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FACULTY OF PSYCHOLOGY AND EDUCATIONAL SCIENCES  
DOCTORAL SCHOOL “EVIDENCE-BASED  
ASSESSMENT AND PSYCHOLOGICAL INTERVENTIONS”

**Ph.D. THESIS**

**Cognitive-Behavioral Coaching: efficacy, methods of delivery and mechanism of change**

**SUMMARY**

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**The studies, part of this thesis, are published or under review as follows:**

**A. Published articles:**

- **Tomoiağă, C., & David, O. (2022).** The efficacy of guided and unguided game-based cognitive-behavioral therapy in reducing distress in college students. *Games for Health Journal*, 11(6), 403-413. <https://doi.org/10.1089/g4h.2021.0195> (Q1; IF 3.5)
- **Tomoiağă, C., & David, O. (2023).** Is cognitive-behavioral coaching an empirically supported approach to coaching? a meta-analysis to investigate its outcomes and moderators. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 1-22. 341:489–510. <https://doi.org/10.1007/s10942-023-00498-y> (Q4; IF 1.4)

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- **Tomoiağă, C., & David, O. (2023).** : How much does coaching relationship matter for the outcomes? The role of the coaching relationship components when using a general or cognitive-behavioral approach in coaching. *Journal of Rational-Emotive & Cognitive-Behavior Therapy* (Q4; IF 1.4)
- **Tomoiağă, C., & David, O. (2023).** : How can we best use cognitive-behavioral coaching to support goal orientation, attainment and positive emotions in students? The efficacy of online, face to face and while walking delivery methods of coaching. *Current psychology* (Q2; IF 2.8)

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- **Lorinț, C. & David, O.A. (2019, July).** A meta-analysis to investigate the effectiveness of cognitive-behavioral coaching. Paper presented at 9th World Congress of Behavioural and Cognitive Therapies, Berlin, Germany.
- **Lorinț, C. & David, O.A. (2019, September).** Does cognitive-behavioral coaching work? A meta-analysis. Paper presented in symposium “Rational Emotive Cognitive-Behavioral Coaching: Present and Future”, at 4th International Congress of Rational Emotive Behavior Therapy „*The Role of „The Classics” in the Present and Future of Psychology*”, Cluj-Napoca, Romania
- **Lorinț, C. & David, O.A. (2020, September).** A meta-analysis to investigate the effectiveness of cognitive-behavioral coaching. Paper presented in symposium „Is CBT a Good Match for Coaching? Current State-Of-The-Art and Future

Directions in Cognitive-Behavioral Coaching”, at 50th EABCT Congress  
„*Adapting CBT to socially and culturally diverse environments*”, Athens, Greece.

- **Lorint, C.** & David, O.A. (2020, September). The efficacy of different types of CBC delivery methods. Paper presented in symposium „Is CBT a Good Match for Coaching? Current State-Of-The-Art and Future Directions in Cognitive-Behavioral Coaching”, at 50th EABCT Congress „*Adapting CBT to socially and culturally diverse environments*”, Athens, Greece.
- **Lorint, C.** & David, O.A. (2021, September). Guided and unguided game-based CBT for stress management in students”, at 51th EABCT European Association for Behavioural and Cognitive Therapies (EABCT 2021), Belfast, United Kingdom.

**D. The following articles are not part of the thesis, but were published during the doctoral stage.**

- David, O., & **Lorint, C.** (2021). ‘New developments of the ABC model for cognitive-behavioral coaching.’ *International Journal of Coaching Psychology*, 2, 2, 1-5.  
<https://ijcp.nationalwellbeingservice.com/volumes/volume-2-2021/volume-2-article-2/>
- David, O. A., Magurean, S., & **Tomoiağă, C.** (2022). Do Improvements in Therapeutic Game-Based Skills Transfer to Real Life Improvements in Children's Emotion-Regulation Abilities and Mental Health? A Pilot Study That Offers Preliminary Validity of the REThink In-game Performance Scoring. *Frontiers in Psychiatry*, 13, 828481. <https://doi.org/10.3389/fpsy.2022.828481>(Q2 ; IF 4.7)
- Iuga, I. A., **Tomoiağa, C. T.**, & David, O. A. (2023). The REThink Online Therapeutic Game: A Usability Study. *Children*, 10(8), 1276.  
<https://doi.org/10.3390/children10081276> (Q2; IF 2.4)

## **CHAPTER I: THEORETICAL BACKGROUND**

### **1. Fundamentals of coaching**

Coaching is a positive intervention that aims to help clients achieve goals or overcome difficulties by using goal-oriented methods and problem-solving ones (Bernard & David, 2018). It is a process between a coach (professional in coaching activities) and a coachee (client) and it is an intervention that was first used in sports industries, then translated and adapted in different areas (e.g. business, health, life etc.; (Bernard & David, 2018). During the adaptation process, coaching acquired influence from several other related interventions like mentoring, training, counseling, consultation or psychotherapy, and different paradigms like problem-solving, integrative paradigm, positive psychology or cognitive-behavioral theory.

#### **1.1. Distinctions**

Mentoring is a positive intervention (similar to coaching), where an expert in a specific given domain (the mentor) trains a person (the mentee) into improving his/hers skills and growing in that specific domain or position by using and sharing his/her knowledge, experience and expertise (Bernard & David, 2018). Training is also a positive intervention, where the trainer teaches the trainees soft skills (e.g. time management skill; communication, feedback) or specific skills (specific to one domain or group of people) by using presentations and different other techniques based on the adult learning process being similar to coaching due to the topic and focus mostly on improvements of healthy individuals (Bernard & David, 2018). Consultation is an intervention where an expert in a given domain (e.g., financial) offers guidance to clients that are no experts in the field, in making a decision in that domain (e.g., a financial expert helps a client plan this retirement) being similar to coaching due to the structure and the collaborative process (Bernard & David, 2018). Counseling and psychotherapy are mental health interventions that aim at helping patients/clients improve their mental health. Coaching is an intervention similar to counseling and psychotherapy given its aim at improving the well-being of the clients and quality of life, but coaching does not target the etiopathogenetic factors of mental health problems.

Cognitive-Behavioral Coaching (CBC) is mainly based on the cognitive-behavioral theory and has borrowed the conceptualization and methods from cognitive-behavioral therapy (CBT; Neenan, 2008). Even though CBC has kept the original coaching format,

purpose and several techniques, it has also adopted the assessment, conceptualization, techniques and the science-based orientation from CBT (Neenan, 2008). CBC borrowed from CBT the ABC model and adapted it to fit into the coaching process (Bernard & David, 2018), and uses it for conceptualization and guiding the process, in conjunction with traditional coaching techniques (e.g., solution-focused, problem-solving), considering the clients goals and problems.

