Career planning in college students: assessment of an online and group intervention

Abstract

There has been a growing demand for evidence-based interventions to help students prepare for the transition between university and the world of work. The aim of this study was to investigate the effects of a career planning intervention, in groups and online, on the career adaptability resources and perceptions of professional development and employability of college students in the final stage of their undergraduate courses. The study was based on career construction theory and the theoretical model for professional development of college students. As a preliminary activity, the intervention was performed with a pilot group (n = 20), followed by the actual experiment with an intervention group (n = 14) and a comparison group (n = 14). Based on a detailed protocol, the intervention was applied for three months, with six weekly sessions and a follow up session one month after the end of the intervention. Between the sessions, the participants were expected to accomplish directed tasks. Two observers were part of the experiment and elaborated reports of each session. The one-way ANOVA and also the Jacobson and Truax (JT) Method were used to evaluate the effectiveness of the intervention, comparing each participant with themself before and after the intervention. The results show that career planning in graduating college students expands their career adaptability resources, and their perceptions of professional development and employability. The time effect did not produce similar scores in the comparison group. Therefore, based on the study, career planning interventions can be recommended for college students to promote proactive action for the anticipation of barriers and increase awareness of possibilities and work interests among participants.

Keywords: career adaptability, career interventions, career planning, employability, professional development.

Graduation is a time that presents many challenges and causes feelings such as fear and insecurity, especially when considering the rapid changes in the world of work. Furthermore, the transition from the university to the job market in the area of study is not an easy task, either due to the lack of self-knowledge and professional experience or due to the low expectation of labor demands (Fouad et al., 2016; ILO, 2015; OECD, 2004). In this context, career planning interventions contribute to the college students' projects for the transition to the world of work (van der Horst et al., 2021).

The importance of investigating career variables in this target audience has already been highlighted in meta-analyses and systematic reviews (Hirschi & Koen, 2021; Kleine et al., 2021; Whiston et al., 2017), as well as in intervention studies. These together allow us to conclude that career interventions involving college students produce positive effects on the clarity of professional objectives (Pinto et al., 2015), on career adaptability resources (Alves & Teixeira, 2021; Souza & Teixeira, 2020; Green et al., 2019; van der Horst et al., 2021) and on professional decision-making during and after the completion of the process (Pordelan & Hosseinian, 2021).

Research shows that career planning is an essential element in the construction of the college student's professional identity (Carvalho et al., 2021; Frick et al., 2015; Wei et al., 2021). Experimental studies highlight the narrative approach as an important factor in the construction, deconstruction and reconstruction of a career (Di Fabio & Maree, 2012; Pordelan & Hosseinian, 2021; Santilli et al., 2019). This approach is normally useful in practice, since the construction of narratives comes from the relationship between client and career counselor, in a logic that values the role of the individual as the author of their own story (Duarte, 2019).

Anchored in Career Construction Theory – CCT, the projective perspective adopted by Savickas (2013) highlights reflections on the life stories of the individual

and shapes their professional identity. This theory is similar to narrative approaches regarding identity, in which building a career is similar to the task of building the self (made from stories). The identification of career themes therefore becomes part of the career counseling process and brings continuity within the diversity of socially constructed individual micro-narratives. Therefore, the processes mobilized in the construction of the career are part of the processes imbricated in the construction of the self, through one's own life stories (Del Corso & Rehfuss, 2011; Hartung & Santilli, 2018; Savickas, 2013).

Narrative career counseling is a constructivist model that emphasizes language, discourse, and the development of life themes, as it involves writing and reviewing a coherent narrative through exploration, experience, and reflection (Severy, 2008). While many career counselors continue to use traditional assessments, the use and interpretation of a narrative approach empowers individuals to constantly assess themselves and their work situations for long-term career transition management (Del Corso & Rehfuss, 2011).

Among the advantages of the Narrative Career Counseling Model (Cochran, 1997; Clark et al., 2004; Savickas, 1997; Severy, 2008) for the present study are: *(i*) the use of the student's own language, reflecting the diversity of human experience; *(ii) the* invitation for college students to expand their experience, explore options and create opportunities that fit into their career change constructs; and *(iii)* the encouragement of long-term strategic transition management rather than one-time decision-making. For these reasons, we chose to use the narrative method in this intervention.

We investigated the career planning of graduating college students, testing its effects on the career adaptability, perception of professional development, and perception of employability variables. As one of the differentials of the intervention, the

group format can be highlighted – combined with individual initiation and follow up sessions – and full use of the online modality. This format can have a positive effect on expanding access to career interventions, since individual and face-to-face attendance limits the target audience (van de Horst, 2021).

Accordingly, an intervention that can increase the number of college students that take part favors the use of a moment of life in which there is ample space for the development of career interventions, helping students to reflect on their professional path. The literature on the career development of college students presents interventions with positive results and the use of different modalities. Table 1 exemplifies career interventions in different countries, detailing the participants in terms of Intervention Group (IG) and Comparison Group (CG), the theoretical model and the protocol used.

Table 1

Summary of Career Intervention Studies with College Students

Source	Participants/Country	Theoretical model and intervention protocol
Green et al. (2020)	Administration Students of Private HEIs - Pakistan (IG=49; CG=49)	Career building adaptation model and critical ingredients. Intervention of 7 face-to-face group sessions, lasting 24 hours, divided into 4 weeks. 6 month follow up.
Pordelan & Hosseinian (2021)	College students from public HEIs - Iran (IG=30; CG=30)	CCT Intervention of 5 online group sessions of 1h30 each, with instructions recorded through videos and interactions carried out through a career counseling website.
Ambiel & Martins (2020)	Psychology students from two private HEIs - Brazil (IG=18)	Career adaptability, professional decision and interests. Intervention of 4 online sessions including independent activities without the need for direct supervision. Case study with follow up of one participant.
Hartung & Santilli (2018)	College students from public HEIs - Italy (IG=10)	CCT Intervention with MCS through individual responses without the need for supervision. Case study outside the intervention sample.
van der Horst et al. (2021)	College students from public HEIs - Netherlands (IG=48; CG=79)	CCT and critical ingredients. Intervention with three online group protocols: *(i)* 1 preparatory and 2 workshop sessions over 2 weeks and 4 hours; *(ii)* 1 preparatory and 1 workshop session of 2h30; *(iii)* single workshop session without preparatory session.
Park et al. (2018)	Psychology Students at Public HEIs - South Korea (IG=21; CG=20)	Cognitive social career theory. Intervention of 3 weekly, face-to-face group sessions of 1h30 each. One month follow up.
Fouad et al. (2016)	College students from public HEIs - USA (IG=56)	CCT. Face-to-face intervention in the form of a one semester course for first and second year students. Pre-test in the first two weeks of the semester and post-test in the last two.
Pordelan et al. (2020)	College students from public HEIs - Iran (IG=15; CG=15)	Life Design Model. Intervention with 2 protocols of 4 group sessions: *(i)* via the counseling website, counselor interaction, videos and materials; *(ii)* in person. 1 month follow up.
Koen et al. (2012)	College students and recent graduates of public HEIs - Netherlands (IG=32; CG=24)	CCT and critical ingredients. Intervention of 4 face-to-face group sessions of 1 to 2 hours each. 6 month follow up.

Pinto et al. (2015)	College students from public HEIs - Portugal (IG=58; CG=62)	Career exploration model. Intervention of 9 face-to-face sessions of 2 hours per week, in groups of 8 to 10 participants.
Clark et al. (2004)	College students from public HEIs - USA (IG=32)	Career narrative model. Intervention of 4 in-person group sessions lasting 1h30 each.
Alves & Teixeira (2021)	College students from public HEIs - Brazil (IG=22; CG=13)	Hope-Action Theory Model. Intervention of 3 face-to-face sessions in weekly groups of 2 hours each.
Barbosa et al. (2018)	College students from public HEIs - Brazil (IG=22)	Life Design Model. Intervention of 8 face-to-face sessions in weekly groups of 1h30 each.
Souza & Teixeira (2020)	College students from public HEIs - Brazil (IG=7)	CCT Intervention with MCS in online format to be answered individually over a maximum of 2 weeks. There was no interaction with the counselor.

Note. HEI = Higher Education Institution; MCS = My Career Story; CCT = Career construction theory; IG = Intervention Group; CG = Comparison Group.

Among the 14 studies presented in Table 1, four had a sample composed of college students from only one specific course and four studies included graduate students or recent graduates in addition to undergraduates. The only study that included college students from two HEIs maintained the concentration on one of them (15 students from one HEI and three from another). Therefore, even with online interventions, there are few studies that diversify the universities studied. This diversification of both courses and HEIs in different regions of the country could be useful for a career planning intervention as it provides the group with different academic experiences and also varied study trajectories (Mourão et al., 2020). In order to promote this diversification and the exchange of experiences, we opted for an intervention with students from 15 undergraduate courses in 17 HEIs located in eight Brazilian states.

