

**PARENTAL DISTRESS IN HIGH-CONFLICT DIVORCES
AND ITS RELATIONSHIP WITH EMOTION
SOCIALIZATION**

PhD candidate: Inés Pellón Elexpuru

Directors: Ana Martínez-Pampliega and Susana Cormenzana Redondo

Doctoral Dissertation

Faculty of Health Sciences

University of Deusto

Bilbao, 19 February 2024

Acknowledgments

As with children, whose development is so closely related to the bonds and support they receive from birth, throughout these three years I have experienced a process of growth and learning, and there have been several people who have lived it with me. Therefore, I would like to offer a few words to express them my gratitude.

First of all, thanks to my directors, Ana and Susana, for giving me the opportunity and trusting that I would be able to do it. Thanks to all my colleagues at Deusto FamilyPsych, Laura, Leire, and the others, for the time spent in the room and all the coffees, which have so often been a space of relief and support.

Thanks also to the Family&Youth team at the University of Utrecht, for being so welcoming, and specially to Inge and Rianne. Thank you for your time and patience, for believing in me, for all your teachings, and for giving me back the motivation I needed. Also, special thanks to all the people who shared this experience with me. Thank you, Bea, for being my faithful travelling companion, and for all that you have taught me, both personally and professionally. Thanks also to my other half there, Marta. You came to bring me your joy, laughter, dancing, and a connection like no other. A part of my heart and my thesis is still in Utrecht with you.

And this thesis being focused on fathers and mothers, I could not fail to mention my own. Thanks to my mother, my unconditional support. I don't think there is a person in the world who will ever trust me more. Thanks to my father, because even in the distance he has been there for me, and he has taught me more things than he can imagine in this process. And last but not least, thanks to Goyo, who in so many breakfasts over these three years has been able to give me the calm and confidence I needed.

Thanks also to all my friends. I feel very lucky, because even if I can count them on one hand, their presence is more than enough to fill my soul. Thanks you Silvia, for

being the person who has dealt with my ups and downs every day, with no exception. Although more than 600 kilometres separate us, you have been able to be closer than ever. Thanks to Begoña, Igor, Sandra, and Nerea, for sharing meals, laughs, and even some excursions (but always with food). Thank you for taking care of me, even when I didn't let you. To Helen and Ane, for becoming an unconditional part of my life. Thank you for the daily messages, the encouragement, the trust, and all the laughter and gossips shared. Thanks to the pole, which appeared in my life to help me find peace, empowerment, and real friends. Thanks to the guardian angels I found in the master's degree, Paula, Majo, and Ibone, who have lived this process with me from the beginning. Thanks you, Yaiza, for making me disconnect with our weekly chats and updates. And finally, I would also like to thank Itxaso, for being so supportive in this last stage, and for having collaborated with the beautiful design of the cover.

Thanks also to all the people I have not mentioned, to those who are still here and those who are not, but who at some point were part of this journey. Thanks to all of you, because you trusted that this moment would come, and you were right.

Finally, I would also like to make a special mention to my therapist, Paloma, for her weekly accompaniment. Thank you for this space that has allowed me to see things in perspective, to deal with all my fears, and to express myself in a way I had never dared before. And thanks to myself, for my perseverance and for not having given up.

Now I am ready to face any new challenge, to continue working on my way, and to open all the doors and embrace every opportunity that may come.

Inés.

Abstract

High-conflict divorces have been related to consequences on both the physical and mental health of former spouses and this, in turn, can affect their parenting skills, including emotion socialization. However, the impact of divorce and conflict may depend on a number of other mediating and moderating factors, such as co-parenting, gender, or resilience. Despite this, the relationship between all these interdependent factors in high-conflict divorces has hardly been studied. In fact, most studies have focused on the impact on children rather than the consequences for parents themselves. However, studying interparental factors is important, as is precisely those factors that also play a role in the adjustment of children after divorce.

Therefore, the aim of the current study was to understand how high-conflict divorces are related to parents' emotion socialization. To this end, some inter- and intra-personal factors, such as physical and psychological symptomatology, co-parenting, resilience, and gender, were considered. These factors have been studied in the context of divorce, but never in high-conflict divorces, nor in relation to emotion socialization. Four studies make up the research: A meta-analysis on physical health and divorce, a cross-sectional study on the relationship between divorce and somatization, a Latent Profile Analysis on the relationship between parental symptomatology and co-parenting and emotion socialization, and the Spanish validation of the Family Hardiness Index (FHI).

Overall, it can be concluded that it is essential to focus on parental health when studying emotion socialization, especially in high-conflict divorces. However, divorce is a complex and multifactorial phenomenon, so it is important to consider other possible factors that may make this impact different. Studying the specific characteristics of divorced people and families, may enable health professionals to develop prevention and intervention programmes tailored to their specific needs.

Keywords: Divorce, high-conflict, emotion socialization, symptomatology, co-parenting, resilience

TABLE OF CONTENTS

INTRODUCTION	1
CHAPTER I: THEORETICAL BACKGROUND.....	7
1. Divorce.....	9
1.1. High-conflict divorce	11
2. Emotion socialization	14
2.1. Impact of high-conflict divorce on emotion socialization	15
3. Moderating or mediating factors in emotion socialization	16
3.1. Gender	16
3.2. Resilience	17
3.3. Co-parenting.....	18
4. Current research.....	19
4.1. Study 1. Divorce and physical health: A three-level meta-analysis.....	20
4.2. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression.....	21
4.3. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis.....	22
4.4. Study 4. Spanish version of the Family Hardiness Index (FHI)	22
CHAPTER II: EMPIRICAL STUDIES.....	25
5. Study 1. Divorce and physical health: A three-level meta-analysis	27
6. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression.....	111

7. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis	145
8. Study 4. Spanish version of the Family Hardiness Index (FHI)	181
CHAPTER III: GENERAL CONCLUSIONS	209
9. Conclusions.....	211
9.1. Study 1. Divorce and physical health: A three-level meta-analysis.....	214
9.2. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression.....	215
9.3. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis.....	216
9.4. Study 4. Spanish version of the Family Hardiness Index (FHI)	218
10. Theoretical and clinical contributions.....	219
11. Limitations	222
12. Future lines of research.....	223
REFERENCES	227
APPENDIXES.....	247
Appendix I: Information letter to participants	249
Appendix II: Information letter to participant centres	251
Appendix III: Informed consent for participants	255
Appendix IV: Informed consent for participants in Study 4.....	258
Appendix V: Authorisation from the University of Deusto Ethics Committee.....	260
Appendix VI: Family Hardiness Index – Spanish Version (FHI-VE).....	262

INTRODUCTION

Family is the main context in which children develop, where they build the basis of their emotional knowledge, and acquire the necessary competences for the identification and regulation of their emotions. Based on Family Systems Theory (Bowen, 1972; Minuchin, 1974), family is considered as an emotional and relational system in which each member influences and is influenced by the others at the individual, dyadic, systemic, and intergenerational levels (Barnwell & Stone, 2016; Erdem & Safi, 2018).

According to this theory, families are dynamic systems that fluctuate due to relational changes, which may be part of the life cycle of its members or come from the interaction with other systems and subsystems. In coping with them, families constantly seek to maintain their balance and well-being at the systemic level (i.e., homeostasis). Sometimes, however, when these changes are not part of the expected life course, they may come with increased stress that makes the process of adaptation or the restoration of balance difficult (Van Gasse & Mortelmans, 2020). In this regard, one of the main and most studied stressors in the family context is divorce (De Bel & Van Gasse, 2020; Shimkowski et al., 2018).

Divorce causes a disruption in people's lives, but the extent of its impact depends on a number of contextual factors, especially destructive conflict (Hald et al., 2019; Polak & Saini, 2019). Sustained conflict, which is often accompanied by dysfunctional dynamics in the relationships before, during, and after divorce, makes this experience feel like a crisis that disturbs all areas of people's lives (Ordway et al., 2020). In addition to the direct impact, both divorce and conflict can have an indirect effect through increased parental symptomatology (Bertie et al., 2021). Parents with more psychological and physical symptoms may be less available to attend and respond to children's needs, especially emotional needs (Gao et al., 2019; Fariña et al., 2020). Thus, among other

parenting skills, high-conflict divorce can lead to an impairment in parents' ability for adequate emotion socialization (Godleski et al., 2020).

Although the impact of divorce has been extensively studied, research has focused primarily on the experience and consequences on children (Schmidt & Grigg, 2023; Van der Wal et al., 2019). Furthermore, even if there are studies that have linked parental emotional skills with the emotion regulation and development of children (Haslam et al., 2020; Mafaza & Sarry, 2022; Ren & Xu, 2019), or that have focused on the association between interparental conflict and emotion socialization in the general population (Godleski et al., 2020), there are no studies that have analyzed emotion socialization in the context of divorce, and even less in high-conflict divorces.

Thus, the aim of this research is to understand how high-conflict divorce may affect parents' emotion socialization. In addition, the role of mediating and moderating factors such as parental health, co-parenting, resilience, or gender, which have been studied in the context of divorce but never linked to emotion socialization, will be considered.

After this introduction, the second chapter of the thesis consists of the theoretical background. In this chapter, a review of the existing literature on divorce, high-conflict divorce, its relation to emotion socialization, and the potential mediating and moderating factors is presented.

The third chapter contains the four empirical studies that have been carried out in this dissertation. The first study is a meta-analysis of the risk of physical health outcomes in divorced people. The second study involves an analysis of the relationship between high-conflict divorce and somatization, considering the mediating role of anxiety and depression. The third study is a profile analysis on a sample of high-conflict parents. The profiles are formed based on parents' physical and psychological symptomatology and

their co-parenting, and in this study, we aimed to analyze the relationship between each profile and emotion socialization. Finally, the fourth study is the validation of the Family Hardiness Index (FHI) (McCubbin et al., 1986) in Spanish version.

Finally, the last chapter presents the general conclusions and implications of this doctoral thesis. It also points out the limitations and future lines of research based on the results obtained.

CHAPTER I: THEORETICAL BACKGROUND

1. Divorce

During the Second Demographic Transition, Western families underwent major changes in their composition and structure, increasing the number of separations and divorces (Härkönen et al., 2020; Musick & Michelmores, 2018). Nowadays, a large proportion of married or cohabiting couples experience a divorce or separation. More specifically, 0.7 million divorces took place in Europe in 2021 (Eurostat, 2023). In Spain, in 2022, a total of 81302 divorces and 84551 dissolution processes were registered, which also includes annulments and separations according to data from the National Institute of Statistics (INE, 2022). However, it should be noted that this data refers to legal divorces, so the rates are even higher when cohabiting couples are considered (Arpino et al., 2021). The literature has found that more than a third of all couples end in separation or divorce (Hogendoorn, 2022; Kalmijn & Leopold, 2021).

Divorce entails a breakdown of the family unit and has been recognised as one of the most significant psychosocial crises a person can experience. This is because it means the breakup of a “happily ever after”, and involves a period in which former spouses need to re-establish their roles and identity outside of marriage or cohabitation. This readjustment requires changes in almost all areas of people’s lives, including financial and legal changes, the renegotiation of co-parenting relationships, changes in friendships and support networks, and moving, among others (Amato, 2000). Although all these changes have a direct impact on the health and well-being of former spouses, its extent depends on the specific circumstances of each person and family (Koldziej-Zaleska & Basista-Przybyla, 2020). In fact, after a certain period of time, necessary for adaptation to the new situation, most people are able to get back to their lives and restore adequate levels of well-being (Ordway et al., 2020; Sbarra et al., 2015).

Despite this, for some people adjusting to divorce is more difficult than for others, and they may experience persistent feelings of sadness, anger, guilt, and helplessness, as well as constant ruminations and longing for the ex-partner (Yárnoz-Yaben, 2017) that can disrupt their daily functioning (Field, 2011; Kiral, 2019). It is therefore clear that divorce depends on multiple factors that can increase the risk or buffer the negative consequences, including the context in which the divorce occurs, who was the initiator, the role of the ex-spouse in the breakup, or the gender of the ex-spouses. Thus, analyzing these factors can make it possible to classify divorced people into different profiles based in common characteristics, which can shed light to better understand who are at most risk (Frisby et al., 2012). Consequently, this will allow researchers and practitioners to focus on specific needs of individuals seeking for help.

1.1. High-conflict divorce

When considering risk factors linked to the context of divorce, persistent conflicts before and after the breakup are one of the most relevant and also most studied. Between 20-80% of divorced people report conflict in their relationship with their ex-spouse, but only for 5-25% of them, the level of this conflict can be considered destructive. However, this type of divorce requires clarifying the definition of conflict, the study populations, and the time elapsed since the conflict was assessed (Haddad et al, 2016; Hald et al., 2019; Polak & Saini, 2019).

High-conflict divorces are characterized by constant negative interactions and a hostile and insecure emotional environment. In addition, three key dimensions of conflictive divorces can be distinguished: 1) the domain dimension (the content of disagreements about divorce-related issues such as finances or co-parenting); 2) the tactical dimension (the way in which disagreements are managed); and 3) the attitudinal

dimension (the degree of hostility or negative emotionality toward the ex-spouse) (Hald et al., 2019).

In these types of divorce, conflict can extend over many years, occupying almost all areas of the person's life, and seeming unavoidable. Thus, the experience of divorce changes from being considered a life-transition to a persistent crisis, that causes a disruption in divorcee's daily life (Ordway et al., 2020).

1.1.1. Consequences of high-conflict divorce

High-conflict divorces have an impact on the individual, legal, and social level, as well as in divorcees' personal relationships. At the individual level, high-conflict divorces have been strongly associated to physical and psychological harm to both the former spouses and their children (Herrero et al., 2020; Martínez-Pampliega et al., 2021). Regarding the ex-spouses, higher levels of conflict have been linked to a range of negative consequences, including reduced well-being, and higher levels of anxiety and depression. This type of divorce has also been linked to difficulties in establishing trust in their new relationships, increased sensitivity, insecurity, and a fear of commitment (Ordway et al., 2020). In addition, divorce and conflict appear to be related to riskier behaviors, such as alcohol, tobacco and other substance use, poorer diet, and less physical activity, which may have an impact on the health of divorcees (Brüggmann, 2020).

Furthermore, the stress of the divorce itself, aggravated by a constant situation of conflict and tension, deteriorates the immune system of former spouses, leading to a higher risk of physical illnesses (Sbarra et al., 2017) and mortality (Sbarra et al., 2012). Common physical consequences include fatigue, insomnia and other sleep disturbances, and also an increased incidence of cardiovascular diseases, diabetes, and hypertension (Kiecolt-Glaser, 2018). High-conflict divorce has also been related to a higher amount of

sick leaves, especially in the first year after divorce (Newton et al., 2016; Kelly & Sweeney, 2020).

However, in many cases, the mentioned conditions appear without an underlying organic cause, which is known as somatization. Somatization has been linked to situations of high stress that the person is unable to manage, and is associated with significant distress, severe impairment in daily functioning, and high use of health and social care. Yet, its management represents a major challenge for health professionals (Husain-Krautter et al., 2021; Nakamura et al., 2017). The absence of an obvious cause and the coexistence of somatization with multiple psychological and psychosocial conditions, especially anxiety and depression (Henningsen, 2022), make it difficult to have a clear diagnosis and an effective treatment (Güney et al., 2015). In fact, most studies have focused on anxiety and depression (Hald et al., 2022; Raley & Sweeney, 2020), while few studies have analyzed the linkage between divorce and somatization (Aragona et al., 2008), and their results have been controversial (Hald et al., 2020).

As can be observed, divorce has been consistently associated with several negative consequences (Frisby et al., 2012; Sbarra & Whisman, 2022), especially when it concerns high-conflict divorces (Hald et al., 2019; Polak and Saini, 2019). However, most studies have focused on mental rather than physical health (Kalmijn, 2017). At the same time, it is worth noting that the divorce impact on health depends on multiple inter- and intrapersonal factors that require further study (Bronselaer et al., 2008; Sbarra et al., 2014; Wilder, 2016). Being able to analyze in detail the different circumstances under which divorce has an impact not only on the mental but also on the physical health of ex-spouses will enable researchers and practitioners to tailor prevention and intervention programs to the specific needs of each divorced person and family.

From a legal perspective, high-conflict divorces take up to 90% of family court resources (Haddad et al., 2016). From a societal point of view, high-conflict divorces involve more difficulties for the public administration system. Due to their disruptive nature, they have been considered a public health problem. However, existing social and health resources do not yet have the necessary tools and support to fully care for the people involved (Hald et al., 2019). Consequently, accurately identifying potentially conflictive divorces in order to intervene as early as possible can be critical for the ex-spouses and their children. By doing so, an escalation of the conflict could be prevented and the ex-spouses could be helped to handle them better (Schramm & Becher, 2020). In addition, prevention programs may also facilitate a reduced investment of time and resources by the public system, that is heavily burdened by high-conflict divorces (Øverup et al., 2020).

Finally, high-conflict divorces have an impact at the relational level, affecting not only the ex-spouses, but all the people around them, especially the children. As family relationships are interdependent and any change in one of the subsystems may affect the others (De Bel & Van Gasse, 2020; Shimkowski et al., 2019), conflict will probably affect the quality of parent-child relationship (Zartler, 2021) and parenting skills (Bertie et al., 2021), including emotion socialization (Gao et al., 2019; Fariña et al., 2020).

2. Emotion socialization

Eisenberg et al. (1998) were the first to talk about emotion socialization. Emotion socialization is the process through which socializing agents, in this case parents, facilitate their children's understanding, experience, expression, and regulation of emotions (Tan et al., 2020). This process begins in early childhood and continues through adolescence.

Emotion socialization is characterized by explicit communication about emotions (e.g., helping children understand or regulate their own and others' emotions), reactions to children's emotions (e.g., responding with support or rejection), and by the way parents regulate their own emotions (e.g., warmth versus negativity) (Breaux et al., 2018; Eisenberg et al., 1998; Lunkenheimer et al., 2020). Parents can socialize their children's emotions through three mechanisms: 1) observation through modelling; 2) parenting practices; and 3) the family emotional atmosphere, made up of parenting style, attachment, and interactions within the family (Mafaza & Sarry, 2022).

How parents carry out this process is crucial in the tendency of children to develop significant social and emotion maladjustments, and even certain types of psychopathologies (Bertie et al., 2021; Correia, 2020; Seddom et al., 2020). The way in which both positive and negative emotions are managed and expressed is related to the development of externalizing and internalizing symptomatology (Dixon-Gordon et al., 2020; Martínez-Pampliega et al., 2021).

2.1. Impact of high-conflict divorce on emotion socialization

In order to be adequate emotion socialization agents for their children, it is important that parents pay attention to their own emotions and their management (Staats et al., 2018). Thus, parents who are able to perceive, understand, and regulate their own emotions will also be able to transmit this ability to their children, in turn helping them to better manage conflict and stress (Lunkenheimer et al., 2020). In contrast, those in high-conflict situations, generally characterized by poor communication and emotion management skills, may show more difficulties in their parenting and, therefore, in their emotion socialization (Bertie et al., 2021; Eisenberg, 2020).

Godleski et al. (2020) examined, among others, interparental conflict as a predictor of children's emotion socialization and adjustment. In their research, the authors

noted that parents influence their children's emotional development directly through parental-filial interactions, including specific responses to children's negative emotions, and indirectly through their own emotional functioning and interparental interactions at home. Thus, when parents exhibit a high level of conflict in their interaction with each other, this pattern may carry over into their relationships with their children. On the one hand, these parents will tend to react negatively or punitively to children's negative emotions. This may cause these children to develop learning and emotion management difficulties, emotion insecurity, and may promote behavioral dysregulation. Moreover, parents act as role models for their children, so constantly observing conflictive interactions will cause them to internalize such patterns through social learning.

In line with what has been described above, parental symptomatology, which has been linked to divorce and, more specifically, to conflict, also seems to indirectly affect this process of emotion socialization. Increased levels of anxiety and depression, fatigue, insomnia, body aches, illness, and perceptions of poorer physical health have been linked to a disruption in decision-making and executive functions (Diamond, 2013). This, in turn, will interfere with their ability to attend and respond sensitively to their children's emotion management (Seddom et al., 2020). In other words, divorce, especially high-conflict divorce, can directly and indirectly interfere with the development of emotional competencies related to parenting, such as emotion socialization (Gao et al., 2019; Fariña et al., 2020).

However, although it seems undeniable that parental conflict and symptomatology have an impact on parenting skills and, in particular, on parent's emotion socialization (Breux et al., 2016; Hald et al., 2019; Warmuth et al., 2019), no studies thus far have explored the relationship between high-conflict divorce and emotion socialization. Moreover, as mentioned above, the impact of divorce depends on a number of moderating

and mediating factors that need to be studied in depth. In addition to parental conflict and symptomatology, it is important to consider other relevant variables in this process such as gender, resilience, or co-parenting.

3. Moderating or mediating factors in emotion socialization

3.1. Gender

Gender has been considered one of the most important factors linked to different adjustment to divorce. Even today, society maintains some traditional structures that support the idea that women should be responsible for housework and childcare (Parker et al., 2022; Raley & Sweeney, 2020). In addition, there is also inequality regarding financial issues, as women tend to have a more precarious post-divorce economic situation, which also makes their family-work balance difficult (Hogendoorn, 2022). As a result, women tend to experience greater emotional or psychological consequences, such as anxiety and depression, and more somatic symptoms after the breakup (Al-Bahrani, 2021; Aragona et al., 2008; Kiecolt-Glaser, 2018). Thus, overall, research has supported a greater post-divorce impact on women. However, research findings regarding gender are controversial, as some research has found a greater impact on men in the long term (Leopold, 2018).

Despite experiencing less financial hardship after divorce, men tend to report a greater loss in social support, as in many cases, the main source of support for them is their partner and children, with whom contact usually decreased substantially. Moreover, men have shown a greater tendency to engage in risky behaviors, such as alcohol and tobacco use, in face of stress (Bourassa et al., 2019). Finally, they also are likely to experience more changes in their diet and physical activity, as the partner and children are often the ones who encourage a healthier lifestyle (Bourassa et al., 2019). Consequently, men's long-term physical health may deteriorate (Leopold, 2018).

3.2. Resilience

Another factor that has been extensively studied in situations of high stress, such as divorce, is resilience. In the face of stressful life events, that involve an impairment of physical and psychological functioning, people and families use available resources to try to maintain or recover their previous well-being (McCubbin et al., 1986). Among the intrapersonal resources that may influence the process of adjustment to divorce, researchers have focused on some personality characteristics, highlighting resilience (Knöpfli et al., 2016). Resilience is the ability to maintain relatively stable and healthy levels of psychological and physical functioning when coping with stressful life events (Bonanno et al., 2011; Perrig-Chiello et al., 2015). Resilient people have a high level of emotional stability and are able to adapt flexibly to unexpected situations and even emerge stronger from them (Troy et al., 2023; Mendoza et al., 2020). Thus, they may potentially have a greater capacity for emotion identification and management, which can directly influence communication and coping with conflict (Frisby et al., 2012; Russell et al., 2021). On the one hand, resilient people will be better able to communicate assertively and empathetically with their ex-spouse (Amir et al., 2019). On the other hand, this more positive and less stressful and conflictive communication will help ex-spouses to be resilient in coping with the stress of divorce, thus influencing its subsequent impact (Walsh, 2002). Resilient parents can therefore be more positive emotion socialization agents for their children, who will then learn to develop greater coping skills and tools to deal with stressors and recover from unexpected situations (Amir et al., 2019; Theiss, 2018).

However, although resilience plays a key role in coping with adverse situations, studies that have considered it in the context of divorce, especially in high-conflict divorces, are still scarce, and have focused mainly on children (Davidson et al., 2014;

Schmidt & Grigg, 2023; Van der Wal et al., 2019), instead of on parents themselves (Mendoza et al., 2020).

3.3. Co-parenting

Finally, one of the most affected areas of family functioning in high-conflict divorces is co-parenting. Co-parenting refers to the way in which parents coordinate, communicate, support each other, and carry out parenting practices (Becher et al., 2019; Nunes et al., 2021).

Through co-parenting, parents become the primary model for their children regarding interpersonal communication, social behavior, and emotion and conflict management. The quality of the co-parental relationship often depends on the levels of conflict, so parents with higher levels of co-parenting tend to have lower levels of conflict (Visser et al., 2017). In cases of pre- and post-divorce conflict, it is often difficult for parents to work as a team, as inter-parental conflict spills over into the co-parental relationship (Lamela & Figueredo, 2015; Van Dijk et al., 2020). In some cases, it may lead to an increase in the level of tension between ex-spouses (Herrero et al., 2020). In addition, parents may use parenting and childcare arrangements to maintain an open contest against the former spouse (Bergman & Rejmer, 2017; Hald et al., 2019; Mafaza & Sarry, 2022; Nikupeteri et al., 2022), thereby shadowing the main purpose of this contact, which is the well-being of the children (Koppejan-Luitze et al., 2021).

Nevertheless, the relationship between co-parenting and conflict is not unidirectional. Although increased contact between parents may encourage conflict to persist and even increase, a positive co-parental relationship may have the opposite impact in the association between interparental conflict and parenting. That is, parents who prioritise the well-being of their children will be more likely to maintain a good co-parental alliance, trying not to focus on their own conflict (Becher et al., 2019). Thus,

reducing tensions with the ex-spouse and focusing on the well-being of the children may make individual parenting practices and emotion socialization more effective as well.

4. Current research

Although high-conflict divorces affect both the well-being of divorcees and the parent-child relationship, research has mainly focused on the consequences on children (Schmidt & Grigg, 2023; Van der Wal et al., 2019), or on children's ability to regulate their emotions (Haslam et al., 2020; Mafaza & Sarry, 2022; Ren & Xu, 2019). In this sense, parenting styles have been studied as the indirect pathway through which conflict affects children (Van Dijk et al., 2020). However, the emotional component of parenting has barely been studied. In addition, research on the consequences of divorce has mainly focused on divorcees' mental health, leaving aside physical health (Kalmijn, 2017).

For these reasons, and following an exhaustive review of the literature, the overall aim of this research is to understand the impact of high-conflict divorce on emotion socialization, considering some mediating factors, such as physical and psychological health and co-parenting, and moderating factors, such as resilience and gender. To this end, four studies have been developed, each of which has a number of specific objectives:

4.1. Study 1. Divorce and physical health: A three-level meta-analysis

The first study was an extensive multilevel meta-analysis on the relationship between divorce and physical health. As noted above, although there is extensive literature focused on the consequences of divorce on children's well-being (Schmidt & Grigg, 2023; Van der Wal et al., 2019) and on parents' mental health (Kalmijn, 2017; Zineldin, 2019), few studies have related it to physical health. Therefore, this study aimed to answer the question of whether divorced people were more at risk of physical health problems than their married counterparts. The meta-analysis consisted of 94 studies in which the following aspects of physical health were considered: Self-reported health,

physical illnesses including hypertension, diabetes, cancer and cancer progression, joint pathologies, cardiovascular diseases, infectious and parasitic diseases, sexually transmitted diseases, and cognitive pathologies such as dementia or Alzheimer's, physical symptomatology, i.e. chronic conditions or diseases, physical pain or somatic conditions, and disability or physical limitations.

On the one hand, separate analyses were conducted for each of the health consequences and, on the other hand, three-level meta-analyses were conducted, examining both the overall health problems of divorced versus married people and the specific health consequences of divorce. In addition, variability within and between studies was also examined. Subsequently, moderator analyses were carried out concerning sociodemographic characteristics of the sample, socioeconomic and behavioral factors, and methodological qualities of the studies, in order to test for possible sources of this variability. Taking into account the significant moderators, two multiple moderator analyses were conducted considering, on the one hand, gender and socioeconomic factors: Employment and presence of children, and, on the other hand, gender and behavioral factors: Alcohol consumption, physical exercise, and obesity.

4.2. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression

The second empirical study aimed to analyze the role of psychological symptomatology (anxiety and depression) in the relationship between high-conflict divorce and somatization. Although somatic symptoms have been strongly related to stressful and adverse life events (Keskin, 2019; Kozłowska et al., 2020), and divorce has been considered a major life stressor (Lorenz et al., 2006), somatic symptoms in divorced people have hardly been studied (Aragona et al., 2008), and even less when there is a high level of destructive conflict. At the same time, there is much confusion between anxiety

and depression and somatic symptoms. Even if comorbidity is regularly found, this is not necessarily so (Henningsen, 2022). For this study, the sample consisted of 270 parents going through a high-conflict divorce that come to Family Visitation Centers in Spain. We controlled for other variables that may influence the differential impact of divorce on somatization such as marital status, type of relationship with the ex-partner, frequency of contact with the children, level of education, type of custody, and time elapsed since divorce. Finally, we analyzed the differential role of gender. After examining the impact of divorce and conflict on parental health in the first two studies, in the third study we explored how this impact may affect parenting skills and, specifically, emotion socialization.

4.3. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis

Following the previous findings, and considering the gap in the literature regarding the relationship between high-conflict divorce and emotion socialization, the third study aimed to analyze the role of physical and psychological symptomatology (anxiety and depression), and co-parenting in the emotion socialization of parents in high-conflict divorces. To do so, a Latent Profile Analysis of families attending Family Visitation Centers in Spain, was carried out using a sample of 239 parents. The results showed three clearly differentiated profiles regarding parental symptomatology. The association between these profiles and four dimensions of emotion socialization (emotion acceptance, emotion rejection, emotion coaching, and feelings of uncertainty/ineffectiveness in emotion socialization) was analyzed. In addition, although literature has consistently shown the protective role of resilience in face of stress, this variable has not been studied in high-conflict divorces, even if divorce has been

considered a major stressor in people's lives. Therefore, in this study the moderating role of resilience was considered.

4.4. Study 4. Spanish version of the Family Hardiness Index (FHI)

As previously noted, individual resilience has been extensively studied as a protective mechanism in situations of high stress. However, divorce being a situation that has an impact on all family members and on family functioning (De Bel & Van Gasse, 2020; Reiter, 2019), it might be interesting to consider resilience as a family coping mechanism. In addition, in Study 3, individual resilience did not show to moderate the relationship between high-conflict divorce and emotion socialization. Therefore, the last study consisted of the adaptation of the Family Hardiness Index (FHI) in Spanish population. This instrument is focused on family hardiness, which is the family's ability to work cohesively to cope with stressors and find solutions to problems (Dunst, 2021). It should also be noted that, as far as we know, there is no published instrument that measures protective resources such as hardiness at the family level in Spanish population. For this study, a sample of 510 parents from the general population was used. We carried out a Confirmatory Factor Analysis (CFA) to analyze the structure and psychometric properties of the Spanish version of the FHI, and we also tested gender invariance through a multigroup analysis. In addition, the concurrent validity was analyzed by correlating the dimensions of the FHI with those of the Brief Symptom Inventory (BSI-18).

In short, the four studies that make up the body of this doctoral thesis, two from the general population (1 and 4) and two in high-conflict divorces (2 and 3) have been developed. The main purpose of this research was to study the relationship between divorce and emotion socialization. For this aim, mediating and moderating variables such as the physical and psychological health of the parents, co-parenting, resilience, or gender, were considered. This research opens the door for future studies to continue

exploring the relationship between the different mechanisms and variables related to divorce, so that preventive programs and interventions can be tailored to the specific needs of divorced people and families.

CHAPTER II: EMPIRICAL STUDIES

5. Study 1. Divorce and physical health: A three-level meta-analysis

Pellón, I., Van Dijk, R., Van der Valk, I., Martínez-Pampliega, A., Molleda, A., & Cormenzana, S. (2024). Divorce and physical health: A three level meta-analysis. *Social Science and Medicine*, 352. <https://doi.org/10.1016/j.socscimed.2024.117005>

Abstract

Divorce is often considered a major and stressful life transition. Given the overrepresentation of divorcees in primary care services and the association between physical health and psychological adjustment, potential post-divorce health problems are of concern. Yet, empirical evidence is lacking on the magnitude of such a health risk after divorce, whether there are differences across specific pathologies, and under which circumstances divorcees' risk for health problems increases. The aim of this meta-analysis was thus to examine if and to what extent divorced adults have a higher risk for physical health problems (i.e., overall and more specific pathologies) compared to their married counterparts. In addition, we examined whether this risk depended on socioeconomic and behavioral factors, or certain sociodemographic characteristics of the participants. We selected 94 studies including $u = 248$ relevant effect sizes, based on $N = 1384507$ participants in total. Generally, divorcees showed significantly worse self-reported health (OR = 1.20, [1.08-1.33]), experienced more physical symptoms (OR = 1.34, [1.17-1.53]), and had a higher risk for diabetes (OR = 1.18 [1.05-1.33]), joint pathologies (OR = 1.24, [1.14-1.34]), cardiovascular (OR = 1.24, [1.09-1.41]) and cerebrovascular conditions (OR = 1.31, [1.14-1.51]), and sexually transmitted diseases (OR = 2.48, [1.32-4.64]). However, they showed no differences compared to married people in hypertension, hypercholesterolemia, cancer and cancer development, disabilities or limitations, and cognitive pathologies. Taken together, divorcees did not have a significantly higher risk for overall physical health problems (OR = 1.14, [0.85 to 1.54]). Moderation analyses revealed that being female, unemployed, childless, or having a lower education constitutes a higher risk for post-divorce physical health problems. The same applies to having a heavy alcohol consumption, lack of exercise, and being overweight. Our meta-analysis shows that divorcees are at heightened risk for certain

pathologies compared to married individuals, with STDs as a particular post-divorce hazard. This calls for more awareness among counsellors and physicians on divorcees' health conditions, and what characteristics make divorcees even more vulnerable to post-divorce health problems.