## **1.2.Types of Cognitive-Behavioral Coaching**

### **1.4.1. Professional Cognitive-Behavioral Coaching**

Coaching was first used in sports in reference to the process that the coach performs with sportsmen in order to increase and improve their sport performance (Bernard & David, 2018). The coach (trainer) uses both his/hers experience and expertise to help the athlete achieve a specific sport-related goal. Later, it was adapted to the business field, and then to many other domains. In the business field, there is executive coaching, performance coaching, team coaching, managerial coaching, leadership coaching and so on (Feldman & Lankau, 2005). All these types of coaching are performed in organizational context with the purpose of helping individuals perform better in work-related aspects, improve their skills, learn new ones or overcome obstacles

Life CBC, is a type of coaching that is used to improve the personal life of an individual, by working towards personal goals while efficiently managing obstacles that every individual encounter in their life (Bernard & David, 2018). Health CBC is a type of coaching that aims to help people manage their health related diagnostics or manage their health-related behaviors. In this type of CBC, the coach acts like a guide that helps clients adhere to a specific treatment for a health-related issue or manage their lifestyle in order to maintain and improve their health. A new and innovative type of coaching is the digital one. Digital coaching acts like an automatic coach that is implemented in a technology-based intervention aimed at supporting clients during the intervention or the digital coach provides a standalone tool (Allemand & Flückiger, 2022).



## **2. Cognitive-Behavioral Coaching - Features**

### **2.1. The coaching relationship in Cognitive-Behavioral Coaching**

In CBC the coaching relationship is a mix between the important elements of the working alliance in coaching in general with the specific elements from CBT. From the cognitive-behavioral perspective (Beck et al., 1979) the coach should pay attention to several aspects: neither participant taking a superior role, but joining efforts as a team, being open and explicit with one another and the coach offering coachee strategies and techniques with the client having the freedom to decide what to use. Another important aspect is that the coach needs to admit if making mistakes (Beck et al., 1979).

### **2.2. Assessment & conceptualization in Cognitive-Behavioral Coaching**

Assessment in CBC has a similar purpose with assessment in CBT, namely to gain as much information as possible about the client, the environment, and the existing problem/context. Being an evidence-based approach CBC uses validated instruments to evaluate several aspects of clients. Some of them are borrowed from CBT like the Profile of Emotional Distress (Opris & Macavei, 2007), Working Alliance Inventory (Tracey & Kokotovic, 1989), but there are several instruments that were developed and tested specifically for CBC such as Managerial Rational and Irrational Beliefs (David, 2013), Managerial Coaching Assessment System (David & Matu, 2013), Solution Focus Inventory (Grant et al., 2012), MoodWheel (David, 2013) and others. Each of these instruments was successfully validated to be used to perform assessment in CBC intervention.

Conceptualization in CBC usually follows the ABC model (Ellis, 1962), where the coach explains to the client the context related to the goal/problem, the unhealthy beliefs, mindset that are present and his/her strengths that could be used and the consequences that are derived from them along with discussion about motivation and meaning (Bernard & David, 2018).

### **2.3. Cognitive-Behavioral Coaching methods and techniques**

In CBC the session is structured in a quite similar way to CBT, even though the duration is variable; there are half-an-hour CBC sessions and also one and a half hour sessions. Usually, the session begins with an overview of the events happened from the last meeting, and then the client and the coach together agree on the session's goal. The coach is

in charge of monitoring the progress towards that goal during the session, and bringing it back into discussion when needed (e.g., if they realize during the session that the goal might be too complex to attain in one session) and adjust it, in order to make sure that at the end of the session there is an agreed goal attained (even if, it is just a small step toward a larger goal).

Recently, a newer conceptualization to CBC appeared, called positive CBT (P-CBT). P-CBT is considered to be the fourth wave of CBT (Bannink, 2014). P-CBT in essence works the same way as CBC does from different reasons. P-CBT is focused on the positive side of a client and, focusing on using his/her strengths and solution-focused methods and techniques to reach a specific goal.

### **3. Domain Problems**

The present status of CBC in term of scientifically approach has some major gaps; lack of rigorous study designs, lack of well-established protocols, and lack of investigation on the active ingredients and mechanisms of change.

CBC has been investigated in several studies, having promising results in different areas such as organizational/workplace (Jones et al., 2016), life area (Grant, 2003), health (Curtis & O'Beso, 2017), parental (David et al., 2017) and for different types of populations such as adults (Grant, 2014), students (Prevatt & Yelland, 2015), and adolescents (Green et al., 2020) being until now the most rigorous and with documented results approach to coaching, but there is no systematical review to specifically asses the magnitude of the effect size of CBC in different forms, types and delivery methods. Second, there are no rigorous protocols for different populations and/or problems tested and validated that practitioners can apply in a standardized manner.

Research in coaching is very heterogeneous with studies being less rigorous and standardized as those in already well-established intervention such as CBT. Specifically, in most CBC studies, the experimental designs are less powerful, namely most of the studies are just one group study, that measure pre-test variables and post-test variables, and does not compare them to a control group, and/or to another type of intervention.

Another major issue in coaching studies is that there is no detailed information about the protocol used. In CBT we have specific session to session protocols that are used that describe the approximate number of sessions needed for each problem and detailed

description of each session's goal, method and techniques. In CBC, studies do not describe in detail protocol used session by session, and there is no developed and validated protocol for specific goals/problems.

Moreover, coaching started to be used as guidance in online CBT interventions as an adjuvant to psychotherapy. Even though, online CBT protocols are very well established and tested, the guidance part of the intervention is, most of the time, scarcely described and protocols for using CBC as guidance were not developed and tested in rigorous studies compared with unguided intervention, and compared with other guidance protocol for specific populations and CBT interventions.

Additionally, another major issue in CBC research is the investigation of the active ingredients and mechanism of change. In CBT, there are studies that investigated the active ingredients of the intervention and there is strong evidence on the mechanisms of change

The present thesis aims at answering those questions and the originality of this thesis comes from all four-research projects conducted. The present thesis is the first synthesis of the magnitude of the effect size of CBC in a systematic review that can answer the question about the significance and impact of what this intervention is. Furthermore, this thesis includes the first study to compare the traditional face-to-face delivery method of CBC, with online CBC, and with one another type of CBC delivery method namely while-walking CBC. This research is not only the first to compare the CBC approach specifically, but it is the first study to compare three delivery methods with a control group from coaching literature in general. This study also answers a very important question from the field, namely regarding the methods of delivery, being a first step towards having enough evidence to develop interventional protocols.

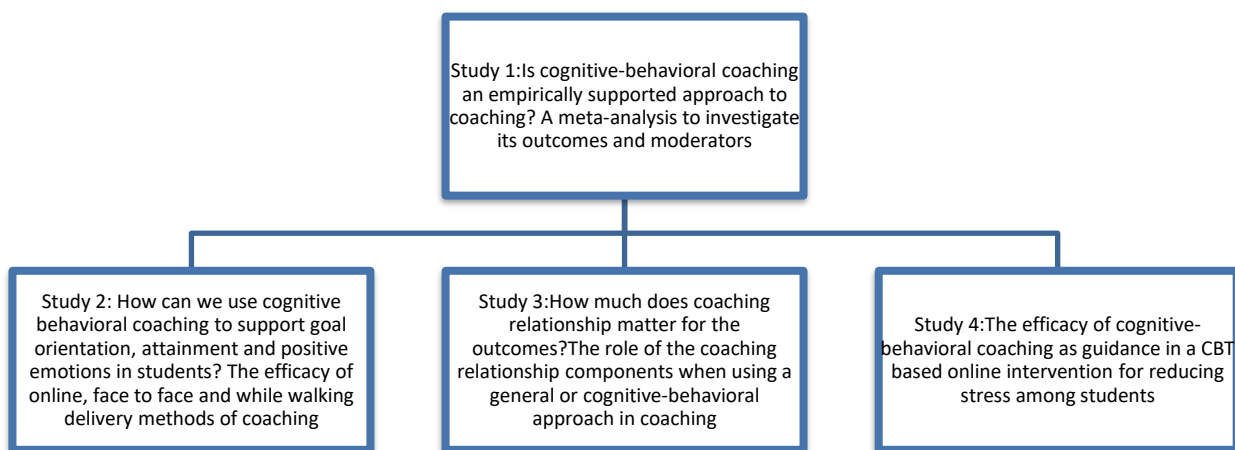
The third study arises from the need to investigate the active ingredients in CBC, and investigates the role of coaching relationship and related factors in the success of the CBC. Last but not least, we have conducted the first study where CBC was applied as guidance in a CBT game-based online intervention, and to compare the intervention with and without guidance in order to analyze the importance of coaching.