In terms of group or individual intervention protocols, three designs can be distinguished among the studies presented in Table 1. The first is individual career guidance, with online protocols and without direct supervision from the advisor (adopted by three of the 14 studies). The second is a model exclusively in the online group format (adopted in three of the 14 studies). The third and final design is a face-to-face group format (nine studies). Accordingly, we opted for a fully online model that mixes the individual and group format.

In the protocol we adopted, in addition to the preparatory activities, each

participant had an initial individual session and a final individual session, interspersed with five other sessions in small groups of seven participants each. This format aims, on the one hand, to meet the singularities of each participant, interacting separately with each of them both at the beginning and at the end of the intervention. On the other hand, the design with the weekly sessions in small groups guarantees space for individual narratives and group exchanges, in which the reports of one can serve as a stimulus for the others, as well as expanding the feelings of belonging and collaboration with a group that is experiencing a similar life moment (Clark et al., 2004).

The studies also diversified in terms of measuring the impact variables of the intervention. The most used was career adaptability, which was investigated in eight of the 14 studies. Other variables investigated in more than one study were: career decision making (Pordelan & Hosseinian, 2021); and self-efficacy (Park et al., 20018; Pordelan et al., 2020). Finally, investigations of results in terms of vocational exploration (Pinto et al., 2015) and proactive resources (Green et al., 2020) were less frequent.

Accordingly, we chose to investigate the effect of the career planning intervention in college students in terms of career adaptability and perceptions of professional development and employability. Career adaptability was included as it is a central construct in the area. However, we chose to include variables not yet investigated in other interventions of this nature, in order to contribute to advancing the research. The perception of professional development is linked to one of the theoretical models used as a basis (Mourão et al., 2020), and to the understanding that higher education training plays a central role in professional trajectories (Carvalho et al., 2021). The perception of employability, which is also little investigated in these studies of career intervention with college students (Koen et al., 2012), allows the measurement of a relevant impact, given that filling a vacancy in the labor market is one of the central

goals of college students (De Vos et al., 2021; Donald et al., 2018).

A minority of studies (*n*=5) included protocols with follow up sessions and only one of the 14 studies reported evaluation of the participants after each session (Barbosa et al., 2018). The inclusion of external observers from the field of Psychology is another of the differentials of the present study, since this observation work increases the methodological rigor (Mourão et al., 2016).

Although career planning does not represent a guarantee of effective placement or relocation in the market, the process anticipates a set of issues present in the transition between university and the world of work (Zikic & Klehe, 2006) or in other phases of the career. Career planning is a practice of facilitating self-reflection processes and engagement in work-related tasks, which contribute to the formation of the professional identity (Hall, 1986). This involves professional decision and exploratory behavior variables, such as self-knowledge, the establishment of professional goals, and networking (Mourão et al., 2020). Carvalho and Mourão (2021a) highlighted more favorable results in terms of the perception of professional development and employability among college students who plan their careers compared to those who do not.

The narrative approach proposed by the CCT has proven to be a relevant resource for use in college students' career planning. It considers experiences, reflections and the exploration of possibilities for a meaningful decision-making process (Clark et al., 2004; Del Corso & Rehfuss, 2011; Savickas, 2013). The My Career Story – MCS program (Savickas & Hartung, 2012), anchored in CCT, allows an operationalization of career planning, as it aims to: *(i)* increase self-knowledge; *(ii)* identify career interests; *(iii)* explore activities; *(iv)* facilitate narrative about life stories; and *(v)* construct an action plan.

The present study implements the autobiographical exercises from the MCS book as one of the pillars of the career planning intervention, with the aim of supporting the process by promoting self-reflection, narrative ability, intentionality and adaptability. Its effectiveness as a career counseling tool has already been evaluated in other group (Santilli et al., 2019) and online (Hartung & Santilli, 2018; Souza & Teixeira, 2020) interventions, all of which showed significant changes in career adaptability features after the intervention.

The design of the present intervention consists of the use of the MCS autobiographical exercises combined with other career planning activities anchored in the Theoretical Model for Professional Development of College students – MPDUS (Mourão et al., 2020) and in the critical ingredients for the efficacy of career interventions (Brown et al., 2003). The first model is specifically aimed at college students and predicts an intentional and continuous process of career growth and planning. The proposal comprises four cyclical steps that can be carried out at periodic intervals to promote reflection on career goals, namely: *(i)* establishment of professional goals; *(ii)* skills analysis; *(iii)* implementation of learning actions; and *(iv)* identification of progress. All stages of the MPDUS were considered in the intervention from the perspective of a practical application.

The intervention design also included the five critical ingredients for the efficacy of career interventions (Brown et al., 2003, see also Green et al., 2020; Koen et al., 2012; Santilli et al., 2019; van der Horst et al., 2021). The first ingredient is the use of written exercises, which require an indication of goals and projects for the future. The second is the provision of individualized attention to receive feedback from the advisor. The third is the construction of opportunities for knowledge of information about the world of work. The fourth is exposing intervention participants to role models of people

who have dealt with similar career issues. The fifth ingredient concerns assistance in constructing support networks for projects and career decisions.

Career adaptability and perceptions of professional development and employability

The student's transition process to the world of work requires means to deal with the changes and uncertainties contemplated in this period of life. Likewise, a person who already works and completes a university degree is also looking for new professional challenges, which can be facilitated through adaptability resources (Barbosa et al., 2018; Spurk et al., 2020).

Career adaptability is a psychosocial construct that denotes readiness and resources to deal with tasks related to the professional development and demands of the world of work (Savickas, 2013). The four dimensions of this variable, according to Savickas and Porfeli (2012), are configured in a set of actions that allow students to construct their careers as they seek guidance for the future (concern); make decisions as a manager of their career (control); explore new possibilities (curiosity); and have an expectation of success when facing challenges (confidence).

The perception of professional development, in turn, concerns an intentional and continuous process of acquisition and improvement of knowledge, skills and attitudes with identity and performance transformations throughout the career (Mourão et al., 2020). The perceptual skills of professional development are valuable for college students who experience the process of entering the world of work in their area of study.

In this context, professional development presupposes a continuous process of growth with formal or informal self-learning opportunities that are related to academic experiences and the proactivity of fulfilling the demands of the working world (Mourão et al., 2020). Therefore, it would be expected that the career planning process works as a

facilitator for the perception of professional development, since other studies denote elements related to planning associated with reflections on life projects and an intention to boost the career (Fouad et al., 2016; Vergara Wilson & Gallardo, 2019).

A comparative study also showed that college students who plan their careers have a higher perception of their professional development than college students who do not plan (Carvalho & Mourão, 2021a). The mediating role of the perception of professional development has also been tested. The results indicate that career adaptability has a greater influence on the perception of employability when this relationship passes through the perception of professional development (Carvalho & Mourão, 2021b). Concern for the future, career control, curiosity to explore possibilities and confidence to face challenges leads college students to perceive greater professional development, which in turn, is linked to the perception of a positive insertion in the labor market (Donald et al., 2018; Peixoto et al., 2015).

The perception of employability is linked to the belief in their own preparation to enter the world of work and the actions that college students develop to obtain a job (Peixoto et al., 2015). This construct differs from employability itself, since the latter depends not only on individual investments, but on the quality of educational training and the socioeconomic and political context in which work organizations are inserted (Donald et al., 2018).

In addition to the professional skills necessary for the market, college students will need to develop a set of competencies that help them to face the challenges of the world of work. There is a strong link between the perception of employability and career transitions (De Vos et al., 2021), as well as with self-knowledge and exploration (Kleine et al., 2021). The perception of professional development of college students is related to the expectation of getting a job in their area of study (Carvalho & Mourão,

2021b).

Construction of the research hypotheses

The three hypotheses of this study are theoretically supported by the Life Design Model (Savickas et al., 2009), the MPDUS (Mourão et al., 2020) and empirical studies of career guidance for college students. The Life Design Model is based on the relational and contextual production of knowledge and has constructivism and constructionism as some of its contemporary epistemological possibilities (Savickas et al., 2009). The production of narratives by college students in a group career planning process can benefit from narratives produced in the psychosocial relationship with both the career counselor and the other participants.

The discursive, narrative and collaborative practices of the career planning intervention have among their objectives narratability, intentionality, activity, and adaptability (Savickas et al., 2009). Regarding adaptability, CCT recommends that career adaptation should follow a sequence that begins with adaptive readiness, passing through adaptability resources, which would trigger adaptive responses (adapting) and promote adaptation results (adaptation) (Savickas & Porfeli, 2012).

