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Article

Career intervention for self-management and entrepreneurship

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Career intervention for self-management and entrepreneurship

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ABSTRACT

Career self-management can be an important contribution for entrepreneurship as an attitude and for the consequent adjustment and professional satisfaction (Loureiro, 2012). For this reason, we carried out a career intervention, in the form of a seminar, with the main goal of promoting career self-management competences. That is, career adaptability in its dimensions of concern, control, curiosity and confidence (Savickas, 2005). This intervention was specifically designed to college students, because there is a strong social concern related to unemployment in this population. Our investigation problem is to determine whether these competences can be developed in specific population and therefore determines this particular career intervention's efficacy. To assess the impact and effectiveness of the seminar on different dimensions, we used a quasi-experimental design, with two assessment moments in time, with non-equivalent groups. Overall, the results seem to be relevant, since the career intervention had a positive and significant impact on exploration behaviors, beliefs, confidence and vocational identity. Further investigation should consider a more longitudinal design and carry out similar interventions with other population.

Keywords: Career self-management, entrepreneurship, career intervention, career exploration, vocational identity

1. Introduction

Changes that took place in educative and labor context are constant and fast nowadays. It is conducted, and still does, to a crisis in the people's guiding patterns. Therefore, these circumstances lead at the same time, to a challenge for professionals in vocational psychology as it shows the importance of developing "educational and employment management skills" (OECD, 2005, p.8) in citizens in order to make them more and more proficient in dealing with these new challenges. That is, to help them be more effective in managing their own career.

An effective career manager is someone who develops an ever more controlled, assertive and proactive role managing his career (Pinto, Taveira, & Sá, 2012; Rodriguez-Moreno, 2008; Vianen, De

Pater, & Preenen, 2008; Veloso, Trevisan, Santos, & Oliveira, 2007). It is someone who tends to acquire experience and skills to meet to the new requirements, even in a preventively way. Consequently, it is someone who tends to seek international experiences in order to increase his/her potential on the international market, and acquire cross-functional experience and leadership and cooperative self-management skills. An effective career manager will also seek to develop personality traits associated with flexibility, integrity and trustworthiness (Allred, Snow, & Miles, 1996; Appelbaum & Santiago, 1997).

The answer to this challenge may be found on Vocational Psychology findings on career interventions effectiveness, especially those designed to facilitate management skills in subjects with different levels of academic and professional qualification (eg, Brown & Lent, 2005; Guichard & Huteau, 2001; Young & Chen, 1999). Indeed, some meta-analysis conducted so far (Brown & Krane, 2000; Oliver & Spokane, 1988; Spokane & Oliver, 1983; Whiston, Brecheisen, & Stephens, 2003; Whiston & Sexton, 1998), based on quantitative research on the topic of effectiveness, demonstrate that infused interventions as seminars and group or individual counseling are the most effective career intervention modalities. These studies report that one can expect improvements on maturity, adaptability, decision status, adequacy and behavioral knowledge measures, especially when compared to a control group. They also report that college students prefer structured interventions to vague and diffuse interventions and those seminars are one of the most preferred and effective intervention modalities (e.g., Johnson, Smither, & Holland, 1981; Luzzo, 2000; Reese & Miller, 2006; Spokane, 2004).

In times of economic and social crisis, it is absolutely important for psychology, combined with other sciences, to help people with effective strategies to deal and solve their problems. What, then, is the role of vocational psychology? Rafael (2007) suggests that vocational psychology must adapt to this changing world in terms of its practices. Thus, in concrete terms, and in a micro level of intervention, it should consider the strong emphasis given to technology, to interpersonal skills, to self-employment, and to the development of unpredictable career patterns. In a macro level, the same author highlights some care that psychologists should consider in this area, including psychological tests' validity when putting them online, getting more sensitivity in dealing with different cultures, and increasing international collaboration between services by sharing good practices and increasing dialog with other social sciences.