Keywords: Divorce, separation, physical, disease, meta-analysis

Divorce or separation is highly prevalent in Western society, with divorce rates in most Western countries ranging between 25 and 60 percent (Eurostat, 2023; Mason, 2024). It is considered one of the greatest interpersonal stressors in people's lives, as it can entail changes in finances, housing, social relationships and, if there are children involved, issues regarding co-parenting, care, and contact arrangements (Leopold, 2018; Whisman et al., 2016; Zineldin, 2019). Consequently, divorce has been associated with symptoms of profound sadness, loneliness, fear, grief, anger, and insecurity, among others (Akhtar & Blue, 2017). Initially, divorcees generally experience an intense period of stress, but eventually, most of them adapt well and are able to return to a normal state and to rebuild their lives after the breakup (Malgaroli et al., 2017). Adequate adjustment to divorce occurs to the extent that people experience few divorce-related symptoms, are able to function well in their family, social, and work roles, and can develop an identity that goes beyond marriage (Amato, 2000). For some people, divorce may even bring a sense of relief and well-being after a relationship that caused dissatisfaction and suffering (Kiecolt-Glaser, 2018; Sander, Strizzi, et al., 2020).

However, about ten to twenty percent of divorcees continue to suffer considerably and have significant difficulties in coping with the divorce, causing their behavioral patterns and associated physical and mental consequences to become chronic (Lin & Brown, 2020; Lorenz et al., 2006). Both physical and mental health are key to proper daily, personal, occupational, and social functioning (Sander, Strizzi, et al., 2020).

Physical health refers to the correct state of the body's organs and systems (immune, cardiovascular, and endocrine) (Koipysheva et al., 2018), while mental health refers to an adequate state of mind and emotions (Defence Health Hub, n.d.). In fact, research has shown that a significant amount of people attending primary care services are divorced, and they usually report problems and complaints regarding both their mental and physical health (Bronselaer et al., 2008; Kiecolt-Glaser, 2018). Accordingly, divorce has been linked to both health and societal costs (Amato, 2010; Sbarra et al., 2012). To empirically substantiate the magnitude of divorcees' potential risk for such health problems, a meta-analysis is warranted. By merging the results of a large number of studies and covering a broad range of various pathologies, it can be determined whether the divorce risk applies to health problems in general or only to specific pathologies. This can provide an important source of knowledge for both health practitioners and policy makers.

Moreover, variability in the physical health risk of divorcees is likely and can depend, at least partly, on some of their characteristics and circumstances surrounding the divorce. Identifying those individuals who are most at risk can contribute to the adaption and targeted inclusion in prevention and intervention (Sander, Hald, et al., 2020; Wilder, 2016). Therefore, the overarching aim of the current meta-analysis was to: 1) Study if divorced individuals have a significant higher risk of physical health problems as compared to their married counterparts and the magnitude of this risk; 2) Identify which aspects of physical health (i.e., specific pathologies) may be more affected; and 3) Examine whether the potential health risk for divorcees is moderated by certain characteristics and circumstances.

The risk of divorce on physical health

Research has supported the idea that, compared to married individuals, divorcees tend to have a higher incidence of chronic pathologies such as hypertension and diabetes,

cardiovascular and cerebrovascular diseases, physical pain (Slatcher & Seluck, 2017; Whisman et al., 2016), increased difficulty in coping with daily life activities (Kojima et al., 2019), and a higher rate of sick leave (Strizzi et al., 2021).

Sbarra et al. (2011) defined three pathways to understand how divorce can pose a risk for physical health. First, divorce often negatively impacts financial and social resources (Malgaroli et al., 2017; Zulkarnain & Korenman, 2019), reducing the access to for instance sports facilities, healthy food, and healthcare. Financial problems can also create stress (Mason & Sbarra, 2013). Second, after divorce, people tend to engage in more risky behaviors and unhealthy lifestyle habits, such as an increased use of alcohol, tobacco, and other substances. And perhaps partly due to less financial resources, but also by the loss of the figure that influences them to take care of their health, divorcees generally have poorer eating habits and a lack of physical exercise patterns (Bourassa et al., 2019). All such behaviors are associated with physical health problems (Sbarra et al., 2011; Shor et al., 2012; Stack, 2021). Third, divorce is related to a heightened risk of ex-partner conflict, constituting a major interpersonal stressor (Zineldin, 2019). High levels of stress following marital or financial strains are often accompanied by a number of changes in the body's organic responses (immune, cardiovascular, and endocrine) that may lead to an increased risk for multiple health pathologies (Mason & Sbarra, 2013; Mattos dos Santos, 2020).

Previous meta-analyses

There are few literature reviews that have considered the risk of divorce for physical health, except Sbarra (2015) and Sbarra et al. (2015). In both literature reviews, the authors described that divorce confers risk for poor health outcomes, and sought to explain the factors that may influence the differential impact of divorce on health (e.g. previous physical and psychological pathologies, time elapsed since divorce, having a

new partner, feelings towards the ex-partner, self-concept, coping strategies, and health behaviours). However, they did not meta-analyse previous findings as opposed to some other studies. One meta-analysis revealed that divorce was associated with increased odds of cardiovascular heart disease (CVD) and suggesting that marital status should be considered in the risk assessment for CVD (Wong et al, 2018). This meta-analysis was thus limited to a specific health condition and did not take into account potential moderators. In another line of research, Sbarra et al. (2011; N = 32) and Shor et al. (2012; N = 104) conducted meta-analyses, and both reported an increased mortality risk for divorcees (HR 1.20, and HR 1.30, respectively). Although the increased risk of mortality may be due, in part, to physical health problems, many other factors such as suicide or risky behaviors may also play a role.

Although these previous literature reviews and meta-analyses have increased our knowledge in important ways, they also have some notable limitations. First, the field could benefit from more detailed information on various post-divorce pathologies, in addition to cardiovascular health and mortality alone. Second, previous work lacks the distinction between unmarried people in general and divorcees specifically (e.g., Wong et al, 2018). This means that they for instance also included widowed individuals, which may obscure the divorce findings. Third, previous meta-analyses merely used studies published until 2020, constituting a relatively narrow timeframe, and potentially lacking important data. Hence, an up-to-date meta-analytic overview on overall post-divorce health risk, covering a broad range of different pathologies is warranted.

The current meta-analysis

The main goal of the current meta-analysis was to examine whether divorce poses a risk for individuals' physical health and the magnitude of this risk. Based on previous literature, divorced people were expected to have a higher risk of physical health

problems compared to married people. Yet, adding to already existing reviews and meta-analyses (Sbarra, 2015; Sbarra et al., 2011; Sbarra et al., 2015; Shor et al., 2012; Wong et al., 2018), the current meta-analysis examined both general health problems as a whole, as well as various specific pathologies and health complaints. This provides a more detailed understanding of post-divorce health conditions. Perhaps divorcees have an increased risk for some specific pathologies, but not all. In that regard, we included substantially more pathologies in our meta-analysis compared to previous work. For instance, physical pain, chronic conditions, self-reported health, and daily life limitations are some of the most common reasons for using primary care services (Kiecolt-Glaser, 2018), but are missing from existing meta-analyses. Similarly, sexually transmitted diseases, joint pathologies, and cognitive diseases are highly prevalent health conditions, and are relevant to include in meta-analytic research. Moreover, we used three-level models to account for within-study dependency of effect sizes from the same study. This is in contrast with more traditional methods, often including (randomly) selecting one effect size or averaging them, which means loss of important data (Assink & Wibbelink, 2016; Assink et al., 2018; Cheung & Chan, 2008).

Moderating factors

Despite our expectation that divorcees are at risk for physical health problems, divorces are complex, and its impact depends on many factors, so it does not affect everyone in the same way (Wilder, 2016; Zulkarnain & Korenman, 2019). According to the Divorce-Stress-Adjustment perspective (Amato, 2000), divorce is a process that begins when the couple is still married and may continue for years after the legal separation. The severity and duration of the negative consequences varies depending on a number of intra- and inter-personal moderating factors (Strizzi et al., 2022). Factors that

likely play a role are: Socioeconomic factors, behavioral factors, and sociodemographic characteristics of the participants (Malgaroli et al., 2017; Tosi & Van den Broek, 2020).

Socioeconomic factors

After the breakup, couples are often faced with a socioeconomic deterioration, because of the need to move and the subsequent division of household-related costs. This higher financial risk is also related to the educational level, as a high level of education may enable people to have access to better-positioned jobs (Hogendoorn et al., 2020; Malgaroli et al., 2017). Therefore, people with lower levels of education, precarious jobs, or who are unemployed, will probably be at greater financial risk (Cabilar & Yilmaz, 2021). Lower income and poorer socioeconomic status have been associated with higher levels of stress, which can negatively affect physical health (Sbarra & Whisman, 2022; Wolfe & Thomeer, 2020).

In addition to potential financial strains, couples may experience a loss of support, as common friends usually tend to take sides (Aeby & Van Hooff, 2019; Lampraki et al., 2019). So, for some people divorce could mean a distancing from certain friendships, in-laws (Sarmadi & Khodabakhsi-Kooláee, 2023), and even neighbours in the case of moving (Amato, 2000). Furthermore, for many people the breakup implies the loss of their main source of support (Kolodziej & Przybyla, 2016; Shor et al., 2012), which is linked to feelings of loneliness and distress (Scheppingen & Leopold, 2020; Wright et al., 2020). However, some people may find a great deal of social support in other networks of friends and family members, which can help to cope more adequately with the divorce (Van Gasse & Mortelmans, 2020; Wilder, 2016). In addition, different studies have shown that when people establish a new relationship after the breakup, they experience a great improvement in their well-being and better adjustment to divorce, alleviating its

impact (Sbarra et al., 2014). Hence, social support plays an important role in the adjustment to divorce.

Moreover, when there are children involved, ex-partners continue to share the responsibility of their children as co-parents, and need to make contact and care arrangements. In cases of single custody, it can lead to an overload of responsibilities for the caregiver and a loss of contact with the child for the other parent (Leopold, 2018; Sander, Strizzi, et al., 2020; Zineldin, 2019). Either situation can greatly increase the stress experienced by parents, likely affecting their health (Ferraro & Lucier-Greer, 2022).

Taken together, we expect that people with a lower socioeconomic status, less social support from friends, family, or a new partner, and those without children will be at greater risk for post-divorce health problems.

Behavioral factors

For some people, divorce can lead to more unhealthy habits such as smoking, alcohol consumption, or a lack of physical exercise (Bourassa et al., 2019; Kalmijn, 2017; Robles, 2014). In the same line, divorce has been linked to changes in weight. Although some people tend to gain weight, which, in part, may be related to the worsening of their lifestyle habits (Sharma, 2014), others tend to lose weight due to the stress of the divorce process (Leopold, 2018; Teachman, 2016). In sum, those individuals who have more unhealthy lifestyles would be more at risk for post-divorce health problems. Hence, we anticipated that those individuals with less healthy lifestyle habits, such as smoking or alcohol consumption, and people who are overweight or underweight are expected to have more physical consequences related to those habits and to post-divorce stress.

Sociodemographic characteristics of the participants

Finally, research on divorce has considered other factors such as the gender, age, and race of participants. First, previous findings on potential gender differences are controversial. On the one hand, women are more affected financially because of still existing social structures. Even though women are currently better positioned in terms of education and employment, they still have more precarious conditions than men (Raley & Sweeney, 2020). Moreover, women tend to resume more household and childcare responsibilities, complicating the balance between family and work life (Parker et al., 2022). Consequently, they may experience more stress and health consequences after divorce (Sbarra & Whisman, 2022; Wolfe & Thomeer, 2020). On the other hand, men may be more affected by divorce in the long-term. For men, their partner is generally the main source of emotional support, so a divorce may involve the loss of this key resource, whereas women generally find more support from friends and/or family, and thus a way to cope with post-divorce distress (Kolodziej & Przybyla, 2016; Shor et al., 2012). Compared to women, men are also more likely to engage in unhealthy lifestyle behaviors after the breakup (Kalmijn, 2017; Robles, 2014; Salvatore et al., 2020). In addition, in previous meta-analyses male divorcees had a higher risk for more cardiovascular health problems (Wong et al., 2018) and mortality (Sbarra et al., 2011; Shor et al., 2012).

In terms of age, findings are also contradictory. Divorce in later life may have a greater impact on physical health, as it may be less accepted and normalized due to the traditional conception of marriage and the greater taboo towards divorce among the older generations (Bronselaer et al., 2008). Also, older people may feel lonelier after divorce (Mudrazija et al., 2020; Tillburg et al., 2015). In contrast, some studies have reported greater distress among young divorcees (Leopold, 2018; Sander, Strizzi, et al., 2020). This may be due to the idealised conception of marriage, so that divorce implies a break in the plans and desires for the future that they have constructed. At the same time, young

people are generally in a less stable economic position, which may decrease after the breakup (Mortelmans, 2020). This is also in line with previous meta-analyses (Sbarra et al., 2011; Shor et al., 2012) showing that younger people generally suffered from more health consequences in the first year after divorce. Due to these contradictory findings for gender and age, we had no prior hypotheses regarding these moderators.

Finally, racial and ethnic differences in relationship formation and dissolution trends have received some attention, although to a lesser extent. Black people are less likely to marry and more likely to divorce than White people. Hispanic people, especially Mexican Americans, have higher marriage rates, more positive attitudes toward marriage, and lower divorce rates (Smock & Schwartz, 2020). This suggests that both structural and cultural factors may play a role in differential marriage rates and outcomes for minorities. Both Black people and Hispanic people tend to be in similar socioeconomic positions (Cuevas et al., 2020), but for Hispanic people the traditional perspective of marriage is culturally very important, and divorce is still a less accepted situation (Cabrera et al., 2020). Therefore, it can be expected that Hispanic people could be more affected than White or Black people in their health after divorce, due to greater emotional and financial stress (Padilla & Borrero, 2005).

Method

Search procedure

For the selection of studies, we searched the electronic databases PsychINFO, Web of Science, the Educational Resources Information Centre, Google Scholar, and Océano. The literature search included all studies published before June 2023 that were written in English and available in peer-reviewed journals. Hence, we excluded all books, encyclopedia, and dissertations.

Selecting the studies

First, we established the search strings to identify the studies of interest. All studies had to include a group of divorced men and/or women and an equivalent group of married people, which required keywords such as: *divorc**, *marital separation*, *marital dissolution*, *relationship dissolution*, *(parent* adj3 separat*)*, *(couple* adj3 separat*)*, *marital disruption*, *breakup*, *break-up*. Second, they should include any physical health outcome, so the following keywords were used: *physical health*, *disease*, *illness**, *diagnos**, *health outcome**, *self-reported health*, *morbidity*, *cancer*, *cardiovascular*, *blood pressure*, *pain*, *disab**, *patholo**, *ache*, *sick**, etc. We searched for these keywords in titles, abstracts, and keywords of studies. The complete search strings that were used can be found in Appendix A.

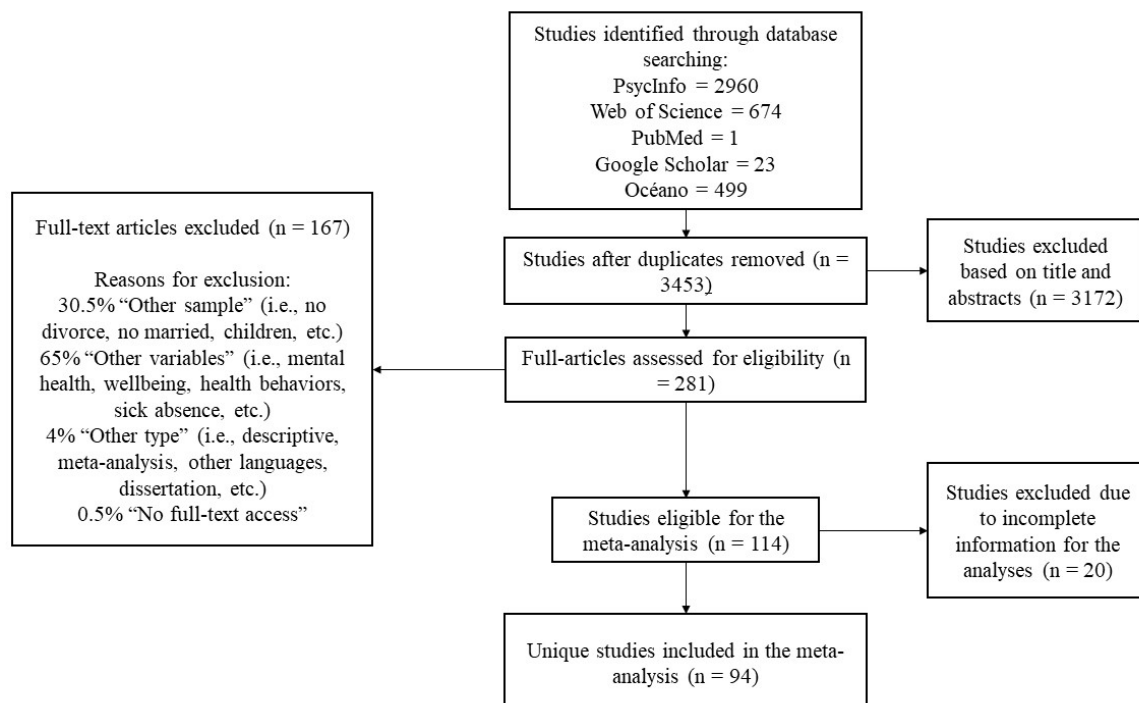
Studies could be either cross-sectional or longitudinal, and experimental or observational, and were included if they met the following criteria: 1) they involved at least one group of divorced or separated participants, and a comparison group of married people; 2) they examined health differences between married or in a relationship and divorced or separated participants; 3) they included an identification of physical health measures, either provided by the participant him/herself, another person close to him/her (subjective measures), or a health professional (objective measure). These latter data could be registered by health diagnosis, Records, and/or medical examinations; and 4) they should report the necessary statistics (odds ratios (OR), beta's (β), risk ratios (RR), confidence intervals (CI), and standard errors (SE), and the number of married/divorced participants) to calculate effect sizes. We excluded studies that: 1) examined risk factors for certain diseases (e.g., physical activity, tobacco and other substance consumption, stress, etc.), although these factors have been considered as moderators when the studies measured any of the physical health outcomes analyzed; 2) were non empirical (e.g.,

literature reviews, meta-analyses, etc.); 3) used general well-being as a single measure (combining both mental and physical health); and 4) focused on mortality.

Once the criteria were established, we started searching and selecting the studies (see Figure 1). First, the duplicates were removed from our search. Second, articles were scanned based on title and abstract by two coders, who showed a moderate interrater agreement rate $\kappa = .58$ (Cohen, 1960). Most of the disagreements were due to confusion related to the inclusion and exclusion of some pathologies or conditions that may or may not fall into any of the categories considered. After having analyzed the discrepancies, a common agreement was reached on the certain pathologies that should be included in each category. Third, full-text articles were assessed for eligibility based on their sample, measured concepts, and the provided statistics.

Figure 1

Schematic representation of selecting the studies



In a substantial number of cases, we had to email the author(s) for (additional) information. This was mainly because some studies reported information about some

outcomes but not all physical health outcomes linked to marital status, or they reported the ORs or RRs without associated confidence intervals. Some studies also missed information about the total sample size and/or the number of participants who did not have the disease. Also, a couple of studies used total scores of physical health which included different outcomes recorded in the meta-analysis (e.g., physical pain, chronic conditions, etc.), so we requested the information for each outcome separately, if possible. If contact information was available, we contacted the first, second, and last author simultaneously. Finally, we contacted those authors whose full-text article was not available but potentially should be included after reviewing the title and abstract, except of 6.7% for which we were unable to find the correct contact information or the author(s) had passed away. In total, we contacted the authors of $n = 120$ articles. Of those, 83.3% replied and were able to provide us with the necessary information, whereas 16.6% did not reply to our email or reminder.

Coding the data

The studies included in the meta-analysis are listed in the references, marked with an asterisk. 42.5% of the effect sizes were coded by two independent raters. In addition to coding study characteristics, we coded potential moderators (e.g., children, social support, cohabitation, healthy behaviors, etc.). Regarding the coding, interrater reliability was substantial, as Cohen's $\kappa = .72$ (Cohen, 1960). Disagreements mainly involved the data reported in the studies on moderating factors. In many cases, articles reported data in different ways than our initial coding scheme (e.g., numbers instead of percentages, or income and education level in ranges, being unclear what was considered high/medium/low). After reviewing the discrepancies, agreement was reached on how to include the data and what cut-off points to set in cases of doubt. The coding scheme

was aligned to those accommodations. In no case were there any discrepancies regarding the key outcomes.

Physical health

Physical health is understood as any disease, pathology, pain, condition, and/or impairment that the person can suffer. Both subjective (health and/or pain perception) and objective (diagnosis, Records, and/or Tests) measures were include. Physical health outcomes were divided in four categories: 1) *self-reported physical health*, which considers health as perceived by the participant him/herself or by a person close to him/her, on a Likert scale ranging from poor health to very good health; 2) *physical illnesses*, which included a) hypertension, b) diabetes, c) hypercholesterolemia, d) cancer, e) cancer progression, f) joint pathologies, g) cardiovascular diseases, h) cerebrovascular diseases, i) sexually transmitted diseases, and j) cognitive pathologies, such as dementia or Alzheimer's disease; 3) *physical symptomatology*, which included chronic conditions or illnesses, physical pain, somatic conditions into one sole category; and 4) *physical disability or limitation*, including any limitation in daily life activities due to physical functioning (e.g. difficulties in walking, dressing, showering, etc.), and also visual and/or hearing impairment.

Description of studies included in analysis

The present meta-analysis included $k = 94$ studies from which $u = 248$ effect sizes were extracted. The key study characteristics can be found in Appendix B. For assessing physical health outcomes 57% of the studies included self-reported and proxy-reported questionnaires regarding health status, chronic conditions, or pain outcomes, 30% obtained information from records or assessment by healthcare professionals, and 13% used tests, such as medical tests such as blood tests, blood pressure measurement, or glucose testing. A 69% of the studies included an adjusted model and 31% included

unadjusted models. Both cross-sectional (51%) and longitudinal (44%) studies were included, and also case-control studies (5%). In total, our analyses included 1384507 participants (44% men) with an average age of 55 years old. Of these participants, 68% were White, 61% had a minimum educational level (high school or higher), 62% were employed, and 75% had children. The studies were published between 1976 and 2023 and were conducted in the United States (49%), Europe (35%), Asia (10%), Africa (3.7%), Australia (2.2%), and South America (0.4%). 74% of the studies recruited participants from community samples and 26% from clinical context such as hospital or other health care centers.

Effect size information

OR was chosen as the effect size as it represents the odds that an outcome (e.g., disease or disorder) will occur given a particular exposure (e.g., divorce), compared to the odds of the outcome occurring in the absence of that exposure. The 95% Confidence Interval (CI) is used to estimate the precision of the OR. A large 95% CI indicates a low level of precision of the OR, whereas a small CI indicates a higher precision of the OR (Szumilas, 2010). For studies that provided estimates based on different multivariate models, we prioritized the unadjusted models or those with the least covariates, in order to optimize comparison. If a study reported analyses for separate groups due to characteristics of the participants (i.e., men and women, White and Black people, young and middle-aged participants, manual and non-manual workers), and contextual factors (i.e., rural and urban, West and East Germany) those were treated as different samples within that study. Finally, we only included data in which the divorce occurred before the physical health measure was administered. More detailed information on the effect size and its registration can be found in Appendix C.

Main analyses

The analyses for this meta-analysis were carried out using the software environment R (version 4.2.2.; R Core Team, 2022), and the Metafor R package (Viechtbauer, 2010). Most studies reported more than one physical health outcome in relation to divorce. Consequently, multiple effect sizes could be extracted from one primary study. First, the effect sizes were calculated for the different health categories separately and the Odds Ratio were converted to log Odds Ratio in order to apply the normal distribution for statistical testing and estimation of confidence intervals, and then converted back to the original measure to facilitate its interpretation. For each health outcome, a two-level random effects model was used (DerSimonian & Laird, 1986; Konstantopoulos, 2011). This method was selected because of the expected high degree of heterogeneity based on the differences in characteristics and cultural backgrounds regarding marriage and divorce across the included studies, and also the high variation between the measures used to assess physical health conditions. This method includes, apart from the variance within studies due to random sampling error, the variability between studies, which represents the deviation of each study from the mean effect size. For each outcome, heterogeneity was tested using the Cochran Q statistic, with a $p < 0.01$ indicating that there is heterogeneity (Cochran, 1954), and quantified with the I-squared (I^2) statistic, which describes the variation in the effect size attributable to the heterogeneity across studies. In this case, values of $< 25\%$, $25-75\%$, and $> 75\%$ indicate low, moderate, and high degrees of heterogeneity (Higgins & Thompson, 2002).

Second, an overall effect size was calculated, that pooled all the health condition, for which a three-level meta-analysis was conducted. Three-level meta-analytic models allow, in addition to random sampling variance (level 1) and the between-study variance (level 3), to measure variance between effect sizes from the same study or within-study variance (level 2) (Assink & Wibbelink, 2016). Previous methods such as randomly

selecting one effect size for each study, averaging multiple effect sizes, or simply ignoring the within-study dependency, could potentially bias the results (Cheung & Chan, 2008).

To determine whether the within-study variance (level 2) and between-study variance (level 3) were significant, two separate log-likelihood-ratio tests were performed. In the first, the fit of the original model, in which the variance at both level 2 and 3 are freely estimated, was compared to the fit of a model in which only the variance at level 3 was freely estimated whereas variance at level 2 was manually fixed to zero. By doing so, it was possible to determine whether accounting for within-study variance in the meta-analytic model was necessary. The same was done for the between-study variance, but in this case only the variance at level 2 was freely estimated whereas variance at level 3 was manually fixed to zero. In both cases, if the within-study and/or the between-study variance was smaller than zero (the null hypothesis was rejected), means that the fit of the three-level model is statistically better than the two-level model, and thus there is a significant variability within and/or between studies. In case the null hypothesis is accepted and therefore the two-level model is a better fit, we would choose to work with the two-level model, as it would not make sense to consider between- and within-study variability in such depth. If it is demonstrated that there is a need to consider this variability within and between studies, moderator analyses can determine which variables may explain this variance (Assink & Wibbelink, 2016).

Moderator analyses

Third, moderator analyses were conducted for overall health to test which factors can explain the heterogeneity of study findings. Specifically, moderators related to the sociodemographic characteristics of the participants: 1) average age, 2) gender (% of male), 3) socioeconomic factors (% of people with minimum educational level, average household income (per year) and % of people with low household income, % of employed

participants), 4) social outcomes (% of people with social support, % of people living with others, % of people with children), and 5) behavioral factors (% of smokers, % of people with high alcohol consumption, % of people who usually do physical exercise, % of underweighted and overweighted people). Also, methodology-related moderators: 1) sample size; 2) type of measures (objective measures, self-reported measures, ad hoc scales, and/or Records); 3) year of publication; and 4) the place where the study was conducted (USA, Canada, Australia, Saudi Arabia, Iran, and some European, South American, and Asian countries).

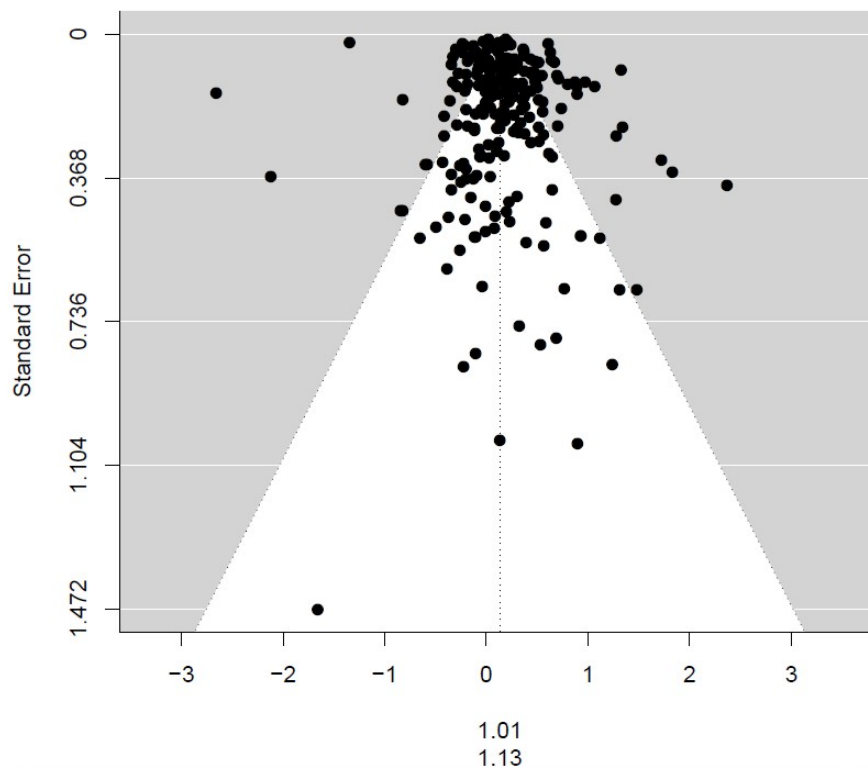
To this aim, all moderators were first tested separately (Van den Noortgate et al., 2015). Moderators were added to the overall model and an omnibus chi-square test showed if the regression coefficient was statistically different from zero. Next, a multiple moderator analysis was performed only including the moderators that were significant in the univariate models (Hox, 2010). In many cases, these variables are interrelated, which leads to a multicollinearity in the analysis. Therefore, it can be relevant to examine multiple moderators simultaneously after having tested the (potential) effects separately in a univariate model (Assink & Wibbelink, 2016; Vu et al., 2016; Van Eldik et al., 2020).

Analysis of bias

To avoid bias, the aim was to search for and retrieve as many primary studies as possible regarding divorce and physical health. However, because we may have missed studies, publication bias was assessed. First, a funnel plot (Figure 2) was constructed to study the distribution of studies according to effect size, which showed an absence of asymmetry, indicating no publication bias. Second, the Egger's test (Egger et al., 1997) was performed, showing a non-significant result ($t = 0.896$, $p = 0.371$), also pointing towards no bias (Higgins & Green, 2011).

Figure 2

Funnel plot publication bias



Note. OR = 1.13; log OR = 1.01.

Results

Effect sizes for specific pathologies

The estimated effect size for each physical health outcome separately can be found in Table 1. When compared to married people, divorcees were significantly more likely to show lower levels of self-reported health, experience more physical symptoms, and tend to have a higher risk for diabetes, joint pathologies, cardiovascular and cerebrovascular conditions, and sexually transmitted diseases. According to certain rules of thumb (Cohen, 1988, Chen et al., 2010), the ORs ranging from 1 to 3 are of small effect size. Yet, when considering the largest OR, divorced people are more than twice as likely to suffer from a sexually transmitted disease, which is quite a substantial risk in daily live. Moreover, divorcees and married people did not differ in the risk of

hypertension, cancer or cancer development, hypercholesterolemia, disabilities or physical limitations, or cognitive pathologies.

Table 1

Effect sizes for each pathology

Outcome	Number of studies	Number of effect sizes	Pooled odds ratio (95% CI)	p-value	Heterogeneity	
					I ²	p-value
Self-reported health	24	44	1.20 (1.08-1.33)	< .001	97.96%	< .001
Physical symptoms	23	36	1.34 (1.17-1.53)	< .001	96.09%	< .001
Hypertension	19	30	1.06 (0.90-1.25)	.467	94.54%	< .001
Diabetes	21	29	1.18 (1.05-1.33)	.006	80.49%	< .001
Hypercholesterolemia	4	6	0.83 (0.60-1.15)	.264	89.86%	< .001
Cancer	8	10	0.83 (0.44-1.56)	.569	99.37%	< .001
Cancer development	3	3	1.13 (0.89-1.45)	.314	94.33%	< .001
Joint pathologies	4	6	1.24 (1.14-1.34)	< .001	15.23%	.325
Cardiovascular conditions	16	23	1.24 (1.09-1.41)	< .001	81.64%	< .001
Cerebrovascular conditions	8	13	1.31 (1.14-1.51)	< .001	27.31%	.184
Disabilities	17	22	1.15 (0.93-1.43)	.201	98.58%	< .001
Cognitive pathologies	11	20	1.11 (0.99-1.26)	.081	83.07%	< .001
STDs	3	6	2.48 (1.32-4.64)	.005	50.84%	.595

Note. Disabilities = Physical disabilities and limitations; STDs = Sexually Transmitted

Diseases

Overall effect size

The estimated overall effect of divorce in physical health across all studies was OR = 1.14, 95%CI [0.85 to 1.54], p = .378. Hence, when taken all the outcomes together, divorced people did not have a higher risk on health problems than their married counterparts.

The forest plot (see Appendix D) reflects the distribution of effect sizes across studies. After carrying out the three-level meta-analysis, a large variability could be observed both between- ($\sigma^2_{\text{level}2} = .331$) and within-studies ($\sigma^2_{\text{level}3} = .134$), with p-values < .001. This means that effect sizes both looking at each study separately and when comparing the different studies have a great variation. We also examined how the total

variance is distributed over the three levels of the meta-analytic model. Around 71% of the total variance can be attributed to differences in effect sizes within the same study (level 2) and around 29% could be attributed to differences between studies (level 3). The rest of the variance ($< 1\%$) may be due to random sampling variability (level 1). Having established that a substantial amount of variability can be attributed to both within- and between-study differences in effect sizes, moderator analyses may be relevant to see if there are variables that are influencing these results.