Considering the importance of all research projects conducted, this thesis is an important step for the establishment of CBC as an evidence-based cognitive-behavioral intervention, and as an evidence-based positive intervention, because it contributes to each

major gap that this domain has and provides important information about efficacy, protocols and active ingredients for different type of outcomes, being one of the foundation materials that future CBC research and protocols can rely on.

## CHAPTER II: RESEARCH OBJECTIVES AND OVERALL METHODOLOGY

The main scope of this thesis was to examine the cognitive-behavioral coaching (CBC), its features, forms and moderators. Given the popularity of CBC, it is crucial for both research and practice to go thorough investigations to examine many factors of the intervention. Thus, in this thesis we pursued an exploratory path based on the existing research, plus scientific and practical trends from both coaching field and CBC. Hence, the initial goal of this research was to assess the magnitude of the effect size of the CBC intervention. The meta-analysis was the first step in narrowing the scope of the thesis, mainly because there was no systematic review to evaluate the size effect of CBC. Then, considering the existing studies on CBC and the results of the systematic review, we outlined directions for the next objectives. The second study from the thesis was focused on examining P-CBT as a new conceptualization for CBC merged with analyzing the effectiveness of three different delivery methods. In the third study, we examine the role of the coaching relationship in CBC, with regard to the CBT research on this topic, and in the last study we investigated a highly debated but important trend, which is guidance in online interventions. The visual representation of the thesis` s structure can be seen in *Figure 1*.



*Figure 1.* The structure of the thesis

## **CHAPTER III: ORIGINAL RESEARCH**

### **1. Study 1: Is cognitive-behavioral coaching an empirically supported approach to coaching? A meta-analysis to investigate its outcomes and moderators**

#### **1.1.Introduction**

Coaching is defined as a systematic learning and changing process, that involves a professional (named “coach”) working together with a client (named “coachee”) for facilitating the client’s goal attainment. It is thus a positive intervention where the coach is using different techniques and strategies to help the client set and achieve a goal (Bernard & David, 2018), that can address a variety of life areas (e.g. personal development, parenting, professional growth, health aspects) and is mainly focused on the non-clinical population.

The existing literature regarding the effectiveness of the coaching process includes a few systematic reviews that have tried to respond to this question. We have carefully revised the section where we present the applications of the general coaching field and its research and we have made all the effort to revise it to reflect the current state of the art. Indeed, the business field is the most interested in coaching effectiveness, proved by the fact that almost all previous meta-analytic studies on coaching are focused on organizational coaching (e.g. Theeboom, Beersma & van Vianen, 2014; Sonesh et al., 2015; Jones, Woods & Guillaume, 2016). There is a meta-analysis on organizational coaching published in 2014 by Theeboom and colleagues that investigated the effectiveness of the coaching process. They found a positive effect of coaching on all studied variables indicating that coaching improves employees` performance (defined as any subjective or objective measurement that can reflect performance such as desired behaviors, tasks or evaluations) in the workplace (Theeboom, Beersma & van Vianen, 2014).

#### **Aim of the study**

The purpose of this study is to synthesize the magnitude of the effects of CBC on different outcomes. Even though there are five meta-analyses on coaching, none of them is specifically focused on the cognitive-behavioral approach. This approach is best supported by research so far when applied to therapy (see David et al., 2018; Andersen et al., 2016), and thus it becomes essential to have an overview of its effects and moderators when applied to coaching.

## 1.2.Method

### Selection of studies

In order to find the relevant studies for our meta-analysis, we performed a systematic search on several databases: PsychInfo, SCOPUS, Science Direct, ProQuest, Web of Science and PubMed. We used the keyword “coaching” in combination with each of the following additional keywords: “rational”, “rational-emotive”, “cognitive AND behavioral”, “cognitive-behavioral” with search in title and abstract for the studies up to October 2019. Besides the typical keywords for CBC, we included words specific for REBC and SF-CBC. To complete our search and to ensure that we find all the articles we could include in the meta-analysis, we performed additional searches looking at the studies included in other meta-analyses on coaching. Prior to the beginning of the process, the present systematic review was registered to PROSPERO, International prospective register of systematic reviews and it can be found by searching the authors or using the code 142303.

The inclusion criteria for our articles were: to be in English, to be published in a peer-review journal, to use a cognitive-behavioral approach, to have a guided intervention, participants to be adults, to use a within-group design or coaching compared to a control group, coaching to be used with a non-clinical population or to be used as an adjuvant (not principal treatment) to a clinical issue, and to report quantitative data to compute the effect size.

The search strategy resulted in 3054 potential studies. After the title and abstract selection process, 49 articles were included in the full text analysis and 26 in the systematic review (see *Fig.2*). Articles removed in this phase were mainly not reporting data to calculate the effect size or were using a “self-help” approach.