This is how CCT understands that success in the career planning processes is associated with four dimensions of adaptability: *(i)* concern – planning skills, “Do I have a future?”; *(ii)* control – choice skills, “Who has control over my future?”; *(iii)* curiosity – exploration skills, “What will I do with my future?”; and *(iv)* confidence – problem-solving skills, “Can I do this?”. Therefore, in line with Life Design, which has CCT as one of its anchors, we arrived at Hypothesis 1 of this study, namely: Career planning in graduating college students expands the resources of career adaptability, in such a way that the IG will show gains in terms of career adaptability after the end of the experiment, while the scores of the CG will remain unchanged (H1).

Other studies have also focused on the discussion of this association between career planning in the transition to the world of work and the enhancement of adaptability resources used by students (Alves & Teixeira, 2021; Frick et al., 2015; Wei et al., 2021; Zikic & Klehe, 2006). In addition, interventions in different countries take adaptability resources as indicators of the effectiveness of exploratory career behaviors and life satisfaction (Fouad et al., 2016; Nota et al., 2016; Pinto et al., 2015; Santilli et al., 2019), which indicates empirical support for Hypothesis 1.

Two other hypotheses were established based on the theoretical support of the MPDUS (Mourão et al., 2020). We constructed a logic that led to the assumption that the career planning intervention allows graduating college students to broaden their perception of professional development, and consequently their perception of employability. The rationale that led us to this understanding is based on the cyclical design of the MPDUS that assumes intentionality in the professional development process comprising four stages: *(i)* desired objective; *(ii)* analysis of competency; *(iii)* learning actions; and *(iv)* identification of progress. This theoretical model is related to two other developmental theories: Donald Super's model, with regard to continuous learning; and the Social Cognitive Career Theory by Robert Lent and Steve Brown, regarding the intentionality and cyclical perspective of the stages of career evolution.

The MPDUS (Mourão et al., 2020) allows this target audience to analyze the skills already acquired and those that still need to be acquired in view of the desired objective. The college student must compare their goals, their current stage of professional maturity and the path that needs to be taken to achieve them, carrying out learning actions that favor their development. Accordingly, considering that the career planning intervention has the MPDUS as one of its bases, we formulated Hypothesis 2. Career planning in graduating college students positively affects the professional

development of the participants, in such a way that the IG will show gains in terms of perception of professional development after the end of the experiment, while the scores of the CG will remain unchanged (H2).

The construction of the third and final hypothesis is anchored in the future professional perspective that begins the first stage of the MPDUS (Mourão et al., 2020). In this sense, it would be expected that the objectives listed by college students would include their insertion into the world of work. When they identify that they are growing in their career and approaching the desired goal, there is a motivation to value the development journey, and a greater perception of being on the right path. Therefore, the analysis of career indicators can be linked to indicators such as the assumption of new responsibilities, positions or roles in the work environment. The identification of these indicators of professional advancement, therefore, leads to a more positive perception of new scenarios and possibilities. This was the logic that led to the construction of Hypothesis 3: Career planning in graduating college students positively affects the perception of employability, in such a way that the IG will present gains in terms of perception of employability after the end of the experiment, while the scores of the CG will remain unchanged (H3).

This last hypothesis is also based on the idea that planning is a proactive action in the construction of a career and that the experience of this process allows the college student to broaden their perception of employability, including by anticipating barriers and strengthening strategies for entering the market (Alves & Teixeira, 2021). Hypothesis 3 is also supported by the results of the empirical study carried out by Carvalho and Mourão (2021a) in which college students who planned their careers had a greater perception of employability than those who did not. In this way, H3 is in line with the idea that planning a career during the graduation period provides opportunities

for reflection on important issues and increases the chances of employability.

Despite the existence of studies with the career adaptability, perception of professional development and perception of employability variables, there are gaps in terms of interventions with these variables. Accordingly, the present study sought to provide theoretical and methodological contributions. From a theoretical perspective, it presents a career planning intervention with groups of graduating college students anchored in solid theoretical assumptions, integrating a network of social roles in a continuous process of growth (Savickas et al., 2013; Mourão et al., 2020).

Another differential was the use of the group session method, with an initial session and a follow up session in an individual format. In the group experience, the co-responsibility of participating in the construction of the other's project is expanded, through the sharing of narratives and access to the exchange of personal and professional experiences (Clark et al., 2004). In addition, the group design also generates insights and concerns about the presentation of a good performance to maintain the social image in the group and allows access to the program to be expanded to different audiences by minimizing the costs for its realization (Barclay & Stoltz, 2016; Barbosa et al., 2018; King et al., 2018). As a result, the chances of investment in scalable career planning interventions in the public and private sectors are increased (van de Horst et al., 2021).

The novelty was also to use a completely online protocol, from the invitation to take part in the intervention to the follow up, allowing the expansion of participation in terms of geographic locations. In the area of career development, the online service modality was already expanding as part of a global trend (Nota et al., 2016; Pordelan & Hosseinian, 2021; Savickas, 2015; Souza & Teixeira, 2020) due to the COVID-19 pandemic. Although it requires access to the internet and competence in managing

digital communication platforms, there are a number of gains associated with the online intervention model, such as being able to record the material, reduced absenteeism and costs, increased access for more people, and the elimination of problems associated with travel (van de Horst et al., 2021). As far as recording is concerned, it allows not only the career counselor to watch and re-watch the sessions, but also outside observers to watch – obviously with the prior consent of the participants. Furthermore, the online environment favors other exchanges between group members through different social networks.

In summary, what makes the intervention unique is the delivery format (fully online, with individual opening and closing sessions and small group sessions) and the design of the activities that combine the MCS, with the critical ingredients for the efficacy of career interventions and the MPDUS. The joint use of these models and the different techniques associated with them created a differentiated intervention that was more focused on the specifics of the target audience. The fact that we included practical activities to be carried out between the last group session and the follow up session a month later was also a differential, since the exercises kept students engaged with the career planning process in this period of progress identification.

We followed some important methodological recommendations, such as the performance of a pilot study following the same protocol adopted in the main study and the external observation of the group sessions by two professionals in the field of Psychology. In addition to the inclusion of an individual follow up session a qualitative assessment was completed for each session, which was performed by the participants, the career counselor psychologist and the two observers. The applications of the evaluative scales were also performed in three waves of data collection.

Considering the three hypotheses presented, our assumption was that career

planning interventions help college students to understand the continuous construction of their careers, including awareness and engagement in projects that guide them on professional trajectories. The aim of this study was to investigate the effects of the career planning intervention, in online groups, on the resources of career adaptability and the perceptions of professional development and employability in college students nearing the conclusion of the course.

5. Method

5.1. Design

In addition to the theoretical contribution to guide the activities implemented in the intervention, here we present the details of the design of the experiment, in order to facilitate the evaluation of processes – rather than just results -, and the replicability of the study. The design was experimental, with data collection prior to the intervention (T1), after the group meetings (T2) and one month after the intervention – follow up session (T3), both for the two intervention groups (IG, n=7 each), and for the comparison group (CG, n=14). In all, there were seven weekly meetings, the first and last being individual (1h30 each) and the other five meetings in the group modality (2h each), all carried out using collective meeting tools and electronic data storage. We included activities to be carried out between all sessions, as well as during the one-month interval between the end of the intervention and the follow up.

The assignment of participants to the groups was random and they had the same opportunity to participate in the intervention. After data collection was carried out in the online format, we randomly organized a total of 14 participants for each group. The students of the CG only received treatment after the end of the evaluation of the intervention with the IG. During the intervention evaluation period, the CG did not receive any type of treatment, its participants only responded to the career adaptability

scales and perceptions of professional development and employability at the same times as the IG participants.

Pilot Study

Prior to performing the intervention with the IG, it was conducted with a pilot group to test the design of the experiment. Participants were 20 college graduates from the Psychology course, divided into two groups of 10 participants each (M=25 years of age; SD=4.5). All ethical procedures were followed, and the realization of this pilot group was essential for the improvement of synchronous and asynchronous activities. The participants in the pilot group, in addition to answering the measurement instruments, evaluated each of the sessions – as was also done in the IG. The purpose of this data collection was to gather useful information to improve the design of the main study.