For a professional in this area, it is important to remember that despite all the changes, there aspects remain stable (a) he/she should not abandon traditional approaches but help clients to accept the challenge of seeing the world in change as an opportunity, (b) intervention in this context should be preventive, non-directive, and based on activating positive emotions strategies, (c) it should also help clients to be more cognitive flexible, versatile, autonomous, adaptable and intrinsically motivated (e.g., Barros, 2011; Brown, Kirpal, Grønning, & Dæhlen, 2010; Dutra, Veloso, Fischer, & Nakata, 2009; Hopson, 2009; Passion, 2012; Sullivan & Arthur, 2006).

The challenge for clients, regardless of the organization in which they operate, or in their more independent work, is the ability to change their skills, to recycle their knowledge and to adapt to new

situations. These characteristics are crucial for workers "survival" in an unpredictable world. Career structured interventions focused on self-knowledge, strengths and weaknesses evaluation, as well as on the opportunities knowledge seems to be essential to face those challenges, since they can foster career self-management and entrepreneurship attitudes and behaviors (Loureiro, 2012).

This study presents the design and evaluation of such a career intervention and is organized into two distinct parts. In the first one we present the choices made in the construction of a career management seminar, a structured and preventive intervention conceived to promote career exploration, decision-making and strategic life-planning. In the second part we present the seminar's evaluation design, participants and the results obtained, as well as a brief discussion about the main intervention effects.

2. Seminar Theoretical Framework

2.1. Seminar's rational

The Career Self-Management Seminar design (version A, for college students), has as main guidelines the following rationale:

- (a) Need to help students to be more confident in their future, by creating and developing trust in themselves for dealing with their social, academic and professional main tasks (Chickering & Reisser, 1993; Erikson, 1982);
- (b) Importance of creating information opportunities and reflecting in a group about new career concepts, to create a more encouraging community to career development (Arnold & Cohen, 2008; Baruch, 2004; DeFillipi & Arthur, 1994; Hall, 2004);
- (c) Awareness that college students are adults and self-determining human beings who must take primary responsibility for their career development in a consciously and preventive way (Loureiro, 2012);
- (d) Importance of promoting individuals career development as there is a close relationship between career and academic development, in terms of school and career motivation, and also a need for pursuing academic and educational goals significant to one's life project (Boto, Mader, & Fernandes, 2010; Loureiro, 2012);
- (e) Awareness that college students adhere more easily to direct interventions with psycho-educational purposes, if these interventions include addressing decision-making difficulties and transition to the world of work (Luzzo, 2000).

The Career Self-Management Seminar is a specialized intervention developed by vocational psychologists, intended to motivate each student to invest more in personal management of his/her career. Throughout the seminar students are supported in the early recognition and resolution of decision-making difficulties related to training and work. Besides it helps students to gather and explore

information and test attitudes and behaviors related to career plans, dreams, and opportunities. It seeks to provide an informative space and questioning and reflective moments.

2.2. Intervention goals

The Career Self-Management Seminar, version A, aims to promote an active vocational development in its participants. Specifically, it aims to help students (a) to develop a positive vision of the future, (b) to determine future goals in academic and professional areas, (c) to test the implementation of these goals, in a supportive context and from an integrated and reflected point of view, (d) and to create opportunities for students to increase their self-knowledge, planning capacity and personal decision-making skills, and also to help them (e) to increase their knowledge about training opportunities and about obtaining or creating jobs in preferred areas.

2.3. Intervention's structure and its procedural components

The Career Self-Management Seminar, version A, was designed after a review and critical analysis of the major theoretical and empirical studies on intervention with college students and on career intervention effectiveness with this group of the population.

Intervention comprises a total of nine weekly 120 minutes sessions, conducted in a small group format, including a pre-test, post-test and follow-up evaluation moment to assess results and determine efficacy. It comprises also process assessment instruments.

The first session (session zero) comprises the pre-test moment, the presentation and discussion of the seminar's process, the definition of operating rules and establishment of a psychological and group commitment contract. Sessions one and two are intended to support students to deepen the new concepts of career, to help students analyze their personal history, and their family and social life as well as to develop a positive outlook on the future, analyzing aspirations, skills, personality and career goals. In sessions three, four and five, students are helped to anticipate the next career decision. In the third session, participants are asked to complete a questionnaire in order to help them assess and reflect on personal career decision-making difficulties. Subsequently, psychologist teaches participants about particularities in a career decision-making process, and helps those defining criteria for general exploration of opportunities, specifying priorities, and deepening options in written media, internet or other material. In the sixth and seventh sessions, students are supported to prepare and test in simulation, the implementation of their decisions, to learn how to solve practical problems related to the implementation of that choice and to discuss its generalization to other career goals or projects. In the eighth session students evaluate the intervention process, and reflect and conclude about the Seminar.