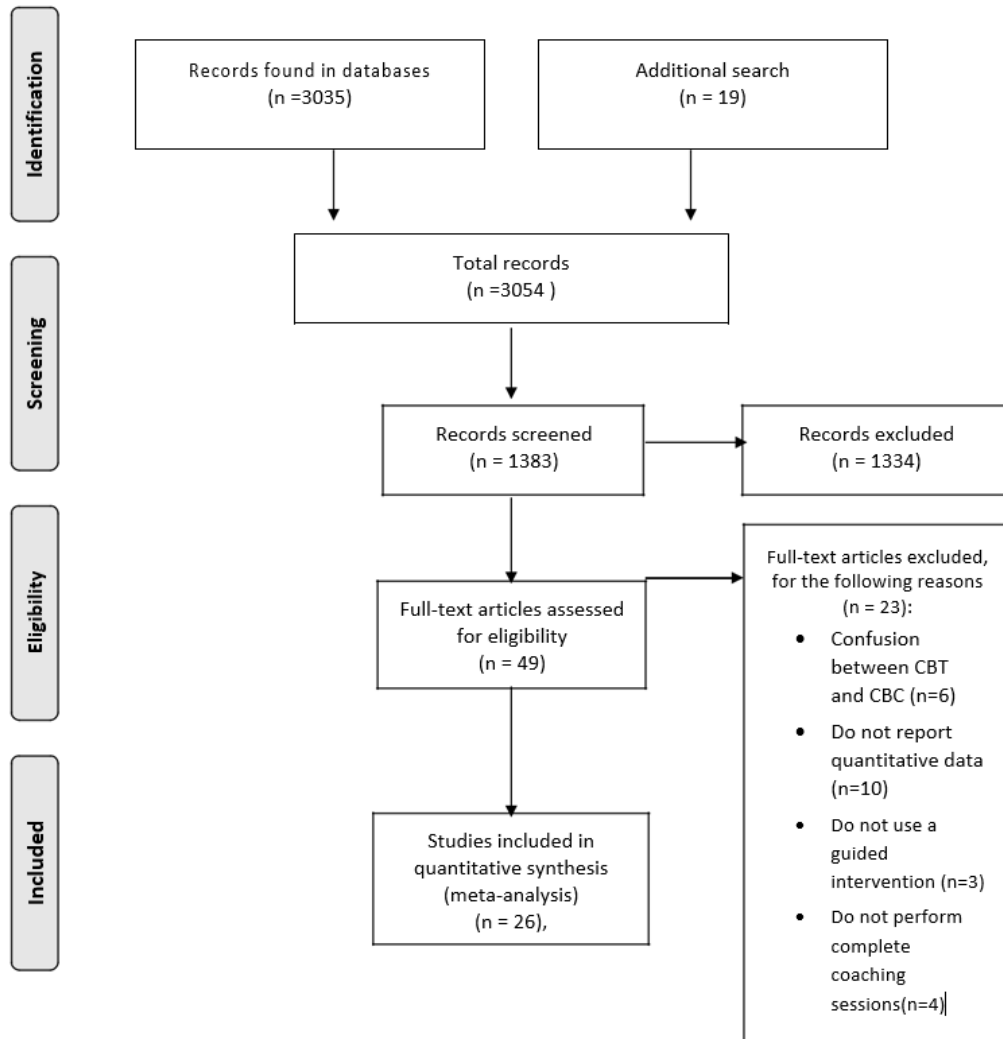


Figure 2. PRISMA flow

### 1.3.Results

From the selected studies that entered the analysis ( $k=26$ ), we coded the following information: study name, population (e.g. students, managers, teachers, general population), measures, outcomes (behavioral, affective, cognitive), study type, duration of the intervention (longevity of the intervention in weeks), number of sessions, type of coach (internal vs. external).

The overall effect size of CBC interventions on all outcomes combined was  $g=.499$ ,  $k=28$ , 95% confidence interval (CI) [.383, .615],  $p < .001$  which is a statistically significant medium effect size.



Next, we performed specific analyses on our outcome categories, namely behavioral, affective, and cognitive. We first looked at each general category to calculate if the CBC intervention has a bigger impact on some specific variables, and then performed a moderation analysis.

For the behavioral outcome, we obtained a medium effect size of  $g=.790$ ,  $k=22$ ,  $CI$  [.563, 1.016],  $p<.001$ . For the affective outcome, we found an effect size of  $g=.365$ ,  $k=24$ ,  $CI$  [.243; .486],  $p<.001$ , showing low magnitude statistically significant improvements for CBC. For the cognitive outcome, we have an effect size of  $g=.337$ ,  $k=22$ ,  $CI$  [.195; .480],  $p<.001$  which is a small statistically significant effect size.

Table 2

*Analyses on categories for each outcome (behavioral; affective; cognitive)*

	<u>g</u>	<u>k</u>	<u>CI</u>	<u>p</u>
<u>Behavioral outcome</u>				
Performance outcome	.904	21	[.640; .168]	<.001
Skills outcome	.343	8	[.219; .466]	<.001
<u>Affective outcome</u>				
Positive emotions outcome	.326	18	[.167; .485]	<.001
Negative emotions outcome	.355	21	[.222; .487]	<.001
<u>Cognitive outcome</u>				
Cognitive change outcome	.358	18	[.192; .525]	<.001
Problem solving outcome	.297	12	[.146; .448]	<.001

*Note:  $p < 0.05$*

As we can see in *Table 3*, results on the general outcomes are statistically significant and in the same range as in the overall analysis for the affective and cognitive outcomes, and larger in the within-group studies for overall effects and behavioral outcomes.

Table 3

*Analyses on outcomes for between-group design studies vs. within group design studies*

	<u>g</u>	<u>k</u>	<u>95%CI</u>	<u>p</u>
<u>Between-group</u>				
Global effect	.401	13	[.219; .583]	<.001
Behavioral outcome	.691	11	[.316; .067]	<.001
Affective outcome	.389	11	[.206; .571]	<.001
Cognitive outcome	.258	10	[.028; .488]	.028
<u>Within-group</u>				
Global effect	.536	18	[.392; .681]	<.001
Behavioral outcome	.829	14	[.533; .125]	<.001
Affective outcome	.361	14	[.205; .517]	<.001
Cognitive outcome	.371	14	[.202; .540]	<.001

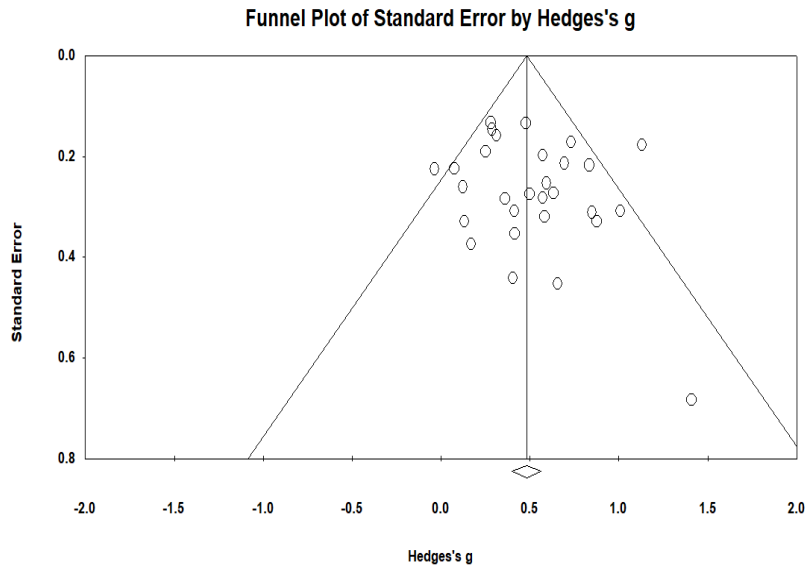
*Note: p < 0.05*

The regression analyses revealed that age and duration of the intervention in weeks are not significant predictors but the proportion of males is a statistically significant moderator with a coefficient of -0.0061, *SD*=0.0027, *k*=26, *CI* [-0.0115; -0.0008], *p*=0.002., representing lower effects of CBC for male clients.

The other continuous moderator that we tested, namely the number of sessions is also a statistically significant predictor with a coefficient of 0.0157, *SD* =0.0046, *k*= 29, *CI* [0.0077; 0.0245], *p*=0.0007, showing higher effect of CBC when more sessions are delivered.