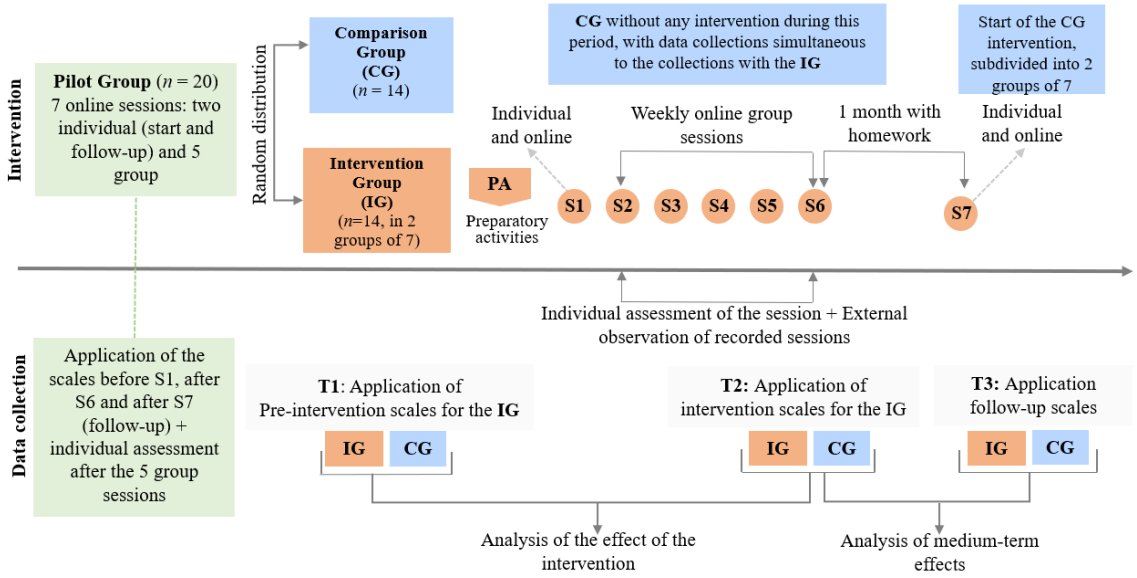
In addition to the assessments carried out by the participants, the experience of the career counselor psychologist in conducting the sessions with the pilot group allowed the identification of improvements in the design of the main intervention. The main improvements were: *(i)* decrease in the number of participants per group – from 10 to seven people, since the greater number reduced the speaking time of each participant; *(ii)* after the pilot group, we increased the session time – from 1h30 to 2h, to avoid delays in the pre-established time for the session and to allow for the deepening of some activities; *(iii)* we set a time limit for individual reports; *(iv)* we expanded the content on the exploitation of social networks as a career driver; and *(v)* we organized a specific session for time management, as this was a frequent demand in the two pilot groups.

Main Study

The career intervention was performed with the IG and, after the end of the sessions, we started the intervention with the CG. The main study had two observers from the Psychology area who watched the recorded sessions and gave feedback,

between one session and another, both in relation to the career counselor's performance, as well as in relation to the aspects they observed in the participants. The counselor and one of the observers received additional training in counseling for career building in theoretical and practical terms before starting the interventions. Figure 1 shows the details of the intervention after the pilot group.

Figure 1
Career Intervention Design



Note: IG = Intervention Group; CG = Comparison Group; PA = Preparatory activities for the session; S = Session; *n* = sample; T = Time of data collection.

In preparation for the first meeting of the career planning group, all participants answered a questionnaire consisting of: *(i)* instruments used for pre-intervention assessment (Career Adaptability Scale; Current Perception of Professional Development Scale and Self-Perception of Employability Scale); *(ii)* questions about expectations regarding the career planning group, starting with item A of Part I of the MCS entitled "telling my story" (Savickas & Hartung, 2012); *(iii)* sociodemographic data for sample characterization; and *(iv)* invitation to write an autobiographical text about how they would like their personal and professional life to be five years from that point, used to

analyze changes in narratives about the future (Rehfuss & Di Fabio, 2012). This last activity was repeated at the end of the intervention as a way for students to perceive possible changes in their perspectives about the future.

All participants were informed that at the end of each session they would make a personal assessment of the meeting to record positive/negative points and contributions to the improvement of the intervention. They were also informed about absences and that there would be activities to be performed outside the sessions, organized in workbooks (individual and collective), constructed during the intervention. Table 2 presents the synthesis of the meetings specifying the theme, the objectives established, and the preparatory/technical activities developed in each of the sessions.

Table 2

Summary of Career Intervention with Objectives and Activities of each Session

Session theme	**Objectives** (at the end, participants should...)	**Preparatory Activities (PA) for the session / Techniques or Activities (TA) developed in the session**
Session 1 Life stories*	Identify expectations and establish working alliance. Reflect on the path to university and define future perspectives.	*PA:* Writing about how they would like to be in 5 years (1st CI) to identify prospects (MPDUS Step 1). *TA:* "Life Line" for understanding professional history, promoting narratives about interests, admired people, favorite story and expression (MCS Part I and II); initial feedback from the counselor (2nd CI).
Session 2 Professional Interests	Expand self-knowledge and establish group bonds. Build a narrative of professional interests and challenges in the transition.	*PA:* List of professional possibilities for starting the learning plan (MPDUS Step 2). *TA:* Expansion of opportunities for action and universes of interests.
Session 3 Goals and Time Management	Understand life roles and their relationship to professional goals. Establish time management strategies to fulfill academic and work requirements.	*PA:* Short-, medium- and long-term professional goals. *TA:* "Life Structure Pizza" for managing multiple roles; expansion of market information through surveys, site visits, participation in events and networking (3rd CI; MCS Part 2)
Session 4 Competence Analysis	Identify the skills that need to be developed in order to achieve the objectives. Develop market exploration attitudes to expand job opportunities.	*PA:* Identification of skills required by the market and self-assessment of skills already developed and to be developed (MPDUS Step 2) *TA:* Like and Do for self-assessment; discussion of the contingency plan to overcome obstacles and the elements that facilitate professional development (MPDUS Step 2).
Session 5 Professional Connections	Start networking with other professionals in the field. Expand autonomy to explore opportunities. Invest in professional development	*PA:* Interviews with professionals in the area of interest (4th CI). *TA:* Discussion on the learning resulting from the interviews with people of reference; exploration of social networks as a career driver and potential for

	drivers.	building support networks in decision-making (5th CI).
Session 6 Consolidation of Changes	Strengthen learning actions to achieve the objectives. Construct a career plan with identification of progress.	*PA:* Action plan with objectives, contact with valued people and definition of next steps (MCS Part 3 and MPDUS Step 3). *TA:* Definition of strategies to overcome internal barriers that hinder the achievement of goals (MCS Part 3; MDPU Step 3).
Session 7 Reconceptualization*	Connect the perceived changes and the processes that favored them. Reconstruct narratives about career planning.	*PA:* List of weekly activities for periodic identification of progress and results, making the benefits of the intervention feasible (MPDUS Step 4). *TA:* Discussion about concrete results, rewriting of the text about how they would like to be in 5 years; definition of the next steps in the career plan (MCS Part 3; MPDUS Step 4); and final feedback from the counselor (2nd CI)

Note. MCS = (Savickas & Hartung, 2012); MPDUS = (Mourão et al., 2020); CI = (Brown et al., 2003); * = individual session.

5.2. Participants and procedure

There were 28 college students in the graduation phase, subdivided into four groups, two intervention, and two comparison groups, containing seven people each. In the IG, the majority (71%) were female (*M* = 24 years of age; *SD* = 6.1). In the CG, the majority were also female (65%), with a mean age of 26 years (*SD* = 6.5). The college students from both groups came from 17 public and private HEIs (60%), attending different degree courses and residing in eight Brazilian states (Rio de Janeiro, Goiás, Rio Grande do Sul, Paraná, Maranhão, Sergipe, Amazonas, and Ceará). The undergraduate courses in which the participants were enrolled were also different (Actuarial Sciences, Agronomy, Biomedicine, Dentistry, Engineering, International Business, Law, Pedagogy, Psychology, Public Relations, Social Work, Systems Analysis and Development, and Visual Arts). The participants did not know each other prior to the beginning of the intervention, which allowed for exchanges free of pre-judgments. In addition, all participants reported having had experience with intertraining or other work activities within or beyond the area of study.

We established four inclusion criteria, namely: (*i*) to be in the final year of graduation; (*ii*) to commit to participating weekly at the agreed time; (*iii*) to write a

short text about their expectations concerning the Career Planning Group; and (*iv*) to respond to the pre-intervention evaluation tools. Considering the students interested in the intervention, participants were designated to the IG and CG at random, the men and women were drawn separately (stratification by sex), in order to prevent the IG or the CG from becoming too heterogeneous in terms of gender.

5.3. Measures

Career Adapt-Abilities Scale (Savickas & Porfeli, 2012). The scale has good evidence of validity indices measured by Cronbach's Alpha in the 24-item version (α=.92) and is divided into four dimensions to assess career adaptability. Concern (*α*=.88; *w*=.84; e.g., *Thinking about what my future will look like*); control (*α*=.83; *w*=.90; e.g., *Making decisions on my own*); curiosity (*α*=.89; *w*=.88; e.g., *Being curious about new opportunities*); confidence (*α*=.89; *w*=.86; e.g., *Being careful to do things well*). We used the version translated and adapted for Brazil (Audibert & Teixeira, 2015) and the response scale from 1 ("I have hardly or not developed") to 10 ("I have developed extremely well").