Moderator analyses

Socioeconomic factors

As depicted in Table 2, among the sociodemographic factors, results showed that divorcees lacking a minimum level of education (high school or higher) or those who were unemployed had a higher risk for physical health problems after divorce. The same applied to childless people. In contrast, income, social support, and cohabitation did not show significant differences.

Behavioral factors

Regarding behavioral factors, alcohol consumption, lack of physical exercise, and being overweight were significantly associated with a higher risk of physical pathologies among divorced people compared to their married counterparts. Contrary, smoking and being underweight did not significantly moderate the association between divorce and physical health.

Sociodemographic characteristics of the participants

In terms of sociodemographic characteristics, gender was the only factor that significantly moderated health problems in divorcees. More specifically, divorcees had a higher risk for physical health problems if they were female. In contrast, age and race were no significant moderators.

Methodological factors

Finally, as far as methodological factors are concerned, neither the sample size, nor the study site, nor the type of measurement used were significant.

Table 2

Moderator analyses

Moderator	F-statistic	B	p-value
Socioeconomic factors			
Educational level	F(1,103) = 9.864	-.007	.002
Employment	F(1,50) = 20.060	-.015	< .001
Income	F(1,28) = 1.020	.008	.321
Social support	F(1,10) = 0.110	-.002	.747
Cohabitation	F(1,35) = 0.902	.004	.349
Children	F(1,33) = 8.025	-.011	.008
Behavioral factors			
Smoking	F(1,89) = 1.816	-.003	.181
Alcohol	F(1,57) = 47.319	.032	< .001
Excercise	F(1,44) = 28.525	-.032	< .001
Overweight	F(1,52) = 25.345	.009	< .001
Underweight	F(1,12) = 0.343	.006	.569
Sociodemographic characteristics			
Age	F(1,212) = 0.102	.001	.749
Gender	F(1,230) = 26.870	-.002	< .001
Race	F(1,94) = 0.007	-.000	.933
Methodological factors			
Sample size	F(1,246) = 3.772	-.000	.053
Place of study	F(1,246) = 3.273	.052	.072
Type of measure			
Ad hoc scale	F(1,246) = 0.832	-.104	.363
Medical records	F(1,246) = 0.605	-.071	.437
Self-reported/Proxy scale	F(1,246) = 0.020	.012	.888
Medical tests	F(1,246) = 0.023	.019	.881

Note. Reference Categories (=0) were: men, White people, minimum educational level, employed people, low income, people with social support, people who cohabit, having children, people who smoke, people with a high alcohol consumption, people who practice high amount of physical exercise, overweight people, underweight people.

Multivariate moderator analyses

In addition to univariate moderation test, we carried out multivariate analyses with those moderators shown to be significant. As the R package does not allow for multivariate analyses including more than four moderators, we grouped them depending on whether they belonged to socioeconomic or behavioral factors. Gender was considered in both groups, as it has been related to both types of variables. Therefore, two multivariate models were run. Because gender differences can be explained by multiple factors, it was included in both multivariate models. The first model additionally contained the significant socioeconomic factors: Education, employment, and presence of children. The second model included gender and the significant behavioral or lifestyle-related factors: Alcohol consumption, physical exercise, and overweight. The results of the multivariate analyses are presented in Table 3, and reveal that in both models none of the separate moderators were significant when entered jointly.

Table 3

Multiple moderator analyses

Moderator	F-statistic	B
Sociodemographic characteristics	$F(4,1) = 4.999$	
Gender		.006
Education		-.023
Children		.032
Employment		-.016
Behavioral factors	$F(3,8) = 1.077$	
Gender		-.004
Alcohol		.035
Exercise		.000
Overweight		-.068

Discussion

Divorce can be considered a major interpersonal stressor in people's lives, that may have consequences not only for their mental health (Ferraro & Lucier-Greer, 2022), but also their physical health (Leopold, 2018; Kiecolt-Glaser, 2018; Zineldin, 2019).

Although a large number of people seek out primary care services asking for physical health issues, of whom many are divorced (Bronsealer et al., 2008), the association between divorce and physical health seems to be understudied compared to mental health (Sander, Strizzi, et al., 2020). Some studies focusing on physical health outcomes have taken divorce into account as a stressor that may influence their onset and development, but thus far, no meta-analysis has considered the overall health risk of divorce, nor the divorce risk for specific health conditions. The current meta-analysis included both aspects, providing more knowledge on divorce-related health risks and potentially leading to an improvement of both the prevention and intervention programs.

Findings of multi-level meta-analyses showed an increased risk in divorcees for several specific pathologies (i.e. self-reported health, physical symptoms, diabetes, joint pathologies, cardiovascular and cerebrovascular diseases, and sexually transmitted diseases), but they did not significantly differ from married people in other outcomes such as hypertension, hypercholesterolemia, cancer and cancer development, disabilities or physical limitations, and cognitive pathologies, nor in their overall physical health. In addition, the moderator analyses revealed that being a female, low educational level, unemployment, having children, high alcohol consumption, lack of physical exercise, and overweight increased the risk for physical health problems in divorcees.

Divorce and specific physical health pathologies

In line with previous studies, in the current meta-analysis divorcees showed lower self-reported health (Sbarra, 2015), and more physical symptoms such as physical pain or chronic conditions (Sjögren et al., 2009). This can be explained by the finding that after divorce, people tend to experience a decrease in life satisfaction and an increase of stress, which may lead to a poorer perception of their own physical health (Sbarra et al., 2015)

and more symptoms such as headaches (Pozo-Rosich, 2012), gastrointestinal problems, or muscle aches and pains (Choi et al., 2017; Slatcher & Seluck, 2017).

Furthermore, the findings show that respondents also had an increased risk for cardiovascular and cerebrovascular conditions, such as myocardial infarction and stroke (Slatcher & Seluck, 2017). This is in line with findings on the consistent association between all conditions and pathologies related to the cardiovascular system and stress. Stress puts people into a state of alertness, which pushes the heart to work harder, thus increasing its vulnerability and the risk of related diseases (O'Connor et al., 2021). Moreover, these conditions have consistently been linked to poor lifestyle habits, which may also appear after divorce (Wong et al., 2019).

In addition, divorcees showed a higher risk of diabetes (Ramezankhani et al., 2019), and joint pathologies such as arthritis and arthrosis (Mili et al., 2002; Shih et al., 2006). It has been shown that stressful situations, such as divorce, can affect not only the cardiovascular, but also the immune system by causing inflammation in the body. Both diabetes and joint diseases are considered autoimmune conditions, that appear as a response of body inflammation (Nedunchezhiyan et al., 2022; Rohm et al., 2022). In line with our previous findings, diabetes has also been linked to a higher probability of suffering from cardiovascular diseases (Wong et al., 2019).

Finally, our findings marked sexually transmitted diseases as a particular post-divorce hazard, since divorced people were more than twice as likely to suffer from it compared to married individuals (Idso, 2009; Smith et al., 2020). This may be explained by their tendency to engage in more risky behavior, including sexual activities, but also by the deterioration of the immune system in case of chronic or acute stress (Scheidell et al., 2020).

In contrast, we found no significant differences between divorced and married people in hypertension, hypercholesterolemia, cancer and cancer development, disabilities, and cognitive pathologies. Although these conditions can be triggered by divorce-related stress somehow, other factors may be more important. Among the most studied are other environmental or contextual factors that may be detrimental to health (e.g. pesticides, certain biomarkers, or the living habits of family members or close people) (Cigan et al., 2023; Engman & Cranford, 2016; Febriani, 2018), genetics (Martínez-Jiménez et al., 2020; Vrablik et al., 2020), and a history of other physical and psychological pathologies (Dafsari & Jessen, 2020; Koderá et al., 2023), or ageing (Gonzales et al., 2022). Thus, these other factors may outweigh the potential effects of divorce-related stress.

Moreover, the risk for certain post-divorce pathologies likely varies among individuals. This is in line with the moderate to substantial heterogeneity we found in the effect sizes of all pathologies studied, except joint pathologies and cerebrovascular conditions. This heterogeneity might be due to the many factors affecting the potential impact of divorce on physical health. That is, the circumstances surrounding the divorce (Krumei et al., 2007; Sbarra & Whisman, 2022; Wilder, 2016), as well as certain socioeconomic, behavioural, and personal characteristics are important. Yet, there were too few studies available to conduct moderation analyses for all the different pathologies. We did however examine such influential factors for overall physical health problems.

Divorce and overall physical health problems

Compared to married individuals, divorced people did not significantly differ in overall health problems. This may be due to their increased risk of suffering from certain pathologies, but not others. In fact, approximately half of the recorded diseases were more likely to occur in divorced people, but not the other half. This emphasizes the need

to differentiate between different pathologies, but is also likely due to individual differences in the process of divorce. Three pathways can help explain why and how divorce can constitute a risk for physical health: Reduced financial and social resources, risky behavior and unhealthy lifestyle, and (interpersonal) stressors after divorce (Sbarra et al, 2011). Hence, taking potential risk factors into account that may explain heterogeneity is important.

Moderating factors

Socioeconomic factors

First, we found that lower educational level and unemployment put people at risk for more adverse health after divorce. A lack of education relates to less access to well-paid jobs, and thus greater financial difficulties (Malgaroli et al., 2017). Hence, elevated stress due to financial struggles might explain the increased health risks for lower educated and unemployed people after divorce.

Contrary to what we expected, people without children also had a higher risk of post-divorce physical health problems. Although co-parenting after divorce can pose various challenges and is considered stressful (Leopold, 2018; Sander et al., 2020; Zineldin, 2019), children may also be an incentive to recover better from the impact of divorce. Focusing on the care and wellbeing of their children, may in part force parents to put their own distress aside. Childless divorcees, however, may experience higher levels of loneliness (Penning et al., 2022), increasing their risk of certain health problems. Future research is needed to examine such differences more thoroughly.

Social support was not a significant moderator, but this may be explained by the lack of studies (7%) that considered this factor. A different explanation could be that we focused on the quantity of the support network, rather than the quality of relationships.

That is, the impact of the social network in the divorce process is not only dependent on the number of social ties, but also on its quality (Kolodziej & Prybyla, 2016).

Behavioral factors

Second, as expected, heavy alcohol consumption, a lack of physical exercise, and being overweight all increased divorcees risk for physical health problems. Research has shown that divorced people sometimes try to alleviate the distress of divorce by engaging in unhealthy habits such as alcohol consumption (Shor et al., 2012; Stack, 2021). Also, generally, having a partner encourages the engagement of more healthy lifestyle habits. Therefore, after a break-up, it is common for people to abandon these beneficial behaviors, such as physical exercise (Bourassa et al., 2019). At the same time, these behavioral patterns have been linked to higher rates of overweight (Sharma, 2014), and all of this can have a great impact on physical health, deteriorating it and increasing the risk of some diseases.

For tobacco use and being underweight the moderation results were not significant. Despite evidence that divorced people tend to smoke more and that this is directly related to health (Bourassa et al., 2019), the included studies measured whether people either smoked or not, but did not consider the amount of cigarettes (Pisinger et al., 2007), the length of time they have been smoking (Xue et al., 2011), or the type of tobacco they use (Blot et al., 2011; Sahu et al., 2023). These factors are important when physical health problems are of concern. With regard to weight, although some research has linked being underweight to health problems (Golubnitschaja et al., 2021), in the current meta-analyses the number of studies that included information on underweight was relatively small. More future studies that consider the relationship between underweight and the risk of physical health problems in divorced people are needed.

Sociodemographic characteristics of the participants

Finally, the risk of health problems after divorce was greater for women compared to men. This is in line with the idea that the existing social structures still promote gender patterns whereby men are better positioned economically and have better access to well-paid jobs, so that women may experience greater financial stress after divorce (Kreyenfeld & Trappe, 2020). Also, they generally assume higher load of responsibilities related to daily childcare and household compared to men (Shor et al., 2012), making it more difficult to find work-family balance (Van den Eynde et al., 2019).

Conversely, race and age did not have a moderating effect. Although some studies have reported differences in the impact of divorce depending on these factors, the results have been controversial. Regarding age, some studies have reported a higher incidence of physical illness in older adults due to the stress of losing a primary support figure, together with the age-related decline of health (Steptoe et al., 2013; Tillburg et al., 2015). However, others had reported a higher incidence in younger people, related to a worse financial situation (Bronseker et al., 2008). Thus, the lack of significance of this moderator is not surprising given the inconsistent finding in previous literature. In the case of race, studies have shown that divorce tends to affect the most to Hispanic people, due to the cultural idea of marriage and the family taking precedence over everything else, which makes divorce especially stressful (Cabrera et al., 2020). However, in the current meta-analysis the majority of participants were White. Thus, there may not be a moderating effect because the sample is quite homogeneous.

Strengths and limitations

To our knowledge, this is the first meta-analysis to analyze the impact of divorce not only on specific health outcomes, most of which have also not been considered in previous meta-analyses, but also on overall physical health. Despite the fact that divorce has been considered a major stressor in people's lives, and that stress has been

consistently linked to physical health outcomes, the literature on divorce and physical health is scarce, and even less in meta-analytic form. It is also worth noting that we used a three-level meta-analysis methodology (Assink & Wibbelink, 2016), different from that used in previous studies in this area. This type of analysis helps to overcome problems of data loss that may be related to traditional methodologies. In addition, it also allows to study the variability between- and within the studies, which in turn enables us to decide about the in-depth study of the potential sources of this variability. To do so, we carried out exhaustive moderator analyses, considering potential factors that had hardly been studied in previous meta-analyses, such as socioeconomic or behavioral factors.

However, this study is not without limitations. First, the vast majority of people with adjustment difficulties in the divorce process, and who suffer the most health consequences, come from conflictual divorces (Mason & Sbarra, 2013; Hald et al., 2019; Sander, Strizzi, et al., 2020). However, the type of communication and the existence of conflicts have hardly been considered in the studies included here, so its moderating role could not be assessed. This may be in part because these studies did not focus on divorce specifically, but rather have considered it as one risk factor among others for the incidence or development of certain pathologies. The same applies for the time elapsed after divorce, as the risk for certain pathologies due to divorce-related stress may vary across time (Malgaroli et al., 2017; Pudrovska & Carr, 2018).

Second, although the results indicate that divorced people tend to be at higher risk of certain pathologies, causality cannot be assumed. For instance, some research has also shown that people with poor physical health are more likely to divorce (Brüggmann, 2023; Sbarra & Whisman, 2022). We therefore encourage future research to longitudinally consider people's health before and after divorce, and also the role of moderating factors that may have an influence both pre- and post-divorce. Third, there is

a great overlap of psychological and physical symptoms in primary care (Fillingim et al., 2020). For example, people with anxiety and depression also tend to manifest physical symptoms (Suls & Howren, 2012). It may be therefore important for future research to consider also the incidence of psychological pathologies in people attending these services for physical complaints, and vice versa. Therefore, the potential moderators examined should be considered in combination with some other to more accurately detect groups of divorcees who may be at higher risk of certain physical health pathologies.

Finally, and in line with this need of examining differences between groups of divorced people, it should be noted that there is also a limitation regarding the homogeneity of the sample. In this case, the majority of participants were white western people, whose sociodemographic and socioeconomic conditions are likely to be similar. As it has been shown that social, cultural, and financial factors play a role in the differential impact of stress and divorce (Cuevas et al., 2020; Mattos dos Santos, 2020; Padilla & Borrero, 2005), it may be worthwhile for future research to include samples from different contexts.

Conclusion and study implications

The current meta-analysis offers important implications for future research and clinical practice. Overall, divorcees appear to be at heightened risk of various pathologies, with sexually transmitted diseases as a particular post-divorce hazard. This calls for more awareness among counsellors and physicians on divorcees' specific health conditions. It also suggests that divorce is a risk factor that needs more in-depth studies considering these specific pathologies, especially with more longitudinal designs and more diverse samples regarding sociodemographic and cultural characteristics.

Through assessing multiple influential factors, the current meta-analysis seems to verify that divorce is a complex and multifactorial phenomenon. Its potential impact

depends on various personal, socioeconomic, and behavioral factors. More specifically, the findings encourage researchers and health professionals to pay close attention to factors that make divorcees more vulnerable to health problems, such as being female, unemployed, or childless, and those with a lower educational level. Intervention and prevention efforts aimed at reducing heavy drinking and encouraging physical exercise in divorcees may prove worthwhile, and should be considered in future research as well as in clinical practice.

Acknowledgments

This work was supported by the Ministerio de Ciencia, Innovación y Universidades [grant RETOS PID2020-112580RB-I00]

References

- Aeby, G., & Van Hooff, J. (2019). Who gets custody of the friends? Online narratives of changes in friendship networks following relationship breakdown. *Families, Relationships, and Societies*, 8(3), 411-426. <https://doi.org/10.1332/204674318X15271464535444>
- *Aizer, A. A., Chen, M. H., McCarthy, E. P., Mendu, M. L., Koo, S., Wilhite, T. J., Graham, P. L., Choueiri, T. K., Hoffman, K. E., Martin, N. E., Hu, J. C., & Nguyen, P. L. (2013). Marital status and survival in patients with cancer. *Clinical Oncology*, 31, 3869-3876. <https://doi.org/10.1200%2FJCO.2013.49.6489>
- Akhtar, S., & Blue, S. (2017). Emotional impact of divorce: An overview. In S. Akhtar (Ed.), *Divorce: Emotional Impact and Therapeutic Interventions*, (pp. 1-30). Rowman & Littlefield.
- Amato, P. R. (2000). The consequences of divorce for adults and children. *Journal of Marriage and Family*, 62(4), 1269-1287. <https://doi.org/10.1111/j.1741-3737.2000.01269.x>

- Amato, P. R. (2010). Research on divorce: Continuing trends and new developments. *Journal of Marriage and Family*, 72(3), 650-666. <https://doi.org/10.1111/j.1741-3737.2010.00723.x>
- *Amieva, H., Stoykova, R., Matharan, F., Helmer, C., Antonucci, T. C., & Dartigues, J. F. (2010). What aspects of social network are protective for dementia? Not the quantity but the quality of social interactions is protective up to 15 years later. *Psychosomatic Medicine*, 72(9), 905-911. <https://doi.org/10.1097/PSY.0b013e3181f5e121>
- *Arber, S., Fenn, K., & Meadows, R. (2014). Subjective financial well-being, income, and health inequalities in mid and later life in Britain. *Social Science and Medicine*, 100, 12-20. <https://doi.org/10.1016/j.socscimed.2013.10.016>
- *Artazcoz, L., Cortès, I., Borrell, C., Escribà-Agüir, V., & Cascant, L. (2011). Social inequalities in the association between partner/marital status and health among workers in Spain. *Social Science and Medicine*, 72, 600-607. <https://doi.org/10.1016/j.socscimed.2010.11.035>
- Assink, M., & Wibbelink, C. J. M. (2016). Fitting three-level meta-analytic models in R: A step-by-step tutorial. *The Quantitative Methods for Psychology*, 12(3), 154-174. <http://dx.doi.org/10.20982/tqmp.12.3.p154>
- Assink, M., Spruit, A., Schuts, M., Lindauer, R., Van der Put, C. E., & Stams, G. J. J. M. (2018). The intergenerational transmission of child maltreatment; A three-level meta-analysis. *Child Abuse and Neglect*, 84, 131-145. <https://doi.org/10.1016/j.chiabu.2018.07.037>
- *Averett, S. L., Argys, L. M., & Sorkin, J. (2013). In sickness and in health: An examination of relationship status and health using data from the Canadian

- National Public Health Survey. *Review of Economics of the Household*, 11(4), 599-633. <https://doi.org/10.1007/s11150-012-9143-z>
- *Beard, C. M., Kokmen, E., Offord, K. P., & Kurland, L. T. (1992). Lack of association between Alzheimer's disease and education, occupation marital status, or living arrangement. *Neurology*, 42(11). <https://doi.org/10.1212/WNL.42.11.2063>
- *Bennet, K. M. (2006). Does marital status and marital status change predict physical health in older adults? *Psychological Medicine*, 36(9), 1313-1320. <https://doi.org/10.1017/S003329170600818X>
- *Ben-Shlomo, Y., Smith, G. D., Shipley, M., & Marmot, M. G. (1993). Magnitude and causes of mortality differences between married and unmarried men. *Journal of Epidemiology and Community Health*, 47, 200-205.
- Blot, W. J., Cohen, S. S., Aldrich, M., McLaughlin, J. K., Hargreaves, M. K., & Signorello, L. B. (2011). Lung cancer risk among smokers of menthol cigarettes. *Journal of the National Cancer Institute*, 103(10), 810-816. <https://doi.org/10.1093/jnci/djr102>
- *Bookwala, J., Mashall, K. I., Manning, S. W., Franks, M. M., Kazak, A. E. & Martire, L. M. (2014). Who needs a friend? Marital status transitions and physical health outcomes in later life. *Health Psychology*, 33(6), 505-515. <https://doi.org/10.1037/hea0000049>
- Bourassa, K. J., Ruiz, J. M., & Sbarra, D. A. (2019). Smoking and physical activity explain the increased mortality risk following marital separation and divorce: Evidence from the English Longitudinal Study of Ageing. *Annals of Behavioral Medicine*, 53(3), 255-266. <https://doi.org/10.1093/abm/kay038>
- *Brenowitz, W. D., Kukll, W. A., Beresford, S. A. A., Monsell, S. E., & Williams, E. C. (2014). Social relationships and risk of incident mild cognitive impairment in US

- Alzheimer's disease. *Alzheimer Disease and Associated Disorders*, 28(3), 253-260. <https://doi.org/10.1097%2FWAD.0000000000000020>
- Bronselaer, J. L. J., De Koker, B. S. M., & Van Peer, C. M. A. (2008). The impact of divorce on the health status of ex-partners. *Archives of Public Health*, 66, 168-186.
- Brüggmann, D. (2023). *Consequences of divorce in Germany*. [Doctoral Thesis]. Hertie School. Available from Library and Information Services. <https://opus4.kobv.de/opus4-hsog/frontdoor/index/index/docId/5061>
- Cabilar, B. O., & Yilmaz, A. E. (2022). Divorce and post-divorce adjustment: Definitions, model, and assessment of adjustment. *Current Approaches in Psychiatry*, 14(2), 1-11. <https://doi.org/10.18863/pgy.910766>
- Cabrera, N. J., Karberg, E., & Fagan, J. (2020). Family structure change among Latinos: Variation by ecologic risk. *Journal of Family Issues*, 40(15), 2123-2145. <https://doi.org/10.1177/0192513X19849636>
- *Caputo, J., & Simon, R. W. (2013). Physical limitation and emotional well-being: A gender and marital status variations. *Journal of Health and Social Behavior*, 54(2), 241-257. <https://doi.org/10.1177/0022146513484766>
- *Charara, R., El Bcheraoui, C., Kravitz, H., Dhingra, S. S., & Mokdad, A. H. (2016). Mental distress and functional health in the United States. *Preventive Medicine: An International Journal Devoted to Practice and Theory*, 89, 292-300. <https://doi.org/10.1016/j.ypmed.2016.06.011>
- Chen, H., Cohen, P., & Chen, S. (2010). How big is a big odds ratio? Interpreting the magnitudes of odds ratios in epidemiological studies. *Communications in Statistics – Simulation and Computation*, 39(4), 860-864. <https://doi.org/10.1080/03610911003650383>

- *Cheung, Y. B. (1998). Can marital selection explain the differences in health between married and divorced people? From a longitudinal study of a British birth cohort. *Public Health*, 112, 113-117. <https://doi.org/10.1038/sj.ph.1900428>
- Cheung, S. F., & Chan, D. K. S. (2008). Dependent correlations in meta-analysis: The case of heterogeneous dependence. *Educational and Psychological Measurement*, 68(5), 760-777. <https://doi.org/10.1177/0013164408315263>
- Cheung, M. W. L., & Vijayakumar, R. (2016). A guide to conducting a meta-analysis. *Neuropsychology Review*, 26, 121-128.
- Choi, Y. J., Kim, N., Yoon, H., Shin, C. M., Park, Y. S., Kim, J. W., Kim, Y. S., Lee, D. H., & Jung, H. C. (2017). Overlap between irritable bowel syndrome and functional dyspepsia including subtype analyses. *Journal of Gastroenterology and Hepatology*, 32(9), 1553-1561. <https://doi.org/10.1111/jgh.13756>
- *Cimas, M., Ayala, A., Sanz, B., Aguilo-Tomas, M. S., Escobar, A., & Forjaz, M. J. (2018). Chronic musculoskeletal pain in European older adults: Cross-national and gender differences. *European Journal of Pain*, 22(2), 333-345. <https://doi.org/10.1002/ejp.1123>
- *Clarke, P., Ailshire, J. A., Bader, M., Morenoff, J. D., & House Kim, Y. (2021). Gender differences in the link between marital status and the risk of cognitive impairment: Results from the Korean longitudinal study of aging. *The International Journal of Aging and Human Development*, 00(0), 1-21. <https://doi.org/10.1177/00914150211024181>
- Cochran, W. G. (1954). The combination of estimates from different experiments. *Biometrics*, 10(1), 101-129. <https://doi.org/10.2307/3001666>

- Cohen, J. (1960). A coefficient of agreement for nominal scales. *Educational and Psychological Measurement*, 20(1), 37-46.
<https://doi.org/10.1177/001316446002000104>
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, 2nd Ed. Routledge.
- *Cramer, D. (1993). Living alone, marital status, gender and health. *Journal of Community and Applied Social Psychology*, 3, 1-15.
<https://doi.org/10.1002/casp.2450030102>
- Cigan, S. S., Murphy, S. E., Stram, D. O., Hecht, S. S., Le Marchand, L., Stepanov, I., & Park, S. L. (2023). Association of urinary biomarkers of smoking-related toxicants with lung cancer incidence in smokers: The multi-ethnic cohort study. *Cancer Epidemiology, Biomarkers, & Prevention*, 32(3), 306-314.
<https://doi.org/10.1158/1055-9965.EPI-22-0569>
- Cuevas, A. G., Chen, R., Slopen, N., Thurber, K. A., Wilson, N., Economos, C., & Williams, D. R. (2020). Assessing the role of health behaviors, socioeconomic status, and cumulative stress for racial/ethnic disparities in obesity. *Obesity*, 28(1), 161-170. <https://doi.org/10.1002/oby.22648>
- Dafsari, F. S., & Jessen, F. (2020). Depression-an underrecognized target for prevention of dementia in Alzheimer's disease. *Translational Psychiatry*, 10(160).
<https://doi.org/10.1038/s41398-020-0839-1>
- *Daoulah, A., Al-Murayeh, M., Al-Kaabi, S., Lofti, A., Elkhateeb, O. E., Al-Faifi, S. M., Alqahtani, S., Stewart, J., Heavey, J., Hurley, W. T., Alama, M. N., Faden, M., Al-Shehri, M., Youssef, A., Alsheikh-Ali, A. A., & Von Haehling, S. (2017). Divorce and severity of coronary artery disease: A multicenter study. *Research and Practice*, 2017. <https://doi.org/10.1155/2017/4751249>

- Defence Health Hub (n.d.). *What is Mental Health?* Retrieved from <https://www.samhsa.gov/mental-health>
- *Denney, J. T., & Boardman, J. D. (2021). Hearing impairment, household composition, marital status, and mortality. *The Journals of Gerontology*, 76(1), 201-208. <https://doi.org/10.1093/geronb/gbz157>
- DerSimonian, R., & Laird, N. (1986). Meta-analysis in clinical trials. *Control Clinical Trials*, 7(3), 177-188. [https://doi.org/10.1016/0197-2456\(86\)90046-2](https://doi.org/10.1016/0197-2456(86)90046-2)
- *Ding, D., Gale, J., Bauman, A., Phongsavan, P., & Nguyen, B. (2021). Effects of divorce and widowhood on subsequent health behaviors and outcomes in a sample of middle-aged and older Australian adults. *Scientific Reports*, 11. <https://doi.org/10.1038/s41598-021-93210-y>
- *Donoho, C.J., Seeman, T. E., Sloan, R. P., & Crimmins, E. M. (2015). Marital status, marital quality, and heart rate variability in the MIDUS cohort. *Journal of Family Psychology*, 29(2), 290-295. <https://doi/10.1037/fam0000068>
- Egger, M., Smith, G. D., Schneider, M., & Minder, C. (1997). Meta-analysis: Potentials and promise. *British Medical Journal*, 315, 1371-1374. <http://dx.doi.org/10.1136/bmj.315.7119.1371>
- *El Ibrahim, S., & Pinheiro, P. S. (2017). The effect of marriage on stage at diagnosis and survival in women with cervical cancer. *Psycho-Oncology*, 26(5), 704-710. <https://doi.org/10.1002/pon.4070>
- *Ellis, W. L. (2008). Well-being of marital groups in later life: Are divorced elders disadvantaged? *Marriage and Family Review*, 44(1), 125-139. <https://doi.org/10.1080/01494920802185603>

- Engman, A., & Cranford, C. (2016). Habit and the body: Lessons for social theories of habit from the experiences of people with physical disabilities. *Sociological Theory*, 34(1). <https://doi.org/10.1177/0735275116632555>
- *Engström, G., Hedblad, B., Rosvall, M., Janzon, L., & Lindgärde, F. (2006). Occupation, marital status, and low-grade inflammation: Mutual confounding or independent cardiovascular risk factors? *Arteriosclerosis, Thrombosis, and Vascular Biology*, 26, 643-648. <https://doi.org/10.1161/01.ATV.0000200100.14612.bb>
- European Commission (2018, February 22). *People in the EU - statistics on household and family structures*. Eurostat. Statistics Explained. <https://ec.europa.eu/eurostat/statistics-explained/index.php?oldid=375234>
- Febriani, D. (2018). The effect of lifestyle on hypercholesterolemia. *The Open Public Health Journal*, 11, 526-532. <http://dx.doi.org/10.2174/1874944501811010526>
- *Feng, L., Ng, X. T., Yap, P., Li, J., Lee, T. S., Hakansson, K., Kua, E. H., & Ng, T. P. (2014). Marital status and cognitive impairment among community-dwelling Chinese older adults: The role of gender and social engagement. *Dementia and Geriatric Cognitive Disorders*, 4(3), 375-384. <https://doi.org/10.1159/000358584>
- Ferraro, A. J., & Lucier-Greer, M. (2022). The case for multidimensional co-parenting behaviours as sources of chronic stress: Understanding pathways to mental health symptomatology among divorced and separating adults. *Journal of Family Nursing*, 28(4), 353-367. <https://doi.org/10.1177/10748407221124235>
- Fillingim, R. B., Ohrbach, R., Greens, J. D., Sanders, A. E., Rathnayaka, N., Maixner, W., & Slade, G. D. (2020). Associations of psychologic factors with multiple chronic overlapping pain conditions. *Journal of Oral Facial Pain Headache*, 34(85-100). <https://doi.org/10.11607%2Fofph.2584>

- *Gilligan, I., Fung, L., Piper, D. W., & Tennant, C. (1987). Life event stress and chronic difficulties in duodenal ulcer: A case control study. *Journal of Psychosomatic Research*, 31(1), 117-123. [https://doi.org/10.1016/0022-3999\(87\)90106-1](https://doi.org/10.1016/0022-3999(87)90106-1)
- Golubnitschaja, O., Liskova, A., Koklesova, L., Samec, M., Biringer, K., Büsselberg, D., Podbielska, H., Kunin, A. A., Evseyeva, M. E., Shapira, N., Paul, F., Erb, C., Dietrich, D. E., Felbel, D., Karabatsiakos, A., Bubnov, R., Polivka, J., Polivka Jr., J., Birkenbihl, C., Fröhlich, H., Hofmann-Apitius, M., & Kubatka, P. (2021). Caution, "normal" BMI: Health risks associated with potentially masked individual underweight – EPMA Position Paper 2021. *EPMA Journal*, 12, 243-264. <https://doi.org/10.1007/s13167-021-00251-4>
- *Goldman, N., Korenman, S., & Weinstein, R. (1995). Marital status and health among the elderly. *Social Science and Medicine*, 40(12), 1717-1730. [https://doi.org/10.1016/0277-9536\(94\)00281-W](https://doi.org/10.1016/0277-9536(94)00281-W)
- Gonzales, M. M., Garbarino, V. R., Pollet, E., Palavicini, J. P., Kellogg, D. L., Kraig, E., & Orr, M. O. (2022). Biological aging processes underlying cognitive decline and neurodegenerative disease. *The Journal of Clinical Investigation*, 132(10). <https://doi.org/10.1172/JCI158453>
- *Grundy, E., & Glaser, K. (2000). Socio-demographic differences in the onset and progression of disability in early old age: A longitudinal study. *Age and Ageing*, 29, 149-157. <https://doi.org/10.1093/ageing/29.2.149>
- *Grundy, E., & Tomassini, C. (2010). Marital history, health and mortality among men and women in England and Wales. *BMC Public Health*, 10, 554. <https://doi.org/10.1186/1471-2458-10-554>
- *Hakanson, K., Rovio, S., Helkala, E. L., Vilska, A. R., Winblad, B., Soininen, H., Nissinen, A., Mohammed, A. H., & Kiyipelto, M. (2009). Association between