### **Heterogeneity analysis**

The heterogeneity test revealed a medium score *I*<sup>2</sup>=40.362, *p*=0.014 indicating that there is a statistically significant variation in effect sizes between studies included in the analysis. Funnel Plot also shows a medium publication bias (see *Figure 3*) and the Duval & Tweedie (2000) trim and fill indicate one missing study in the left and no missing study in the right side of the mean that could change the effect size



*Figure 3. Funnel Plot*

#### **1.4. Discussion**

Overall, our results show that CBC has a global significant positive impact of moderate magnitude, in line with the results of coaching obtained in other meta-analyses (e.g., Theeboom et al., 2014, Jones et al., 2016).

We obtained a large effect size for performance outcomes, which means that CBC brings high-level improvements in clients` performance. The effect size in performance following CBC is larger than those documented from general coaching in the other meta-analyses conducted to date. Indeed, Theeboom and collaborators (2014), found a medium effect size for performance outcomes and Sonesh and collaborators (2015) in their meta-analysis reported a small to medium effect size for the same. These results suggest that CBC brings the best improvements in performance outcomes which are in line with CBC`s practical, directive, active and solution-focused approach.

The medium effect size found for CBC for the abilities outcome is in line with the results obtained by Theeboom and collaborators (2014) and by Jones and collaborators (2016) in their meta-analyses. Regarding the low effect sizes for changes in cognitive outcomes, these are in line with the results regarding the outcomes reported by Theeboom and collaborators (2014), which also included in their sample studies investigating CBC. Sonesh and collaborators (2015) in their meta-analysis did not find a significant change in cognitive

outcomes after the coaching. The significant improvements in cognitive outcomes following CBC need to be noted and can be related to the fact that cognitions are an important focus of the cognitive-behavioral theory which underlies CBC.

### **Limitations and future directions**

As implications, our review has both practical and empirical important contributions. From the empirical point of view this review includes recent studies on coaching that have not been previously analyzed in a quantitative meta-analytic way, thus providing an up to date conclusion regarding the effectiveness of coaching. More than that, this is the first meta-analysis to synthesize the effect size for CBC, thus drawing a clear conclusion regarding the efficiency of this approach to coaching.

As practical implications, this review has important conclusions for coaching practitioners in general and especially for CBC practitioners. Practitioners can use with confidence CBC practices based on our results in terms of efficacy.

### **Conclusion**

In conclusion, CBC is proven to be an evidence-based positive intervention with applicability in different areas of coaching

## **2. Study 2 How can we use cognitive-behavioral coaching to support goal orientation, attainment and positive emotions in students? The efficacy of online, face to face and while walking delivery methods of coaching**

### **2.1.Introduction**

Coaching is widely used currently in different areas (schools, universities, private practices and organizations), and is proved to be a successful intervention for supporting goal attainment (Grant et al., 2017), increasing self-efficacy (Oreopoulos et al., 2020), motivation (Haryanto, 2021), specific abilities and performance (e.g. Grant, 2014; Grant, Curtayne & Burton, 2009), and also reducing emotional distress (David et al., 2016).

Recently, scholars argue about a new wave of CBT called positive CBT (P-CBT; Bannink, 2013). Like all other CBT therapies, P-CBT follows the main assumption of the theory and involves the use of ABC model, but is also based on positive psychology and brief solution-focus therapy (Bannink, 2013).

Thus, the main aim of this study is to compare the efficacy of brief face-to-face P-CBT (two versions, in the therapist office or while-walking) method with online P-CBT delivered synchronously, in terms of improvements in goal orientation, goal attainment and emotions. We have hypothesized that all delivery methods, face-to-face P-CBT, online P-CBT, and while-walking P-CBT, will have similar efficacy in terms of improving goal orientation, goal attainment and positive emotions for participants. We have also hypothesized that all the P-CBT groups will register significant improvements in outcomes, compared to wait list.

### **2.2.Method**

#### Participants

Participants in this study were 113 psychology students enrolled in master`s program of clinical psychology. They had a course for a semester and as a part of their practical session they took part in the study. The mean age of the participants was 25.04 ( $SD=6.87$ ). We had 31 male participants, and 82 female participants.

#### Procedure

The therapists involved in the study were last year master students in clinical psychology and psychotherapy and they received training before delivering the intervention with focus on the therapeutic alliance, and single session protocol of P-CBT ( Bannink, 2013; Bernand & David, 2018; Dryden, 2016). The session had a duration of half an hour, and

therapists were instructed to use specific P-CBT approach with focus on specific methods, such as clearly defining the clients goals by analyzing what they want to be different in the future and how they see themselves in the future, using the miracle question (Bernard & David, 2018), in a process of co-creation, where the clients are co-experts in the process (Bannink, 2013). The therapist were trained to help the clients by choosing the proper technique considering the client`s goal (Bernard & David, 2018), and focusing on the their strengths, hopes, motivation for change and finding exceptions and analyzing them (Bannink, 2013)

Participants completed the pretest and posttest in physical form while the follow-up measures were conducted online via Google Forms. We had 113 participants and a dropout level of 33%, of which 76 participants completed the follow-up questionnaires.

Interaction Analysis

### 2.3.Results

Main outcomes

*Goal attainment*

The results of the ANOVA on PES from pretest to posttest indicated a significant time effect, Pillai`s Trace = .288,  $F(1, 81) = 32.76$ ,  $p < 0.001$ , with a large effect size of  $\eta_p^2 = .288$ . Pairwise comparisons revealed significant difference between P-iCBT and P-wCBT  $p = 0.026$ , from pretest to posttest.

A significant time effect, Pillai`s Trace = .704,  $F(1, 51) = 121.419$ ,  $p < 0.001$ , with a large effect size of  $\eta_p^2 = .704$  was found from pretest to follow-up and we found significant differences between P-iCBT and P-wCBT  $p = .015$ , from pretest to follow-up for pairwise comparisons.

Another significant time effect, Pillai`s Trace = .264,  $F(1, 54) = 19.39$ ,  $p < 0.001$ , with a large effect size of  $\eta_p^2 = .264$  was found from posttest to follow-up and pairwise comparisons revealed significant difference between P-iCBT and P-wCBT  $p = .014$  and between P-iCBT and WL,  $p = .003$ . Also, post hoc test Sidak revealed significant difference between P-iCBT and WL with a mean difference of 1.85,  $SD = .597$ ,  $p = .019$ .

*Goal orientation*

As a result from pretest to posttest for SFI we obtained a significant effect of time Pillai`s Trace = .198,  $F(1, 105) = 25.95$ ,  $p < 0.001$ , with a large effect size of  $\eta_p^2 = .198$  and pairwise comparisons showed significant differences between face-to-face P-CBT and WL,  $p = .003$  and between P-iCBT and WL,  $p = .008$ .

A significant time effect, Pillai's Trace = .057,  $F(1, 71) = 4.318$ ,  $p = 0.041$ , with a medium effect size of  $\eta_p^2 = .057$  was found from pretest to follow-up and pairwise comparisons indicated significant differences between face-to-face P-CBT and WL,  $p = .013$  and between P-iCBT and WL,  $p = .016$ .

Post hoc analysis using Sidak did not reveal any significant difference for this scale at any time point.