Current Perception Scale of Professional Development (Mourão et al., in press). The scale has good evidence of validity in its short version with four items to assess the perception of professional development (*α*=.82; *w*=.82; e.g. *I have had a significant professional development since I started working).* The items were answered on a Likert-type response scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

Self-perceived Employability Scale (Peixoto et al., 2015). The scale presents good indices of evidence of validity to measure employability expectations in the area of study. We chose to investigate only the acquisition dimension (new job), with six items (*α*=.77; *w*=.86; e.g. *I feel that I have important knowledge and skills for the job*

market), as the college public often does not have an employment bond yet, which makes it impossible to include the maintenance dimension (current employment). The items were answered using the same Likert-type scale described for the previous instrument.

5.4. Ethical and data collection procedures

The study was previously approved by a Research Ethics Committee and respected all the ethical precepts for research involving human subjects, such as confidentiality of individual information, the right to voluntary participation, and to cease the involvement in the study at any time. Participation in the experiment did not generate any cost for the participants, and all signed the consent form. Invitations were extended by email and social networks, with individual contact to explain the research. All candidates registered through an electronic form, answering specific questions to control the group stratification variables.

Throughout the intervention, we performed different data collections. The application of the career adaptability, perception of professional development and perception of employability scales were carried out, using an electronic form, before the beginning of the intervention (T1), during the intervention (T2) and after the intervention (T3). Both IG participants and CG participants responded to the scales at the same time intervals. The CG was measured at T3 before the start of the intervention, that is, these became their T1 data.

In addition to the scales, all participants answered an evaluation in which they indicated their satisfaction with the group session and highlighted the activities that helped them the most, as well as any possible obstacle or negative episode in the session that could compromise their progress. In the follow up session, a balance of possible results obtained over the long period was requested. In a complementary way, the

observers who watched the recording of the group sessions also filled out a form with the reports of the most important observations of each session, including the perception of the participants' evolution.

5.5. Data analysis procedures

The effectiveness of the career planning intervention was evaluated in three stages, all using the career adaptability scales (through the general score and through its four dimensions), professional development and employability scales. These measurements made it possible to compare the T1 and T2 scores, as well as the T1 and T3 scores, both in the IG and in the CG.

The analysis of effectiveness was performed by comparing the scores of the participants at the three moments through the Repeated Measures Analysis of Variance (ANOVA) and the Jacobson and Truax Method (JT). The comparison of mean scores showed statistically significant differences between the groups over time, that is, differences in scores before (T1), during (T2) and after the intervention (T3) between the IG and CG.

The JT Method further investigated the effects of the intervention, comparing each participant with themselves before and after the sessions (Jacobson & Truax, 1991). The evaluation of efficacy through the JT Method is based on the Reliable Change Index (RCI). The RCI shows whether the changes that occurred between the pre- and post-interventions are a result of the procedures used or if they result from the evaluation process. The RCI is calculated as the mean difference of the post-intervention score minus the pre-intervention score divided by the standard error of the difference, with a confidence interval of 0.95.

Therefore, an RCI greater than 1.96 is defined as Reliable Positive Change (RPC); an RCI less than -1.96 refers to Reliable Negative Change (RNC); and RCI

values between -1.96 and 1.96 are defined as No Change (NC). It can be interpreted that the participants present a change considered clinically relevant in situations in which the post-intervention assessment exceeds the pre-intervention score by at least two standard deviations (Del Prette & Del Prette, 2008; Jacobson & Truax, 1991).

The use of the RCI makes it possible to interpret that the participants present a change considered clinically relevant in situations in which the post-intervention assessment is at least two standard deviations above the score obtained in the pre-intervention measure (Del Prette & Del Prette, 2008). Therefore, it is possible to classify the changes that occurred between the scores before and after the intervention (RPC; RNC and NC). The comparison of the classifications obtained from the JT Method for each participant in the IG and the CG increases the possibilities of attributing the possible differences between the groups to the career planning intervention.

For complementary analysis of the results obtained, the reports of the participants were analyzed after each of the sessions, as were the reports of the external observers. In addition to the use of the scales, these reports present concrete evidence of short-term results obtained by the intervention participants.

6. Results

6.1. Preliminary Analyses

The first stage of the analysis referred to checking the database. There were no spurious data, since the answers to all scales were performed through an online platform, in which each participant selected their answer from among the options listed. All participants who started completed the career planning process, with no dropouts. There were also no missing data, because all questions had to be answered in the electronic form. Preliminarily, we performed descriptive statistics regarding the mean,

standard deviation and minimum and maximum values of each of the scales surveyed. After the initial analysis of the database exploration, analyses were carried out on possible differences in the IG and CG.

Possible differences in terms of sex between the IG and CG were tested using the chi-square test and no significant differences were found between the groups ($\chi^2(df)$=(1) 0.16, p=.688). To check for possible differences between the groups in terms of age, career adaptability (concern, control, curiosity and confidence), perception of professional development and perception of employability, *t*-tests were performed, comparing the IG and CG. Due to the small sample size, bootstrapping (1,000 resamples) was applied. The results showed no significant difference between the groups for age (t(26)=0.18, p=.89), career adaptability (t(26)=0.16, p=.87), perception of professional development (t(26)=-1.68, p=.11) or perception of employability (t(26)=-1.23, p=.23). Furthermore, concern (t(26)=- 0.91, p=.37), control (t(26)=-0.80, p=.43), and curiosity (t(26)=-1.73, p=.10) also presented no significant differences. The levels of confidence showed a statistically significant difference (t(26)=-2.26, p=.03), suggesting that the IG (M=6.7, SD=0.9) had slightly lower levels than the CG (M=7.1, SD=1.2).

6.2. Analysis of the study hypotheses

The results of the repeated measures ANOVA analysis and the JT Method showed that all hypotheses were confirmed. The interaction of time (T1, T2 and T3) and the condition of the participants (IG and CG) in the ANOVA was significant for the seven dimensions investigated (Table 3). Therefore, we performed contrast analyses using the Bonferroni correction. In the seven dimensions evaluated, Mauchly's test indicated that the sphericity assumptions were not met. Therefore, we applied the Greenhouse-Geisser correction.

The comparison of the means of T1 and T2 and of the means of T1 and T3 for the IG showed that all the mean differences were statistically significant (Table 3). In the CG, the mean differences were statistically significant for concern (T1xT2), control (T1xT2) and perceived employability (T1xT3). However, the mean differences in the CG were small. The findings showed that the scores of all investigated dimensions gradually increased over time for the IG, and that there were no significant differences over time for the CG. Furthermore, it was observed that the IG scores in all dimensions were significantly higher than those of the CG, suggesting the efficacy of the training (career adaptability, $t(26)=12.5$, $p<.001$; concern, $t(26)=12.4$, $p<.001$; control, $t(26)=11.3$, $p<.001$; curiosity, $t(26)=11.2$, $p<.001$; confidence, $t(26)=6.1$, $p<.001$; perception of professional development, $t(26)=11.8$, $p<.001$; and perception of employability, $t(26)=13.1$, $p<.001$).

Table 3

Mean and Standard Deviations of Variables in terms of IG and CG

	Intervention Group			**Comparison Group**					**Interaction (Time x Condition)**					
									T1xT2		T2xT3		T1xT3	
	T1	T2	T3	T1	T2	T3	$F_{(1,6)}$	η^2	t_{IG} (26)	t_{CG} (26)	t_{IG} (26)	t_{CG} (26)	t_{IG} (26)	t_{CG} (26)
CA	22.9 (4.1)	30.0 (1.6)	31.0 (0.5)	22.0 (4.4)	21.0 (3.4)	19.0 (3.5)	52*	0.20	-8.2*	1.90	-0.3*	2.30	-9.3*	2.60
CN	6.0 (0.8)	9.2 (0.6)	9.8 (0.2)	6.3 (1.2)	6.9 (1.1)	5.6 (1.2)	76*	0.25	12.9*	-2.20	-2.6	6.30*	12.2*	2.30
CT	6.8 (0.9)	9.2 (0.6)	9.7 (0.2)	7.2 (1.4)	6.1 (1.1)	6.2 (1.1)	88*	0.37	-12.0*	5.70*	-2.7	0.52	9.8*	3.60
CR	6.1 (1.2)	9.1 (0.5)	9.7 (0.2)	7.0 (1.6)	6.0 (1.1)	6.0 (1.2)	68*	0.31	9.1*	0.30	2.7	0.11	10.3*	1.20
CF	22.0 (4.1)	30.0 (1.6)	31.0 (0.5)	22.0 (4.4)	21.0 (3.4)	19.0 (3.5)	55*	0.21	-11.6*	0.001	3.8*	0.07	-12.4*	0.01
PD	5.7 (1.5)	8.5 (1.1)	9.9 (.1)	6.5 (1.0)	6.7 (0.7)	6.7 (1.0)	56*	0.23	-9.3*	-0.75	-0.6*	-0.01	-12.2*	-0.70
PE	5.6 (1.0)	8.5 (1.1)	9.9 (0.1)	6.2 (1.3)	6.5 (1.1)	6.8 (0.8)	34*	0.19	-8.5*	5.10*	5.1*	-1.60	-12.3*	-0.80

Note: * = $p<.001$; CA = Career Adaptability; CN = Concern; CT = Control; CR = Curiosity; CF = Confidence; PD = Perceived Professional Development; PE = Perceived Employability. Response scales ranging from 1 to 10 for CN; CT; CR; CF; PD; PE Response scales ranging from 4 to 40 for CA.