3. Methodology

3.1. Participants

Participated were 198 undergraduate students attending the 3rd year of a University program in 2009-2010, belonging to an experimental group (n = 119, 60.1%) or control group (n = 79, 39.9%). The experimental group includes 19 boys and 100 girls of three universities in the north of Portugal (U1 = 78, U2 = 39, U3 = 2), studying in social sciences, natural and health sciences and engineering programs. The control group includes 7 boys and 72 girls, attending one of the mentioned universities (U2 = 79), and studying in health and social protection programs (n = 79). The average age in both groups is 21.72 (SD = 3.09) for girls and 23.31 (SD = 3.53) for boys.

3.2. Measures

Participants were administer a socio demographic questionnaire, a career exploration scale and a career development inventory.

The socio demographic questionnaire was fulfilled with information on course, gender, age and qualifications.

The *Career Exploration Survey* (CES; Stumpf, Colarelli, & Hartman, 1983 - adapt. by Taveira, 1997) is a multidimensional scale, consisting of fifty-three items aimed to assess, in a consistently way, four kinds of beliefs, five behavioral responses and three vocational exploration reactions. In this study we used twelve dimensions, i.e., Employment outlook ($\alpha = .86$), Certainty of exploration outcomes ($\alpha = .89$), External search instrumentality ($\alpha = .85$) and Internal search instrumentality ($\alpha = .80$), as well as Environment exploration ($\alpha = .70$), Self-exploration ($\alpha = .70$), Intended and systematic exploration ($\alpha = .66$), Amount of acquired information ($\alpha = .71$) and the importance of getting the Preferred P Importance of preferred position ($\alpha = .76$), as regards the first two dimensions. As for reactions, it allows to assess satisfaction with (obtained) information ($\alpha = .74$), Exploration stress ($\alpha = .75$) and Decision stress ($\alpha = .88$).

The *Career Development Inventory* (CDI, Super, Thompson, Lindeman, Jordaan, & Myers, 1979, 1981 - adapt. by Ferreira Marques & Caeiro, 1979, 1981, 1988), a career maturity inventory, which can be used as a way to assess individual readiness to make career decisions (Glavin & Rehfuß, 2005; Patton, Spooner-Lane, & Creed, 2005). The CDI is based on two main constructs: general career decision making attitudes (related to the willingness to think, expending effort and plan educational and occupational choices) and career decision-making skills (related to the ability to apply knowledge and understand the world of work in a rational way. The notion of attitudes refers to the first two scales of

CDI - Career Planning ($\alpha = .86$) and Career Exploration. The notion of competence refers to the remaining two scales - Decision making ($\alpha = .49$) and Knowledge world of work ($\alpha = .63$) (Glavin & Rehfuß, 2005). In this study, due to the use of CES, it was decided not to use the Career Exploration scale of the CDI.

3.3. Hypothesis

Considering theoretical expectation and evidence from several consulted empirical studies on exploration and vocational maturity, the hypothesis is:

H1 - After career intervention students, in experimental group, in contrast to control group, present better attitudinal and behavioral career results related to exploration beliefs, behaviors and reactions as well as better career results related to career planning, decision making and knowledge about careers and the world of work.

3.4. Procedure

First, researchers contacted each of the three universities involved in data collection plan. After that was carried out some publicity about the seminar and solicitation for students' registration for the seminar as well as for the investigation. Students' participation in experimental group as well as in control group, was voluntarily and properly informed.

Data collection occurred in two stages, before and after the seminar, within an interval of about two months. It took place in group and in a classroom context. Each instrument's instructions were read aloud and clarified to all participants. Questionnaires were delivered in a varied order to control possible fatigue effect on task (Almeida & Freire, 1997). To ensure data confidentiality, the pairing of all questionnaires was made using an alphanumeric code.