#### *Changes in emotions*

For the Positive Affect subscale of the PANAS, we found a significant time effect, Pillai's Trace = .339,  $F(1, 91) = 46.74$ ,  $p < 0.001$ , with a large effect size of  $\eta_p^2 = .339$  from pretest to posttest but we did not find any significant differences between groups ( $ps > .05$ ). However, visual examination of the groups for positive emotions showed positive changes in positive emotions between all P-CBT groups and WL (*Fig. 1*). From posttest to follow-up we have significant time effect for positive emotions, Pillai's Trace = .088,  $F(1, 60) = 5.815$ ,  $p = .019$ , with a medium effect size of  $\eta_p^2 = .088$  and pairwise comparisons showed significant differences between P-iCBT and face-to-face P-CBT,  $p = .011$ , P-wCBT  $p = .022$  and WL  $p = .005$ . Post hoc test Sidak also showed significant differences between P-iCBT and P-wCBT with a mean difference of 6.40,  $SD = 2.119$ ,  $p = .022$  and between P-iCBT and WL with a mean difference of 6.99,  $SD = 1.988$ ,  $p = .005$ , in both cases P-iCBT was superior.

For the Negative Affect of the PANAS subscale, we did not find any significant difference between groups  $p > .05$  at any time points but our visual examinations showed improvements in negative emotions in all P-CBT groups and WL with a medium effect size of  $\eta_p^2 = .097$  from pre-test to post-test.

## **2.4. Discussion**

The aim of the present study was to assess the efficacy of two versions of face-to-face P-CBT and online P-CBT in terms of goal attainment, goal orientation and changes in emotional well-being. Results obtained for goal attainment showed that P-iCBT is more effective than face-to-face or P-wCBT or WL at different time points, namely post-test and follow-up with large effect sizes. This scale is a one-item scale and it has been used previously in other studies (e.g., Ianiro et al., 2015), for documenting improvement from one session to another. Our results showing that P-iCBT is the most effective type of P-CBT in terms of goal attainment can suggest that online delivery method for is especially suitable for brief P-CBT when delivered to young participants without clinical diagnosis. Being in their own environment, participants might have felt more focused to the session and to their goal.

In conclusion, brief P-CBT proves to be an effective approach, with significant results even after a single session intervention for college students. The P-iCBT and P-wCBT are effective delivery methods to be used, showing significant and medium to large effect size results in improving goal orientation, goal attainment and positive emotions



### **3. Study 3: How much does coaching relationship matter for the outcomes? The role of the coaching relationship components when using a general or cognitive-behavioral approach in coaching**

#### **3.1.Introduction**

Coaching is a collaborative and personalized process between a coach and a coachee (or client), aimed to offer support, guidance and help clients to achieve a goal, reach their full potential or overcome obstacles in their lives (Whitmore, 1992). The coaching effectiveness has been demonstrated first in the organizational area (Theeboom, Beersma & van Vianen, 2014); it has a positive effect at the organizational level and also helps individuals to improve their performance, emotions and attitudes towards the workplace (Jones, Woods & Guillaume, 2016).

Aim of the study

This study aims to investigate the role of the coaching relationship and its components in the effectiveness of the coaching process in two types of coaching approaches. Since there is no study to compare the efficacy or the coaching relationship in two coaching approaches, having this research is important, first because it can demonstrate if coaching must be used with a specific theoretical approach in order to have results or general coaching can also bring significant improvement.

Hypotheses:

Based on the results of our meta-analysis compared with other meta-analyses` results (Tomoiaga & David, 2023; Jones et al., 2016) we hypothesize that participants that underwent CBC will report higher levels of goal attainment, solution focus orientation and positive emotion, compared to those that underwent general coaching.

Also, based on the same results of the meta-analysis, we hypothesize that participants that underwent CBC will report lower levels of negative emotions compared to those that underwent general coaching.

Based on the existing studies on coaching relationship in both approaches, we hypothesize that in both CBC and general coaching, the coaching relationship (coaching alliance, coach`s emotions, and inspiration) quality will be rated similarly.

Based on the existing results on the role of the coaching relationship we also hypothesize that the coaching relationship will bring a moderate level contribution the coaching success both in CBC and in general coaching.

### **3.2.Method**

#### Study Design

The study has a retrospective design meaning that the participants who responded to the questionnaires from the study are former clients from different coaching processes with different coaches. We recruited the participants online via social media for a period of three months. Participants completed all questionnaires at once and we included in our analyses respondents that underwent coaching in the last 12 months.

#### Participants

Participants included in this study were former coaching clients from all over the country. 77 participants responded to the invitation to participate in the study. From those, 43 underwent CBC, and 34 underwent general coaching. There were 20 male participants and 57 female participants with a mean age of 30.84. In our sample, participants had a mean of 8.49 coaching sessions.

### **3.3.Results**

For the coaching relationship (measured with ARI) we found a significant difference between CBC and general coaching in the expected direction,  $F(1, 75) = 10.95, p=.001$ , with a Cohens`d of .7, meaning that the CBC clients reported the coaching relationship as being better than general coaching clients. For the coaching alliance measured with WAI, we found a significant difference between CBC and general coaching in the expected direction,  $F(1, 75) = 9.41, p=.003$ , with a Cohens`d of .71, with CBC clients reporting better coaching alliance compared with general coaching clients.

We did not find any significant difference between the two approaches in terms of the negative emotions of the coach (reported by the client and measured with PANAS)  $p=.31$ , but we found a significant difference between the groups in terms of positive emotions of the coach (measures with PANAS)  $F(1, 75) = 7.45, p=.008$ , with a Cohens`d of .73, meaning that in CBC participants reported higher levels of positive emotions displayed by coaches than in general coaching. A significant difference between CBC and general coaching we

also found for inspiration  $F(1, 75) = 10.45, p=.002$  with CBC clients reporting that their coach inspired better than general coaching clients` did.

### Regression analysis

Next, we performed linear regression considering as predictors, WAI, PANAS coach and inspiration and each dependent variable (PES, SFI, and PANAS client). We did not include ARI as a predictor to avoid colinearity in our regression models.

The analysis of regression for the goal attainment outcome (measures by PES) can be found in *Table 2*. We did not find any significant predictor for CBC, but for general coaching, the coaching relationship measure predicted the reported goal attainment ( $p<.001$ ) with  $R^2$  of .686. Also, in general coaching, inspiration is a significant predictor ( $p= .021$ ) for goal attainment with  $R^2$  of .077.

Table 2  
Regression analyses for the PES outcome for WAI, PA –coach, NA-coach and Inspiration as predictors

	B	SE	$\beta$	<i>t</i>	<i>p</i>
<b>CBC</b>					
WAI	.986	.751	.311	1.313	.197
PA – coach	.338	.678	.083	.498	.621
NA – coach	.460	.799	.112	.575	.569
Inspiration	.427	.347	.250	1.229	.227
<b>General coaching</b>					
WAI	1.781	0.337	.702	5.286	.000
PA – coach	-.190	.458	-.057	-.415	.681
NA – coach	-.637	.374	-.171	-1.702	.100
Inspiration	.479	.195	.279	2.455	.021

### 3.4.Discussion

We hypothesized that participants that underwent CBC will report higher levels of goal attainment, solution focus orientation, and positive emotions and our results show that CBC and general coaching have similar effectiveness regarding these outcomes. However, the

visual examination of the scores shows that there is a tendency for CBC to have better scores in terms of goal attainment, positive emotions, and solution focus orientation.