- mid-life marital status and cognitive function in later life: Population based cohort study. *BMJ: British Medical Journal*, 339(7712), 1-12.
<https://doi.org/10.1136/bmj.b2462>
- Hald, G. M., Strizzi, J., Ciprić, A., & Sander, S. (2019). The divorce conflict scale. *Journal of Divorce and Remarriage*, 61(2), 83-104.
<https://doi.org/10.1080/10502556.2019.1627150>
- *Hank, K. (2010). Childbearing history, later-life health, and mortality in Germany. *Population Studies*, 64(3), 275-291.
<https://doi.org/10.1080/00324728.2010.506243>
- *Hawley, D. J., Wolfe, F., Cathey, M. A., & Roberts, F. K. (1991). Marital status in rheumatoid arthritis and other rheumatic disorders: A study of 7293 patients. *The Journal of Rheumatology*, 18(5), 654-660.
- *Helmer, C., Damon, D., Letenneur, L., Fabrigoule, C., Barberger-Gateau, P., Lafont, S., Fuhrer, R., Antonucci, T., Commenges, D., Orgogozo, J. M., & Dartigues, J. F. (1999). Marital status and risk of Alzheimer's disease: A French population-based cohort study. *Neurology*, 53(9). <https://doi.org/10.1212/WNL.53.9.1953>
- Higgins, J. P. T., & Green, S. (2011). *Cochrane Handbook for Systematic Reviews of Interventions*. The Cochrane Collaboration.
- Higgins, J. P. T., & Thompson, S. G. (2002). Quantifying heterogeneity in a meta-analysis. *Statistics in Medicine*, 21, 1539-1558. <https://doi.org/10.1002/sim.1186>
- *Hofbauer, L. M., & Rodríguez, F. S. (2021). Validation of a social deprivation index and association with cognitive function and decline in older adults. *International Psychogeriatrics*, 33(12), 905-911. <https://doi.org/10.1017/S1041610221000995>

- Hogendoorn, B., Leopold, T., & Bol, T. (2020). Divorce and diverging poverty rates: A risk-and-vulnerability approach. *Journal of Marriage and Family*, 82(3), 1089-1109. <https://doi.org/10.1111/jomf.12629>
- Hox, J. J. (2010). *Multilevel analysis: Techniques and applications*. New York: Routledge.
- Idso, C. (2009). Sexually transmitted infection prevention in newly single older women: A forgotten health promotion need. *The Journal for Nurse Practitioners*, 5(6), 440-446. <https://doi.org/10.1016/j.nurpra.2009.02.015>
- *Joung, I. M., Stronks, K., Van de Mheen, H., & Mackenbach, J. P. (1995). Health behaviors explain part of the differences in self-reported health associated with partner/marital status in the Netherlands. *Journal of Epidemiology and Community Health*, 49, 482-488. <http://dx.doi.org/10.1136/jech.49.5.482>
- *Joung, I. M. A., Van de Mheen, H., Stronks, K., Van Poppel, F. W. A., & Mackenbach, J. P. (1994). Differences in self-reported morbidity by marital status and by living arrangement. *International Journal of Epidemiology*, 23(1), 91-97. <https://doi.org/10.1093/ije/23.1.91>
- *Joutsenniemi, K. E., Martelin, T. P., Koskinen, S. V., Martikainen, P. T., Härkänen, T. T., Luoto, R. M., & Aromaa, A. J. (2006). Official marital status, cohabiting, and self-rated health – time trends in Finland, 1978-2001. *European Journal of Public Health*, 16(5), 476-483. <https://doi.org/10.1093/eurpub/cki221>
- Kalmijn, M. (2017). The ambiguous link between marriage and health: A dynamic reanalysis of loss and gain effects. *Social Forces*, 95(4), 1607-1636. <https://doi.org/10.1093/sf/sox015>

- Kalmijn, M., & Poortman, A. R. (2006). His or her divorce? The gendered nature of divorce and its determinants. *European Sociological Review*, 22(2), 201-214.
<https://doi.org/10.1093/esr/jci052>
- *Kamaleri, Y., Natvig, B., Ihlebaek, C. M., Benth, J. S., & Bruusgaard, D. (2008). Number of pain sites is associated with demographic, lifestyle, and health-related factors in the general population. *European Journal of Pain*, 12(6), 742-748.
<https://doi.org/10.1016/j.ejpain.2007.11.005>
- *Kawada, Y., & Suzuki, S. (2011). Marital status and self-related health in rural inhabitants in Japan: A cross-sectional study. *Journal of Divorce and Remarriage*, 52(1), 48-54. <https://doi.org/10.1080/10502556.2011.534395>
- Kiecolt-Glaser, J. K. (2018). Marriage, divorce and the immune system. *American Psychologist*, 73(9), 1098-1108. <https://doi.org/10.1037/amp0000388>
- *Kiecolt-Glaser, J. K., Kennedy, S., Maikoff, S., Fisher, L., Speicher, C. E., & Glaser, R. (1988). Marital discord and immunity in males. *Psychosomatic Medicine*, 50(3), 213-229.
- *Kim, Y. (2021). Gender differences in the link between marital status and the risk of cognitive impairment: Results from the Korean longitudinal study of aging. *The International Journal of Aging and Human Development*, 00(0), 1-21.
<https://doi.org/10.1177/00914150211024181>
- *Knöpfli, B., Cullati, S., Courvoisier, D. S., Burton-Jeangros, C., & Perrig-Chiello, P. (2016). Marital breakup in later adulthood and self-rated health: A cross-sectional survey in Switzerland. *International Journal of Public Health*, 61, 357-366.
<https://doi.org/10.1007/s00038-015-0776-6>
- Kodera, R., Fujihara, K., Koyama, T., Shiozaki, H., Mutsuma, Y., Yagyuda, N., Hatta, M., Tsuruoka, K., Takeda, Y., Araki, A., & Sone, H. (2023). Impact of a history

- of cardiovascular disease and physical activity habits on the incidence of functional disability. *Scientific Reports*, 13. <https://doi.org/10.1038/s41598-023-47913-z>
- Koipysheva, E. A., Lebedinsky, V. Y., Koipysheva, M. A. (2018). Physical health (definition, semantic content, study prospects). *Social & Behavioural Sciences*, 50, 601-605. <http://doi.org/10.15405/epsbs.2018.12.73>
- Kojima, G., Walters, K., Iliffe, S., Taniguchi, Y., & Tamiya, N. (2020). Marital status and risk of physical frailty: A systematic review and meta-analysis. *Journal of the American Medical Directors Association*, 21(3), 322-330. <https://doi.org/10.1016/j.jamda.2019.09.017>
- Kolodziej, A., & Przybyla, H. (2016). Psychological well-being of individuals after divorce: The role of social support. *Current Issues in Personality Psychology*, 4(4). <https://doi.org/10.5114/cipp.2016.62940>
- Konstantopoulos, S. (2011). Fixed effects and variance components estimation in three-level meta-analysis. *Research Synthesis Methods*, 2(1), 61-76. <https://doi.org/10.1002/jrsm.35>
- Krumei, E., Coit, C., Martin, S., Fogo, W., & Mahoney, A. (2007). Post-divorce adjustment and social relationships: A meta-analytic review. *Journal of Divorce and Remarriage*, 46(3-4), 145-166. https://doi.org/10.1300/J087v46n03_09
- Kreyenfeld, M., & Trappe, H. (2020). Introduction: Parental life courses after separation and divorce in Europe. In M. Kreyenfeld, & H. Trappe (Eds.), *Parental Life Courses After Separation and Divorce in Europe*, (pp. 43-64), Springer.
- *Kposowa, A. J., Ezzat, D. A., & Breault, K. (2021). Diabetes mellitus and marital status: Evidence from the national longitudinal mortality on the effect of marital

- dissolution and the death of a spouse. *International Journal of General Medicine*, 14, 1881-1888.
- Lampraki, C., Jopp, D. S., Spini, D., & Morselli, D. (2019). Social loneliness after divorce: Time-dependent differential benefits of personality, multiple important group memberships, and self-continuity. *Gerontology*, 65(3), 275-287. <https://doi.org/10.1159/000494112>
- Leopold, T. (2018). Gender differences in the consequences of divorce: A study of multiple outcomes. *Demography*, 55(3), 769-797. <https://doi.org/10.1007/s13524-018-0667-6>
- *Lillard, L., & Panis, C. (1996). Marital status and mortality: The role of health. *Demography*, 33(3), 313-327. <https://doi.org/10.2307/2061764>
- Lin, I. F., & Brown, S. L. (2020). Consequences of later-life divorce and widowhood for adult well-being: A call for the convalescence model. *Journal of Family Theory and Review*, 12(2), 264-277. <https://doi.org/10.1111/jftr.12366>
- *Lindström, M. (2009). Marital status, social capital, material conditions, and self-rated health: A population-based study. *Health Policy*, 93, 172-179. <https://doi.org/10.1016/j.healthpol.2009.05.010>
- *Liu, H. (2012). Marital dissolution and self-rated health: Age trajectories and birth cohort variations. *Social Science and Medicine*, 74(4), 1107-1116. <https://doi.org/10.1016/j.socscimed.2011.11.037>
- *Liu, H., & Zhang, Z. (2013). Disability trends by marital status among older Americans, 1997-2010: An examination by gender and race. *Population Research and Policy Review*, 32, 103-127. <https://doi.org/10.1007/s11113-012-9259-0>
- *Liu, H., Zhang, Y., Burgard, S. A., & Needham, B.L. (2019). Marital status and cognitive impairment in the United States: Evidence from the National Health and

- Aging Trends Study. *Annals of Epidemiology*, 38, 28-34.
<https://doi.org/10.1016/j.annepidem.2019.08.007>
- *Liu, H., Zhang, Z., Choi, S. W., & Langa, K. M. (2020). Marital status and dementia: Evidence from the health and retirement study. *The Journals of Gerontology*, 75(8), 1783-1795. <https://doi.org/10.1093/geronb/gbz087>
- Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. (2006). The short-term and decade-long effects of divorce on women's midlife health. *Journal of Health and Social Behavior*, 47(2), 111-125.
<https://doi.org/10.1177/002214650604700202>
- Malgaroli, M., Galatzer-Levy, I. R., & Bonanno, G. A. (2017). Heterogeneity in trajectories of depression in response to divorce is associated with differential risk for mortality. *Clinical Psychological Science*, 5, 843-850.
<https://doi.org/10.1177/2167702617705951>
- Martínez-Jiménez, F., Muiños, F., Sentís, I., Deu-Pons, J., Reyes-Salazar, I., Arnedo-Pac, C., Mularoni, L., Pich, O., Bonet, J., Kranas, H., González-Pérez, A., & López-Bigas, N. (2020). A compendium of mutational cancer driver genes. *Nature Reviews Cancer*, 20, 555-572. <https://doi.org/10.1038/s41568-020-0290-x>
- *Maselko, J., Bates, L. M., Avendaño, M., & Glymour, M. M. (2009). The intersection of sex, marital status, and cardiovascular risk factors in shaping stroke incidence: Results from the Health and Retirement Study. *Journal of American Geriatric Society*, 57(12), 2293-2299. <https://doi.org/10.1111/j.1532-5415.2009.02555.x>
- Mason, A. E., & Sbarra, D. A. (2013). Romantic separation, loss, and health: A review of moderators. In M. L. Newman, & N. A. Roberts, (Eds.), *Health and social relationships: The good, the bad, and the complicated* (pp. 95-119). American Psychological Association.

- *Mastekaasa, A. (1997). Marital dissolution as a stressor: Some evidence on psychological, physical, and behavioural changes in the pre-separation period. *Journal of Divorce and Remarriage*, 26(3-4), 155-183.
- *Matthews, K. A., & Gump, B. B. (2002). Chronic work stress and marital dissolution increase risk of posttrial mortality in men from the multiple risk factor intervention trial. *Archives of Internal Medicine*, 162(3), 309-315. <https://doi.org/10.1001/archinte.162.3.309>
- Mattos dos Santos, R. (2020). Isolation, social stress, low socioeconomic status, and its relationship to immune response in Covid-19 pandemic context. *Brain, Behavior, & Immunity – Health*, 7. <https://doi.org/10.1016/j.bbih.2020.100103>
- *Meadows, R., & Arber, S. (2015). Marital status, relationship distress, and self-related health: What role for “Sleep problems”? *Journal of Health and Social Behaviour*, 56(3), 341-355. <https://doi.org/10.1177/0022146515593948>
- *Melotti, R. M., Samolsky-Dekel, B., Gedaliahi, R., Ennio, C., Chiari, P., Di Giacinto, I., Carosi, F., & Di Nino, G. (2005). Pain prevalence and predictors among inpatients in a major Italian teaching hospital: A baseline survey towards a pain free hospital. *European Journal of Pain*, 9(5), 485-495. <https://doi.org/10.1016/j.ejpain.2004.09.010>
- *Mermin, J., Musinguzi, J., Opio, A., Kirungi, W., Ekwaru, J. P., Hladjk, W., Kaharuza, F., Powning, R., & Bunnell, R. (2008). Risk factors for recent HIV infection in Uganda. *JAMA: Journal of the American Medical Association*, 300(5), 540-549. <https://doi.org/10.1001/jama.300.5.540>
- *Metayer, C., Coughlin, S. S., & McCarthy, E. P. (1996). Marital status as a predictor of survival in idiopathic dilated cardiomyopathy: The Washington, DC dilated

- cardiomyopathy stud. *European Journal of Epidemiology*, 12(12), 573-582.
<https://doi.org/10.1007/BF00499455>
- Mili, F., Helmick, C. G., & Zack, M. M. (2002). Prevalence of arthritis: Analysis of data from the US behavioral risk factor surveillance system, 1996-99. *The Journal of Rheumatology*, 29(9), 1981-1988.
- *Molloy, G. J., Stamatakis, E., Randall, G., & Hamer, M. (2009). Marital status, gender and cardiovascular mortality: Behavioral, psychological, distress, and metabolic explanations. *Social Science and Medicine*, 69, 223-228.
<https://doi.org/10.1016/j.socscimed.2009.05.010>
- *Morales, L., Álvarez-Garriga, C., Matta, J., Ortiz, C., Vergne, Y., Vargas, W., Acosta, H., Ramírez, J., Pérez-Mayoral, J., & Bayona, J. (2013). Factors associated with breast cancer in Puerto Rican women. *Journal of Epidemiology and Global Health*, 3(4), 205-215. <https://doi.org/10.1016/j.jegh.2013.08.003>
- Mortelmans, D. (2020). Economic consequences of divorce: A review. In M. Kreyenfeld, & H. Trappe (Eds.), *Parental Life Courses After Separation and Divorce in Europe*, (pp. 23-41). Springer.
- Mudrazija, S., Angel, J. L., Cipin, I., & Smolic, S. (2020). Living alone in the United States and Europe: The impact of public support on the independence of older adults. *Research on Aging*, 42(5-6), 150-162.
<https://doi.org/10.1177/0164027520907332>
- *Nagi, S. Z. (1976). An epidemiology of disability among adults in the United States. *The Milbank Memorial Fund Quarterly*, 54(4), 439-467.
<https://doi.org/10.2307/3349677>

- Nedunchezhiyan, U., Varughese, I., Sun, A. R., Wu, X., Crawford, R., & Prasad, I. (2022). Obesity, inflammation, and immune system in osteoarthritis. *Frontiers in Immunology*, 13. <https://doi.org/10.3389/fimmu.2022.907750>
- *Newton, N. J., Ryan, L. H., King, R. T., & Smith, J. (2014). Cohort differences in the marriage-health relationship for mid-life. *Social Science and Medicine*, 116, 64-72. <https://doi.org/10.1016/j.socscimed.2014.06.040>
- *Notara, V., Panagiotakos, D. B., Papataxiarchis, E., Verdi, M., Michalopoulou, M., Tsompanaki, E., Kogias, Y., Stravopodis, P., Papanagnou, G., Zombolos, S., Stergiouli, I., Mantas, Y., & Pitsavos, C. (2015). Depression and marital status determine the 10-year (2004-2014) prognosis in patients with acute coronary syndrome: The GREECS study. *Psychology and Health*, 30(9), 1116-1127. <https://doi.org/10.1080/08870446.2015.1034720>
- O'Connor, D. B., Thayer, J. F., & Vedhara, K. (2021). Stress and health: A review of psychobiological processes. *Annual Review of Psychology*, 72, 663-688. <https://doi.org/10.1146/annurev-psych-062520-122331>
- *Olaleye, A., & Ogwumike, F. O. (2013). Pattern and determinants of morbidity among people living with HIV/AIDS in North Central Nigeria. *Journal of Health Care for the Poor and Underserved*, 24(1), 247-261. <https://doi.org/10.1353/hpu.2013.0001>
- Padilla, A. M., & Borrero, N. (2005). Effects of acculturative stress on the Hispanic family. In P. T. P. Wong, & L. C. J. Wong, (Eds.), *Handbook of Multicultural Perspectives on Stress and Coping. International and Cultural Psychology*, (pp. 299-317). Springer. https://doi.org/10.1007/0-387-26238-5_13
- *Papadogeorgakis, H., Caroni, C., Katsambas, A., Pimenta, J. M., Avdeliodi, C., Kotrotsou, T., Frangoulis, E., & Smith, J. S. (2008). Herpes simplex virus

- seroprevalence among children, adolescents, and adults in Greece. *International Journal of STD & AIDS*, 19(4), 272-278.
<https://doi.org/10.1258/ijsa.2007.007142>
- *Parise, C., & Caggiano, V. (2018). The influence of marital status and race/ethnicity on risk of mortality for triple negative breast cancer. *PLoS One*, 13(4).
<https://doi.org/10.1371/journal.pone.0196134>
- Parker, G., Durante, K. M., Hill, S. E., & Haselton, M. G. (2021). Why women choose divorce: An evolutionary perspective. *Current Opinions in Psychology*, 43, 300-306. <https://doi.org/10.1016/j.copsyc.2021.07.020>
- Penning, M. J., Wu, Z., & Hou, F. (2022). Childlessness and social and emotional loneliness in middle and later life. *Ageing and Society*, 1-28.
<https://doi.org/10.1017/S0144686X22000824>
- *Pienaar, M., Van Rooyen, D. C., & Walsh, C. M. (2017). Household food security and HIV in rural and urban communities in the free state province, South Africa. *SAHARA-J: Journal of Social Aspects of HIV/AIDS*, 14(1), 118-131.
<https://doi.org/10.1080/03670244.2014.964230>
- *Pienta, A. M., Hayward, M. D., & Jenkins, K. R. (2000). Health consequences of marriage for the retirement years. *Journal of Family Issues*, 21(5), 559-586.
<https://doi.org/10.1177/019251300021005003>
- Pisinger, C., & Godtfredsen, N. S. (2007). Is there a health benefit of reduced tobacco consumption? A systematic review. *Nicotine and Tobacco Research*, 9(6), 631-646. <https://doi.org/10.1080/14622200701365327>
- Pozo-Rosich, P. (2012). Chronic migraine: Its epidemiology and impact. *Revista de Neurología*, 54(2), 3-11.

- Pudrovská, T., & Carr, D. (2008). Psychological adjustment to divorce and widowhood in mid-and later life: Do coping strategies and personality protect against psychological distress? *Advances in Life Course Research*, 13, 283-317. [https://doi.org/10.1016/S1040-2608\(08\)00011-7](https://doi.org/10.1016/S1040-2608(08)00011-7)
- R Core Team (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. URL <https://www.R-project.org/>.
- Raley, R. K., & Sweeney, M. M. (2020). Divorce, repartnering, and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82(1), 81-99. <https://doi.org/10.1111/jomf.12651>
- *Ramezankhani, A., Azizi, F., & Hadaegh, F. (2019). Associations of marital status with diabetes, hypertension, cardiovascular disease and all-cause mortality: A long term follow-up study. *PLoS One*, 14(4). <https://doi.org/10.1371/journal.pone.0215593>
- *Randi, G., Altieri, A., Gallus, S., Chatenoud, L., Montella, M., Franceschi, S., Negri, E., Talamini, R., & La Vecchia, C. (2004). Marital status and cancer risks in Italy. *Preventive Medicine: An International Journal Devoted to Practice and Theory*, 38(5), 523-528. <https://doi.org/10.1016/j.ypmed.2003.12.004>
- Robles, T. F. (2014). Marital quality and health: Implications for marriage in the 21st century. *Current Directions in Psychological Science*, 23(6), 427-432. <https://doi.org/10.1177/0963721414549043>
- Rohm, T. V., Meier, D. T., Olefsky, J. M., & Donath, M. Y. (2022). Inflammation in obesity, diabetes, and related disorders. *Immunity*, 55(1), 31-55. <https://doi.org/10.1016/j.immuni.2021.12.013>

- *Rote, S. (2017). Marital disruption and allostatic load in late life. *Journal of Aging and Health*, 29(4), 688-707. <https://doi.org/10.1177/0898264316641084>
- Sahu, R., Shah, K., Malviya, R., Paliwal, D., Sagar, S., Singh, S., Prajapati, B. G., & Bhattacharya, S. (2023). E-cigarettes and associated health risks: An update on cancer potential. *Advances in Respiratory Medicine*, 91(6), 516-531. <https://doi.org/10.3390/arm91060038>
- Salvatore, J. E., Gardner, C. O., & Kendler, K. S. (2020). Marriage and reductions in men's alcohol, tobacco, and cannabis use. *Psychological Medicine*, 50, 2634-2640. <https://doi.org/10.1017/S0033291719002964>
- Sander, S., Hald, G. M., Ciprić, A., Øverup, C. S., Strizzi, J. M., Kjeld, S. G., & Lange, T. (2020). A randomized controlled trial study of the effects of a digital divorce platform on mental and physical health. *Applied Psychology: Health and Well-being*, 12(3), 863-776. <https://doi.org/10.1111/aphw.12213>
- Sander, S., Strizzi, J. M., Øverup, C. S., Ciprić, A., & Hald, G. M. (2020). When love hurts – Mental and physical health among recently divorced Danes. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.578083>
- Sarmadi, Y., & Khodabakhshi-Kooláee, A. (2023). Psychological and social consequences of divorce emphasis on children's well-being: A systematic review. *Journal of Preventive Counselling*, 4(2), 1-34. <https://doi.org/10.22098/jpc.2023.12578.1162>
- Sbarra, D. A. (2015). Divorce and health: Current trends and future directions. *Psychosomatic Medicine*, 77(3), 227-236. <https://doi.org/10.1097%2FPSY.0000000000000168>

- Sbarra, D. A., Hasselmo, K., & Bourassa, K. J. (2015). Divorce and health: Beyond individual differences. *Current Directions in Psychological Science*, 24(2), 109-113. <https://doi.org/10.1177/0963721414559125>
- Sbarra, D. A., Law, R. W., & Portley, R. M. (2011). Divorce and death: A meta-analysis and research agenda for clinical, social, and health psychology. *Perspectives on Psychological Science*, 6(5), 454-474. <https://doi.org/10.1177/1745691611414724>
- Sbarra, D. A., & Whisman, M. A. (2022). Divorce, health, and socioeconomic status: An agenda for psychological science. *Current Opinion in Psychology*, 75-78. <https://doi.org/10.1016/j.copsyc.2021.06.007>
- Scheidell, J. D., Thorpe, L. E., Adimora, A. A., Caniglia, E. C., Lejuez, C. W., Troxel, A. B., & Kahn, M. R. (2020). Perceived stress, sexually transmitted infection, and pelvic inflammatory disease: Examination of differences in associations among black and white women. *Sexually Transmitted Diseases*, 47(9), 617-624. <https://doi.org/10.1097%2FOLQ.0000000000001232>
- Scheppingen, M. A., & Leopold, T. (2020). Trajectories of life satisfaction before, upon, and after divorce: Evidence from a new matching approach. *Journal of Personality and Social Psychology: Personality Processes and Individual Differences*, 119(6), 1444-1458. <https://doi.org/10.1037/pspp0000270>
- *Schneider, M. G. (2004). The intersection of mental and physical health in older Mexican Americans. *Hispanic Journal of Behavioral Sciences*, 26(3), 333-335. <https://doi.org/10.1177/0739986304267204>
- Schoonjans, F. (2023). *MedCalc's Odds Ratio Calculator*. MedCalc. Available from: https://www.medcalc.org/calc/odds_ratio.php

- *Schultz, W. M., Hayek, S. S., Tahhan, A. S., Ko, Y. A., Sandesara, P., Awad, M., Mohammed, K. H., Patel, K., Yuan, M., Zheng, S., Topel, M. L., Hartsfield, J., Bhimani, R., Varghese, T., Kim, J. H., Shaw, L., Wilson, P., Vaccarino, V., & Quyyumi, A. A. (2017). Marital status and outcomes in patients with cardiovascular disease. *Journal of the American Heart Association*, 6, 1-9. <https://doi.org/10.1161/JAHA.117.005890>
- *Seidler, A., Bernhardt, T., Nienhaus, A., & Frölich, L. (2002). Association between the psychosocial network and dementia – a case-control study. *Journal of Psychiatric Research*, 37, 89-98. [https://doi.org/10.1016/S0022-3956\(02\)00065-1](https://doi.org/10.1016/S0022-3956(02)00065-1)
- *Seymour, C. W., Iwashyna, T. J., Cooke, C. R., Hough, C. L., & Martin, G. S. (2010). Marital status and the epidemiology and outcomes of sepsis. *Chest*, 137(6), 1289-1296. <https://doi.org/10.1378/chest.09-2661>
- Sharma, A. (2014). Divorce/Separation in later-life: A fixed effects analysis of economic well-being by gender. *Journal of Family and Economic Issues*, 36, 299-306. <https://doi.org/10.1007/s10834-014-9432-1>
- Shih, M., Hootman, J. M., Strine, T. W., Chapman, D. P., & Brady, T. J. (2006). Serious psychological distress in U.S. adults with arthritis. *Journal of General Internal Medicine*, 21(11), 1160-1166. <https://doi.org/10.1111/j.1525-1497.2006.00573.x>
- Shor, E., Roelfs, D. J., Bugyi, P., & Schwartz, J. E. (2012). Meta-analysis of marital dissolution and mortality: Reevaluating the intersection of gender and age. *Social Science and Medicine*, 75, 46-59. <https://doi.org/10.1016/j.socscimed.2012.03.010>
- Sjögren, P., Ekholm, O., Peuckmann, V., & Grønbaek, M. (2009). Epidemiology of chronic pain in Denmark: An update. *European Journal of Pain*, 13(3), 287-292. <https://doi.org/10.1016/j.ejpain.2008.04.007>

- Slatcher, R. B., & Seluck, E. (2017). A social psychological perspective on the links between close relationships and health. *Current Directions in Psychological Science*, 26(1), 16-21. <https://doi.org/10.1177/0963721416667444>
- Smith, M. L., Bergeron, C. D., Goltz, H. H., Coffey, T., & Boolani, A. (2020). Sexually transmitted infection knowledge among older adults: Psychometrics and test-retest reliability. *International Journal of Environmental Research and Public Health*, 17(7). <https://doi.org/10.3390/ijerph17072462>
- *Smith, W. C. S., Bourne, D., Squair, J., Phillips, D. O., & Chambers, W. A. (1999). A retrospective cohort study of post mastectomy pain syndrome. *Pain*, 83, 91-95. [https://doi.org/10.1016/S0304-3959\(99\)00076-7](https://doi.org/10.1016/S0304-3959(99)00076-7)
- Smock, P. J., & Schwartz, C. R. (2020). The demography of families: A review of patterns and change. *Journal of Marriage and Family*, 82(1), 9-34. <https://doi.org/10.1111/jomf.12612>
- Stack, S. (2021). Contributing factors to suicide: Political, social, cultural, and economic. *Preventive Medicine*, 152(1). <https://doi.org/10.1016/j.ypmed.2021.106498>
- *Stack, S., & Eshelman, J. R. (1998). Marital status and happiness: A 17-nation study. *Journal of Marriage and Family*, 60(2), 527-536. <https://doi.org/10.2307/353867>
- *St John, P. D., Tyas, S. L., Menec, V., & Tate, R. (2014). Multimorbidity, disability, and mortality in community-dwelling older adults. *Canadian Family Physician*, 60, 272-280.
- Step toe, A., Shankar, A., Demakakos, P., & Wardle, J. (2013). Social isolation, loneliness, and all-cause mortality in older men and women. *Proceedings of the National Academy of Sciences*, 110(15), 5797-5801. <https://doi.org/10.1073/pnas.1219686110>

- *Stickley, A., Koyanagi, A., Leinsalu, M., Ferlander, S., Sabawoon, W., & McKee, M. (2015). Loneliness and health in Eastern Europe: Findings from Moscow, Russia. *Public Health*, 129(4), 403-410. <https://doi.org/10.1016/j.puhe.2014.12.021>
- *Stimpson, J., & Wilson, F. A. (2009). Cholesterol screening by marital status and sex in the United States. *Preventing Chronic Diseases*, 6(2), 55.
- Strizzi, J. M., Ciprić, A., Sander, S., & Hald, G. M. (2021). Divorce is stressful, but how stressful? Perceived stress among recently divorced Danes. *Journal of Divorce & Remarriage*, 62(4), 295-311. <https://doi.org/10.1080/10502556.2021.1871838>
- Strizzi, J. M., Koert, E., Øverup, C. S., Ciprić, A., Sander, S., Lange, T., Schmidt, L., & Hald, G. M. (2022). Examining gender effects in postdivorce adjustment trajectories over the first year after divorce in Denmark. *Journal of Family Psychology*, 36(2), 268-279. <https://doi/10.1037/fam0000901>
- *Sundström, A., Westerlund, O., Mousavi-Nasab, H., Adolfsson, R., & Nilsson, L. G. (2014). The relationship between marital and parental status and the risk of dementia. *International Psychogeriatrics*, 26(5), 749-757. <https://doi.org/10.1017/S1041610213002652>
- Suls, J., & Howren, M. B. (2012). Understanding the physical-symptom experience: The distinctive contributions of anxiety and depression. *Current Directions in Psychological Science*, 21(2), 129-134. <https://doi.org/10.1177/0963721412439298>
- Szumilas, M. (2010). Explaining Odds Ratios. *Journal of the Canadian Academy of Child and Adolescent Psychiatry*, 19(3), 227-229.
- Teachman, J. (2016). Body weight, marital status, and changes in marital status. *Journal of Family Issues*, 37(1), 74-96. <https://doi.org/10.1177/0192513X13508404>

- Tillburg, T. G., Aartsen, M. J., & Van der Pas, S. (2015). Loneliness after divorce: A cohort comparison among Dutch young-old adults. *European Sociological Review*, 31(3), 243-252. <https://doi.org/10.1093/esr/jcu086>
- Tosi, M., & Van den Broek, T. (2020). Gray divorce and mental health in the United Kingdom. *Social Science & Medicine*, 256. <https://doi.org/10.1016/j.socscimed.2020.113030>
- *Trudel-Fitzgerald, C., Poole, E. M., Sood, A. K., Okereke, O. I., Kawachi, I., Kubzansky, L. D., & Tworoger, S. S. (2019). Social integration, marital status, and ovarian cancer risk: A 20-year prospective cohort study. *Psychosomatic Medicine*, 81(9), 833-840. <https://doi.org/10.1097%2FPSY.0000000000000747>
- *Tsakos, G., Sahbah, W., Chandola, T., Newton, T., Kawachi, I., Aida, J., Sheiham, A., Marmot, M. G., & Watt, R. G. (2013). Social relationships and oral health among adults aged 60 years or older. *Psychosomatic Medicine*, 75(2), 178-186. <https://doi.org/10.1097/PSY.0b013e31827d221b>
- Van den Eynde, A., Vercruyssen, A., & Mortelmans, D. (2019). The experience of work-family conflict among divorced parents in Flanders. *Journal of Divorce and Remarriage*, 60(6), 447-478. <https://doi.org/10.1080/10502556.2019.1586227>
- Van den Noortgate, W., López-López, J. A., Marín-Martínez, F., & Sánchez-Meca, J. (2015). Meta-analysis of multiple outcomes; A multilevel approach. *Behavior Research Methods*, 47, 1274-1294. <http://dx.doi.org/10.3758/s13428-014-0527-2>
- Van Eldik, W. M., De Haan, A. D., Parry, L. Q., Davies, P. T., Luijk, M. P., Arends, L. R., & Prinzie, P. (2020). The interparental relationship: Meta-analytic associations with children's maladjustment and responses to interparental conflict. *Psychological Bulletin*, 146(7), 553-594. <https://doi/10.1037/bul0000233>

- Van Gasse, D., & Mortelmans, D. (2020). Social support in the process of household reorganization after divorce. *Journal of Social and Personal Relationships*, 37(6), 1927-1944. <https://doi.org/10.1177/0265407520910268>
- *Venters, M., Jacobs, D. R., Pirie, P., Luepker, R. V., Folsom, A. R., & Gillum, R. F. (1986). Marital status and cardiovascular risk: The Minnesota heart survey and the Minnesota heart health program. *Preventive Medicine*, 15(6), 591-605. [https://doi.org/10.1016/0091-7435\(86\)90064-2](https://doi.org/10.1016/0091-7435(86)90064-2)
- Viechtbauer, W. (2010). Conducting meta-analyses in R with the metaphor package. *Journal of Statistical Software*, 36(3), 1-48. <https://doi.org/10.18637/jss.v036.i03>
- Vrablik, M., Tichy, L., Freiburger, T., Blaha, V., Satny, M., & Hubacek, J. A. (2020). Genetics of familial hypercholesterolemia: New insights. *Frontiers in Genetics*, 11, <https://doi.org/10.3389/fgene.2020.574474>
- Vu, N. L., Jouriles, E. N., McDonald, R., & Rosenfield, D. (2016). Children's exposure to intimate partner violence: A meta-analysis of longitudinal associations with child adjustment problems. *Clinical Psychological Review*, 46, 25-33. <https://doi.org/10.1016/j.cpr.2016.04.003>
- *Wändell, P., Carlsson, A. X., Li, X., Gasevic, D., & Sundquist, J. (2020). The association between sociodemographic characteristics and dementia in patients with atrial fibrillation. *Aging Clinical and Experimental Research*, 32, 2319-2327. <https://doi.org/10.1007/s40520-019-01449-3>
- *Wang, L., Seelig, A., Wadsworth, S. M., McMasler, H., Alcaraz, J. E. & Crum-Cianflone, N. F. (2015). Associations of military divorce with mental, behavioral, and physical health outcomes. *BMC Psychiatry*, 15(1), 128. <https://doi.org/10.1186/s12888-015-0517-7>