4. Results

This results presentation is organized into three parts. In the first one are presented the main procedures used to compare control and experimental group results in order to test its equivalence at pretest moment. This analysis is important to determine if differences that may occur in the posttest moment are due to the intervention itself or to the manipulation of the independent variable and not to other influences (Almeida & Freire, 2003; Christensen, 2005). In the second phase, are presented the most significant results, as means and standard deviations, at experimental and control groups in pre and posttest moment. Finally, in the third phase, we present an analysis related to our hypothesis. That is, we intend to clarify the effects of the intervention seminar on each considered career dimensions.

4.1. Preliminary analysis

This preliminary analysis is important to ensure that we can use the comparison group as a control group. Therefore, analyzes of variance were conducted (t test for independent samples) to evaluate values at exploration dimensions and at vocational maturity dimensions, as well as age and gender (Kracke & Schmitt-Rodermund, 2001; Maroco, 2007; Taveira, 1997, Vignoli, Croity-Belz, Chapeland, Fillipis, & Garcia, 2005). Finally, analysis were also conducted to find out inter correlations (pretest / posttest) in order to determine its magnitude and significance level, for the two months' time interval.

The t test results for independent samples reveal that at the pretest moment no statistically significant differences existed between the two groups, except for Career Decision Making ($t = -2.632$, $p = 0.09$). At this particular dimension experimental group has a highest average value unlike the control group. The gender and group (control versus experimental) analysis also did not reveal any statistically significant difference ($\chi^2 = 2.102$, $p = 0.147$). In the age analysis the experimental group participants are older than their control group colleagues and that difference is statistically significant ($t = -3170$, $p = 0.02$). Table 1 presents the correlation matrix analysis of the studied dimensions, considering time (pre / posttest). The statistical significance values ranged between .000 in QI dimension (Amount of acquired information), for instance and .685 in the TDC dimension (Career Decision Making).

4.2. Main results

Table 2 presents means and standard deviation values on the twelve career exploration dimensions and on the three vocational maturity dimensions, at each group and on pre and posttest moment. A paired sample student's t test analysis was conducted as well as a variance analysis (ANOVA) for repeated measures

Analyzing the average values per group, depending on the research groups, one can realize that at the first moment analysis (pretest), experimental group values were lightly above the scale midpoint in all dimensions, except for ESI (Intended and systematic exploration), ESP (Self-exploration), EE (Employment outlook) and for CR (Certainty of exploration outcomes). In the posttest moment exception was also for CR (Certainty of exploration outcomes), and for SD (Decision stress, that dropped and reached much better and desirable results).

In control group values are below the scale midpoint in five dimensions at the pretest. These dimensions are ESI (Intended and systematic exploration), ESP (Self-exploration), EE (Employment outlook), CR (Certainty of exploration outcomes) and for SD (Decision stress). At the posttest moment the dimensions below the scale midpoint were those found at the pretest and also TDC (Career Decision Making), with a slightly decrease results.

Paired sample t test results reveal significant differences when comparing the average results from the pretest to posttest but also if we consider the research group. In fact, at the experimental

group, between pretest and posttest, there was a significant improvement at almost all evaluated dimensions. IMP (Importance of preferred position), SE (Exploration stress), PC (Career planning) and ICMT (World of work information) dimensions were an exception to that conclusion. At those identified differences, nine were statistically significant with a p value equal or below .001.

Table 1. Intercorrelations among the variables of exploration and vocational maturity (*T1 e T2*) and between different moments (*T1xT2*)

