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DEPARTMENT OF CLINICAL PSYCHOLOGY AND PSYCHOTHERAPY



Ph.D. THESIS SUMMARY

**COGNITIVE MECHANISMS INVOLVED IN
COMPLICATED GRIEF IN ADULTS**

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CLUJ-NAPOCA

2013

TABLE OF CONTENTS

List of Tables.....	5
List of Figures.....	7
List of Annexes.....	8
Acknowledgements.....	9

CHAPTER I. THEORETICAL BACKGROUND

1.1. Introduction and research topic.....	10
1.2. Relevance of the research.....	15
1.3. State of the art in the literature.....	21
1.3.1. Complicated grief theories	21
1.3.2. Complicated grief models.....	26
1.3.3. Complicated grief interventions.....	33

CHAPTER II. RESEARCH OBJECTIVES AND OVERALL METHODOLOGY

Theoretical objectives.....	41
Methodological and practical objectives.....	42

CHAPTER III. ORIGINAL RESEARCH

3.1. Study 1. The efficacy of cognitive behavioral interventions on complicated grief in adults: A quantitative meta-analysis.....	43
3.1.1. Introduction.....	43
3.1.2. General and specific objectives.....	47
3.1.3. Method and procedure.....	47
3.1.3.1. Study selection.....	47
3.1.3.2. Study coding.....	49
3.1.3.3. Data analysis.....	55
3.1.4. Results.....	55
3.1.4.1. The efficacy of cognitive behavioral interventions on complicated grief and comorbid symptoms	56
3.1.4.1.1. Post-treatment.....	56

3.1.4.1.2. Follow-up.....	56
3.1.5. Discussions and conclusions.....	57
3.2. Study 2. The relationship between autobiographical memory specificity, irrational beliefs, coping strategies and complicated grief.....	59
3.2.1. Introduction.....	59
3.2.2. Objectives and hypothesis.....	64
3.2.3. Method and procedure.....	65
3.2.3.1. Participants.....	65
3.2.3.2. Instruments.....	66
3.2.3.3. Procedure.....	74
3.2.3.4. Design.....	74
3.2.4. Results.....	74
3.2.5. Discussions and conclusions.....	80
3.3. Study 3. The relationship between autobiographical memory, biographical memory, future episodic memory and irrational beliefs in adults with complicated grief.....	83
3.3.1. Introduction.....	83
3.3.2. Objectives and hypothesis.....	86
3.3.3. Method and procedure.....	86
3.3.3.1. Participants.....	86
3.3.3.2. Instruments.....	87
3.3.3.3. Procedure.....	88
3.3.3.4. Design.....	88
3.3.4. Results.....	89
3.3.5. Discussions and conclusions.....	97
3.4. Study 4. Efficacy of the TEO system as an online intervention program in reducing complicated grief symptoms.....	100
3.4.1. Introduction.....	100
3.4.2. Objectives and hypothesis.....	112
3.4.3. Method and procedure.....	113
3.4.3.1. Participants.....	113

3.4.3.2. Instruments.....	114
3.4.3.3. Procedure.....	115
3.4.3.4. Design.....	116
3.4.4. Results.....	116
3.4.5. Discussions and conclusions.....	123

CHAPTER IV. DISCUSSIONS AND GENERAL CONCLUSIONS

4.1. Theoretical objectives.....	126
4.2. Methodological and practical objectives.....	130
4.3. Limitations and future research directions.....	133

REFERENCES.....	135
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ANNEXES.....	148
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Keywords: adults, complicated grief, comorbid symptoms, depression, anxiety, distress, cognitive-behavioral interventions, online interventions, efficacy, irrational beliefs, autobiographical memory, biographical memory, future episodic memory, coping strategies.

The main objectives of this thesis were (1) study of the relationship between three potential causal mechanisms involved in the symptoms of complicated grief, such as autobiographical memory specificity, irrational beliefs/beliefs and coping strategies, in order to clarify the relationship between these concepts; (2) study the impact of several background variables, such as time since death, kinship with the deceased, participants' age and type of death on the three mechanisms mentioned above and (3) study of the relationship between each of the three mechanisms and complicated grief symptoms in adults, for empirical evidence of possible causal mechanisms.

In order to achieve these theoretical objectives, in **Study 2**, we aimed to analyze the impact of background variables, specifically time since death, kinship with the deceased, participants' age and type of death on autobiographical memory specificity, irrationality level, coping strategies and complicated grief symptoms. The results show that time since death emerged as a significant negative predictor of autobiographical memory specificity. In other words, the longer the time since a significant person passed away, the autobiographical memory specificity is further reduced. Based on these results, we can argue with caution that some background variables do contribute in an indirect way in the development of complicated grief symptoms, through their influence on the central mechanisms.