- *Wang, X. D., Qian, J. J., Bai, D. S., Li, Z. N., Jiang, G. Q., & Yao, J. (2016). Marital status independently predicts pancreatic cancer survival in patients treated with surgical resection: An analysis of the SEER database. *Oncotarget*, 7(17), 24880-24887. <https://doi.org/10.18632/oncotarget.8467>
- Whisman, M. A., Robustelli, B. L., & Sbarra, D. A. (2016). Marital disruption is associated with shorter salivary telomere length in a probability sample of older adults. *Social Science and Medicine*, 157, 60-67. <https://doi.org/10.1016/j.socscimed.2016.03.029>
- Wilder, S. E. (2016). Predicting adjustment to divorce from social support and relational quality in multiple relationships. *Journal of Divorce and Remarriage*, 57(8), 553-572. <https://doi.org/10.1080/10502556.2016.1233844>
- *Williams, K., & Umberson, D. (2004). Marital status, marital transitions, and health: A gendered life course perspective. *Journal of Health and Social Behaviour*, 45(1), 81-98. <https://doi.org/10.1177/002214650404500106>
- *Williams, L., Zhang, R., & Packard, K. C. (2017). Factors affecting the physical and mental health of older adults in China: The importance of marital status, child proximity, and gender. *SSM – Population Health*, 3, 20-36. <https://doi.org/10.1016/j.ssmph.2016.11.005>
- *Wójcik, G., Zawisza, K., Jablonska, K., Grodzicki, T., & Tobiasz-Adamczyk, B. (2021). Transition out of marriage and its effects on health and health-related quality of life among females and males. COURAGE and COURAGE-POLFUS-Population based follow-up study in Poland. *Applied Research in Quality of Life*, 16(1), 13-49. <https://doi.org/10.1007/s11482-019-09742-z>

- Wolfe, J. D., & Thomeer, M. B. (2020). Divorce, economic resources, and survival among older black and white women. *Journal of Marriage and Family*, 83(1), 173-190. <https://doi.org/10.1111/jomf.12702>
- *Wong, W. S., & Fielding, R. (2012). The co-morbidity of chronic pain, insomnia, and fatigue in the general adult population of Hong Kong: Prevalence and associated factors. *Journal of Psychosomatic Research*, 73(1), 28-34. <https://doi.org/10.1016/j.jpsychores.2012.04.011>
- Wong, C. W., Kwok, C. S., Narain, A., Gulati, M., Mihalidou, A. S., Wu, P., Alasnag, M., & Myint, P. K. (2018). Marital status and risk of cardiovascular diseases: A systematic review and meta-analysis. *Heart*, 104(23), 1937-1948. <http://doi.org/10.1136/heartjnl-2018-313005>
- Wright, M. R., Hammersmith, A. M., Brown, S. L., & Lin, I. F. (2020). The role of marital dissolution and subsequent repartnering on loneliness in later life. *The Journal of Gerontology*, 75(8), 1796-1807. <https://doi.org/10.1093/geronb/gbz121>
- Xue, F., Willett, W. C., Rosner, B. A., Hankinson, S. E., & Michels, K. B. (2011). Cigarette smoking and the incidence of breast cancer. *Archives of Internal Medicine*, 171(2), 125-133. <https://doi.org/10.1001/archinternmed.2010.503>
- *Yannakoulia, M., Panagiotakos, D., Pitsavos, C., Skoumas, Y., & Stefanadis, C. (2008). Eating patterns may mediate the association between marital status, body mass index, and blood cholesterol levels in apparently healthy men and women from the ATTICA study. *Social Science and Medicine*, 66, 2230-2239. <https://doi.org/10.1016/j.socscimed.2008.01.051>
- *Zella, S. (2017). Marital status transitions and self-reported health among Canadians: A life course perspective. *Applied Research in Quality of Life*, 12(2), 303-325. <https://doi.org/10.1007/s11482-016-9462-y>

- *Zhang, Z., & Hayward, M. D. (2006). Gender, the marital life course, and cardiovascular disease in late midlife. *Journal of Marriage and Family*, 68, 639-657.
<https://doi.org/10.1111/j.1741-3737.2006.00280.x>
- *Zheng, Y., Lamoureux, E. L., Chiang, P. P. C., Anuar, A. R., & Wong, T. Y. (2013). Marital status and its relationship with the risk and pattern of visual impairment in a multi-ethnic Asian population. *Journal of Public Health*, 36(1), 104-110.
<https://doi.org/10.1093/pubmed/fdt044>
- Zineldin, M. (2019). TCS is to blame: The impact of divorce on physical and mental health. *International Journal of Preventive Medicine*, 10(1), 141-145.
https://doi.org/10.4103%2Fijpvm.IJPVM_472_18
- *Zulkarnain, A., & Korenman, S. (2019). Divorce and health in middle and older ages. *Review of Economics of the household*, 17(4), 1081-1106.
<https://doi.org/10.1007/s11150-018-9435-z>

Supplementary material

Appendix A

Search strings

((Divorc* OR marital separation OR marital dissolution OR relationship dissolution OR (parent* adj3 separat*) OR (couple* adj3 separat*) OR marital disruption OR breakup OR break-up) AND (physical health OR disease OR illness* OR diagnos* OR health outcome* OR clinical endpoint OR self-reported health OR morbidity OR cancer OR cardiovascular OR neuroendocrine OR HPA OR cortisol OR blood pressure OR pain OR dementia OR cognitive disease OR Alzheimer OR Parkinson OR heart OR lung OR chronic condition OR headache OR migraine OR gastrointestinal OR back pain OR impairment OR disab* OR patholo* OR ache OR medic* OR sick*)).ab,ti.

Appendix B

Study characteristics

Study	Year	Sample	Effect size	Average age	% male	N	Design	Place	Outcome	Measurement
Wang et al.	2015	1	1	NA	81	29314		2 USA	Physical symptoms	Self
Wang et al.	2015	1	2	NA	81	29314		2 USA	Hypertension	Self
Wang et al.	2015	1	3	NA	81	29314		2 USA	Diabetes	Self
Daoulah et al. (men)	2017	1	1	58	100	771		2 Africa	Cardiovascular conditions	Records
Daoulah et al. (women)	2017	2	2	59	0	297		2 Africa	Cardiovascular conditions	Records
Daoulah et al. (total)	2017	3	3	59	72	1068		2 Africa	Cardiovascular conditions	Records
Joung et al. (men)	1995	1	1	NA	100	7892		2 Europe	Self-reported health	Self
Joung et al. (women)	1995	2	2	NA	0	8419		2 Europe	Self-reported health	Self
Joung et al. (men)	1995	1	3	NA	100	7892		2 Europe	Physical symptoms	Self
Joung et al. (women)	1995	2	4	NA	0	8419		2 Europe	Physical symptoms	Self
Joung et al. (total)	1995	3	5	NA	48	16311		2 Europe	Physical symptoms	Self
Newton et al.	2014	1	1	56	0	6672		2 USA	Physical symptoms	Self
Newton et al.	2014	1	2	56	0	6672		2 USA	Hypertension	Self
Newton et al.	2014	1	3	56	0	6672		2 USA	Diabetes	Self
Newton et al.	2014	1	4	56	0	6672		2 USA	Joint pathologies	Self
Newton et al.	2014	1	5	56	0	6672		2 USA	Cardiovascular conditions	Self
Newton et al.	2014	1	6	56	0	6672		2 USA	Cerebrovascular conditions	Self
Newton et al.	2014	1	7	56	0	6672		2 USA	Disabilities	Self
Averett et al. (men)	2013	1	1	46	100	39883		2 Canada	Self-reported health	Self
Averett et al. (women)	2013	2	2	47	0	46590		2 Canada	Self-reported health	Self
Averett et al. (men)	2013	1	3	46	100	39883		2 Canada	Physical symptoms	Self
Averett et al. (women)	2013	2	4	47	0	46590		2 Canada	Physical symptoms	Self
Averett et al. (men)	2013	1	5	46	100	39883		2 Canada	Disabilities	Self
Averett et al. (women)	2013	2	6	47	0	46590		2 Canada	Disabilities	Self
Bookwala et al.	2014	1	1	64	35	707		2 USA	Self-reported health	Self
Goldman et al. (men)	1995	1	1	77	100	2847		2 USA	Hypertension	Self
Goldman et al. (women)	1995	2	2	77	0	4631		2 USA	Hypertension	Self
Goldman et al. (men)	1995	1	3	77	100	2847		2 USA	Diabetes	Self

Goldman et al. (women)	1995	2	4	77	0	4631	2	USA	Diabetes	Self
Goldman et al. (men)	1995	1	5	77	100	2847	2	USA	Cancer	Self
Goldman et al. (women)	1995	2	6	77	0	4631	2	USA	Cancer	Self
Goldman et al. (men)	1995	1	7	77	100	2847	2	USA	Cardiovascular conditions	Self
Goldman et al. (women)	1995	2	8	77	0	4631	2	USA	Cardiovascular conditions	Self
Goldman et al. (men)	1995	1	9	77	100	2847	2	USA	Cardiovascular conditions	Self
Goldman et al. (women)	1995	2	10	77	0	4631	2	USA	Cerebrovascular conditions	Self
Goldman et al. (men)	1995	1	11	77	100	2847	2	USA	Cerebrovascular conditions	Self
Goldman et al. (women)	1995	2	12	77	0	4631	2	USA	Disabilities	Self
Schultz et al.	2017	1	1	63	64	6051	2	USA	Disabilities	Self
Schultz et al.	2017	1	2	63	64	6051	2	USA	Hypertension	Records
Artazcoz et al. (no manual workers) (men)	2011	1	1	40	100	6697	2	Europe	Diabetes	Records
Artazcoz et al. (no manual workers) (women)	2011	2	2	40	0	6697	2	Europe	Self-reported health	Self
Artazcoz et al. (manual workers) (men)	2011	3	3	39	100	7747	2	Europe	Self-reported health	Self
Artazcoz et al. (manual workers) (women)	2011	4	4	39	0	7747	2	Europe	Self-reported health	Self
Artazcoz et al. (no manual workers) (men)	2011	1	5	40	100	6697	2	Europe	Self-reported health	Self
Artazcoz et al. (no manual workers) (women)	2011	2	6	40	0	6697	2	Europe	Hypertension	Self
Artazcoz et al. (manual workers) (men)	2011	3	7	39	100	7747	2	Europe	Hypertension	Self
Artazcoz et al. (manual workers) (women)	2011	4	8	39	0	7747	2	Europe	Hypertension	Self
Cramer (men)	1993	1	1	47	100	2345	2	Europe	Physical symptoms	Self
Cramer (women)	1993	2	2	46	0	2755	2	Europe	Physical symptoms	Self
Yannakoulia et al.	2008	1	1	48	61	3042	2	Europe	Hypertension	Self
Yannakoulia et al.	2008	1	2	48	61	3042	2	Europe	Diabetes	Self
Yannakoulia et al.	2008	1	3	48	61	3042	2	Europe	Hypercholesterolemia	Tests

Trudel-Fitzgerald et al.	2019	1	1	59	0	72206	2	USA	Cancer	Records
Joung et al.	1994	1	1	NA	NA	18435	2	Europe	Self-reported health	Self
Cheung (men)	1998	1	1	33	100	1443	2	Europe	Self-reported health	Self
Cheung (women)	1998	2	2	33	0	2453	2	Europe	Self-reported health	Self
Cheung (men)	1998	1	3	33	100	1443	2	Europe	Disabilities	Self
Cheung (women)	1998	2	4	33	0	2453	2	Europe	Disabilities	Self
Morales et al.	2013	1	1	54	0	1126	2	South America	Cancer	Records
Ramezankhani et al.	2019	1	1	46	45	5325	2	Africa	Hypertension	Self
Ramezankhani et al.	2019	1	2	46	45	5325	2	Africa	Diabetes	Self
Ramezankhani et al.	2019	1	3	46	45	5325	2	Africa	Cardiovascular condition	Self
Sundström et al.	2014	1	1	75	44	1609	2	Europe	Cognitive pathologies	Records
Grundý & Tomassini (1991) (men)	2010	1	1	68	100	33686	2	Europe	Physical symptoms	Self
Grundý & Tomassini (1991) (women)	2010	2	2	69	0	41341	2	Europe	Physical symptoms	Self
Grundý & Tomassini (2001) (men)	2010	1	3	76	100	17997	2	Europe	Physical symptoms	Self
Grundý & Tomassini (2001) (women)	2010	2	4	78	0	26541	2	Europe	Physical symptoms	Self
Zhang et al. (men)	2006	1	1	56	100	3745	2	USA	Hypertension	Self
Zhang et al. (women)	2006	2	2	55	0	4502	2	USA	Hypertension	Self
Zhang et al. (men)	2006	1	3	56	100	3745	2	USA	Diabetes	Self
Zhang et al. (women)	2006	2	4	55	0	4502	2	USA	Diabetes	Self
Zhang et al. (men)	2006	1	5	56	100	3745	2	USA	Hypercholesterolemia	Self
Zhang et al. (women)	2006	2	6	55	0	4502	2	USA	Hypercholesterolemia	Self
Pienta et al.	2011	1	1	NA	47	9333	2	USA	Physical symptoms	Self
Pienta et al.	2011	1	2	NA	47	9333	2	USA	Hypertension	Self
Pienta et al.	2011	1	3	NA	47	9333	2	USA	Diabetes	Self
Pienta et al.	2011	1	4	NA	47	9333	2	USA	Cancer	Self
Pienta et al.	2011	1	5	NA	47	9333	2	USA	Joint pathologies	Self

Pienta et al.	2011	1	6	NA	47	9333	2	USA	Cardiovascular conditions	Self
Pienta et al.	2011	1	7	NA	47	9333	2	USA	Cerebrovascular conditions	Self
Pienta et al.	2011	1	8	NA	47	9333	2	USA	Disabilities	Self
Molloy et al. (men)	2009	1	1		52	6097	2	Europe	Hypertension	Self
Molloy et al. (women)	2009	2	2		52	7792	2	Europe	Hypertension	Self
Molloy et al. (men)	2009	1	3		52	6097	2	Europe	Diabetes	Self
Molloy et al. (women)	2009	2	4		52	7792	2	Europe	Diabetes	Self
Notara et al.	2015	1	1		66	2172	2	Europe	Cardiovascular conditions	Records
Engström et al.	2006	1	1		47	6075	2	Europe	Diabetes	Tests
Engström et al.	2006	1	2		47	6075	2	Europe	Cardiovascular conditions	Tests
Engström et al.	2006	1	3		47	6075	2	Europe	Cerebrovascular conditions	Records
Stimpson et al. (men)	2009	1	1		50	16299	2	USA	Hypertension	Self
Stimpson et al. (women)	2009	2	2		50	20295	2	USA	Hypertension	Self
Stimpson et al. (men)	2009	1	3		50	16299	2	USA	Diabetes	Self
Stimpson et al. (women)	2009	2	4		50	20295	2	USA	Diabetes	Self
Stimpson et al. (men)	2009	1	5		50	16299	2	USA	Hypercholesterolemia	Self
Stimpson et al. (women)	2009	2	6		50	20295	2	USA	Hypercholesterolemia	Self
Stimpson et al. (men)	2009	1	7		50	16299	2	USA	Cerebrovascular conditions	Self
Stimpson et al. (women)	2009	2	8		50	20295	2	USA	Cerebrovascular conditions	Self
Matthews et al.	2002	1	1		45	12336	2	USA	Cardiovascular conditions	Self
Maselko et al. (men)	2009	1	1		65	22818	2	USA	Hypertension	Self
Maselko et al. (women)	2009	2	2		65	10035	2	USA	Hypertension	Self
Maselko et al. (men)	2009	1	3		65	22818	2	USA	Diabetes	Self
Maselko et al. (women)	2009	2	4		65	10035	2	USA	Diabetes	Self
Maselko et al. (men)	2009	1	5		65	22818	2	USA	Cardiovascular conditions	Self
Maselko et al. (women)	2009	2	6		65	10035	2	USA	Cardiovascular conditions	Self
Ben-Shlomo et al.	1993	1	1		52	18403	2	Europe	Physical symptoms	Self
Ben-Shlomo et al.	1993	1	2		52	18403	2	Europe	Diabetes	Self
Metayer et al.	1996	1	1		59	129	2	USA	Hypertension	Self

Metayer et al.	1996	1	2	59	54	129	2	USA	Diabetes	Self
Liu et al. (dementia)	2019	1	1	78	42	7508	2	USA	Cognitive pathologies	Tests
Liu et al. (cognitive impairment)	2019	2	2	78	42	7508	2	USA	Cognitive pathologies	Tests
Wändell et al. (men)	2020	1	1	73	100	287959	2	Europe	Cognitive pathologies	Records
Wändell et al. (women)	2020	2	2	78	0	249554	2	Europe	Cognitive pathologies	Records
Feng et al. (men)	2014	1	1	69	100	904	2	Asia	Hypertension	Tests
Feng et al. (women)	2014	2	2	66	0	1594	2	Asia	Hypertension	Tests
Feng et al. (total)	2014	3	3	66	36	2498	2	Asia	Hypertension	Tests
Feng et al. (men)	2014	1	4	69	100	904	2	Asia	Diabetes	Tests
Feng et al. (women)	2014	2	5	66	0	1594	2	Asia	Diabetes	Tests
Feng et al. (total)	2014	3	6	66	36	2498	2	Asia	Diabetes	Tests
Feng et al. (men)	2014	1	7	69	100	904	2	Asia	Cardiovascular conditions	Records
Feng et al. (women)	2014	2	8	66	0	1594	2	Asia	Cardiovascular conditions	Records
Feng et al. (total)	2014	3	9	66	36	2498	2	Asia	Cardiovascular conditions	Records
Feng et al. (men)	2014	1	10	69	100	904	2	Asia	Cerebrovascular conditions	Tests
Feng et al. (women)	2014	2	11	66	0	1594	2	Asia	Cerebrovascular conditions	Tests
Feng et al. (total)	2014	3	12	66	36	2498	2	Asia	Cerebrovascular conditions	Tests
Feng et al. (men)	2014	1	13	69	100	904	2	Asia	Cognitive pathologies	Tests
Feng et al. (women)	2014	2	14	66	0	1594	2	Asia	Cognitive pathologies	Tests
Feng et al. (total)	2014	3	15	66	36	2498	2	Asia	Cognitive pathologies	Tests
Seidler et al.	2002	1	1	77	28	424	2	Europe	Cognitive pathologies	Tests
Aizer et al.	2013	1	1	65	52	734889	2	USA	Cancer	Records
Wang et al.	2016	1	1	NA	51	13370	2	USA	Cancer development	Records
Venters et al.	1986	1	1	45	50	7849	2	USA	Cardiovascular conditions	Tests
Hawley et al. (rheumatic disorders)	1991	1	1	49	36	1270	2	USA	Joint pathologies	Records
Hawley et al. (noninflammatory rheumatic disorders)	1991	2								
Kim	2021	1	2	55	28	4756	2	USA	Joint pathologies	Self
			1	56	52	7568	2	Asia	Hypertension	

Kim	2021	1	2	56	52	7568	2	Asia	Diabetes	Self
Kim	2021	1	3	56	52	7568	2	Asia	Cerebrovascular conditions	Self
Kim	2021	1	4	56	52	7568	2	Asia	Disabilities	Self
Zheng et al.	2013	1	1	59	49	10033	2	Asia	Hypertension	Self
Zheng et al.	2013	1	2	59	49	10033	2	Asia	Diabetes	Self/Records
Zheng et al.	2013	1	3	59	49	10033	2	Asia	Disabilities	Tests
Denney et al.	2019	1	1	59	44	198902	2	USA	Disabilities	Self
Liu et al.	2013	1	1	71	44	170446	2	USA	Disabilities	Self
St John et al.	2014	1	1	42	78	1751	2	Canada	Physical symptoms	Self
Grundy et al.	2000	1	1	62	46	2243	2	Europe	Disabilities	Self
Nagi	1976	1	1	46	42	6493	2	USA	Disabilities	Self
Clarke et al.	2021	1	1	56	44	1195	2	USA	Disabilities	Self
Seymour et al.	2010	1	1	67	48	37524	2	USA	Hypertension	Self
Seymour et al.	2010	1	2	67	48	37524	2	USA	Diabetes	Self
Seymour et al.	2010	1	3	67	48	37524	2	USA	Cancer	Self
Seymour et al.	2010	1	4	67	48	37524	2	USA	Cardiovascular conditions	Self
Kposowa et al.	2021	1	1	44	47	1384507	2	USA	Diabetes	Records
Parise et al.	2018	1	1	57	56	22812	2	USA	Cancer development	Records
Caputo et al. (MIDUS)	2013	1	1	48	48	1239	2	USA	Disabilities	Self
Caputo et al. (ACL)	2013	2	2	49	40	1673	2	USA	Disabilities	Self
Smith et al.	1999	1	1	60	0	408	2	Europe	Physical symptoms	Self/Records
Wojcik et al.	2021	1	1	58	45	1073	2	Europe	Physical symptoms	Self
Cimas et al. (men)	2018	1	1	67	100	22247	2	Europe	Physical symptoms	Self
Cimas et al. (women)	2018	2	2	67	0	33910	2	Europe	Physical symptoms	Self
Cimas et al. (total)	2018	3	3	67	46	61157	2	Europe	Physical symptoms	Self
Zella	2017	1	1	31	50	4744	2	Canada	Self-reported health	Self
Zella	2017	1	2	31	50	4744	2	Canada	Physical symptoms	Self
El Ibrahimy & Pinheiro	2017	1	1	47	0	31425	2	USA	Cancer development	Records
Charara et al.	2016	1	1	NA	NA	456119	2	USA	Disabilities	Self

Meadows & Arber (men)	1	1	44	100	15187	2	Europe	Self-reported health	Self
Meadows & Arber (women)	2	2	44	0	19287	2	Europe	Self-reported health	Self
Meadows & Arber (total)	3	3	44	44	34424	2	Europe	Self-reported health	Self
Stickley et al.	1	1	47	43	1190	2	Europe	Self-reported health	Self
Donoho et al.	1	1	58	45	907	2	USA	Heart conditions	Tests
Brenowitz et al.	1	1	73	33	5335	2	USA	Cognitive pathologies	Records
Arber et al.	1	1	61	32	9458	2	Europe	Self-reported health	Self
Tsakos et al.	1	1	71	50	4014	2	USA	Physical symptoms	Self
Wong & Fielding	1	1	38	45	5001	2	Asia	Physical symptoms	Self
Wong & Fielding	1	1	38	45	5001	2	Asia	Physical symptoms	Self
Kawada & Suzuki	1	1	NA	49	10268	2	Asia	Self-reported health	Self
Kamaleri et al. (last 12 months)	1	1	47	41	2926	2	Asia	Physical symptoms	Self
Kamaleri et al. (last 7 days)	2	2	47	41	2926	2	Europe	Physical symptoms	Self
Papadogeorgakis et al. (men)	1	1	28	75	277	2	Europe	STD	Tests
Papadogeorgakis et al. (women)	2	2	30	0	1214	2	Europe	STD	Tests
Papadogeorgakis et al. (total)	3	3	30	75	1491	2	Europe	STD	Tests
Ellis	1	1	NA	NA	8208	2	USA	Self-reported health	Self
Ellis	1	2	NA	NA	8208	2	USA	Physical symptoms	Self
Ellis	1	3	NA	NA	8208	2	USA	Hypertension	Self
Ellis	1	4	NA	NA	8208	2	USA	Diabetes	Self
Ellis	1	5	NA	NA	8208	2	USA	Hypercholesterolemia	Self
Bennet (men)	1	1	63	NA	1.867	2	Europe	Self-reported health	Self
Bennet (women)	2	2	62	NA	1.867	2	Europe	Self-reported health	Self
Bennet (men)	1	3	63	NA	1.867	2	Europe	Physical symptoms	Self
Bennet (women)	2	4	62	NA	1.867	2	Europe	Physical symptoms	Self
Bennet (men)	1	5	63	NA	1.867	2	Europe	Disabilities	Self
Bennet (women)	2	6	62	NA	1.867	2	Europe	Disabilities	Self
Melotti et al. (T0)	1	1	61	47	892	2	Europe	Physical symptoms	Self

Melotti et al. (T-1)	2005	2	2	NA	47	892	2	Europe	Physical symptoms	Self
Williams & Umberson	2005	1	1		47	4773	2	USA	Self-reported health	Self
Schneider	2004	1	1		42	3050	2	USA	Cancer	Self
Schneider	2004	1	2		42	3050	2	USA	Cardiovascular conditions	Self
Randi et al.	2010	1	1		40	33321	2	Europe	Cancer	Records
Gilligan et al.	1987	1	1		NA	132	2	Australia	Physical symptoms	Records
Mastekaasa (men)	1997	1	1		NA	19000	2	Europe	Self-reported health	Self
Mastekaasa (women)	1997	2	2		NA	19000	2	Europe	Self-reported health	Self
Kiecolt-Glaser et al.	1988	1	1		100	64	2	USA	Disabilities	Self
Pienaar et al. (urban)	2017	1	1		21	539	2	Africa	STD	Records
Pienaar et al. (rural)	2017	2	2		23	423	2	Africa	STD	Records
Olaleye & Ogunniyi	2013	1	1		27	1056	2	Africa	Physical symptoms	Records
Mermin et al.	2008	1	1		45	18525	2	Africa	STD	Tests
Beard et al. (men)	1992	1	1	NA	100	126	2	USA	Cognitive pathologies	Records
Beard et al. (women)	1992	2	2	NA	0	356	2	USA	Cognitive pathologies	Records
Beard et al. (total)	1992	3	3	NA	26	482	2	USA	Cognitive pathologies	Records
Amieva et al. (dementia)	2010	1	1		40	2089	2	Europe	Cognitive pathologies	Records
Amieva et al. (Alzheimer)	2010	2	2		40	2089	2	Europe	Cognitive pathologies	Records
Hofbauer & Rodriguez	2021	1	1		53	1630	2	USA	Cognitive pathologies	Tests
Hakanson et al.	2009	1	1		38	1448	2	Europe	Cognitive pathologies	Tests
Helmer et al. (dementia)	1999	1	1	NA	42	2881	2	Europe	Cognitive pathologies	Tests
Helmer et al. (Alzheimer)	1999	2	1	NA	42	2881	2	Europe	Cognitive pathologies	Tests
Hank (West Germany) (men)	2010	1	1		61	1837	2	Europe	Self-reported health	Self
Hank (West Germany) (women)	2010	2	2		0	3126	2	Europe	Self-reported health	Self
Hank (East Germany) (men)	2010	3	3		61	488	2	Europe	Self-reported health	Self
Hank (East Germany) (women)	2010	4	4		61	1156	2	Europe	Self-reported health	Self
Zulkarnain & Korenman (men)	2019	1	1		64	10555	2	USA	Self-reported health	Self

Zulkarnain & Korenman (women)	2	2019	2	62	0	10953	2	USA	Self-reported health	Self
Zulkarnain & Korenman (men)	1	2019	3	64	100	10555	2	USA	Physical symptoms	Self
Zulkarnain & Korenman (women)	2	2019	4	62	0	10953	2	USA	Physical symptoms	Self
Zulkarnain & Korenman (men)	1	2019	5	64	100	10555	2	USA	Hypertension	Records
Zulkarnain & Korenman (women)	2	2019	6	62	0	10953	2	USA	Hypertension	Records
Zulkarnain & Korenman (men)	1	2019	7	64	100	10555	2	USA	Diabetes	Records
Zulkarnain & Korenman (women)	2	2019	8	62	0	10953	2	USA	Diabetes	Records
Zulkarnain & Korenman (men)	1	2019	9	64	100	10555	2	USA	Cancer	Records
Zulkarnain & Korenman (women)	2	2019	10	62	0	10953	2	USA	Cancer	Records
Zulkarnain & Korenman (men)	1	2019	11	64	100	10555	2	USA	Joint pathologies	Records
Zulkarnain & Korenman (women)	2	2019	12	62	0	10953	2	USA	Joint pathologies	Records
Zulkarnain & Korenman (men)	1	2019	13	64	100	10555	2	USA	Cardiovascular conditions	Records
Zulkarnain & Korenman (women)	2	2019	14	62	0	10953	2	USA	Cardiovascular conditions	Records
Zulkarnain & Korenman (men)	1	2019	15	64	100	10555	2	USA	Cerebrovascular conditions	Records
Zulkarnain & Korenman (women)	2	2019	16	62	0	10953	2	USA	Cerebrovascular conditions	Records
Ding et al.	1	2021	1	60	46	33184	2	Australia	Self-reported health	Self
Liu	1	2012	1	49	41	1282	2	USA	Self-reported health	Self
Lillard & Panis	1	1996	1	NA	100	4092	2	USA	Self-reported health	Self
Stack & Eshleman (men)	1	1998	1	NA	100	9237	2	USA	Self-reported health	Self
Stack & Eshleman (women)	2	1998	2	NA	0	10127	2	USA	Self-reported health	Self

Williams et al.	2017	1	1	61	51	9831	2	Asia	Self-reported health	Self
Lindström (men)	2009	1	1	49	100	12623	2	Europe	Self-reported health	Self
Lindström (women)	2009	2	2	48	0	15134	2	Europe	Self-reported health	Self
Knöpfli et al.	2016	1	1	52	40	1355	2	Europe	Self-reported health	Self
Joutsenniemi et al. (1978-80) (men)	2006	1	1	45	100	2820	2	Europe	Self-reported health	Self
Joutsenniemi et al. (1978-80) (women)	2006	2	2	46	0	3042	2	Europe	Self-reported health	Self
Joutsenniemi et al. (2000-01) (men)	2006	3	3	46	100	2621	2	Europe	Self-reported health	Self
Joutsenniemi et al. (2000-01) (women)	2006	4	4	46	0	2784	2	Europe	Self-reported health	Self
Rote	2017	1	1	69	51	1414	2	USA	Cardiovascular conditions	Tests
Liu et al.	2019	1	1	66	45	15379	2	USA	Cognitive pathologies	Self

Note. Self = Self-reported health; Records = Medical records; Tests = Medical tests.