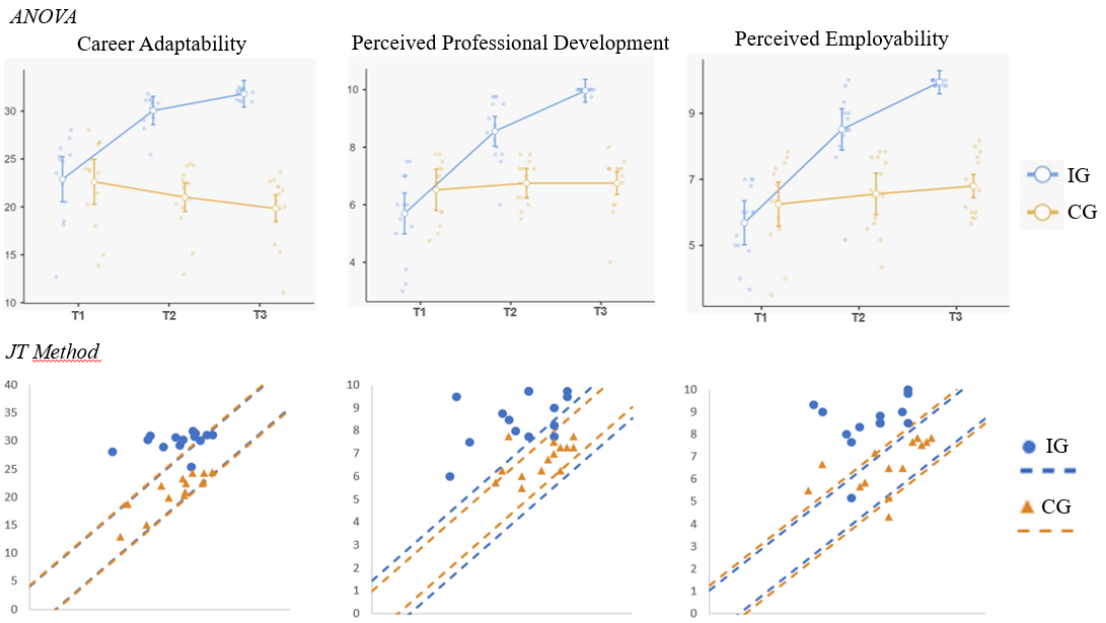
Figure 2 also presents the graphs comparing the results of the IG and the CG in the career adaptability, perception of professional development and perception of employability variables. Each participant is represented on the graph with a blue circle

(IG participants) or an orange triangle (CG participants). The dotted lines on the graph identify the confidence interval, with the blue line relating to the IG and the orange line relating to the CG. The range between these lines indicates NC (-1.96<RCI>1.96).

Participants who fall between these two dotted lines presented no change during the intervention period. Those located in the upper range of these lines had an RPC, while participants located in the lower range of the lines had an RNC. Virtually all IG participants presented RPC in terms of career adaptability, perception of professional development and perception of employability, while the CG participants predominantly presented NC.

Figure 2

Results of Condition and Time Interaction of Investigated Variables (ANOVA) and Reliable Change in the IG and CG (JT Method)



Hypothesis 1 suggested that career planning in graduating college students expands the resources of career adaptability, in such a way that the IG will present gains in terms of adaptability after the end of the experiment, while the scores of the CG will remain unchanged. Therefore, in an analysis of the general career adaptability score, we observed that, after the intervention was performed (comparing T1-T2), 11 of the 14

participants of the IG presented RPC in terms of adaptability, while in the CG participants there was no reliable change, either positive or negative (Table 4). Comparing T1-T3, 13 of the 14 participants of the IG presented RPC in career adaptability, while in the CG this was the case for only one participant.

We also analyzed the results of each of the dimensions of career adaptability. Regarding the dimensions of concern and confidence, all participants in the IG obtained RPC in their scores between T1-T2 and T1-T3. In the CG, for the concern dimension, only four participants achieved this change from T1-T2 and one participant from T1-T3. In the confidence dimension, no participant had a favorable result from T1-T2 and only one presented RPC from T1-T3. In relation to the control and curiosity dimensions, 12 of the 14 participants in the IG presented RPC and the 14 achieved this result in the comparison of T1-T3. Among the CG participants, for both dimensions, none obtained RPC from T1-T2 and only one achieved this result after the follow up session (T1-T3).

Hypothesis 2 proposed that career planning in graduating college students positively affects the professional development of participants, in such a way that IG members will present gains in terms of perception of their development after the experiment. When comparing the results from T1-T2, we observed that 12 of the 14 participants in the IG presented RPC in terms of the perception of professional development. In the comparison of T1-T3, all participants achieved this condition. In the CG, only three members presented RPC both from T1-T2 and from T1-T3 (Table 4). These results support H2.

Hypothesis 3 proposed that career planning in graduating college students positively affects and provides gains in terms of perceived employability for IG participants. In the results, we observed that, comparing T1-T2, only one participant in the IG did not present RPC, and all of them achieved this from T1-T3. In contrast,

among the members of the CG, only three presented RPC from T1-T2 and two members from T1-T3. Table 4 presents the results for the IG and CG at the three times of data collection (T1, T2 and T3), detailing the RCI, which allows the evaluation of the possible changes that occurred in each of them.

Table 4

Analysis of IG and CG organized by participant at the three data collection times.

	Career Adaptability				Professional Development				Employability			
IG	RCI T1-T2	RCI T1-T3	CG	RCI T1-T2	RCI T1-T3	IG	RCI T1-T2	RCI T1-T3	CG	RCI T1-T2	RCI T1-T3	IG	RCI T1-T2	RCI T1-T3	CG	RCI T1-T2	RCI T1-T3
1	8(+)	9(+)		-2(*)	-2(-)		4(+)	9(+)		-2(-)	0(*)		9(+)	11(+)		0(*)	-1(*)
2	3(+)	4(+)		-2(*)	-2(-)		5(+)	5(+)		0(*)	-1(*)		4(+)	6(+)		-1(*)	-2(*)
3	3(+)	3(+)		-1(*)	-3(-)		4(+)	6(+)		-1(*)	-1(*)		5(+)	9(+)		0(*)	0(*)
4	3(+)	4(+)		2(*)	3(+)		2(+)	5(+)		2(+)	5(+)		0(*)	9(+)		3(+)	7(+)
5	3(+)	3(+)		0(*)	0(*)		5(+)	5(+)		0(*)	0(*)		6(+)	6(+)		1(*)	-1(*)
6	2(*)	2(+)		-1(*)	-1(*)		2(*)	4(+)		0(*)	-1(*)		3(+)	5(+)		0(*)	0(*)
7	6(+)	6(+)		-1(*)	-2(*)		8(+)	9(+)		0(*)	1(*)		11(+)	12(+)		-3(-)	0(*)
8	2(*)	2(*)		1(*)	1(*)		3(+)	3(+)		5(+)	4(+)		5(+)	7(+)		2(+)	2(*)
9	4(+)	5(+)		-1(*)	-1(*)		3(+)	3(+)		0(*)	-1(*)		5(+)	6(+)		1(*)	1(*)
10	0(*)	4(+)		0(*)	-1(*)		1(*)	4(+)		1(*)	0(*)		5(+)	7(+)		1(*)	1(*)
11	2(+)	3(+)		0(*)	-1(*)		3(+)	6(+)		0(*)	-3(-)		5(+)	7(+)		-2(*)	-1(*)
12	6(+)	7(+)		-2(*)	-4(-)		5(+)	8(+)		2(+)	2(+)		6(+)	9(+)		4(+)	4(+)
13	3(+)	4(+)		-2(*)	-2(-)		5(+)	6(+)		0(*)	0(*)		6(+)	9(+)		0(*)	0(*)
14	4(+)	6(+)		-1(*)	-1(*)		3(+)	4(+)		0(*)	0(*)		5(+)	7(+)		1(*)	1(*)

Notes. IG = Intervention Group; CG = Comparison Group; (+) = Reliable Positive Change; (-) = Reliable Negative Change; (*) = No change.