The *second aim* of Study 2 was to analyze the relationship between the irrationality level, autobiographical memory specificity and coping strategies on adult population. As first hypothesis of Study 2, we anticipated positive and significant correlations between the irrationality level and coping strategies, according to recent studies that show an association between preexisting thinking patterns and the use of specific coping strategies in confronting with the death of a loved one (Bower & Sivers, 1998). Regarding the association between complicated grief symptoms and irrationality level, autobiographical memory specificity and coping strategies, we obtained positive and significant correlations between complicated grief symptoms and substance use, but also negative and significant correlations between complicated grief symptoms and active coping and a positive and significant correlation between autobiographical memory specificity and active coping. Therefore, the results confirm our first hypothesis in the present study. As second hypothesis of Study 2, we anticipated negative and significant correlations between irrational beliefs and autobiographical

memory specificity, but our results show no significant association between these variables. In the third hypothesis of Study 2, we anticipated positive and significant correlations between irrational beliefs and complicated grief symptoms severity, and we obtained significant results. These results confirm earlier findings showing that negative beliefs play a crucial role in developing emotional problems after the loss of a loved one (Boelen et al., 2006). According to the fourth hypothesis of Study 2, based on previous findings, we anticipated a positive and significant correlation between coping strategies and complicated grief symptoms severity, hypothesis confirmed by our results. Finally, in the fifth hypothesis of Study 2, we anticipated a negative and significant correlation between autobiographical memory specificity and complicated grief symptoms severity. We briefly mention the fact that previous earlier studies showed deficits in evoking specific past events in response to various cue-words in individuals with complicated grief (Maccalum & Bryant, 2011). The findings of this study confirm earlier findings, given the fact that we found a positive and significant correlation between the aforementioned variables.

The *third aim* of Study 2 consisted in analysing the distinct impact of each mechanism/process (irrational beliefs, autobiographical memory specificity and coping strategies) on complicated grief symptoms severity. A comprehensive review of the literature failed to identify studies investigating the predictive role of the three main components postulated in the cognitive-behavioral model/conceptualization of complicated grief, on complicated grief symptoms severity (Boelen et al., 2006). Out of the three mechanisms, irrational beliefs and autobiographical memory specificity emerged as significant independent predictors of complicated grief symptoms severity.

In **Study 3**, the *first aim* was to investigate the role of background variables on various types of episodic memory specificity, complicated grief symptoms and irrational beliefs. As background variables, we analysed the following: type of death (natural vs. violent death), participants' age (years) and time since death (years). Our results show that participants' age emerged as a positive and significant predictor of autobiographical memory specificity (related to the loss), and of biographical memory specificity (related to a person still alive). Based on these results, we argue that the older the participants are, the higher the autobiographical memory specificity (related to the loss) and the biographical memory specificity (related to a person still alive) are. Also,

time since loss emerged as a positive and significant predictor of irrational beliefs, so that the longer the time since a loved one passed away, the higher the irrational beliefs are.

According to the *second aim* of Study 3, we investigated the relationship between various kinds of episodic memory (autobiographical memory, autobiographical memory related to the loss, biographical memory related to the deceased person, biographical memory related to a person still alive and future episodic memory) among adults with complicated grief. As first hypothesis of Study 3, we anticipated negative and significant correlations between autobiographical memory specificity and autobiographical memory specificity (related to the loss). Our results show a significant association between these variables. In the second hypothesis of Study 3, we anticipated negative and significant correlations between autobiographical memory specificity and biographical memory specificity (related to the deceased person, related to a person still alive). The results are consistent with this hypothesis. Continuing with the third hypothesis of Study 3, we anticipated positive and significant correlations between autobiographical memory specificity and future episodic memory specificity, with results confirming this hypothesis. Therefore, we found significant associations between the investigated types of episodic memory.

According to the *third aim* of Study 3, we investigated the role of general and specific irrational beliefs (related to the loss and related to the emotional outcomes experienced after the loss) and also the role of automatic thoughts in the relationship between the types of episodic memory and complicated grief symptoms severity. Our results show that both autobiographical memory specificity and future episodic memory specificity emerged as significant negative predictors of complicated grief symptoms severity. Hence, the lower the specificities (autobiographical memory, future episodic memory), the higher the complicated grief symptoms. Also, general irrational beliefs emerged as significant positive predictor of complicated grief symptoms severity, which means that the higher the irrational beliefs, the higher the intensity of complicated grief symptoms. Our results also show that general irrational beliefs, autobiographical memory specificity and future episodic memory specificity all emerged as significant predictors of complicated grief symptoms severity.

An important methodological objective of this thesis concerns the analysis of cognitive-behavioral interventions efficacy in reducing symptoms of complicated grief and / or comorbid symptoms in adults, by (1) estimating the effect size of these interventions and (2) identify potential moderators of the effect size of these interventions.

In this regard, **Study 1** consists of a quantitative meta-analysis summarizing intervention studies regarding cognitive- behavioral interventions for the treatment of complicated grief and/or comorbid symptoms in adults, in terms of their effect size.