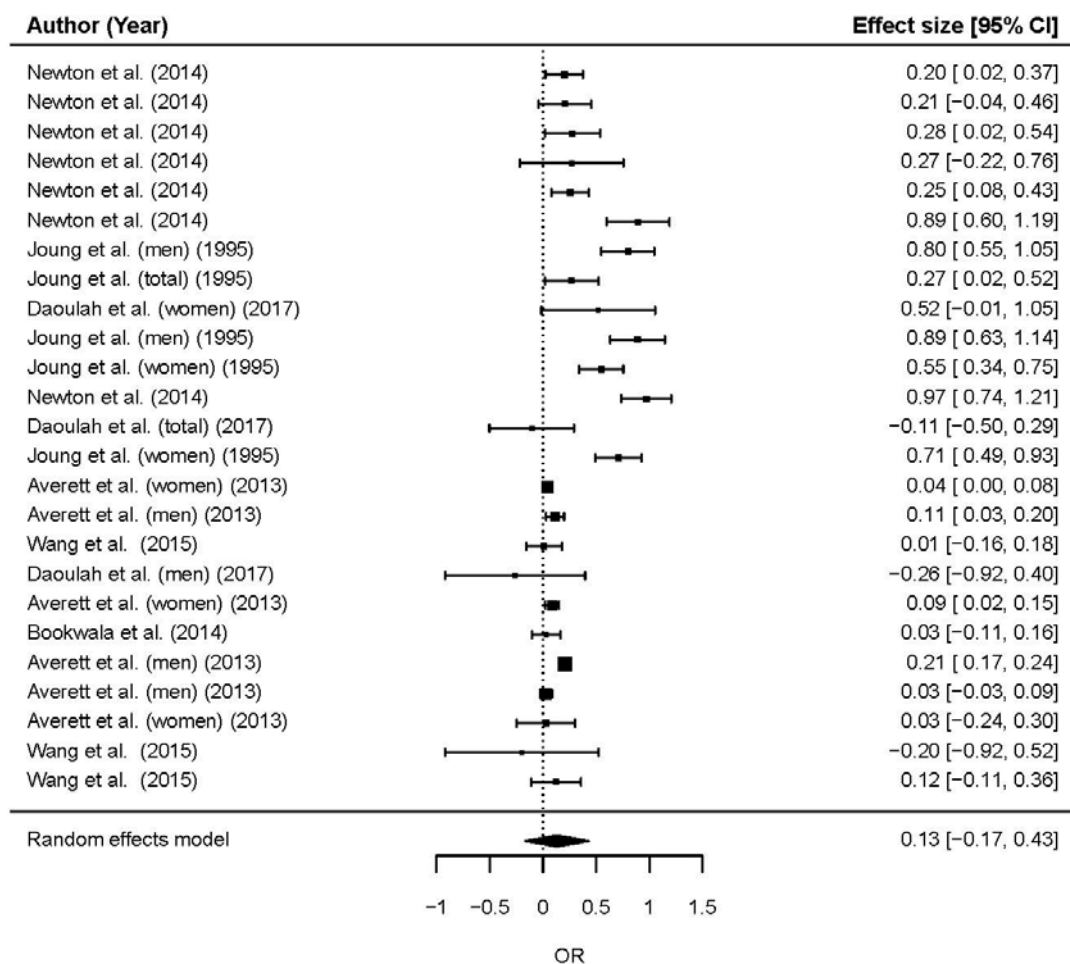
Appendix C

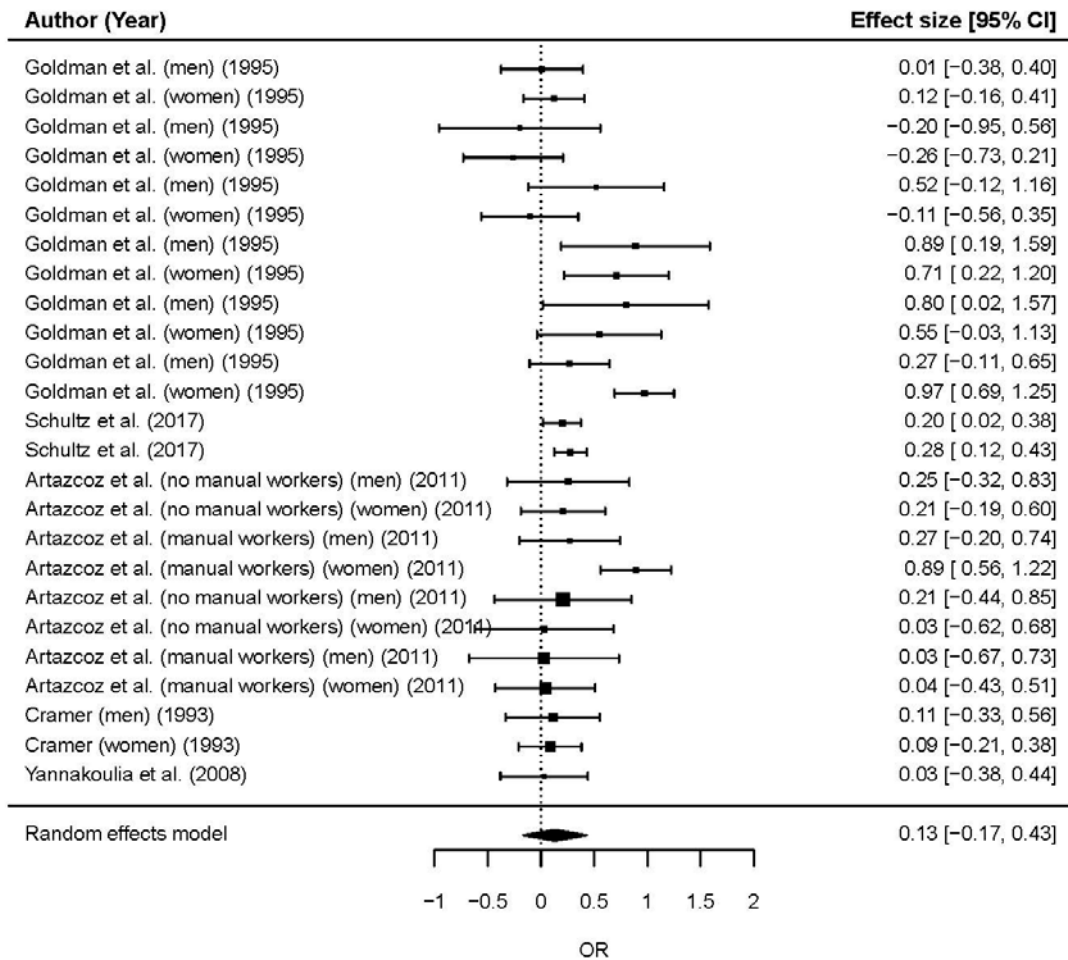
Effect size information

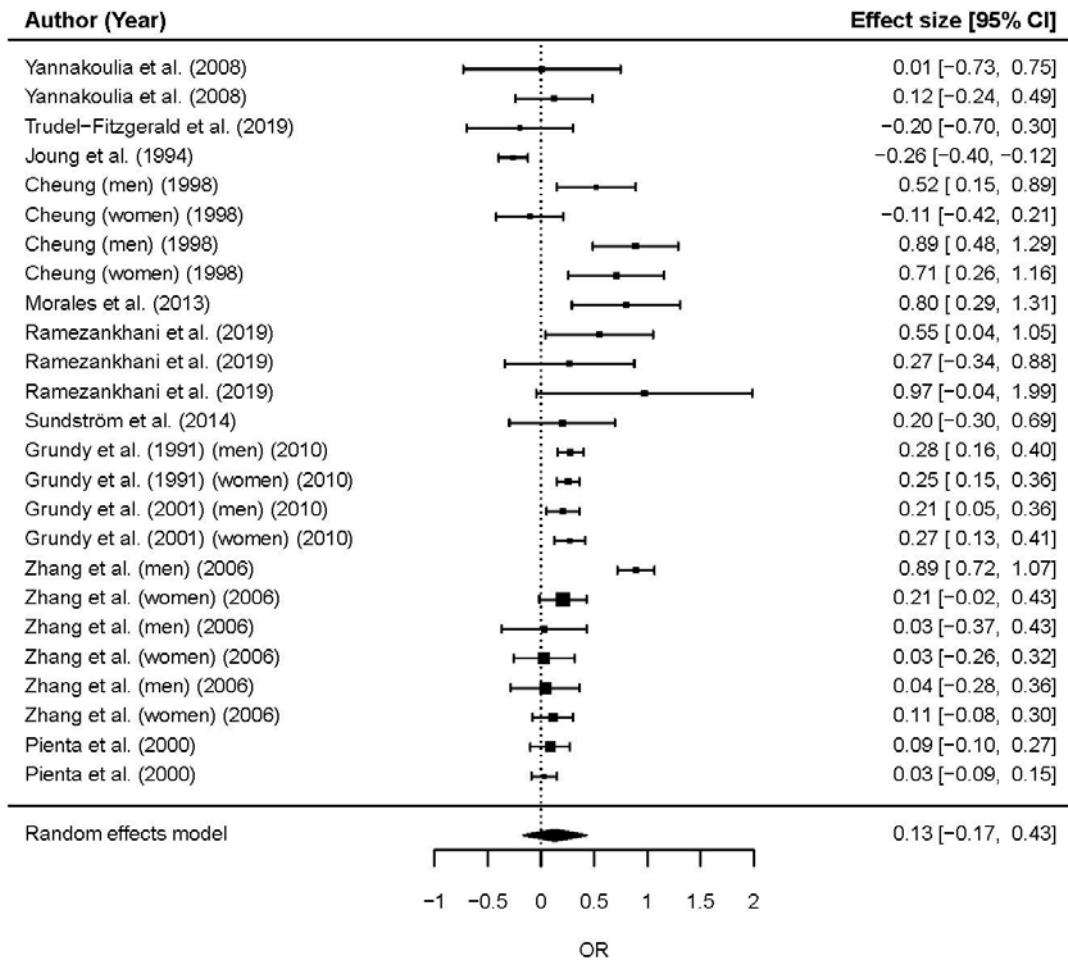
When a study did not report ORs, we converted other effect sizes such as β using the following formula $OR = \exp(\beta)$ which means that the OR is the result of exponentiating the value of beta. To calculate the 95%CI from the Standard Error (SE) value the following formula was applied: $\exp(\beta \pm (1.96 * SE(\beta)))$. Additionally, if only registered the number of married and divorced participants with and without the health outcome was available we converted it into OR using a 2x2 cross tabulation. Finally, means and standard deviations were first converted to Standardized Mean Difference (d) and then converted into OR using the following formula: $\ln OR = d / \sqrt{3}$. Both the cross tabulation and the Standard Mean Difference were converted using an Effect Size Calculator (Schoonjans, 2023).

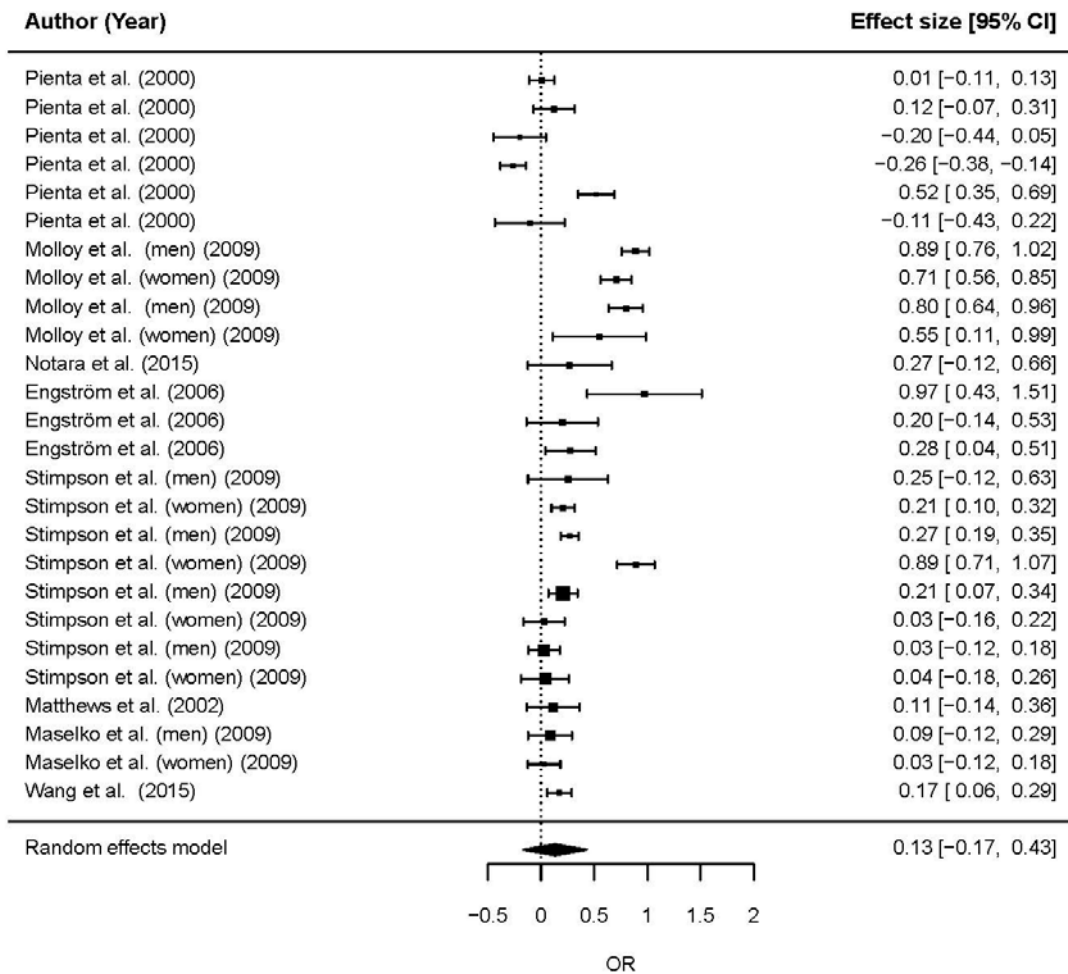
Appendix D

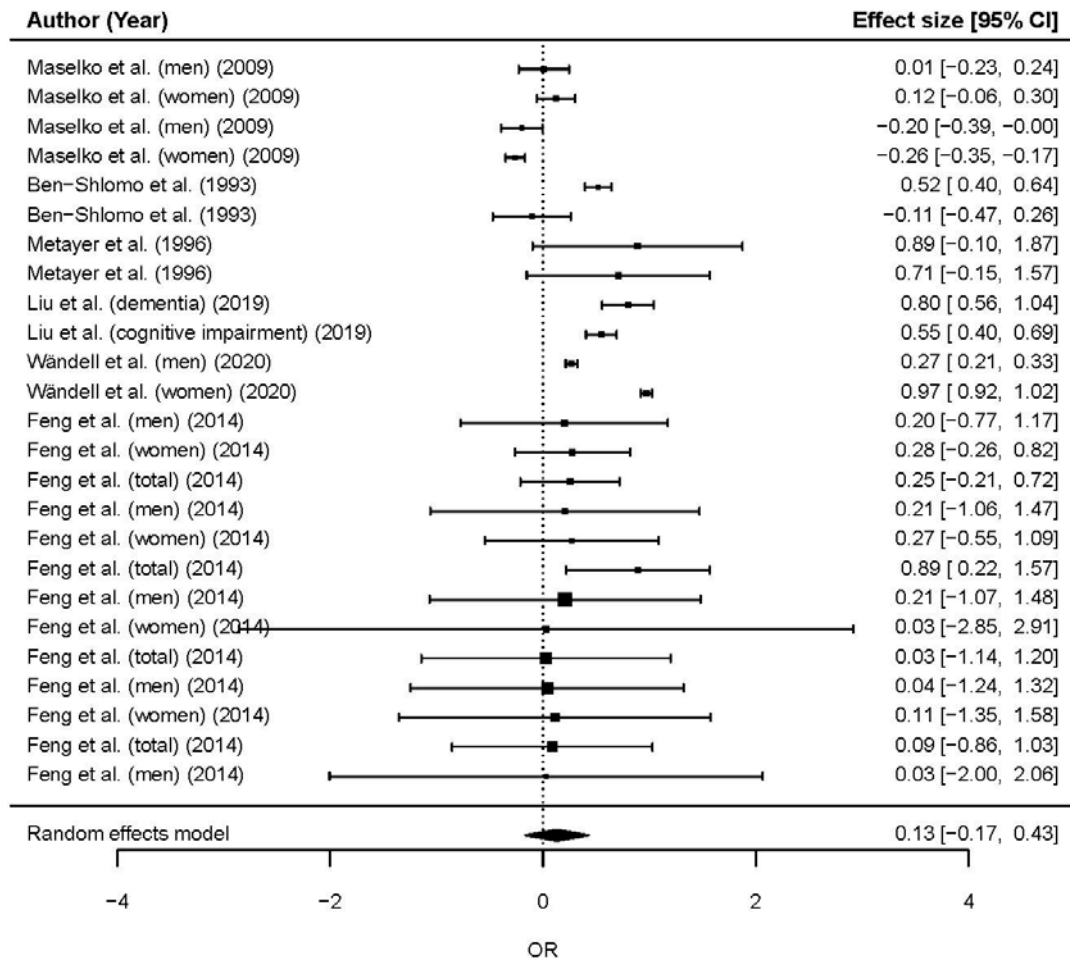
Forest plot

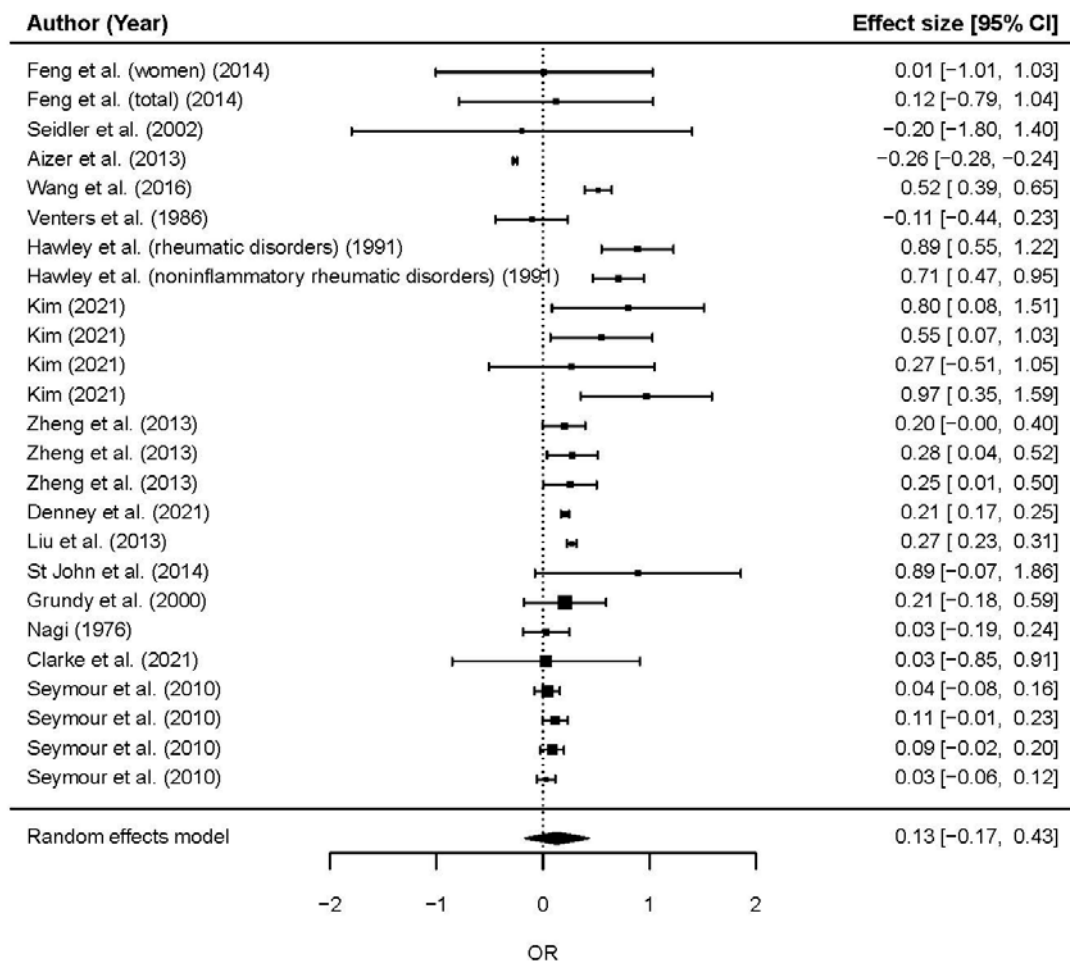


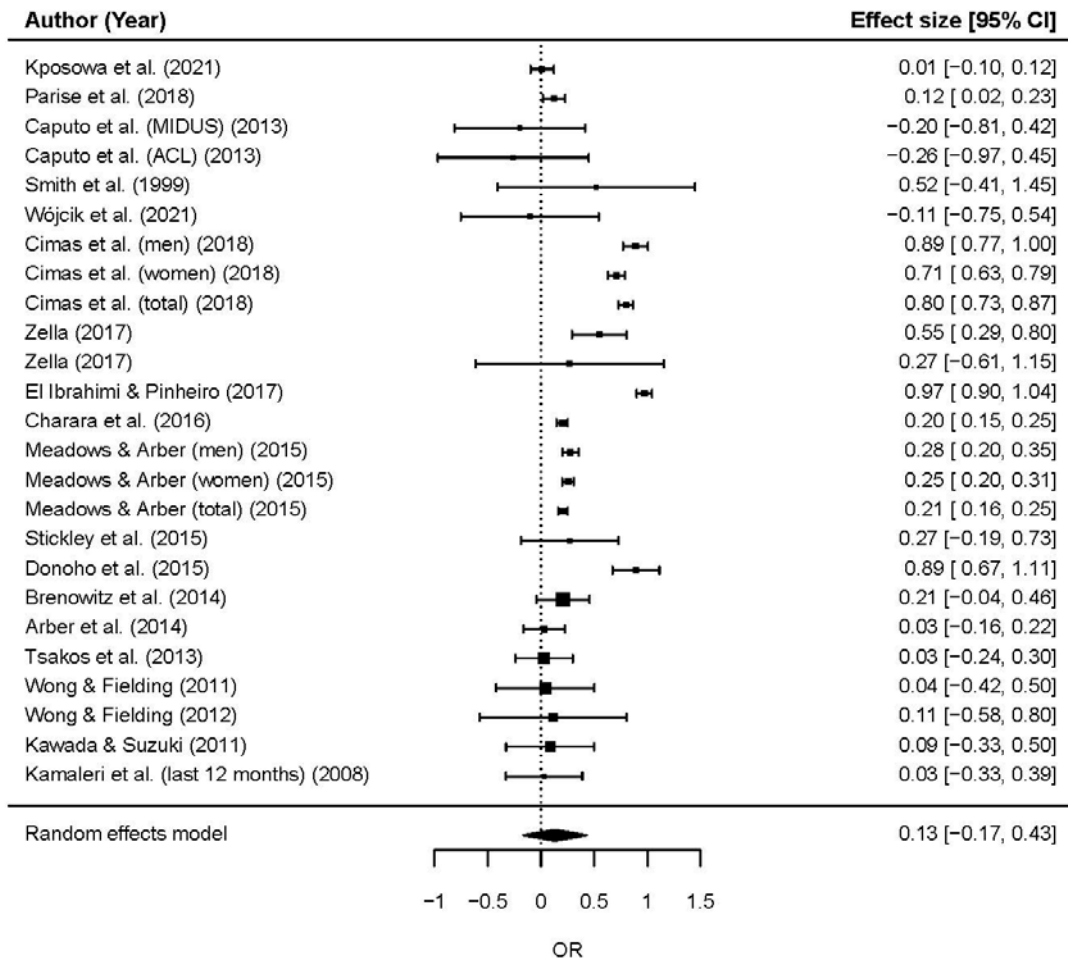


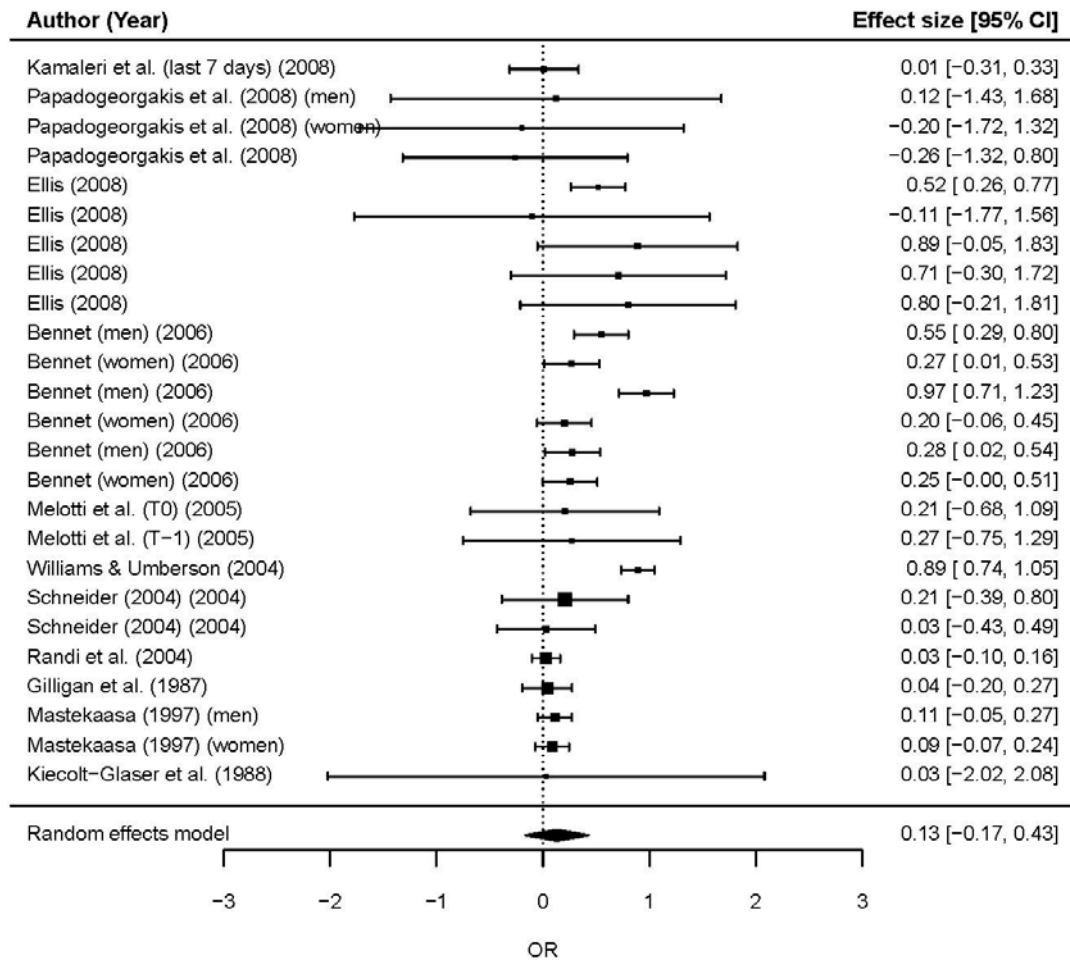


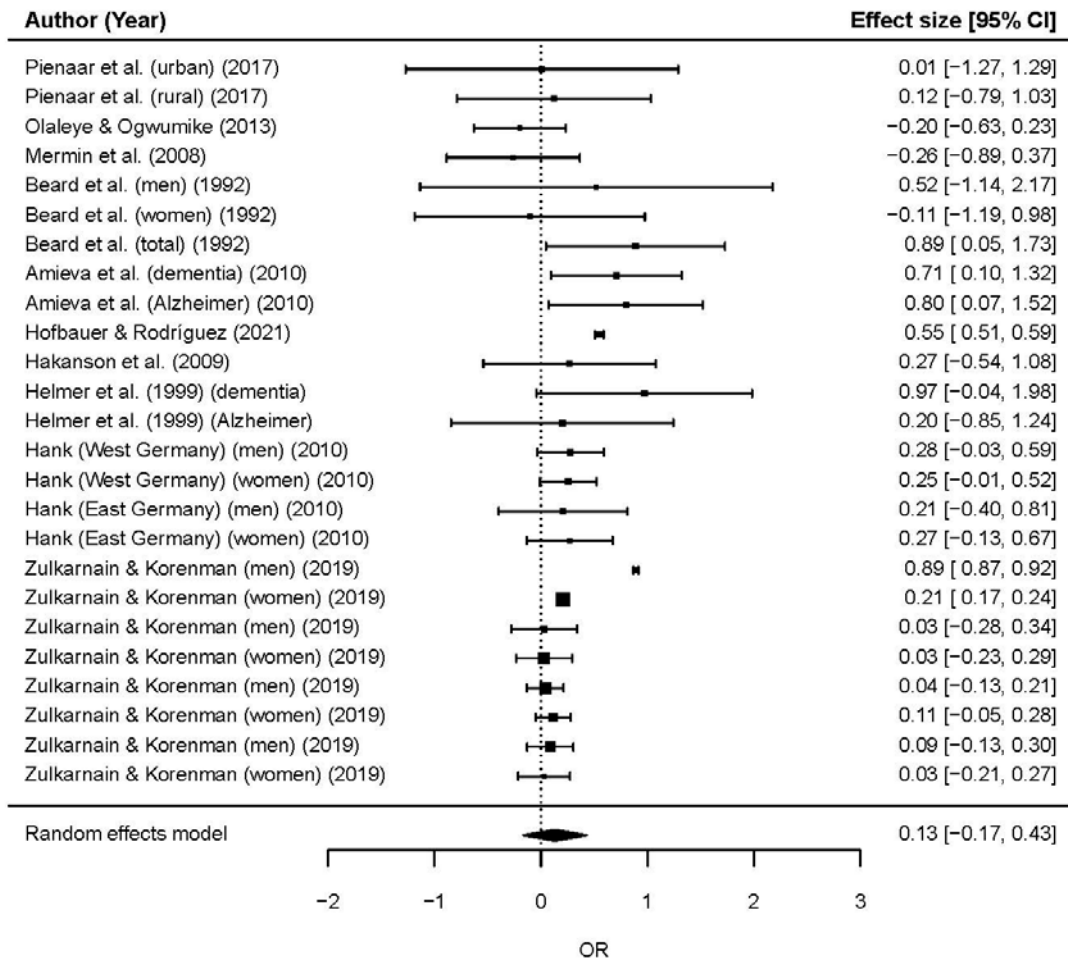


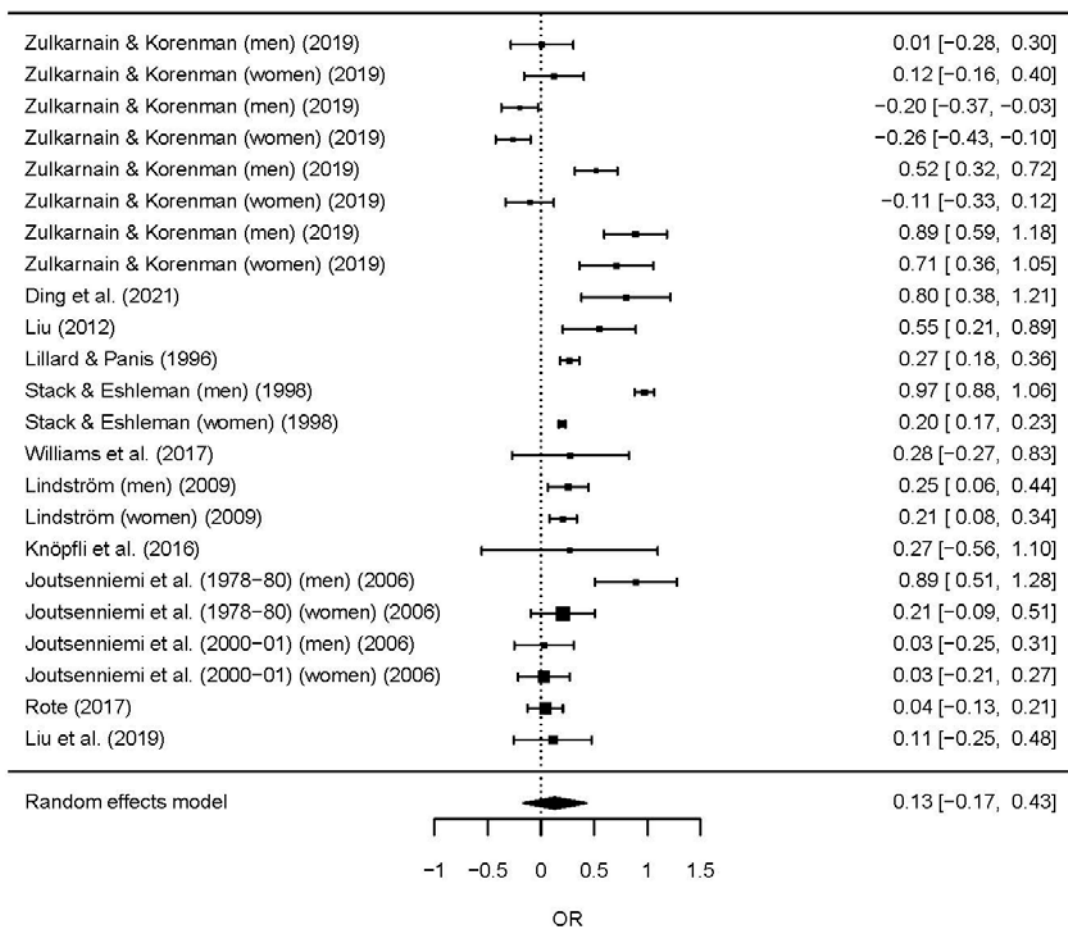












6. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression

Pellón, I., Martínez-Pampliega, A., & Cormenzana, S. (2023). Post-Divorce Adjustment, Coparenting, and Somatisation: Mediating Role of Anxiety and Depression in High-Conflict divorces. *Journal of Affective Disorders Reports*, 100697. <https://doi.org/10.1016/j.jadr.2023.100697>

Abstract

Due to the overlap of somatization with other psychiatric symptomatology and the difficulty of making a clear diagnosis, few studies have focused on somatic symptoms after divorce. Moreover, their results are controversial and do not provide a conclusive differentiation according to gender. The present study is based on the hypothesis that psychological difficulties of adjustment to divorce and co-parenting are linked to somatic symptomatology, in a sample of high-conflict divorcees, considering anxious and depressive symptoms as mediating factors. To this end, we carried out a path analysis using the IBM SPSS AMOS 28 program. In addition, we controlled for some variables that may have an influence on the link between high-conflict divorce and somatization, such as marital status, level of education, time elapsed since separation, type of custody, frequency of contact with the children, and type of relationship with the ex-partner. In addition, we also considered the differential role of gender. The results of this study supported the relationship between psychological difficulties of adjustment to divorce and somatization, as well as the mediating role of anxiety. We also found a direct relationship between co-parenting and somatization. These results were invariant in men and women, although we identified specific differences in anxiety. As a preliminary study, it is not without limitations. On the one hand, it can be noted that we used a homogeneous sample with similar sociodemographic characteristics. On the other hand, the instruments used are general screening tests, so it could be interesting to incorporate more specific assessment tools. This study supported the link between conflictive divorce and somatic symptomatology, opening the door to further research.

Keywords: Conflict, breakup, court, family, stress, somatic.

Separation and/or divorce is a process that involves several changes both before and after the breakup (Basak & Yilmaz, 2022). This situation is frequently perceived as

a crisis, as these changes affect the individual, legal, family, work, and social areas of people's lives. After the breakup, the person tries to restructure the needs of his/her life and his/herself after separating from the ex-spouse while, at the same time, he/she fulfills his/her daily duties and obligations (Knöpfli et al., 2016).