	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
IPC T1																														
2TDC T1	,685																													
3ICMT T1	,453	,002																												
4QI T1	,000	,641	,921																											
5ESI T1	,001	,727	,203	,023																										
6EM T1	,000	,827	,392	,000	,000																									
7ESP T1	,723	,219	,533	,456	,000	,000																								
8EE T1	,043	,747	,327	,004	,016	,074	,012																							
9CR T1	,004	,650	,402	,010	,213	,136	,033	,000	-																					
10IE T1	,146	,602	,761	,270	,030	,000	,000	,001	,151																					
11II T1	,653	,600	,590	,362	,051	,005	,000	,001	,255	,000																				
12IMP T1	,683	,152	,107	,379	,708	,496	,350	,572	,765	,132	,049																			
13SI T1	,000	,767	,818	,000	,059	,000	,623	,002	,085	,217	,036	,605																		
14SE T1	,022	,214	,156	,214	,559	,980	,250	,074	,962	,775	,759	,123	,044																	
15SD T1	,000	,737	,549	,020	,853	,641	,002	,858	,931	,024	,000	,663	,135	,000																
16PC T2	,000	,428	,401	,000	,030	,010	,584	,278	,085	,241	,167	,966	,000	,711	,012															
17TDC T2	,808	,000	,001	,330	,323	,827	,450	,202	,507	,471	,096	,029	,151	,444	,713	,009														
18ICMT T2	,650	,000	,000	,572	,955	,921	,346	,546	,749	,386	,021	,194	,483	,051	,898	,013	,000													
19QI T2	,000	,730	,942	,000	,248	,003	,809	,113	,037	,012	,048	,823	,000	,388	,218	,000	,068	,002												
20ESI T2	,002	,361	,346	,005	,000	,000	,003	,208	,285	,012	,014	,621	,043	,664	,300	,000	,191	,642	,000											
21EM T2	,000	,642	,097	,001	,000	,000	,006	,586	,213	,001	,009	,649	,004	,468	,864	,000	,007	,030	,000	,000										
22ESP T2	,102	,994	,423	,023	,032	,001	,000	,183	,082	,002	,008	,840	,059	,305	,074	,000	,023	,794	,001	,000	,000									
23EE T2	,031	,874	,161	,115	,002	,218	,091	,000	,000	,002	,058	,227	,123	,090	,873	,000	,627	,329	,000	,000	,000	,000								
24CR T2	,093	,860	,865	,557	,009	,722	,189	,000	,000	,312	,531	,806	,129	,042	,850	,093	,481	,988	,007	,004	,026	,124	,000							
25IE T2	,068	,127	,098	,141	,278	,010	,005	,303	,971	,000	,000	,257	,266	,333	,683	,000	,000	,027	,000	,000	,000	,000	,002	,217						
26II T2	,367	,059	,020	,100	,484	,043	,003	,388	,642	,000	,000	,956	,140	,533	,033	,000	,001	,032	,000	,000	,000	,000	,000	,004	,130	,000				
27IMP T2	,556	,005	,103	,176	,291	,966	,165	,358	,144	,081	,346	,000	,558	,401	,812	,995	,089	,042	,453	,463	,694	,027	,568	,327	,117	,209				
28SI T2	,000	,540	,277	,000	,035	,000	,398	,850	,354	,103	,251	,136	,000	,290	,056	,000	,075	,010	,000	,000	,000	,000	,000	,082	,000	,000	,399			
29SE T2	,015	,584	,519	,109	,011	,064	,666	,116	,480	,544	,664	,263	,239	,000	,002	,085	,107	,159	,002	,202	,065	,948	,076	,000	,276	,599	,447	,002		
30SD T2	,001	,524	,631	,008	,162	,012	,543	,497	,426	,589	,442	,003	,141	,000	,000	,004	,360	,110	,001	,152	,061	,309	,433	,047	,143	,629	,607	,023	,000	

Note: PC= Career planning; TDC= Career Decision Making; ICMT= World of work information; QI= Amount of acquired information; ESI= Intended and systematic exploration; EM= Environment exploration; ESP=Self-exploration; EE= Employment outlook; CR= Certainty of exploration outcomes; IE= External search instrumentality; II= Internal search instrumentality; IMP= Importance of preferred position; SI= Satisfaction with information; SE= Exploration stress; SD= Decision stress.

At control group, the results trajectory was not that clear and in an expected direction. Values are in a random order, showing better results at some dimensions (two statistically significant, with p value $<.05$) and worse results at others dimensions (four of these also with statistical significance). These values reinforce and distinguish themselves from the values found at the experimental group. These results suggest that there was a significant reduction at exploratory activity and a decrease at career planning between the pre and posttest moment. Besides, the ability to make career decisions and the information about careers and the world of work seems to be also smaller in the posttest evaluation moment.