When we analyzed the combined results of the intervention, we observed that it had positive effects in terms of career adaptability and perceptions of professional development and employability. Most of the participants achieved RPC at the end of the group sessions (T1-T2), and some others took a little longer to achieve this result, therefore, the results were better from T1-T3. In general, between T2-T3, we continued to observe a continuous improvement in the scores of the IG participants in all the variables investigated.

6.3. Complementary analyses

In addition to the results measured by the scales, there were also several spontaneous reports from participants of the IG that indicated advances in terms of career adaptability, professional development and employability. For example, some

participants reported that in the course of the career planning group they put into practice what they learned in the sessions. One of the participants reported having assumed a new position in the work organization and other participants reported obtaining internships in the area of interest. Other short-term result indicators were the approval of one participant for a scientific initiation program and the invitation for another participant to write in newspaper columns in her area of study.

As a complementary analysis, the reports of the external observers during the sessions were also examined. They indicated an expansion of self-knowledge, the identification of interests and the exploration of new professional activities by the participants. According to the observers, these advances were explicit in the reports that occurred in the group sessions, as well as in the preparatory activities carried out by them during the intervention. The analyses carried out by the observers are reinforced by the evidence of positive changes in the trajectory of college students identified in their reports.

7. Discussion

The aim of this study was to investigate the effects of the career planning intervention, in online groups, on career adaptability resources and the perceptions of professional development and employability in college students nearing the conclusion of their course. It follows suggestions for further studies to help students prepare for the university-world of work transition (van de Horst, 2021; Whiston et al., 2017).

The effect of the career planning intervention on the expansion of adaptability resources corroborated the results of other interventions with this audience and focused on career adaptability (Barbosa et al., 2018; Fouad et al., 2016; Green et al., 2019; van der Horst et al., 2021), indicating that college students who plan their careers tend to have higher scores in concern, control, curiosity and confidence.

The intervention with college students at the conclusion of their course also generated positive results in terms of the perception of professional development, confirming that the intentionality of planning and action on the part of college students generates effects on their development process (Mourão et al., 2020). This finding corroborates the idea that professional development, associated with the perception of progress, is characterized by a purposeful search for actions that boost life and career projects (Vergara Wilson & Gallardo, 2019).

Another conclusion of this study is that the intervention in career planning also positively affected the perception of employability of college students in the transition phase to the job market. When planning a career, the college student has the ability to understand and acquire the skills necessary for their insertion into the work context of their area of study (Carvalho & Mourão, 2021a; Carvalho & Mourão, 2021b; De Vos et al., 2021; Donald et al., 2018; Peixoto et al., 2015).

The results of the practical application of the MCS were also in agreement with studies that applied this protocol with college students (Alves & Teixeira, 2021; Souza & Teixeira, 2020), adolescents (Santilli et al., 2019) and employed adults (Hartung & Santilli, 2018). However, in the present study, the protocol was combined with elements of the MPDUS (Mourão et al., 2020) and critical ingredients for the effectiveness of career interventions (Brown et al., 2003).

The follow up session, for example, covered the final step of the MPDUS, which concerns the identification of progress through indicators that show professional advancement. Having included asynchronous activities to be carried out between the final group session and the follow up session was a strategy that yielded good results, as the participants remained engaged with the career planning process even after the last group session. The realization of the weekly activities list to periodically identify

progress, as highlighted in the final step of the MPDUS, made the benefits of the career intervention discernible. This was a differential that made the intervention unique, and led to a continuous increase in career adaptability, professional development and employability scores, between T2 and T3, when the end of the intervention often causes a reduction rather than an increase in results.

The fact that the career planning intervention was carried out in a group favored the exchange process, as the participants had other interlocutors who listened to their story, expanding the possibilities for reflection on the responses (Barclay & Stoltz, 2016; Clark et al., 2004). When a participant reported their progress (such as obtaining an internship, a scholarship, or a professional referral), this generated a stimulus for the other participants in the group. Collective interventions tend to expand the resources of career adaptability, perception of professional development and perception of employability, since there can be identification among participants who are experiencing a similar moment of career transition.

7.1. Theoretical and practical implications

The design of the online intervention in small groups of college students was derived from the MCS theoretical models, anchored in CCT (Savickas, 2013) and in the five critical ingredients for the effectiveness of career interventions (Brown et al., 2003), reaffirming the effectiveness of interventions that include these protocols. However, from a theoretical point of view, we added the testing of the MPDUS (Mourão et al., 2020). Accordingly, researchers and professionals who work with career guidance now have one more resource to be used in research and practice, with the advantage of having been prepared specifically for college students, which opens up new avenues of career planning studies for that target audience.

In addition, the results obtained in terms of career adaptability resources and the

perception of professional development and employability have practical implications for career planning interventions in that that they are anchored in student engagement in establishing guiding objectives for their professional trajectories (Mourão et al., 2020; Pinto et al., 2015). There was a quest to increase awareness in decision making and the recognition of career planning as an important element in the construction of the professional identity (Carvalho et al., 2021; Frick et al., 2015; (Mourão et al., 2020; Pordelan & Hosseinian, 2021; Wei et al., 2021), which can indicate paths for those working in the area of career counseling.

Methodologically, the combination of group sessions with an initial session and a final session in the individual format showed very favorable results in terms of expanding career adaptability resources and the perceptions of professional development and employability. This design benefited both from the previous testing carried out in a pilot group and from the work of the two external observers, which contributed to the improvement of the protocol of the career planning sessions. In addition, the use of asynchronous practical activities between the last group session and the individual follow up session contributed to the college students remaining engaged with their planning, even after the group meetings ended.

Another practical implication is the testing of an intervention that mixed college students from different areas of study and with a wide geographical distribution. The favorable results of this intervention indicate that career counselors can develop online group interventions with a heterogeneous audience in terms of the study area, educational institutions and cities. In fact, this diversity seems to have proved to be one of the advantages of this methodology that uses digital communication platforms and a format of mostly collective sessions. Gains of scale in terms of the target audience reached and the reduction in the costs of this type of intervention are among the main

practical implications of the model tested, which makes it possible to democratize access to career counseling services in the field of Psychology (van de Horst et al., 2021).

7.2. Limitations and directions for future research

Although the data collection covered different areas of study and regions of Brazil, it is necessary to consider that the study involved a small number of students. The data analysis strategies chosen took this limitation into account, either with the application of bootstrapping, or by the combined use of ANOVA with the JT Method, which analyzes results individually. However, it is important that future studies replicate the design of this intervention with larger samples. In addition, for better testing of the protocol, it is important for it to be applied by different career counselors, since the counselor's profile could also be a differential in the results obtained.

We suggest new studies that adopt other indicators of intervention effectiveness, such as obtaining a job in the area or a scholarship/place to continue studies. We also suggest longitudinal and intervention studies with collections that evaluate the benefits of career counseling in the medium and long term. Finally, we suggest testing interventions with a larger number of participants and without individual sessions, so that even more scalable designs can be evaluated, given the significant number of college students in countries like Brazil.

Reference

Audibert, A., & Teixeira, M. (2015). Escala de adaptabilidade de carreira: Evidências de validade em universitários brasileiros [Career Adapt-Abilities Scale: Evidences of validity in Brazilian university students]. *Brazilian Journal of Vocational Guidance*, 16(1), 83–93. http://pepsic.bvsalud.org/pdf/rbop/v16n1/09.pdf

Alves, C., & Teixeira, M. (2021). Construção e Avaliação de uma Intervenção de Planejamento de Carreira para Estudantes Universitários [Construction and Evaluation of a Career Planning Intervention for College Students]. *Psico-USF, 25*, 697–709. https://doi.org/10.1590/1413/82712020250409

Barclay, S., & Stoltz, K. (2016). The life-design group: A case study assessment. The *Career Development Quarterly*, *64*(1), 83–96. https://doi.org/10.1002/cdq.12043

Brown, S., Ryan Krane, N., Brecheisen, J., Castelino, P., Budisin, I., Miller, M., & Edens, L. (2003). Critical ingredients of career choice interventions: More analyses and new hypotheses. *Journal of Vocational Behavior, 62*(3), 411–428. https://doi.org/10.1016/S0001-8791(02)00052-0

Carvalho, L., & Mourão, L. (2021). Percepção de Desenvolvimento Profissional e de Empregabilidade em Universitários: Uma Análise Comparativa [Perception of Professional Development and Employability in Undergraduate Students: A Comparative Analysis]. *Estudos e Pesquisas em Psicologia, 21*(4), 1522–1540. https://doi.org/10.12957/epp.2021.64033

Carvalho, L., Amorim-Ribeiro, E., Cunha, M., & Mourão, L. (2021). Professional identity and experience of undergraduate students: an analysis of semantic networks. *Psicologia: Reflexão e Crítica*, *34,* 1–14. https://doi.org/10.1186/s41155-021-00179-8

Cochran, L. R. (1997). *Career counseling: A narrative approach.* Sage.