When a romantic relationship ends, a grieving process can be expected. Among others, the most common responses may include a depressed mood, lower work performance, alcohol or other substance consumption, and feelings of anger, guilt, helplessness, and hopelessness (Blue, 2017). However, for some people, this emotional experience is even more intense, and is accompanied by feelings of loneliness and nostalgia, reduced interest in daily activities, sleep difficulties (Barbara & Dion, 2000; Field, 2011; Kiral, 2019), ruminations, and/or intrusive or obsessive thoughts about the relationship and the ex-partner (Finkelstein, 2014; Yárnoz-Yaben, 2017). The difference of this impact for each people depends on a number of inter- and intrapersonal factors, of which pre- and post-divorce conflict is considered the most important (Hald et al., 2019; Nikupeteri & Laitinen, 2022; Polak & Saini, 2019).

Between 5-25% of divorces occur with relatively high levels of conflict both during and after the breakup. These are known as "high-conflict divorces", and they are characterized by constant negative interactions and a hostile and insecure emotional environment (Ordway et al., 2020; Riquelme et al., 2020). Divorce itself has been considered one of the most stressful life events, although most people cope well with it. However, when there is a high level of destructive conflict, the level of stress increases and may even become chronic (Symoens et al., 2014). In these cases, people tend to have more adjustment difficulties, and therefore, more negative consequences on their well-being (Fernandes de Magalhães et al., 2021; Hald et al., 2019; Nikupeteri & Laitinen, 2022).

Although the impact of divorce has been extensively studied, attention has mainly focused on psychological aspects such as anxiety or depression, rather than physical health problems, hospitalizations, suicide, and mortality risk (Knöpfli et al., 2016; Strizzi et al., 2021). Also, studies on the onset of somatic symptoms after divorce are minimal (Aragona et al., 2008), although the literature has frequently identified these symptoms as being associated with periods and situations of high stress (Davoodi et al., 2018; Keskin, 2019; Kozłowska et al., 2020).

Somatization is the expression of one or more symptoms without any apparent organic cause. Some of the most studied pathologies in relation to prolonged or intense stress states are irritable bowel syndrome or fibromyalgia (Amato, 2012; Fischer et al., 2016; Keskin, 2019). Other common symptoms in people who somatize are fatigue, palpitations, breathing difficulties, back and neck pain, headaches, and some gastrointestinal conditions (Henningesen, 2022; Nakao et al., 2001; Ran et al., 2020; Shangguan et al., 2021).

Somatization is linked to a significant distress and a deterioration in daily functioning, making it difficult to carry out daily activities. At the same time, it is related to a high use of health and social care, while professionals find serious difficulties in dealing with these symptoms (Husain-Krautter & Ellison, 2021; Nakamura et al., 2017). The coexistence of multiple somatic symptoms, the absence of clear diagnoses, and the ineffective treatments make somatic disorders challenging to treat and entail high health and social costs (Güney et al., 2015).

Moreover, somatization sometimes coexists with symptoms of anxiety and depression, which may lead to an overlap in the diagnostic criteria, treatment, and conceptual understanding of the three. The presence of somatization may increase anxious and/or depressive symptoms and vice versa (Garrusi et al., 2019; Hald et al.,

2020; Zheng et al., 2019). However, the presence of anxiety and depression does not necessarily imply somatic symptoms. Likewise, many patients who somatize do not have anxiety or depression. Thus, a direct association cannot be established, nor can somatization be considered as masked depression or anxiety (Henningsen, 2022).

However, perhaps due to this overlap and the frequent difficulty in making a clear diagnosis of somatization, studies have focused mostly on psychological symptoms (Lorenz et al., 2006; Hald et al., 2022; Raley & Sweeney, 2020), while few have considered somatic symptoms after divorce (Aragona et al., 2008), and their results are controversial (Hald et al., 2020). Moreover, there is no study that has analyzed somatization in high-conflict divorces.

Likewise, there is also controversy when considering the differences on the impact of divorce on men and women. On the one hand, some authors have found worse outcomes in women, associated with a worse financial situation after divorce (Parker et al., 2022) and a higher responsibility related to housework and childcare (Yáñez-Yaben, 2017). Therefore, socioeconomic factors such as the ex-spouses' employment and financial situation or their educational level seem to have an influence on their adaptation to divorce (Ciprić et al., 2021). On the other hand, there are also studies that have documented more negative consequences in men linked to decreased contact with their children, lack of social support, and greater social isolation (Al-Bahrani, 2021; Strizzi et al., 2021), also related to the absence of a new partner (Wang & Amato, 2000).

Furthermore, as regards support, and taking into account the central role that children play in their parents' lives, co-parenting — understood as a relationship of mutual support, positive communication, and shared commitment to the children's upbringing (Becher et al., 2019; Yáñez-Yaben, 2010) — could be considered a relevant factor when analyzing the consequences of divorce on the health of parents (Hardesty et

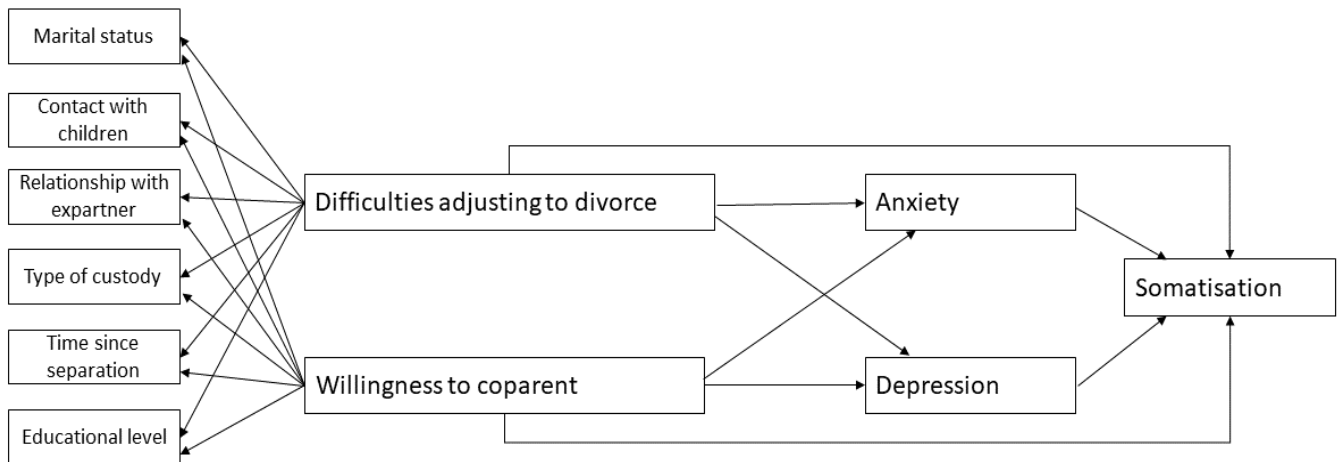
al., 2019). However, to date, the relationship between high-conflict divorce and co-parenting has barely been studied (Herrero et al., 2020), and even less when it comes to somatic symptoms. Similarly, there are many factors surrounding the performance of co-parenting in divorced families that have hardly been analyzed, such as the type of relationship with the ex-partner, the type of custody, and the frequency of contact with the children (Frisby et al., 2012; Russell et al., 2021; Yilmaz & Fişigöglü, 2005), which have shown to have an impact on well-being, but not on somatization.

In short, the literature review reveals a lack of studies on somatization concerning divorce, and even less when it comes to high-conflict divorce. As mentioned above, the possible impact on somatic symptoms of co-parenting and other difficulties related to the adjustment to divorce has not been considered. Neither has the role of psychological manifestations associated to divorce and conflict, such as anxiety and depression, been studied in relation to somatization. Finally, although some studies have considered the different impact of divorce based on the gender of the divorcees, their results are controversial, and there is a gap concerning the relationship between divorce, conflict, and somatization.

Therefore, this study aims to analyze the relationship between high-conflict divorce and somatization. We expect to find a positive relationship between psychological difficulties of adjustment to divorce and somatic symptomatology, both direct and mediated by anxiety and depression. In the case of co-parenting, this relationship is expected to be negative. The proposed model (see Figure 1), both in men and women, will be analyzed. We will control for other variables such as marital status, type of relationship maintained with the ex-partner, frequency of contact with the children, level of education, type of custody, and time elapsed since the separation.

Figure 1

Initial model based on the hypotheses



Method

Participants

The sample consisted of 270 parents, 160 mothers and 108 fathers, users of Family Visitation Centers in Spain, i.e. centers to which families in high-conflict situations are sent by court referral. These situations include, among others, high-conflict divorces, in which the professionals of these centers regulate exchanges and supervised visits of non-resident parents and their children (De la Torre, 2018). The inclusion criteria for the participation in the study were that parents were separated from their partners, regardless of current marital status (separation, divorce, singleness, new relationship, etc.), and in charge of one or more children. The diagnosis of serious psychopathological disorders and the existence of domestic violence were established as exclusion criteria. The sociodemographic characteristics of the study population can be seen in Table 1. Mean age was 41 years old ($SD = 6.49$; men = 43 years old, $SD = 6.60$; women = 40 years old; $SD = 6.28$). About 60% of the participants were separated or divorced, with an average of 2 children per participant ($SD = 0.77$). Most of them had high school, Unified Polyvalent High School (BUP in Spanish) or Vocational Training (FP in Spanish) studies.

Most participants (46%) indicated that the range of time elapsed since the separation was more than three years, with an average time of $M = 5$ years. Approximately 60% of the custodies were exclusive to the mother, and most mothers (79%) had daily contact with their children, while most of the fathers had contact with them several days a week (48%). Regarding the relationships between the ex-spouses, 42% of participants indicated that they were inexistent.

Table 1

Sociodemographic characteristics of the sample

	Mothers (<i>n</i> = 160)		Fathers (<i>n</i> = 108)		Total (<i>n</i> = 270)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	40	6.28	43	6.60	41	6.49
Number of children	2	0.83	1	0.66	2	0.77
	n	%	n	%	n	%
Educational level						
Less than primary education	-	-	1	<1	1	4
Primary studies	48	30	36	33.3	84	31.1
High school, BUP, or FP	56	35	37	34.3	93	34.4
Medium career	24	15	8	7.4	32	11.9
Higher career	20	12.5	17	15.7	37	13.7
Master's or PhD	5	3.1	7	6.5	12	4.4
Marital status						
Single	50	31.3	32	29.6	83	30.7
Separated	21	13.1	13	12	34	12.6
Divorced	74	46.3	47	43.5	121	44.8
Married, not a first marriage	4	2.5	1	<1	6	2.2
Common law couple	4	2.5	6	5.6	10	3.7
Time since separation						
Less than two months	2	1.3	1	<1	3	1.1
Two to six months	12	7.5	6	5.6	18	6.7
From six months to one year	16	10	10	9.3	26	9.6
From one to two years	32	20	20	18.5	52	19.3
Two to three years	23	14.4	9	8.3	32	11.9
More than three years	68	42.5	55	50.9	123	45.6
Type of custody						
Shared	26	16.3	27	25	53	19.6
Exclusive to mother	107	66.9	56	51.9	163	60.4
Exclusive to father	8	5	10	9.3	18	6.7
Relationship with ex-spouse						
Non-existent	59	36.9	51	47.2	112	41.5

Very scarce	33	20.6	14	13	47	17.4
Restricted	36	22.5	28	25.9	64	23.7
Fluid	15	9.4	9	8.3	24	8.9
Variable and/or ambiguous	15	9.4	4	3.7	19	7
Contact with the child						
Every day	126	78.8	21	19.4	147	54.4
Several days a week	20	12.5	52	48.1	74	27.4
Once a week	6	3.8	9	8.3	15	5.6
Every two weeks	3	1.9	15	13.9	18	6.7
Less frequently	-	-	6	5.6	6	2.2
Alternate weeks	1	< 1	4	3.7	5	1.9

Instruments

Sociodemographic questionnaire. It was constructed ad hoc to collect data regarding sex, age, educational level, marital status, time elapsed since separation, frequency of contact with the children, relationship with the ex-partner, and type of custody.

The Symptom Checklist-90-R (SCL-90-R; Derogatis, 1992). It is a 90-item self-reported symptom questionnaire that includes psychopathological symptoms structured around 9 dimensions (Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism). In this study, three of those dimensions were used: Somatization (12 items), which measures the distress perceived by the person based on different physical symptoms (e.g., headaches), Depression (13 items), which considers mood symptoms and dysphoric affect (e.g., feeling very low energy), and Anxiety (10 items), that comprises a series of symptoms and signs associated with its clinical diagnosis (e.g., nervousness) (Robles et al., 2002). Each item is rated on a 5-point Likert type scale ranging from 0 (*not at all*) to 4 (*very much*). The reliability obtained in this study was $\alpha = .93$ and $\omega = .93$ for Somatization, $\alpha = .91$ and $\omega = .91$ for Anxiety, and $\alpha = .92$ and $\omega = .92$ for Depression.

Cuestionario de Adaptación al Divorcio-Separación (CAD-S [Divorce-Separation Adaptation Questionnaire]). This is a Spanish instrument designed by Yáñez-Yaben and

Comino (2010). It comprises 20 items and evaluates the adaptation to divorce of the whole family, answered by one of the ex-partners. The instrument has four dimensions: Psychological difficulties of adjustment to divorce, Conflict with the ex-partner, Negative consequences of separation, and Willingness to co-parent. In this study, the subscales that were used were Psychological difficulties of adjustment to divorce (6 items), which refers to anger towards the ex-partner, incapacity feelings to overcome the breaking up, and obsession with the ex-partner's current daily activities (e.g., "Sometimes I wonder what my ex-partner is doing right now"), and Willingness to co-parent (5 items), which describes perceptions of the ex-partner's level of cooperation to act for the benefit of their children, helping and supporting the other parent when necessary (e.g., "My ex-partner helps me to raise our children"). All items are rated on a 5-point Likert type scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). In this study, the reliability obtained by the Psychological difficulties of adjustment to divorce and Willingness to co-parent was $\alpha = .70$ and $\omega = .69$ and $\alpha = .77$ and $\omega = .77$, respectively.

Procedure

The present cross-sectional study complied with the original Declaration of Helsinki, and was approved by the University's Ethics Committee (ETK-7/16-17). In order to carry out the study, participants were contacted through the National Federation of Family Visitation Centers (Spain). The study involved 12 centers belonging to 9 Autonomous Communities, including the north (Asturias, La Rioja, and the Basque Country), the central region (Madrid, Castilla La Mancha, and Castilla León), and the south (Andalusia, Valencia, and Murcia) of Spain. The first step was to check the inclusion and exclusion criteria, through the clinical history and/or the judicial referral report, verifying the possible existence of a clinical diagnosis or an active restraining order (i.e. a legal instrument designed to protect victims of domestic or gender-based

violence against all types of aggression. It implies that the aggressor must keep a physical distance, determined by a judge, from the victim. There cannot be any communication between the victim and the aggressor). Subsequently, the potential participants were contacted by telephone, confirming that they fulfilled the inclusion criteria. They were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of the data. Finally, those interested in participating were invited to a face-to-face interview to resolve any possible doubts. Before completing the questionnaires, the informed consent of all participants was requested. The questionnaires were filled in individually with an approximate duration of 30 minutes. There was no financial remuneration for participation in the study.

Data analysis

To start with the analyses, the simple correlations between the proposed variables were analyzed. Then, the proposed model was tested (Figure 1) using the IBM SPSS AMOS 28 program. We used the maximum likelihood method (ML) (Arbuckle, 2021) to evaluate the model's fit, and considered a non-significant value of χ^2 as criterion of adequacy. We also checked the Root Mean Square Error of Approximation (RMSEA) and its 90% Confidence Interval (CI), with values between .05 and .08 being acceptable and those below .05 being very good, the Goodness-of-Fit Index (GFI), and the Comparative Fit Index (CFI), with a value higher than .90 being the fit criterion for both of them (Bentler, 1990; Byrne, 2001; Hu & Bentler, 1998).

In addition, we considered the differential role of gender. For this purpose, following the recommendation of Bollen and Hoyle (1990), we compared nested models by analyzing the differences between the chi-squares of each model. A significant value of chi-square means that there is a difference depending on gender. First, we performed a multigroup model with all its relationships restricted to 0 for men and women, thus

limiting it to equality between genders. Next, we estimated a model in which these parameters were allowed to vary freely without any condition in each group.

Results

Table 2 shows the simple correlations between the studied variables. We found a positive correlation between Psychological difficulties of adjustment to divorce and Somatization, Anxiety, and Depression. Somatization also showed to correlate positively with Anxiety and Depression, and there was also a positive correlation between these last two. Finally, we observed a negative correlation between Willingness to co-parent and Somatization.

Table 2

Simple correlations between variables

	Difficulties	Co-parenting	Somatization	Anxiety
Difficulties	-	-	-	-
Co-parenting	.012	-	-	-
Somatization	.301**	-.137*	-	-
Anxiety	.382**	-.064	.822**	-
Depression	.469**	-.010	.726**	.832**

** $p < .001$. * $p < .05$.

With regard to the control variables, we observed no influence of marital status, type of custody, and level of education in the dimensions of Psychological difficulties of adjustment to divorce and Willingness to co-parent. In contrast, there was a relationship between the time elapsed since separation and both Psychological difficulties of adjustment to divorce in men ($\beta = -.152, p < .001$) and women ($\beta = -.104, p < .001$), and Willingness to co-parent, also in men ($\beta = -.070, p = .025$) and women ($\beta = -.067, p = .006$). In addition, the relationship with the ex-partner was linked to Willingness to co-parent, both in men ($\beta = .141, p < .001$) and women ($\beta = .152, p < .001$). Finally, the

frequency of contact with the children was related to the Psychological difficulties of adjustment to divorce only in women ($\beta = .042, p < .001$).

Table 3 shows the indexes obtained after testing the proposed models. The initial model did not obtain a good fit, and therefore we decided to remove the non-significant relationships. Then, we tested a second model after eliminating the mediation of Anxiety and Depression in the relationship between Willingness to co-parent and Somatization. We also removed the relationship between Psychological difficulties of adjustment to divorce and Somatization. In addition, we added a correlation between Willingness to co-parent and Psychological difficulties of adjustment to divorce, following the criterion provided by the modification indexes. In this second model, all indexes showed adequate values. Although the chi-square value was significant ($\chi^2(72) = 105.329, p < .001$), this indicator is very sensitive to the sample size, so the rest of the indexes were checked. The RMSEA showed a value of .049 (90% CI [0.027, 0.068]). The GFI and CFI obtained values of .912 and .940, respectively. Therefore, this model achieved a good fit.

Table 3

Global fit indexes for the proposed model

Model	χ^2	<i>df</i>	<i>p</i>	GFI	CFI	RMSEA	RMSEA, 90% CI
M	281.462	68	.000	.830	.618	.128	.113-.144
M-1	105.329	72	.006	.912	.940	.049	.027-.068

Note. GFI = Goodness of Fit Index; CFI = Comparative Fit Index; RMSEA = root mean square error of approximation; RMSEA, 90% CI = RMSEA confidence interval; M = Initial model; M-1 = Model with modifications.

Next, the model was analyzed considering the participants' gender in the relationship between divorce and somatization. The final model for men and women is represented in Figures 2 and 3, respectively. The chi-square difference was non-significant ($\Delta\chi^2(17) = 17.292, p = .435$), indicating that the general male and female

model did not operate differently. However, there may be significant variations in the specific relationships within the model. Therefore, to analyze them in greater depth, we considered the critical ratio indexes.

Figure 2

Explanatory model of Psychological difficulties of adjustment to divorce and Willingness to co-parent in Somatization in men (standardized estimates)

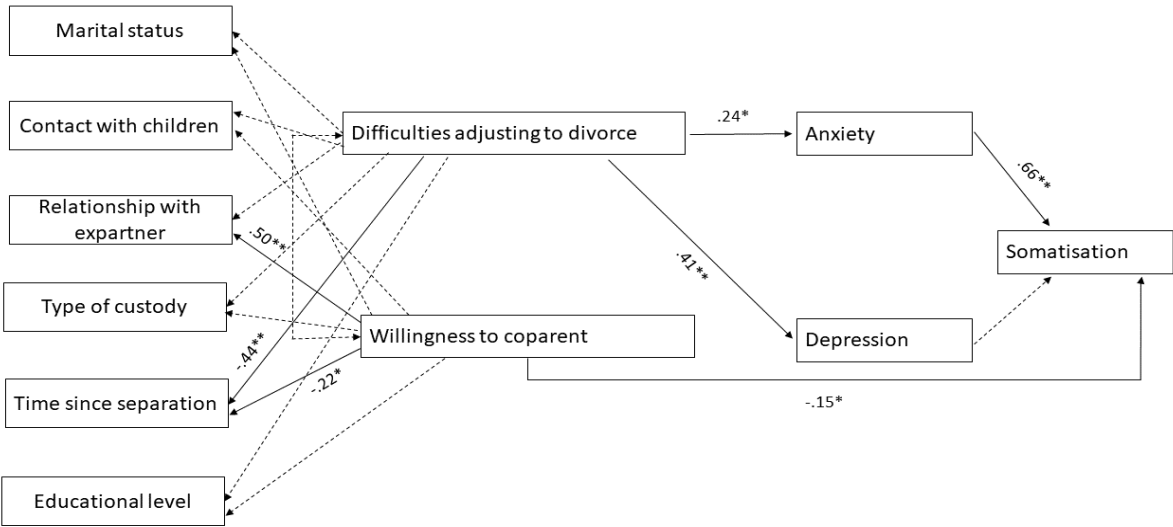
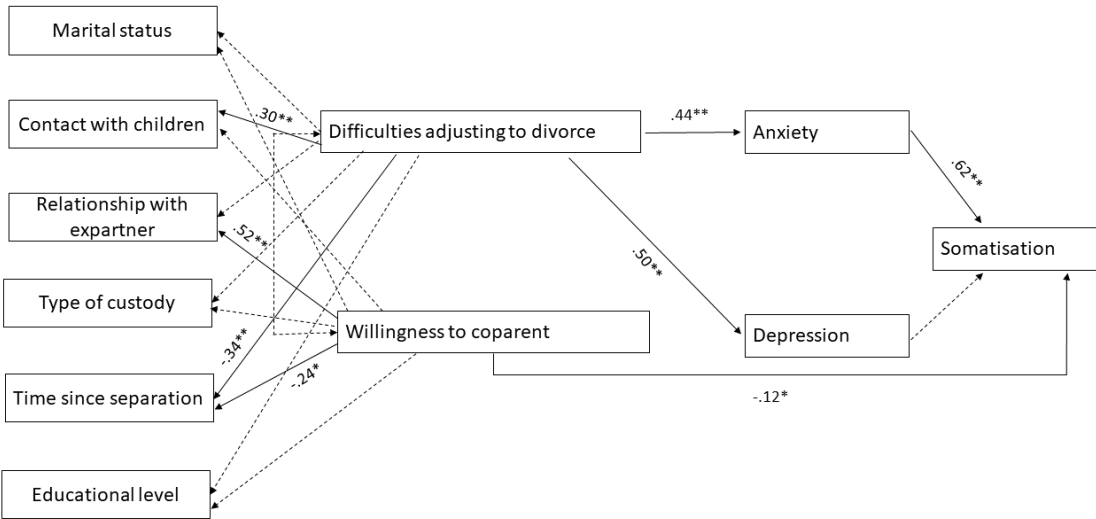


Figure 3

Explanatory model of Psychological difficulties of adjustment to divorce and the Willingness to co-parent in Somatization in women (standardized estimates)



The critical ratios indexes revealed significant gender differences in the association between Psychological difficulties of adjustment to divorce and Anxiety ($z = 2.003, p < .001$). Although both women and men ($\beta = .772, p < .001, \beta = .340, p = .030$) showed a positive and significant relationship between Psychological difficulties of adjustment to divorce and Anxiety, this relationship was higher for women.

Regarding the rest of the relationships, we observed an association between Anxiety and Somatization, both in women ($\beta = .837, p < .001$) and men ($\beta = .923, p < .001$). Also, Psychological difficulties of adjustment to divorce were related to Depression both in women ($\beta = 1.24, p < .001$) and men ($\beta = 1.059, p < .001$). However, the relationship between Depression and Somatization was non-significant for either women ($\beta = .169, p = .072$) or men ($\beta = .097, p = .333$). Finally, Willingness to co-parent had a negative relationship with Somatization both in women ($\beta = -.270, p = .044$) and men ($\beta = -.276, p = .028$).

Discussion

The present study makes an important contribution to the understanding of the relationship between high-conflict divorce and somatization. On one hand, the results confirmed the hypothesis of the mediating role of anxiety in the association between psychological difficulties of adjustment to divorce and somatic symptoms, although this mediation was not observed in the case of depression. On the other hand, willingness to co-parent had a direct relationship with somatic symptomatology, without the mediation of anxiety nor depression.

First, concerning the dimension of psychological difficulties of adjustment to divorce, we found that the greater the difficulties experienced in the face of a breakup, both men and women will exhibit more somatic symptoms. This result supports previous literature that have demonstrated that sustained stress over time, in this case related to

psychological difficulties of adjustment to divorce (constant thoughts about the ex-partner, negative emotions towards him/her, constant crying, difficulties sleeping and/or waking up, thinking that one cannot overcome the break-up, etc.), may be linked to a greater presence of somatic symptoms (headaches, gastrointestinal conditions, body aches, breathing difficulties, etc.) (Davoodi et al., 2018; Keskin, 2019; Kozłowska et al., 2020).

Second, we could observe a stronger relationship between psychological difficulties of adjustment to divorce and anxiety and depression. That is, people with psychological difficulties during the divorce process tend to have more anxious and depressive symptoms. These results are also in line with those of Strizzi et al. (2021), Hald et al. (2022) or Sbarra and Borelli (2019), who identified more anxious states, more depressive symptoms, and a higher prevalence of depression in divorced people than in married or cohabiting people.

Third, this study allowed us to support the relationships between anxiety and depression, on the one hand, and somatic symptoms, on the other. The results found were interesting, even if they did not fully confirm the hypotheses proposed. Although a greater presence of anxious symptoms also implied more somatization, this was not observed in the case of depressive symptoms, in contrast to previous research (Chu et al., 2019). However, several authors have argued that there is comorbidity between the three variables, so that people with somatic symptoms often also have anxious and/or depressive symptoms (Garrusi et al., 2019; Hald et al., 2020; Zheng et al., 2019), but not necessarily (Henningsen, 2022). Therefore, the results of this study may be reflecting this comorbidity and an overlap between depressive and somatic symptoms, but they should be considered with caution.

In addition, this study has some differences compared to the previous research in this area. First, other studies used larger sample sizes and they included both recently divorced people (one week or less after legal divorce) (Hald et al., 2019; Hald et al., 2022) and people who had not undergone a breakup (Kapfhammer, 2006). Second, participants from both the general population and clinical contexts were considered. Finally, some authors have used different instruments to assess symptoms of depression (e.g., Garrusi et al. (2019) used the Patient Symptom Questionnaire, PHQ-15; Kroenke et al., 2002), or medical records, such as Xinyu et al. (2019). Taking all this into account, further research is needed, not only on the interaction between anxious, depressive, and somatic symptoms, but also on the impact that high-conflict divorce has on each of them, as has been done in this study.

Beyond the relationships between the mentioned variables, this study has allowed us to deepen the mediating role of emotional well-being in situations of high-conflict divorce, confirming that anxiety mediates the relationship between psychological difficulties of adjustment to divorce and somatization. In this case, the mediation was total, because the link between the difficulties of adjustment and somatization was not significant anymore when anxiety was considered. Therefore, based on the results of this study, we can infer that divorced people may suffer more anxious states related to the disruptive nature of divorce, which can lead to more health complaints such as back pain, fatigue, gastrointestinal problems, or headaches, all symptoms related to somatization. However, in the case of depression, there was no mediating effect, but rather a parallel effect, as previously noted. That is, although people may experience more depressive symptoms in situations of high-conflict divorce, that does not mean that their somatic symptoms will necessarily increase, as in this case. These results highlight the need to continue deepening the study of the relationship between depression and somatization,

their coexistence, or their masking depending on the intensity of the symptoms, as highlighted by some authors (Güney et al., 2015; Henningsen, 2022; Macina et al., 2021).

Regarding gender invariance, although we found similarities in both men and women, we also found some specific differences between them. First, women showed significantly more anxiety than men when they both had psychological difficulties of adjustment. In the previous literature, women have consistently shown an increased presence of psychiatric disorders, including anxiety, in face of stressful situations (Faravelli et al., 2013), and specifically in high-conflict divorces (Sedighi et al., 2021). This greater vulnerability has been explained not only through biological criteria (metabolism, hormonal system, and brain structures) but also in the basis of psychological and social structures related to gender roles (Green et al., 2019; Jalnapurkar et al., 2018; Pigoni et al., 2020). Concerning post-divorce situations, there are still gender differences in financial losses and the responsibilities related to housework and children (Parker et al., 2022; Raley & Sweeney, 2020; Yáñez-Yaben, 2017), which have been linked to women's higher level of stress and, thus, a greater presence of anxious symptoms (Al-Bahrani, 2021).

Second, willingness to co-parent (perception of the ex-partner as a figure of support and help, and perception of compliance with agreements concerning the children, economic conditions, and domestic decisions) was related to a lower presence of somatic symptomatology. These results are consistent with studies that have identified the buffering role of co-parenting against the negative effects of stress (Choi & Becher, 2019; Eikrem & Jevne, 2022; Richardson et al., 2018), or studies that have negatively related a tension-laden communication (about the care of children and the tasks corresponding to co-parenting) to higher levels of distress (DeGarmo et al., 2008). In this study, however, contrary to what we had expected, we did not find a relationship between willingness to

co-parent and anxiety and depression. The previous literature has been consistent about the bidirectional association of co-parenting and anxiety, claiming that a co-parental relationship charged with tension and conflict can increase anxious symptoms by generating a stress-enhancing environment and vice versa (Dollberg et al., 2020). Likewise, depressive symptoms have been related to the lack of support from the ex-partner (Xiao & Loke, 2021). However, these results should be considered with caution, as the literature is scarce and the studies mentioned differ from the present study both in the instruments and the type of sample used. That is, unlike these investigations, in the present study, anxiety and depression were measured through a general questionnaire of psychological symptomatology (SCL-90-R) and not through more specific instruments such as the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) or the State-Trait Anxiety Inventory (STAI; Spielberg, 1983) (Pinto et al., 2019). Also, in our study, co-parenting was measured through a divorce adaptation questionnaire instead of more specific instruments such as the Co-parenting Relations Scale (CRS; Feinberg et al., 2012) (Ferraro & Lucier-Greer, 2022; Lee et al., 2021). Finally, the mentioned studies used more diverse samples (e.g., both with divorced and non-divorced people, or divorced people without conflict) or more specific samples (families with young children). In short, the results obtained allow us to confirm the direct relationship between co-parenting and somatization, but we have not been able to verify co-parenting's indirect relationship with anxious or depressive symptomatology.

With respect to the covariables, the proposed model was maintained both for men and women regardless of marital status, type of custody, and level of education. However, the time elapsed since the separation was related to psychological difficulties of adjustment to divorce and willingness to co-parent in both genders. This means that both for fathers and mothers, the time since the breakup is related to the intensity of the

psychological difficulties of the divorce, as they seem to recover well over time (Lampraki et al., 2018). At the same time, we found a decrease in the willingness to co-parent in both parents (Rejaän et al., 2022). Apparently, over time, as relationships become more stable, post-divorce difficulties decrease and co-parental interaction is incorporated into the parents' daily routine, reducing somehow their initial disposition. However, this does not mean that the quality of the co-parenting relationship is diminished (Russell et al., 2016; Stafford & Coleman, 2012).

In addition, the type of relationship maintained with the ex-partner was also linked to men's and women's willingness to co-parent. That is, a more fluid interaction between the ex-partners seems to increase their willingness to co-parent, which in line with the findings of previous studies (Beckmeyer et al., 2022; Jamison et al., 2014). Finally, a lower frequency of contact with the children showed to have an impact on the psychological difficulties of adjustment to divorce only in women. It has been found that, for mothers, a lack of contact with children is a great stressor. This may be due to the persistent social concept of devaluation and rejection towards mothers who do not have custody or are not the primary source of care for their children (Kielty, 2008; Omrod, 2018), which can even lead these women to wonder about their self-esteem and maternal identity (Kruk, 2010; Weitz & Karlsson, 2021).

Following all of the above, the present study is a preliminary approach to the relationship between high-conflict divorce and somatization. More specifically, we observed that the psychological difficulties of adjustment to divorce and co-parenting were linked to the onset of somatic symptomatology, a health condition that has barely been studied in divorce in general, and in high-conflict divorces in particular. In addition, this study has allowed us to identify the mediating role of anxiety in the psychological difficulties of adjustment to high-conflict divorce, an aspect that had not been previously

considered. The results suggest that anxiety increases the onset of somatic symptoms in people with psychological difficulties of adjustment in a high-conflict divorce. In addition, we saw that this relationship was especially significant in women, somehow contributing to clarifying gender differences in the consequences of high-conflict divorce.