4.3. Intervention effects

To analyze the intervention effects repeated measures variance analyzes (ANOVA) were conducted and are also presented at table 2. In repeated measurements factor (Within-Subject Factor) the twelve career exploration dimensions and the three vocational maturity dimensions have been successively studied at two levels (pre and posttest). Contrastingly, at the independent factor analysis (Between-Subject Factor) the group variable (experimental versus control) was also considered. The effect size was calculated using partial eta-squared (η^2).

Results suggest interactions (moment vs group) in the following dimensions: PC (Career planning, $F(18,93)$, $p = .000$; $\eta^2 = .14$); TDC (Career Decision Making, $F(26,85)$, $p = .000$, $\eta^2 = .12$); ICMT (World of work information, $F(33,16)$, $p = .000$; $\eta^2 = .14$); QI (Amount of acquired information, $F(11,92)$, $p = .001$, $\eta^2 = .06$); EM (Environment exploration, $F(28,31)$, $p = .000$; $\eta^2 = .12$); ESP (Self-exploration, $F(19,73)$, $p = .000$; $\eta^2 = .09$); II (Internal search instrumentality, $F(20,22)$, $p = .000$; $\eta^2 = .09$); IE (External search instrumentality, $F(11,20)$, $p = .001$, $\eta^2 = .05$); and SI (Satisfaction with information, $F(13,87)$, $p = .000$, $\eta^2 = .06$).

Interpretative analyses reveal that there was an improvement in two dimensions at the two research groups from pre to posttest moment. However, at the experimental group that improvement was statistically significant. Besides, we also conclude that at the remaining seven dimensions the experimental group showed better results from pretest to posttest moment while control group did not and in some cases those results are worse.

Table 2. Mean, Standard deviation, Paired sample *t Test*, *Anova* and Magnitude of effect

Scales and dimensions	Mean point	Experimental group				t	p	Control group				t	p	F	p	η ²
		Pre test Mean	SD	Post test Mean	SD			Pre test Mean	SD	Post test Mean	SD					
PC	57	71,85	10,63	79,60	10,27	-9,39	,000	72,72	10,17	71,73	11,95	0,675	,502	18,926	,000	,14
TDC	8	9,76	1,88	10,07	2,08	-1,55	,124	8,89	2,04	7,39	2,92	4,981	,000	26,852	,000	,12
ICMT	10	13,72	2,01	14,20	2,18	-2,09	,039	13,32	2,09	11,59	3,64	3,781	,000	33,162	,000	,14
QI	9	10,40	1,98	11,37	1,75	-5,81	,000	10,26	1,57	10,29	2,00	-,177	,860	11,922	,001	,06
ESI	6	5,46	2,01	6,19	2,04	-3,79	,000	5,48	1,76	5,76	1,67	-1,29	,198	2,353	,127	,01
EM	12	12,58	3,43	14,97	3,15	-7,60	,000	12,57	3,33	12,39	3,05	0,49	,621	28,314	,000	,12
ESP	15	14,80	4,19	17,53	4,60	-5,83	,000	14,43	4,14	14,05	4,35	0,77	,444	19,731	,000	,09
EE	9	7,75	2,40	9,21	2,29	-6,53	,000	7,58	2,35	8,38	2,54	-2,63	,010	3,269	,072	,01
CR	9	6,39	2,64	7,56	3,03	-4,61	,000	6,51	2,75	7,37	2,61	-2,37	,020	0,516	,474	,00
IE	33	40,16	6,53	42,59	7,09	-3,45	,001	38,73	5,74	36,08	5,92	2,99	,004	20,222	,000	,09
II	12	15,45	2,89	16,08	2,95	-2,14	,035	14,81	2,75	13,89	2,67	2,61	,011	11,200	,001	,05
IMP	9	10,54	2,62	10,62	2,45	-0,39	,695	11,23	2,12	11,16	2,36	0,25	,804	0,165	,660	,00
SI	9	9,92	2,03	11,42	1,96	-7,47	,000	9,85	1,52	10,24	1,49	-1,915	,059	13,867	,000	,06
SE	12	15,07	4,44	14,84	4,41	0,52	,602	15,53	4,67	16,64	3,69	-1,850	,068	3,464	,064	,02
SD	15	15,47	6,87	13,88	6,41	2,71	,008	14,97	7,10	13,92	6,06	1,432	,156	0,336	,563	,04

Note: PC= Career planning; TDC= Career Decision Making; ICMT= World of work information; QI= Amount of acquired information; ESI= Intended and systematic exploration; EM= Environment exploration; ESP=Self-exploration; EE= Employment outlook; CR= Certainty of exploration outcomes; IE= External search instrumentality; II= Internal search instrumentality; IMP= Importance of preferred position; SI= Satisfaction with information; SE= Exploration stress; SD= Decision stress.