Clark, M., Severy, L., & Sawyer, S. (2004). Creating connections: Using a narrative approach in career group counseling with college students from diverse cultural backgrounds. *Journal of College Counseling*, *7*, 24–31. https://doi.org/10.1002/j.2161-1882.2004.tb00256.x

Del Corso, J., & Rehfuss, M. (2011). The role of narrative in career construction theory. *Journal of Vocational Behavior, 79*(2), 334–339. https://doi.org/10.1016/j.jvb.2011.04.003

Del Prette, Z., & Del Prette, A. (2008). Significância clínica e mudança confiável: A

efetividade das intervenções em psicologia [Clinical significance and reliable change in evaluating psychological interventions]. *Psicologia: Teoria e Pesquisa, 24*(4), 105–114. https://doi.org/10.1590/S0102-37722008000400013.

Donald, W., Ashleigh, M., & Baruch, Y. (2018). Students' perceptions of education and employability: Facilitating career transition from higher education into the labor market. *Career Development International, 23*(5), 513–540. https://doi.org/10.1108/CDI-09-2017-0171

Frick, S., Gillain, R., & Kim, A. (2015). Career Planning. *The Encyclopedia of Adulthood and Aging*, 1–5. https://doi.org/10.1002/9781118521373.wbeaa066

Fouad, N., Ghosh, A., Chang, W., Figueiredo, C., & Bachhuber, T. (2016). Career exploration among college students. *Journal of College Student Development, 57*(4), 460–464. https://doi.org/10.1353/csd.2016.0047

Green, Z., Noor, U., & Hashemi, M. (2020). Furthering proactivity and career adaptability among university students: Test of intervention. *Journal of Career Assessment, 28*, 402–424. https://doi.org/10.1177/1069072719870739

Hall, D. (1986). Introduction. In D. Hall & Associates (Eds.), *Career development in organizations* (pp. 1–20). Jossey-Bass.

Hartung, P., & Santilli, S. (2018). My career story: Description and initial validity evidence. *Journal of Career Assessment, 26*(2), 308–321. https://doi.org/10.1177/1069072717692980

Hirschi, A., & Koen, J. (2021). Contemporary career orientations and career self-management: A review and integration. *Journal of Vocational Behavior, 126,* 103505. https://doi.org/10.1016/j.jvb.2020.103505

International Labour Organization – ILO. (2016). *Developing skills foresights, scenarios and forecasts: Guide to anticipating and matching skills and jobs.* International Labour Office.

Jacobson, N., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology, 59*, 12–19. https://doi.org/10.1037/0022-006X.59.1.12

King, A., Gravina, N., & Sleiman, A. (2018) Observing the Observer. *Journal of Organizational Behavior Management, 38*(4), 306–323. https://doi.org/10.1080/01608061.2018.1514346

Koen, J., Klehe, U., & Van Vianen, A. (2012). Training career adaptability to facilitate a successful school-to-work transition. *Journal of Vocational Behavior, 81*(3), 395–

408. https://doi.org/10.1016/j.jvb.2012.10.003

Kleine, A., Schmitt, A., & Wisse, B. (2021). Students' career exploration: A meta-analysis. *Journal of Vocational Behavior, 131,* 103645. https://doi.org/10.1016/j.jvb.2021.103645

Mourão, L., Tavares, S., & Sandall, H. (*in press*). The Professional Development Short Scale: Measurement Invariance, Stability, and Validity in Brazil and Angola. *Frontiers in Psychology*. https://doi.org/10.3389/fpsyg.2022.841768

Mourão, L., Carvalho, L., & Monteiro, A. (2020). Planejamento do desenvolvimento profissional na transição entre universidade e mercado de trabalho [Professional development planning in the transition between university and labor market]. In A. Soares, L. Mourão, & M. Monteiro (Eds.), *O estudante universitário brasileiro: saúde mental, escolha profissional, adaptação a Universidade e desenvolvimento de carreira [The Brazilian university student: mental health, professional choice, adaptation to the university and career development]* (pp. 255–272). Appris.

Nota, L., Santilli, S., & Soresi, S. (2016). A life-design-based online career intervention for early adolescents: Description and initial analysis. *The Career Development Quarterly*, *64*(1), 4–19. https://doi.org/10.1002/cdq.12037

Organisation for Economic Co-operation and Development – OECD. (2004). *Career guidance: A handbook for policy makers.* OECD Publishing.

Peixoto, A., Janissek, J., & Aguiar, C. (2015). Autopercepção de Empregabilidade [Self-Perception of Employability. In K. Puente-Palacios, & A. Peixoto (Eds.), *Ferramentas de Diagnóstico para Organizações e Trabalho: Um Olhar a partir da Psicologia [Diagnostic Tools for Organizations and Work: A Look at Psychology]* (pp. 175–186). Artmed.

Pinto, J., Loureiro, N., & Taveira, M. (2015). Psychological intervention in Portuguese college students: Effects of two career self-management seminars. *Journal of College Student Development, 56*(5), 518–524. https://doi.org/10.1353/csd.2015.0055

Pordelan, N., & Hosseinian, S. (2021). Online career counseling success: the role of hardiness and psychological capital. *International Journal for Educational and Vocational Guidance, 21*, *531*–549. https://doi.org/10.1007/s10775-020-09452-1

Rehfuss, M., & Di Fabio, A. (2012). Validating the future career autobiography as a measure of narrative change. *Journal of Career Assessment, 20*(4), 452–462. https://doi.org/10.1177/1069072712450005

Santilli, S., Nota, L., & Hartung, P. (2019). Efficacy of a group career construction with early adolescent youth. *Journal of Vocational Behavior, 111*, 49–58. https://doi.org/10.1016/j.jvb.2018.06.007.

Savickas, M., & Hartung, P. (2012). *My career story: An autobiographical workbook for life-career success.* http://www.vocopher.com/CSI/CCI_workbook.pdf

Savickas, M. (2013). Career construction theory and practice. In R. Lent & S. Brown (Eds.), *Career development and counseling: Putting theory and research to work* (2nd ed., pp. 147–183). John Wiley & Sons.

Savickas, M. (2015). Career counseling paradigms: Guiding, developing, and designing. In P. Hartung, M. Savickas, & W. Walsh (Eds.), *APA handbook of career intervention*, Vol. 1. Foundations (pp. 129–143). American Psychological Association. https://doi.org/10.1037/14438-008

Savickas, M., & Porfeli, E. (2012). The Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of Vocational Behavior, 80*, 661-673. https://doi.org/10.1016/j.jvb.2012.01.011

Severy, L. E. (2008). Analysis of an online career narrative intervention:“What's my story?”. *The Career Development Quarterly*, *56*(3), 268–273. https://doi.org/10.1002/j.2161-0045.2008.tb00041.x

Souza, T., & Teixeira, M. (2020). Avaliação dos efeitos do Minha História de Carreira para construção de carreira [Evaluation of the effects of My Career Story on career construction]. *Brazilian Journal of Vocational Guidance, 21*(1), 29–39. http://dx.doi.org/10.26707/1984-7270/2020v21n104

Spurk, D., Volmer, J., Orth, M., & Göritz, A. (2020). How do career adaptability and proactive career behaviours interrelate over time? An inter-and intraindividual investigation. *Journal of Occupational and Organizational Psychology, 93*(1), 158–186. https://doi.org/10.1111/joop.12288

van der Horst, A., Klehe, U., Brenninkmeijer, V., & Coolen, A. (2021). Facilitating a successful school-to-work transition: Comparing compact career-adaptation interventions. *Journal of Vocational Behavior*, *128*, 103581. https://doi.org/10.1016/j.jvb.2021.103581

Vergara Wilson, M., & Gallardo, G. (2019). ¿Cómo encontraré trabajo? Proyecciones imaginadas de transición desde la universidad al mundo laboral de estudiantes de pregrado. *Psicoperspectivas, 18*(3), 1–12. https://doi.org/10.5027/psicoperspectivas-vol18-issue3-fulltext-1676

Wei, L., Zhou, S., Hu, S., Zhou, Z., & Chen, J. (2021). Influences of nursing students' career planning, internship experience, and other factors on professional identity. *Nurse Education Today, 99,* 104781. https://doi.org/10.1016/j.nedt.2021.104781

Whiston, S., Li, Y., Mitts, N., & Wright, L. (2017). Effectiveness of career choice interventions: A meta-analytic replication and extension. *Journal of Vocational Behavior, 100*, 175–184. https://doi.org/10.1016/j.jvb.2017.03.010

Zikic, J., & Klehe, U. (2006). Job loss as a blessing in disguise: The role of career exploration and career planning in predicting reemployment quality. *Journal of Vocational Behavior, 69*(3), 391–409. https://doi.org/10.1016/j.jvb.2006.05.007