We hypothesized that participants that underwent CBC will report lower levels of negative emotions compared to those that underwent general coaching and our results confirm our hypothesis, namely, we found CBC to reduce negative emotions more effectively than general coaching.

We hypothesized that in both CBC and general coaching, the quality of the coaching relationship will be rated similarly and our results showed significant differences between CBC and general coaching, with the CBC clients reporting higher quality of the coaching relationship. Also, results show no difference between the two approaches in terms of coach's negative emotions, as hypothesized, but significant differences emerged in terms of the positive emotions displayed by the coach, with CBC clients reporting higher levels of positive emotions in their coaches and inspiration, also CBC clients reporting higher levels of inspiration. The results concerning positive emotions displayed by the coach are in contradiction with our expectations.

We hypothesized that the coaching relationship will explain with a moderate strength the coaching's success both in CBC and in general coaching and our results showed that the coaching relationship is responsible for around 30% of the CBC's effectiveness in terms of positive emotions as outcome, which the same as in CBT (around 30%). These results can be explained by the cognitive-behavioral orientation and methodology, where practitioners consider that the relationship is an important part of the intervention. Even though for CBC is a shorter intervention and a more active and action oriented one, compared with CBT, practitioners focus on establishing a good coaching relationship with their clients. Having a well-developed coaching relationship even when working especially with practical solutions rather than focusing more extensively on psychological mechanisms can be an important part of the success of the process. Moreover, our results also showed that in CBC coach's positive emotions explain part of the CBC's success in terms of solution focus orientation. Goal

The retrospective design can be considered a limitation to this study. Even though using this design we have been able to extract conclusions about our variables, in order to validate the results we need to replicate them in an experimental design. Future studies need to investigate the coaching relationship in CBC and general coaching in a more rigorous study design such as a randomized control trial.

#### **4. Study 4. The efficacy of cognitive-behavioral coaching as guidance in a CBT based online intervention for reducing stress among students**

##### **4.1.Introduction**

College student`s mental health is a subject of great interest and major importance for research and interventions in recent years (Traunmüller et al., 2020). The most important and global action is represented by the de World Mental Health International College Student (WMH-ICS) Initiative (<https://www.hcp.med.harvard.edu/wmh/index.php>). The purpose of this initiative is to collect data regarding the mental health of the students from different countries and to develop and test evidence-based interventions.

Studies focused on this issue investigated the mental health problems of college students in different countries. Aurebach and collaborators (2019) performed a review where they analyzed surveys from eight countries and their results show that 28.4% of the responding students met the criteria for at least one mental health disorder in the last 12 months. The most common mental health issues were the emotional ones (depression, anxiety) and then the behavioral problems, especially for minorities which had the lowest rate for accessing the mental health services.

Since game-based interventions are becoming more and more popular and the college student population is a vulnerable category in terms of mental health, it is important to investigate the efficiency of the game in order to have more accessible, valid and easy to use interventions for them.

##### **4.2.Method**

The study is a randomized control trial with three arms. We performed measurements before the intervention, after the intervention and in the middle of the intervention in an ecological stressful exam situation.

##### **Participants**

Participants were psychology students in the last year which received a small bonus to an exam for their participation into the study. Participants were randomized in three groups using a randomization program. The first group was the game-based CBT with guidance group, the second group was the game-based CBT without guidance group and the third group was the control group. The mean age of the participants was 26.27 years old; we had in

sample 17 male students and 122 female students. In our study the inclusion criteria for participants was to be enrolled as a college student and have access to a desktop device with internet in order to be able to complete the questionnaires and access the game. The exclusion criteria were not to be enrolled as a student and the inability to access a desktop device with internet. All participants involved in the study signed an informed consent which described all the steps and procedure used in the study and our study received ethical approval from the university's ethical board.

After enrolling to participate in the study, all students received a link to complete the pre-test questionnaires. They had three days for completing all pre-test. Then, participants in the game-based CBT groups were invited to access the trial of the game. They had a day and a half to complete the trial of the game (which is composed of the first sublevel from each level). Once they completed the trail section, they were given access to two levels of the game (Level 2 and Level 4). They had once again a day and a half to complete the two levels. After completing the game, participants in the game-based CBT with guidance condition received email coaching. All participants completed afterwards the post-test questionnaires (they had three days to complete the scales). Also, students performed an additional measurement during intervention in an ecological stressful exam situation. They completed the questionnaires one more time in a day with the exam from their exam session for this specific situation.

### **4.3.Results**

For the negative dysfunctional emotions (measured with PDA) we found statistically significant group effect after the interventions  $F(2, 120) = 14.44, p = .001$ , and pairwise comparisons showed significant differences between game-based CBT plus guidance group and control group  $p = .007$  with a Cohen  $d$  of .37 which represents a small effect size, and significant difference between game-based CBT without guidance and the control group  $p = .001$  with a Cohen  $d$  of .51 which also represents a moderate effect size.

For the total distress and for functional negative emotions, we found significant effect of time Pillai's Trace = .265,  $F(1, 121) = 43.58, p < 0.001, \eta^2 = .265$ , respectively Pillai's Trace = .208,  $F(1, 121) = 31.78, p < 0.001, \eta^2 = .208$  but the univariate did not reveal any significant changes (all  $ps > .05$ ) for any of the groups. For rational cognitions (measured with ABS) we found a significant effect of time Pillai's Trace = .133,  $F(1, 121) = 51.39, p < 0.001, \eta^2 = .113$ , but the univariate test did not result in any significant differences  $F(2, 121) =$

1.16,  $p=.31$ . For irrational cognitions (measured with ABS) we found a significant effect of time Pillai's Trace = .432,  $F(1, 121) = 91.95$ ,  $p < 0.001$ ,  $\eta^2 = .432$ , but the univariate test did not result in any significant differences  $F(2, 121) = 1.20$ ,  $p=.30$ .

### **Stress during exam condition**

For this analysis we performed MANOVA and the results in the exam situation for cognition and emotions indicated a significant time effect, Wilks' Lambda = .853,  $F(10, 264) = 2.183$ ,  $p = 0.019$ ,  $\eta^2 = .076$ . Then for rational cognitions (measured with ABS) we found marginally significant differences between the groups  $F(2, 136) = 2.61$ ,  $p=.07$ , and at pairwise comparisons we found significant differences between game-based CBT without guidance group and control group  $p=.028$ , with a Cohen's  $d$  of .49 which represents a small effect size.

For irrational cognitions (measured with ABS) we found significant differences between groups  $F(2, 136) = 3.61$ ,  $p=.03$ . Pairwise comparisons showed marginally significant differences between the game-based CBT with guidance group and the control group  $p=.07$  with a Cohen  $d$  of .30 which represents a small effect size and significant differences between the game-based CBT without guidance group and control group  $p=.01$  with a Cohen's  $d$  of .51 which represents a moderate effect size.

### **4.4. Discussion**

Our results showed that the students in both intervention groups that used the RETHink game reported reduced negative dysfunctional emotions with a small and moderate magnitude of change than students in the control group after the intervention. Also, there is significant difference between groups in terms of categorization of negative dysfunctional emotions from pre-test to post-test and significant difference between groups for the reliable change in negative dysfunctional emotions. We did not find any significant differences for the total distress or for negative functional emotions between groups. The magnitude of changes in dysfunctional emotions results are promising and in line with the binary model of distress (Ellis, 1994<sup>36</sup>) which suggests that in CBT/REBT the main target are dysfunctional negative emotions which are caused by irrational cognitions, and not functional negative emotions which have positive effects on performance.