5. Discussion

Considering theoretical orientations and some empirical evidence in the area of exploration and vocational maturity, the hypothesis raised the assumption that, after the vocational intervention, students in the experimental group would have better results than the group control in those dimensions. Besides, the assumption was that these values would represent a statistically significant improvement in attitudes and behaviors related to vocational exploration, particularly in terms of the exploration process, which includes the dimensions of environment exploration, self-exploration and systematic and intentional exploration, but also related to career planning, career decision making and knowledge about careers and the world of work.

This hypothesis and this study take into account that the recent challenges of the current world, at educational and professional level, require from every citizen the development of self-management career skills and competences. These competences consist, among other things, on the development of cooperative leadership skills and self-management skills, as well as on the search for experiences and skills to cope with new requirements in national and international markets. These skills are reflected in a greater capacity to manage, in a more controlled, assertive and proactive way his/her own career, no matter if the citizen is an employee or if he is a manager of his own business.

The intervention proposal made to the college students was based on these assumptions of development and personal knowledge, besides developing confidence on the future and enlarging the career concept to other fields of life beyond professional area, to potentiate a greater personal empowerment and balance.

Participants in the intervention were assessed at pre and post intervention, and this assessment included also a peer group comparison. The obtained results in experimental group, when comparing the pretest and posttest results, shows that, on average, the trend is positive, i.e., results indicate improvement in experimental group in almost every analyzed dimensions. The most relevant results are related to self-exploration, environmental exploration, amount of information, exploration stress, decision stress and career planning.

These values found in experimental group are even more relevant when compared to the values found in the control group. By contrast, the control group evolution is not as positive as the experimental group's evolution, in a statistical significance point of view. In fact, in some cases results get even worse from a pretest moment to a posttest moment in control group.

This means that we can much certainly conclude that intervention had an impact and effectiveness in the experimental group, since this is the group that registered more improvements in career planning, amount of acquired information, self-exploration, and environmental exploration in a systematic and intentional way, among other things. That is, participation in intervention might potentiate greater personal knowledge, in terms of personal characteristics and capabilities, greater knowledge on career opportunities available related to especially personal characteristics, greater career planning skills, better goal formulation and better strategies to achieve those goals.

These results are consistent with theory and studies on career intervention that supports the idea that seminars are one of the most effective career intervention modalities design to college students intervention and demonstrates that this type of intervention receives greater acceptance, especially among the college population (Luzzo, 2000). The fact that the intervention is developed in a group format allows potentiation of group communication skills and personal and interpersonal knowledge, since these are important variables in self-management (Spokane, 1991). Self-management skills developed at the seminar might be important, therefore, to deal with present and future career challenges no matter its nature or areas since clients anticipate them more easily and have better self-knowledge and self-understanding and this might be crucial in critical situations.

6. Final considerations and further recommendations

This study is important to us since it present a new methodological intervention in career intervention in Portugal. It is a group and psych educative intervention in which participants reflect about their past, roles, interests, values, difficulties and learn how to make a CV or application. As a new type of career intervention we used a relevant assessment tests battery.

Results are motivating to do further intervention and investigation since there is some evidence of efficacy and impact of the seminar on participants.

For further intervention we suggest to apply the seminar in other universities along the country and not just in the north. Besides, we suggest the use of representative groups of investigation, a more longitudinal design and the use of similar interventions with other population, for instance.

In spite of all improvements needed this investigation is important so far as it allows us to specifically improve self-exploration and knowledge, environmental exploration, decrease in stress related to exploration and decision making and improvements in career planning among other things. These competences and results are crucial to deal with present and future challenges and are related to literature conceptions of what is relevant in a self-management behavior (Greenhaus & Callanan, 1994; Greenhaus, Callanan, & Godshalk, 2010).

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