me to enter.</i>
PCBC19			Můj rodič hovořil s poradcem na mé škole (výchovným poradcem, školním psychologem apod.). <i>My parent has talked with my school counselor.</i>
PCBC20	PCBC-CZ11	Action	Můj rodič mě povzbuzuje, abych se ptal/a na různé profese či zaměstnání. <i>My parent encourages me to ask questions about different jobs.</i>
PCBC21	PCBC-CZ12	Support	Můj rodič mi říká, že mě má rád. <i>My parent tells me he/she loves me.</i>
PCBC22			Můj rodič mi pomohl porozumět výsledkům testů zaměřených na volbu vzdělávací nebo profesní cesty. <i>My parent has helped me understand results from career tests or interest assessments I have taken.</i>
PCBC23	PCBC-CZ13	Support	Můj rodič mně dodává odvalu, abych zkoušel/a nové věci. <i>My parent encourages me to try new things.</i>
PCBC24			Můj rodič mě vede k tomu, abych s ním hovořil/a o svých vzdělávacích nebo profesních plánech. <i>My parent encourages me to talk to him/her about my career plans.</i>
PCBC25			Můj rodič mi řekl, že je se svým životem spokojený. <i>My parent tells me he/she is very satisfied with his/her own life.</i>
PCBC26			Můj rodič má představu, co bych měl/a po ukončení střední školy dělat a očekává, že jeho představu naplním. <i>My parent has one career in mind for me and expects me to enter it.</i>
PCBC27			Můj rodič se ptá, jakou vzdělávací nebo profesní cestu pro svou budoucnost zvažuji. <i>My parent asks what careers I am considering for my future.</i>
PCBC28			Můj rodič mě podporuje, abych si zvolil/a vzdělávání či povolání, které sám/sama chci. <i>My parent encourages me to choose whatever career I want.</i>
PCBC29	PCBC-CZ14	Support	Můj rodič mi říká, že je na mě pyšný. <i>My parent tells me he/she is proud of me.</i>
PCBC30	PCBC-CZ15	Support	Můj rodič mě podpořil, když jsem se mu svěřil/a, o jaké vzdělávání nebo práci se po střední škole zajímám. <i>My parent has supported me when I have told him/her that I am interested in a specific career.</i>

Appendix B

Polychoric correlations of PCBC-CZ candidate items.

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30							
PCBC01	—																																				
PCBC02	.55	—																																			
PCBC03	.43	.64	—																																		
PCBC04	.57	.48	.34	—																																	
PCBC05	.21	.35	.35	.08	—																																
PCBC06	.42	.43	.38	.44	.29	—																															
PCBC07	.30	.44	.44	.36	.34	.49	—																														
PCBC08	.03	.14	.16	.12	.53	.22	.26	—																													
PCBC09	.39	.51	.44	.34	.46	.38	.55	.33	—																												
PCBC10	.43	.58	.50	.36	.29	.46	.42	.16	.49	—																											
PCBC11	.70	.56	.47	.66	.24	.40	.40	.17	.42	.50	—																										
PCBC12	.69	.52	.42	.68	.19	.41	.35	.06	.42	.47	.80	—																									
PCBC13	.44	.72	.60	.48	.37	.43	.50	.20	.64	.61	.54	.57	—																								
PCBC14	.41	.65	.61	.40	.39	.45	.54	.28	.57	.55	.50	.49	.77	—																							
PCBC15	.55	.60	.57	.49	.32	.40	.46	.17	.58	.57	.64	.64	.71	.67	—																						
PCBC16	.39	.53	.49	.35	.24	.37	.36	.14	.43	.45	.50	.45	.51	.60	.56	—																					
PCBC17	.28	.39	.40	.35	.25	.32	.18	.34	.37	.42	.40	.39	.40	.43	.45	.45	—																				
PCBC18	-.20	-.29	-.30	-.10	-.52	-.25	-.33	-.45	-.30	-.22	-.21	-.13	-.29	-.42	-.32	-.31	-.36	—																			
PCBC19	.16	.27	.37	-.01	.30	.16	.24	.05	.31	.30	.16	.15	.36	.37	.27	.33	.29	-.36	—																		
PCBC20	.37	.47	.48	.34	.31	.31	.37	.15	.50	.50	.42	.62	.63	.41	.36	.47	.34	.40	-.17	.12	.33	—															
PCBC21	.60	.42	.35	.54	.16	.43	.27	.12	.33	.42	.62	.63	.41	.36	.47	.34	.40	-.17	.12	.33	—																
PCBC22	.51	.62	.65	.47	.31	.42	.41	.13	.56	.57	.59	.58	.68	.65	.69	.60	.47	-.29	.40	.58	.59	—															
PCBC23	.61	.48	.36	.68	.21	.46	.41	.14	.45	.48	.68	.71	.53	.43	.61	.40	.45	-.17	.13	.46	.71	.64	—														
PCBC24	.54	.54	.43	.54	.32	.43	.39	.21	.52	.49	.64	.62	.60	.53	.65	.46	.42	-.32	.25	.56	.60	.65	.73	—													
PCBC25	.45	.44	.44	.44	.47	.29	.40	.33	.21	.44	.41	.48	.52	.52	.47	.55	.38	.39	-.25	.27	.49	.57	.55	.65	.60	—											
PCBC26	.14	.28	.32	.11	.51	.20	.31	.39	.36	.24	.20	.14	.35	.42	.31	.28	.27	-.65	.43	.32	.22	.40	.23	.35	.39	—											
PCBC27	.48	.44	.35	.46	.31	.34	.36	.17	.43	.38	.53	.53	.48	.50	.56	.39	.39	-.37	.22	.51	.47	.56	.55	.62	.52	.43	—										
PCBC28	.45	.34	.24	.70	.14	.36	.28	.14	.24	.28	.57	.59	.36	.26	.45	.33	.39	-.05	-.03	.29	.55	.43	.68	.54	.50	.09	.50	—									
PCBC29	.54	.41	.34	.56	.26	.44	.27	.12	.42	.46	.58	.64	.48	.43	.56	.43	.41	-.16	.20	.41	.70	.56	.69	.60	.61	.30	.53	.58	—								
PCBC30	.49	.47	.41	.60	.22	.43	.33	.13	.42	.44	.62	.67	.51	.46	.62	.47	.42	-.18	.16	.42	.60	.62	.73	.66	.58	.26	.59	.72	.72	—							