The fact that students reported lower distress only at post-test and not in the exam situation could be explained by the fact that students played a full level on the cognitive

change ability and only a trial version of the other levels including the one that targets emotions. Future studies should investigate the effect of the levels that train the emotions (Level 1 and Level 6) on the distress of college students in an ecological stressful exam situation.

Our study is not without limitations. First, we used only self-report measures and future studies should include more objective measures like in-game scores and physiological measures of stress. Another limitation of our study is the population used and future studies that investigate REThink game should include all types of college students (not only psychology students) and students from all years of study (since in our study the sample consisted of last year students only) to ensure generalization of the findings.



## **CHAPTER 4: GENERAL CONCLUSIONS AND IMPLICATIONS**

### **1. Main results**

The main contributions of the thesis are related to the scientific investigation of the field and contribution to the scientific validation; considering the lack of rigorous studies and the number of practitioners and clients that access CBC despite its thin scientific support, it is crucial to conduct more studies, to investigate and analyze its efficacy and specific features, forms and moderators in order to establish clear directions, protocols and solidify the evidence about them.

Hence, the main additions of the thesis are: the contribution to the documentation of CBC in terms of efficacy by analyzing the magnitude of the effect size, the investigation of online CBC as an effective delivery method similar to the classical face-to-face CBC, and the investigation of an innovative delivery method, namely while-walking CBC, the examination of the coaching relationship in CBC and its role compared to the general coaching and CBT, and of course the research of CBC as guidance in a CBT online intervention.

The first main addition of the thesis to the field is provided by the analysis of the efficacy of CBC that we derived from the first study, using a systematic review methodology and meta-analysis, which involved computing the effect size to analyze the magnitude of the CBC impact on cognitive, behavioral, and affective outcomes. Moreover, in this study, we compared different formats of CBC (group and individual), types (life, health, executive) and methods of delivery (online and face-to-face) and the results are important to the future studies and use of this intervention.

The investigation of the aggregated effect sizes of the studies published so far, is essential in order to draw conclusions regarding the evidence-based status of CBC. Based on the meta-analysis results, we can conclude that CBC is one of the few evidence-based positive interventions and approaches to coaching, and that the cognitive-behavioral approach is a validated theory applied to the coaching field. Starting from these outcomes, researchers can continue to explore and test specific aspects of CBC (e.g., formats of delivery, clients' characteristics) and develop distinct CBC protocols for each type, format and method, in order to be able in future studies to compute the magnitude of the effect sizes for those precise protocols, similarly to CBT or any well supported intervention in mental health.

The major additions from the second study are related to the investigation and validation of a widely used CBC delivery method, the online CBC, and the introduction of a new method, the while-walking one. This contribution is important for both research and practice; from the scientific point of view this study offers important data on the efficacy of online CBC compared to the traditional face-to face, and this is the first study to investigate comparatively three delivery methods of CBC and first to examine while-walking CBC in a rigorous scientific methodology that allows to draw solid conclusions regarding efficacy.

The third study that was conducted in the present thesis brings contributions to both CBC and coaching in general domain. It is the first study to analyze and assess comparatively the role of the coaching relationship as an active ingredient in the success of coaching (both CBC and general coaching), and also to compare the results with others from the literature regarding CBT. The results of this study have significant and important conclusions for CBC and general coaching in terms of future studies of the mechanism of change in these interventions, yet unknown. Moreover, the information regarding the two types of coaching is important for both science and practice; to be aware of important factors that must be kept in the main focus by practitioners, and similarly, to know as a scientist that for general coaching and cognitive-behavioral approach to coaching there might be different mechanisms of change that contribute differently to the efficiency of the intervention.

The last study from the present thesis focuses on using CBC as an adjuvant to a CBT online intervention, thus bringing significant information for both CBC and CBT fields. Taking into consideration that lately research and practice have been focused on developing, delivering, and testing self-help online interventions and results showed important benefits and statistically significant changes in outcomes, having an evidence-based approach when offering guidance is essential for the success of the intervention. This is the first study to investigate the CBC coaching as guidance for an online CBT game-based intervention for students and its results can constitute a foundation and/or starting point for future developments in terms of guidance in CBT and CBC.

## **2.Implications**

The present thesis has multiple practical implications that will be detailed in the following paragraphs. The first and the most important practical implication is the confirmation and demonstration of the status of evidence-based positive intervention that can be given to CBC based on the magnitude of the effect size the we obtained (Study1). These results serve as

guidance for practitioners when choosing appropriate intervention considering the outcomes (behavioral, cognitive, and emotional). Then, the second and third study offer important information for practitioners regarding the CBC process itself, specifically the active ingredients (coaching relationship and other common factors (Study 3), and the efficacy of several delivery methods (Study 2). These guidelines can help CBC professionals extend their methods for delivering intervention to their clients, and successfully use them, having scientific proof for efficacy and empower clients in choosing the delivery method that suits their needs best. Moreover, the data regarding the active ingredients is in the benefit of practitioners because it offers direction on what to focus on and how the change in clients' outcomes can occur.

The present thesis has also important theoretical implications, especially considering the empirical status of CBC. The systematic review that we performed (Study 1) as the first step in the present thesis, is the first systemization of the effect size of CBC. Being the first study to document the effect size of all experimental studies that employed CBC as an intervention is of major importance and it is considered a foundation for future CBC research. The results of the meta-analysis contribute not only by being the first initiative to define and establish CBC as an evidence-based approach to coaching and assessing the magnitude of the effect size, but also its results are essential for validation of the cognitive-behavioral theory applied to positive interventions, confirming once again the theory's powerful efficacy.

Considering the status of the CBC domain, the present thesis is mainly focused on practical and theoretical implications, but it also includes methodological assets. The most important methodological implications of the present thesis emerge from the studies 2,3 and 4. In the second study we developed a protocol that tested comparatively three methods of CBC (under the conceptualization of P-CBT) delivery in a one session type of peer coaching. This protocol hasn't been studied before, there is no study to compare the face-to-face delivery method with two other delivery methods, online and while-walking in a one session CBC protocol. This methodology allows us to examine if the new delivery methods of CBC are more efficient than the classical face-to-face or if they have similar efficiency. Also, the one session CBC protocol was inspired by one session CBT that has proven to be efficient, and we tested it for CBC as well.

### **3.Limits**

The present thesis is not without limitations. The main limitations are the small number of studies, protocols used in those studies, measures used, and the lack of long terms follow-ups. The main limitations refer to the small amount of experimental studies that tested CBC especially compared with a control group. Even though we had enough studies to compute the effect size, the number of studies we have compared to other CBT interventions is relatively small.

### **4.Conclusion**

In conclusion, the thesis makes significant contributions to the field of cognitive-behavioral coaching by analyzing the efficacy, delivery methods, coaching relationship and integration of CBC in online CBT interventions. These contributions have significant practical, theoretical, and methodological implications and provide a solid framework for the continued development and validation of cognitive-behavioral coaching.

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