The results indicate that cognitive-behavioral interventions have no significant effect in reducing the symptoms of complicated grief, nor comorbid symptoms. Moreover, the results remain nonsignificant in the post-test, but also at follow-up. Regarding the potential moderators of the effect size, both for complicated grief and the comorbid symptoms, only participants' age and time since the death have a significant moderating effect, unlike gender, kinship or number of sessions. This pattern of results of this meta-analysis may be due to the selection process of the studies included. In other words, if we look specifically at the efficacy of cognitive-behavioral interventions in complicated grief and combining the results of individual studies reporting significant effect sizes, the average effect size may not be significant.

The main practical goal of this thesis refers to the integration of data derived from studies 1, 2 and 3 in order to implement an online potocol intervention aimed to reduce symptoms of complicated grief and comorbid symptoms in adults. In this regard, **Study 4** of this thesis has sought to implement this online protocol, in order to (1) reduce the symptoms of complicated grief, comorbid symptoms (depression and anxiety) and the overall level of distress, (2) changing the mechanisms involved in pathological symptoms, such as reducing the irrationality level, increasing autobiographical memory specificity and improving coping strategies and (3) producing higher levels of optimism.

Specifically, under the *first objective* of Study 4, we wanted to investigate the efficacy of an online intervention using the TEO system in terms of modifying potential causal mechanisms of complicated grief symptoms: general and specific level of irrationality, automatic thoughts, autobiographical memory specificity and coping strategies. According to the first hypothesis of the Study 4, we anticipated significant

differences pre-post-intervention, in terms of reductions in irrationality level (general and specific) and automatic thoughts after the intervention. Results confirm this hypothesis, by identifying significant differences in the anticipated direction, the effect size for the online intervention in the TEO system being high for this component. On the other hand, in terms of irrational beliefs related to the significant person's death, or irrational beliefs related to emotional reactions after death, we obtained a small effect size of the intervention, while in the case automatic thoughts, there was no effect of the intervention in the TEO system. In the second hypothesis of the Study 4, we anticipated a significant difference pre-post-intervention regarding autobiographical memory specificity, in terms of increases in specificity. The results confirm this hypothesis, and the significant differences obtained were in the expected direction. Regarding the effect size of the intervention on this component, we obtained a moderate effect size. Regarding coping strategies, within the third hypothesis of the Study 4, we anticipated a significant difference pre-post-intervention, as confirmed by our results. For some specific coping strategies investigated, there was a moderate effect size of the intervention (self-distraction, active coping, denial, substance use, use of emotional support, positive reframing, planning, humor, acceptance, religion and self-blame).

Continuing with the *second objective* of Study 4, we wanted to assess the efficacy of an online intervention protocol using the TEO system in reducing the symptoms of complicated grief, the comorbid symptoms (depression and anxiety) and the general level of distress as a result of losing a loved one. Therefore, significant differences pre-post-intervention were anticipated, regarding the reduction of complicated grief symptoms, comorbid symptoms and the general level of distress after the intervention, with results that confirmed the fourth hypothesis of Study 4. Regarding the effect size obtained on each of these components, for the complicated grief and depressive symptoms we obtained a small effect size of the intervention, while for trait-anxiety, there was a moderate effect size of the intervention. With regard to the emotional distress, the effect size for this component was moderate.

As *third objective* of Study 4, we wanted to assess the efficacy of the online intervention protocol using the TEO system in terms of increasing the level of optimism. As with other components analyzed, significant differences pre-post-intervention were expected in terms of increases in the levels of optimism, as confirmed

by the results of this study. Regarding the effect size of the intervention, it is important to note that we obtained only a small effect size on optimism.

The studies presented in this thesis have a number of important limitations. As for *Study 1*, a major limitation of this meta-analysis is the large number of studies excluded due to insufficient data reported, or to the strict inclusion criteria used in this study. Moreover, the studies included in the meta-analysis included a relatively small number of subjects derived from clinical population. There is also a significant number of variables that were not the subject of this research, but that should be taken into account in further studies, such as the attachment style.

Regarding *studies 2, 3 and 4*, they share important limits: relatively small samples included in the studies, which could explain the statistically and/or clinically non-significant results obtained. Moreover, in *Studies 2 and 3*, samples were composed exclusively of undergraduate students, and the majority of participants were women. Due to this limit, the generalization of the results to both genders is problematic, and the results should be interpreted with caution.

Finally, *Study 4* dealt with a major limit, such as that the TEO system interface was only available in Spanish language, fact that could have raised a number of issues in terms of the efficient use of the system, despite of the translations that were sent to the participants before the beginning of the intervention. Also, the absence of measurements at follow-up is another major limitation of this study. In the results presented, it is not possible to identify subsequent changes in the investigated components in terms of differences in the presence or magnitude of the effect sizes. For example, there is a significant probability that the small effect size obtained for the grief symptoms to be larger at follow-up, as it is practiced a more rational thinking style for example, or as participants engage in the use of more adaptive coping strategies, such as planning, or positive reframing. The absence of a control group in this study prevents us to conclude that the effects are attributable exclusively to the intervention and not to other external causes, such as the natural remission of symptoms.