Limitations

Despite all the contributions, as a preliminary study it is not without limitations. First, the sample was homogeneous, as the participants only came from centers located in Spain, and most of them shared socioeconomic characteristics such as educational level or number of children. Thus, it might be interesting to replicate the study with a larger sample from a different sociocultural context. At the same time, they were only divorcees with high levels of destructive conflict, that may have consistently more anxious, depressive, and somatic symptoms (Hald et al., 2022; Hald et al., 2019; Lebow, 2019). Therefore, future studies should also consider the relationship between the destructiveness of conflict and the presence of somatic symptomatology. In the same line, even if this study poses a major contribution to the investigation of high-conflict divorce, it may also be worthwhile to replicate it with a population of divorced people without conflict. This will allow us to compare the consequences of divorce based on the level of conflict between ex-spouses. Likewise, we recommend incorporating into subsequent studies more specific instruments to measure anxious, depressive, and somatic symptoms (Pinto et al., 2019), as well as the factors related to divorce (Ferraro & Lucier-Greer, 2022; Lee et al., 2021), as in the present study we only used general tools for all the variables included.

Conclusions

In short, and regardless of these limitations, the present preliminary study has shed light on the relationship between high-conflict divorce and somatization, a health

condition that is affecting a growing number of people who come to primary care services and whose origin and intervening factors are still very little known. Divorce is a complex and multidimensional process, but this study has allowed us to delve into the relationship between psychological difficulties of adjustment to divorce and willingness to co-parent and the health of divorcees in a high-conflict context.

References

- Al-Bahrani, M. A. (2021). Post-divorce experience within Arab context: Gender differences. *International Journal of Social Science and Humanity*, 11(3), 54-58.
<http://doi.org/10.18178/ijssh.2021.11.3.1039>
- Amato, P. R. (2012). The consequences of divorce for adults and children: An update. *Dustvena Istrazivanja*, 1, 5-24. <http://doi.org/10.5559/di.23.1.01>
- Aragona, M., Monteduro, M.D., Colosimo, F., Maisano, B., & Geraci, S. (2008). Effects of gender and marital status on somatization symptoms of immigrants from various ethnic groups attending a primary care service. *German Journal of Psychiatry*, 11, 64-72.
- Arbuckle, J. L. (2021). Amos (Version 28.0). [Computer Software]. IBM SPSS.
- Barbara, A. M., & Dion, K. L. (2000). Breaking up is hard to do, especially for strongly “preoccupied” lovers. *Journal of Personal and Interpersonal Loss*, 5(4), 315-342.
<https://doi.org/10.1080/108114400008407850>
- Basak, O. B., & Yilmaz, A. E. (2022). Post-divorce adjustment: Definitions, models and assessment of adjustment. *Approaches in Psychiatry*, 14(1), 1-11.
<http://doi.org/10.18863/pgy.910766>
- Becher, E. H., Kim, H., Cronin, S. E., Deenanath, V., McGuire, J. K., McCann, E. M., & Powell, S. (2019). Positive parenting and parental conflict: Contributions to

- resilient co-parenting during divorce. *Family Relations*, 68, 150-164.
<https://doi.org/10.1111/fare.12349>
- Beckmeyer, J. J., Markham, M. S., & Troilo, J. (2022). Domains of ongoing communication between former spouses: Associations with parenting stress and children's post-divorce well-being. *Journal of Family Issues*, 43(6), 1579-1600.
<https://doi.org/10.1177/0192513X211029264>
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238-246. <https://doi/10.1037/0033-2909.107.2.238>
- Blue, S. (2017). *Grief and romantic relationships dissolution*. Lexington Books.
- Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, 69(2), 479-504. <https://doi.org/10.1093/sf/69.2.479>
- Byrne, B. M. (2001). *Structural equation modelling with AMOS. Basic concepts, applications, and programming*. Lawrence Erlbaum Associates.
- Choi, J. K., & Becher, E. H. (2019). Supportive co-parenting, parenting stress, harsh parenting, and child behaviour problems in nonmarital families. *Family Process*, 58(2), 404-417. <https://doi.org/10.1111/famp.12373>
- Chu, A. L., Stochl, J., Lewis, G., Zammit, S., Jones, P. B., & Khandaker, G. M. (2019). Longitudinal association between inflammatory markers and specific symptoms of depression in a prospective birth cohort. *Brain, Behavior, and Immunity*, 76, 74-81. <https://doi.org/10.1016/j.bbi.2018.11.007>
- Ciprić, A., Stulhofer, A., Overup, C. S., Strizzi, J. M., Lange, T., Sander, S., & Hald, G. M. (2021). Does one size fit all? Socioeconomic moderators of post-divorce health and the effects of a post-divorce digital intervention. *Psychological Intervention*, 30, 163-173. <https://doi.org/10.5093/pi2021a6>

- Davoodi, E., Wen, A., Dobson, K. S., Noorbala, A. A., Mohammadi, A., & Farahmand, Z. (2018). Early maladaptive schemas in depression and somatization disorder. *Journal of Affective Disorders*, 235, 82-89.
<https://doi.org/10.1016/j.jad.2018.04.017>
- DeGarmo, D. S., Patras, J., & Eap, S. (2008). Social support for divorced fathers' parenting: Testing a stress-buffering model. *Family Relations*, 57(1), 35-48.
<https://doi.org/10.1111/j.1741-3729.2007.00481.x>
- De la Torre, J. (2018). *Los divorcios conflictivos: Guía de intervención en los Puntos de Encuentro Familiar* [Conflictive divorces: Intervention guide in the Family Visitation Centres]. Morata.
- Derogatis, L. R. (1992). *The Symptom Checklist-90-Revised*. NCS Assessments.
- Dollberg, D. G., Gamliel, K. H., & Levy, S. (2020). Mediating and moderating links between co-parenting, parental mentalisation, parents' anxiety and children's behaviour problems. *Journal of Family Psychology*, 35(3), 324-334.
<https://doi/10.1037/fam0000728>
- Eikrem, T., & Jevne, K. S. (2022). I do it for the children, and it's not a walk in the park: Parents' stories about how to maintain cooperative co-parenting during the divorce process. *Child and Family Social Work*, 27(4), 815-824.
<https://doi.org/10.1111/cfs.12928>
- Faravelli, C., Scarpato, M. A., Castellini, G., & Lo Sauro, C. (2013). Gender differences in depression and anxiety: The role of age. *Psychiatry Research*, 210, 1301-1303.
<http://dx.doi.org/10.1016/j.psychres.2013.09.027>
- Feinberg, M. E., Brown, L. D., & Kan, M. L. (2012). A multi-domain self-report measure of co-parenting. *Parenting: Science and Practice*, 12(1), 1-21.
<https://doi.org/10.1080/15295192.2012.638870>

- Fernandes de Magalhães, J. R., Pereira, A., Pereira, N., Ferreira da Silva, A., Matheus, F., Arão da Silva, M., & Araújo, M. (2021). Meanings of intrafamily violence experienced in childhood/adolescence present in the discourses of men. *Revista Brasileira de Enfermagem*, 74(3), <http://dx.doi.org/10.1590/0034-7167-2020-0238>
- Ferraro, A. J., & Lucier-Greer, M. (2022). The case for multidimensional co-parenting behaviour as sources of chronic stress: Understanding pathways to mental health symptomatology among divorced and separating adults. *Journal of Family Nursing*, 28(4), 353-367. <https://doi.org/10.1177/10748407221124235>
- Field, T. (2011). Romantic breakups, heartbreak and bereavement. *Psychology*, 2(4), 382-387. <https://doi.org/10.4236/psych.2011.24060>
- Finkelstein, L. (2014). *Breaking your own heart: A qualitative study of grief after initiating a breakup*. [Doctoral Thesis]. University of Denver. Available from ProQuest One Academic. (Order No. 1626728770). <https://www.proquest.com/dissertations-theses/breaking-your-own-heart-qualitative-study-grief/docview/1626728770/se-2>
- Fischer, S., Nater, U. M., & Laferton, J. A. C. (2016). Negative stress beliefs predict somatic symptoms in students under academic stress. *International Journal of Behavioral Medicine*, 23, 746-751. <https://doi.org/10.1007/s12529-016-9562-y>
- Frisby, B. N., Booth-Butterfield, M., Dillow, M. R., Martin, M. M., & Weber, K. D. (2012). Face and resilience in divorce: The impact on emotions, stress, and post-divorce relationships. *Journal of Social and Personal Relationships*, 29(6), 715-735. <https://doi.org/10.1177/0265407512443452>
- Garrusi, B., Danaei, M., & Aboosaeidi, R. (2019). The prevalence and predictive factors of somatization and its relationship with anxiety and depression in Iranian

- population. *Journal of Preventive Medicine and Hygiene*, 60(4), 400-406.
<https://doi.org/10.15167%2F2421-4248%2Fjpmh2019.60.4.1006>
- Green, T., Flash, S., & Reiss, A. L. (2019). Sex differences in psychiatric disorders: What we can learn from sex chromosome aneuploidies. *Neuropsychopharmacology*, 44(1), 9-21. <https://doi.org/10.1038%2Fs41386-018-0153-2>
- Güney, Z. O., Sattel, H., Cardone, D., & Merla, A. (2015). Assessing embodied interpersonal emotion regulation in somatic symptom disorder: A case study. *Frontiers in Psychology*, 6(68), 1-14. <https://doi.org/10.3389/fpsyg.2015.00068>
- Hald, G. M., Ciprić, A., Øverup, C. S., Štulhofer, A., Lange, T., Sander, S., Gad Kjeld, S., & Strizzi, J. M. (2020). Randomised controlled trial study of the effects of an online divorce platform on anxiety, depression, and somatization. *Journal of Family Psychology*, 34(6), 740-751. <https://doi.org/10.1037/fam0000635>
- Hald, G. M., Ciprić, A., Sander, S., & Strizzi, J. M. (2022). Anxiety, depression and associated factors among recently divorced individuals. *Journal of Mental Health*, 31(4), 462-470. <https://doi.org/10.1080/09638237.2020.1755022>
- Hald, G. M., Strizzi, J. M., Ciprić, A., & Sander, S. (2019). The Divorce Conflict Scale. *Journal of Divorce and Remarriage*, 61(2), 83-104.
<https://doi.org/10.1080/10502556.2019.1627150>
- Hardesty, J. L., Ogolsky, B. G., Raffaelli, M., & Whittaker, A. (2019). Relationship dynamics and divorcing mothers' adjustment: Moderating role of marital violence, negative life events, and social support. *Journal of Social and Personal Relationships*, 36(11-12), 3651-3672.
<https://doi.org/10.1177/0265407519833178>

- Henningesen, P. (2022). Management of somatic symptom disorder. *Dialogues in Clinical Neuroscience*, 20(1), 23-30.
<https://doi.org/10.31887/DCNS.2018.20.1/phenningsen>
- Herrero, M., Martínez-Pampliega, A., & Álvarez, I. (2020). Family communication, adaptation to divorce and children's maladjustment: The moderating role of coparenting. *Journal of Family Communication*, 20(2), 114-128.
<https://doi.org/10.1080/15267431.2020.1723592>
- Hu, L., & Bentler, P. M. (1998). Fit indexes in covariance structure modelling: Sensitivity to underparameterized model specification. *Psychological Methods*, 3(4), 424-453. <https://doi.org/10.1037/1082-989X.3.4.424>
- Husain-Krautter, S., & Ellison, J. M. (2021). Late life depression: The essentials and the essential distinctions. *Focus*, 19, 282-293.
<https://doi.org/10.1176/appi.focus.20210006>
- Jalnapurkar, I., Allen, M., & Pigott, T. (2018). Sex differences in anxiety disorders: A review. *HSOA Journal of Psychiatry, Depression and Anxiety*, 4(12).
<http://doi.org/10.24966/PDA-0150/100012>
- Jamison, T. B., Coleman, M., Ganong, L. H., & Feistman, R. E. (2014). Transitioning to postdivorce family life: A grounded theory investigation of resilience in co-parenting. *Family Relations*, 63(3), 411-423. <https://doi.org/10.1111/fare.12074>
- Kapfhammer, H. P. (2006). Somatic symptoms in depression. *Dialogues in Clinical Neuroscience*, 8(2). <https://doi.org/10.31887/DCNS.2006.8.2/hpkapfhammer>
- Keskin, G. (2019). Approach to stress endocrine response: Somatization in the context of gastroenterological symptoms: A systematic review. *African Health Sciences*, 19(3). <https://doi.org/10.4314/ahs.v19i3.29>

- Kielty, S. (2008). Non-resident motherhood: Managing a threatened identity. *Child and Family Social Work*, 13(1), 32-40. <https://doi.org/10.1111/j.1365-2206.2007.00512.x>
- Kiral, Ö. (2019). *An investigation into the relationship between early maladaptive schemas and romantic dissolution grief in youth: A mixed method study*. [Doctoral Thesis]. Ted University. Available from ProQuest One Academic. (Order No. 30289840). <https://www.proquest.com/docview/2761108730?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>
- Knöpfli, B., Morselli, D., & Perrig-Chiello, P. (2016). Trajectories of psychological adaptation to marital breakup after a long-term marriage. *Gerontology*, 62, 541-552. <https://doi.org/10.1159/000445056>
- Kozłowska, K., Scher, S., & Helgeland, H. (2020). *Functional somatic symptoms in children and adolescents: A stress-system approach to assessment and treatment*. Springer Nature.
- Kroenke, K., Spitzer, R. L., y Williams, J. B. W. (2002). The PHQ-15: Validity of a new measure for evaluating the severity of somatic symptoms. *Psychosomatic Medicine*, 64(2), 258-266. <https://doi.org/10.1097/00006842-200203000-00008>
- Kruk, E. (2010). Collateral damage: The lived experiences of divorced mothers without custody. *Journal of Divorce and Remarriage*, 51, 526-543. <https://doi.org/10.1080/10502556.2010.504103>
- Lampraki, C., Jopp, D. S., Spini, D., & Morselli, D. (2018). Social loneliness after divorce: Time-dependent differential benefits of personality, multiple important group memberships, and self-continuity. *Gerontology*, 65, 275-287. <https://doi.org/10.1159/000494112>

- Lebow, J. L. (2019). Divorce today. In J. L. Lebow (Ed.), *Treating the difficult divorce: A practical guide for psychotherapists* (pp. 35-55). American Psychological Association. <https://doi/10.1037/0000116-003>
- Lee, J. K., Feinberg, M. E., & Wells, M. B. (2021). The Swedish Brief Co-parenting Relationship Scale: Psychometrics and concurrent validity among primiparous and multiparous fathers. *Family Relations*, 70(3), 823-839. <https://doi.org/10.1111/fare.12503>
- Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. (2006). The short-term and decade-long effects of divorce on women's midlife health. *Journal of Health and Social Behavior*, 47, 111-125. <https://doi.org/10.1177/002214650604700202>
- Macina, C., Bendel, R., Walter, M., & Wrege, J. S. (2021). Somatization and somatic symptom disorder and its overlap with dimensionally measured personality pathology: A systematic review. *Journal of Psychosomatic Research*, 151, 11646.
- Nakamura, Y., Takeuchi, T., Hashimoto, K., & Hashizume, M. (2017). Clinical features of outpatients with somatization symptoms treated at Japanese psychosomatic medicine clinic. *BioPsychoSocial Medicine*, 11(16). <https://doi.org/10.1186/s13030-017-0104-x>
- Nakao, M., Fricchione, G., Zuttermeister, P. C., Myers, P., Barsky, A. J., & Benson, H. (2001). Effects of gender and marital status on somatic symptoms of patients attending a mind/body medicine clinic. *Behavioral Medicine*, 26(4), 159-168. <https://doi.org/10.1080/08964280109595763>
- Nikupeteri, A., & Laitinen, M. (2022). High-conflict separations and differentiated professional responses – from confrontational interaction to post-separation violence and stalking. *Journal of Divorce and Remarriage*, 63(7-8). <https://doi.org/10.1080/10502556.2022.2157667>

- Omrod, J. (2018). The challenges facing non-resident mothers following divorce: A literature review. *British Journal of Guidance and Counselling*, 46(6), 694-708. <https://doi.org/10.1080/03069885.2018.1483008>
- Ordway, A. M., Moore, R. O., Casasnovas, A. F., & Asplund, N. R. (2020). Understanding vicarious trauma, burnout, and compassion fatigue in high-conflict divorce. *The Family Journal: Counselling and Therapy for Couples and Families*, 28(2), 187-193. <https://doi.org/10.1177/1066480720904028>
- Parker, G., Durante, K. M., Hill, S. E., & Haselton, M. G. (2022). Why women choose divorce: An evolutionary perspective. *Current Opinion in Psychology*, 43, 300-306. <https://doi.org/10.1016/j.copsyc.2021.07.020>
- Pigoni, A., Delvecchio, G., Squarcina, L., Bonivento, C., Giradi, P., Finos, L., Crisanti, C., Balestrieri, M., D'Agostini, S., Stanley, J. A., & Brambilla, P. (2020). Sex differences in brain metabolites in anxiety and mood disorders. *Psychiatry Research: Neuroimaging*, 305. <https://doi.org/10.1016/j.psychresns.2020.111196>
- Pinto, T. M., Figueredo, B., & Feinberg, M. E. (2019). The Co-parenting-Relationship Scale-Father's Prenatal Version. *Journal of Adult Development*, 26, 201-208. <https://doi.org/10.1007/s10804-018-9308-y>
- Polak, S., & Saini, M. (2019). The complexity of families involved in high-conflict disputes: A postseparation ecological transactional framework. *Journal of Divorce and Remarriage*, 60(2), 117-140. <https://doi.org/10.1080/10502556.2018.1488114>
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurements*, 1(3), 385-401. <https://doi.org/10.1177/014662167700100306>

- Raley, R. K., & Sweeney, M. M. (2020). Divorce, repartnering, and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82, 81-99.
<https://doi.org/10.1111/jomf.12651>
- Ran, L., Wang, W., Ai, M., Kong, Y., Chen, J., & Kuang, L. (2020). Psychological resilience, depression, anxiety, and somatization symptoms in response to COVID-19: A study of the general population in China at the peak of its epidemic. *Social Science and Medicine*, 262, 113261.
<https://doi.org/10.1016/j.socscimed.2020.113261>
- Rejaän, Z., Van der Valk, I., & Branje, S. (2022). Postdivorce co-parenting patterns and relations with adolescent adjustment. *Journal of Family Issues*, 43(7), 1739-1759.
- Richardson, E. W., Futris, T. G., Mallette, J. K., & Campbell, A. (2018). Foster mothers' parenting stress and co-parenting quality: An examination of the moderating role of support. *Children and Youth Services Review*, 89, 77-82.
<https://doi.org/10.1016/j.childyouth.2018.04.024>
- Riquelme, V., Sahuquillo, P., Cánovas, P. (2020). Transitando la ruptura familiar: Una aproximación hacia la coordinación de parentalidad. *Cuestiones Pedagógicas*, 29, 77-89. <https://doi.org/10.12795/CP.2020.i29.06>
- Robles, J. I., Andreu, J. M., & Peña, M. E. (2002). SCL-90-R: Aplicación y análisis de sus propiedades psicométricas en una muestra de sujetos clínicos españoles [SCL-90: Application and analysis of its psychometric properties in a Spanish clinical sample]. *Psicopatología Clínica, Legal y Forense*, 2(1), 5-19.
- Russell, L. T., Beckmeyer, J. J., Coleman, M., & Ganong, L. (2016). Perceived barriers to postdivorce coparenting: Differences between men and women and associations with coparenting behaviors. *Family Relations*, 65(3), 450-461.
<https://doi.org/10.1111/fare.12198>

- Russell, L. T., Ferraro, A. J., Beckmeyer, J. J., Markham, M. S., & Zimmermann, M. L. (2021). Communication technology use in post-divorce co-parenting relationships: A typology and associations with post-divorce adjustment. *Journal of Social and Personal Relationships*, 38(12), 3752-3776.
- Sbarra, D. A., & Borelli, J. L. (2019). Attachment reorganisation following divorce: Normative processes and individual differences. *Current Opinion in Psychology*, 25, 71-75. <https://doi.org/10.1016/j.copsyc.2018.03.008>
- Sedighi, K., Toosi, M.S., & Khadivi, G. (2021). Effectiveness of mindfulness-based cognitive therapy on anxiety and depression of divorced women. *Journal of Research in Behavioural Sciences*, 19(1), 149-158. <http://dx.doi.org/10.29252/rbs.19.1.149>
- Shangguan, F., Zhou, C., Qian, W., Zhang, C., Liu, Z., & Zhang, X. Y. (2021). A conditional process model to explain somatization during coronavirus disease 2019 epidemic: The interaction among resilience, perceived stress, and sex. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.633433>
- Spielberg, C. D. (1983). *Manual for the State-Trait Anxiety Inventory*. Palo Alto, C.A.: Consulting Psychologists Press.
- Stafford, M., & Coleman, M. (2012). The good, the bad, and the ugly: Divorced mothers' experiences with coparenting. *Family Relations*, 61(4), 586-600. <https://doi.org/10.1111/j.1741-3729.2012.00718.x>
- Strizzi, J. M., Ciprić, A., Sander, S., & Hald, G. M. (2021). Divorce is stressful, but how stressful? Perceived stress among recently divorced Danes. *Journal of Divorce and Remarriage*, 62(4), 295-311. <https://doi.org/10.1080/10502556.2021.1871838>

- Symoens, S., Colman, E., y Bracke, P. (2014). Divorce, conflict, and mental health: How the quality of intimate relationships is linked to post-divorce well-being. *Journal of Applied Social Psychology*, 44, 220-233. <https://doi.org/10.1111/jasp.12215>
- Wang, H., & Amato, P. R. (2000). Predictors of divorce adjustment: Stressors, resources and definitions. *Journal of Marriage and the Family*, 62, 655-668.
- Weitz, Y. S., & Karlsson, M. (2021). Professional or authentic motherhood? Negotiations on the identity of the birth mother in the context of foster care. *Qualitative Social Work*, 20(3), 703-717. <http://dx.doi.org/10.1177/1473325020912815>
- Xiao, X., & Loke, A. Y. (2021). The effects of co-parenting/intergenerational co-parenting interventions during the postpartum period: A systematic review. *International Journal of Nursing Studies*, 119. <https://doi.org/10.1016/j.ijnurstu.2021.103951>
- Xinyu, F., Chen, Z., Zhiguo, W., Daihui, P., Weiping, X., Jingjing, X., Chenglei, W., Lvchun, C., Jia, H., & Yiru, F. (2019). The association between somatic symptoms and suicidal ideation in Chinese first-episode major depressive disorder. *Journal of Affective Disorders*, 245, 17-21. <https://doi.org/10.1016/j.jad.2018.10.110>
- Yáñez-Yaben, S. (2010). Hacia la co-parentalidad post-divorcio: Percepción del apoyo de la expareja en progenitores divorciados españoles. *International Journal of Health Psychology*, 10, 295-307.
- Yáñez-Yaben, S., & Comino, P. (2010). El CAD-S, un instrumento para la evaluación de la adaptación al divorcio-separación [The CAD-S, an instrument to assess adaptation to divorce-separation]. *Psicothema*, 22(1), 157-162.

- Yárnöz-Yaben, S. (2017). Grief due to divorce: Relationship with attachment style and effects on subjective well-being and co-parenting. *Estudios en Psicología*, 38(3), 667-688. <https://doi.org/10.1080/02109395.2017.1330305>
- Yilmaz, A. E., & Fişigöglü, H. (2005). Turkish parents' post-divorce adjustment. *Journal of Divorce and Remarriage*, 42(3-4), 83-107. https://doi.org/10.1300/J087v42n03_06
- Zheng, F., Duan, Y., Li, J., Lai, L., Zhong, Z., Hu, M., & Ding, S. (2019). Somatic symptoms and their association with anxiety and depression in Chinese patients with cardiac neurosis. *Journal of International Medical Research*, 47(10), 4920-4928. <https://doi.org/10.1177/0300060519869711>

7. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis

Pellón, I., Martínez-Pampliega, A., & Cormenzana, S. (under review). *Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis.*

Abstract

Although the consequences of divorce and conflict have been extensively studied, most studies have focused on the health of the children, rather than on the ex-spouses. Furthermore, even if divorce has been found to have an impact on co-parenting, it has not been studied in relation to health. In addition, the interaction between all these variables with emotion socialization has not been considered in high-conflict divorces. Therefore, the present study aimed to analyze the impact of physical and psychological symptomatology and co-parenting on the emotion socialization of parents experiencing high-conflict divorces, taking into account the moderating role of resilience. For this purpose, a Latent Profile Analysis was carried out with Mplus 8.10 using a sample of 239 parents from Family Visitation Centers. Regarding the results, on the one hand, parents with fewer physical and psychological symptoms showed more emotion socialization behaviors than those with more symptomatology. On the other hand, we could observe that in situations of high interparental conflict neither co-parenting nor resilience were significant, which seems to indicate that their role is not that relevant compared to the one of physical or psychological symptomatology. We can therefore conclude that it is of primary importance to consider the role of physical and psychological parental symptomatology when analyzing parental skills such as emotion socialization, and that there is a lack of studies that focus on this relationship in high-conflict divorces.

Keywords: divorce, conflict, symptomatology, co-parenting, emotion socialization, resilience

Currently, a large proportion of married or cohabiting couples undergo divorce or separation. More precisely, in 2021, 700,000 divorces took place in the European Union (Eurostat, 2023) and 690,000 across 45 states in the US the same year (Centers for Disease Control and Prevention, 2023). Divorce often involves financial and legal changes, the renegotiation of parental relationships, changes in friendships and social networks, and moving. Considering the parents experiencing high-conflict divorces, these changes, if not well managed, can generate tension and conflict that may affect their physical and psychological health (Ordway et al., 2020). Subsequently, this negative environment and parents' distress can spillover into their co-parental relationship (Becher et al., 2019; Nunes et al., 2021), and their parenting skills (Bertie et al., 2021).

However, the extent of these consequences can vary substantially since divorce is a multifactorial phenomenon and, thus, its impact depends on various inter and intrapersonal factors (Kolodziej-Zaleska & Basista-Przybyła, 2016). In this sense, although it has been demonstrated that most adults can recover well over time (Ordway et al., 2020; Sbarra et al., 2015), some situations, such as high levels of destructive conflict, may increase vulnerability to negative consequences (Fernandes de Magalhães et al., 2021; Hald et al., 2019; Nikupeteri & Laitinen, 2022; Polak & Saini, 2019).

Between 5-25% of divorces occur with relatively high levels of conflict both during and after the breakup (Hald et al., 2019). High-conflict divorces involve constant negative interactions and a hostile and insecure emotional environment. Conflicts preceding, during, and after divorce may reflect relationships characterized by manifestations of hostility, inability to cooperate, and ongoing legal struggles (Levite & Cohen, 2012). All of the above entails a number of consequences that have been linked to clinical, legal, and social resource use (Polak & Saini, 2019). Although high-conflict divorces represent a relatively small group of divorces, they occupy 90% of the resources

of the family courts (Hald et al., 2019; Ordway et al., 2020), and are often very challenging for the public administration to handle (Haddad et al., 2016; Nikupeteri & Laitinen, 2022).

Regarding the clinical aspect, the existence of fierce and persistent conflicts before, during, and after divorce within the couple has been related to higher physical and psychological consequences (Fernandes de Magalhães et al., 2021; Nikupeteri & Laitinen, 2022). Parents experiencing high-conflict divorces with high levels of conflict tend to show increased levels of anxiety and depression, difficulties trusting new relationships, sensitivity and insecurity, and a greater fear of commitment (Hald et al., 2019; Ordway et al., 2020; Polak & Saini, 2019). Furthermore, people who are engaged in conflictive relationships tend to have more physical symptoms and pain, fatigue, insomnia, and a worsening of overall physical health (Kelly et al., 2020; Pellón et al., 2023). Both the conflict and all of these consequences related to it in parents can have an impact on their ability to be aware and respond to their children's needs, thus affecting not only their individual parenting skills (Hald et al., 2019), but also other aspects related to children's well-being, such as co-parenting (Herrero et al., 2020; Lamela et al., 2016).

Co-parenting refers to how parents communicate and practice parenting with their children. Research has shown that co-parenting is not only related to children's well-being, but is also strongly related to parental stress (Becher et al., 2019; Nunes et al., 2021). In fact, when there is a high level of parental conflict—which leads to higher stress—co-parenting may be undermined. Moreover, conflict and co-parenting cannot be considered as separated constructs, as high levels of conflict often stem from disagreements related to the children's care, education, and support (Hald et al., 2019; Ordway et al., 2020).

In addition, these disagreements, discomfort, and tension can also be reflected in parents' individual parenting skills. Parents with high levels of distress and difficulties in managing conflicts may tend to use more parenting practices based on punishment and denial or invalidation of their children's emotions (Warmuth et al., 2019), which have been linked to an impaired emotional parenting, including their children's emotion socialization (Breaux et al., 2016).

Emotion socialization is the ability of socializing agents, in this case parents, to facilitate their children's emotional development (Eisenberg et al., 1998; Tan et al., 2020). Thus, it is related to the expression and regulation of one's own emotions and understanding other's emotions, and the corresponding behaviors (Eisenberg, 2020; Peisch et al., 2019). This process begins in early infancy and continues throughout childhood and even adolescence. Emotion socialization is characterized by the explicit discussion about emotions (e.g., helping children understand or regulate their own and other's emotions), reactions to children's emotions (e.g., responding to them with support or rejection), and the way parents express their own emotions (e.g., warmth versus negativity) (Breaux et al., 2016; Eisenberg et al., 1998; Lunkheimer et al., 2020). How parents carry out this process and respond to children's emotions is critical to their developing and has been linked to significant social and emotional maladjustment (Hale et al., 2023), and even some types of psychopathology (Bertie et al., 2021; Seddom et al., 2020).

Two types of behavior have been distinguished in emotion socialization: 1) active and intentional responses to children's emotions and a tendency to explicitly talk about them (active emotion socialization); and 2) relatively involuntary and passive modelling and behavior concerning emotions (passive emotion socialization) (Eisenberg et al., 1998). Although the parents' intentionality in dealing with their children's emotions is

very important, passive emotion socialization plays a key role, as children learn to manage their emotions largely from observing how their parents do so. In addition to the intention, the parents' interpretation of their children's emotions is also of great importance. Emotion socialization has a lot to do with parenting styles, as one way in which parents teach and accompany their children on an emotional level is through parenting (Hakim-Larson et al., 2006). Therefore, depending on the two aspects mentioned, i.e., the intentionality and the interpretation of emotions, parents can socialize their children's emotions based on four parenting styles: 1) Emotion coaching, understood as the parent's acceptance of his or her children's emotion expressions and desire to teach them about emotions. This dimension would correspond to the active emotion socialization; 2) Parental acceptance of children's negative emotions; 3) Parental rejection of children's negative emotions; and 4) Parental feelings of uncertainty or ineffectiveness in their emotion socialization, which involves the acceptance of negative emotions, but with little guidance in helping them work through these emotions. This dimension will be equivalent to a more passive emotion socialization (Scott, 2012).

Parents' socializing processes can be affected by multiple factors, such as their own emotion regulation, their physical and mental health, or co-parenting (Mirabile, 2014).

In this regard, a greater presence of parental symptomatology has been shown to worsen parental functioning. On the one hand, parents who present more anxious and depressive symptoms may not be emotionally available and are less sensitive to the emotional needs, with difficulties in being supportive in their children's emotion understanding and expression (Seddom et al., 2020). These parents engage in more non-supportive responses when socializing their children's emotions (Arikan & Kumuru, 2021). On the other hand, fatigue, insomnia, body aches, illness, and perceptions of poorer

physical health have been shown to diminish the ability to think clearly, make decisions, and respond sensitively to children's demands and needs (Cooklin et al., 2011).

At the same time, high parental conflict has often been associated with an impaired co-parenting (Becher et al., 2019; Nunes et al., 2021) which may also be linked to greater emotion socialization difficulties. Research has shown that attitudes such as dismissing the other parent's parenting and conflictual co-parenting behaviors, characterized by competitiveness and criticism, lead to higher stress levels and may impede being responsive and supportive to their children's needs. Moreover, when parents engage in conflictive interactions, they tend to focus more on disempowering the other parent than on childcare. At the same time, parents with poor co-parenting or conflictive interactions will probably present more negative responses to their children's emotional reactions (Ren & Xu, 2019).

Given all of the above, it is clear that the conflict plays a key role in the wellbeing of divorced people (Haddad et al., 2016; Polak & Saini, 2019), as well as in their co-parenting and parenting skills (Hald et al., 2019). However, the relationship between parental symptomatology and co-parenting in parents experiencing high-conflict divorces has barely been considered (Martínez-Pampliega et al., 2021), and how they may affect parents' ability to socialize their children's emotions even less so. Parents with a higher level of conflict and, therefore, more conflictual co-parenting may be concealing a high level of distress (i.e. more anxiety, depression, or more physical symptoms), which has not yet been taken into account but which may be fundamental when intervening with these families (Ferraro & Lucier-Greer, 2022).

Although most research and interventions in high-conflict divorce have focused on the negative aspects or on trying to reduce conflict, given its important and undeniable role, it is also worth noting that there are other personal resources that may also be worth

paying attention to, as they may be modulating the impact of divorce and conflict on health and parenting skills. One of the most studied resources in adverse situations is resilience (Knöpfli et al., 2016). Resilience is considered a coping factor that involves the ability to maintain relatively stable and healthy levels of psychological and physical functioning, and to regain optimal levels of well-being, when facing stressful life events (Perrig-Chiello et al., 2015). Resilient individuals have a high level of emotional stability and can adapt flexibly to unexpected events, and even emerge stronger from them (Troy et al., 2023). Resilience has also been linked to emotion management, co-parenting, and parenting skills (Amir et al., 2019). Even though resilience has been shown to play a key role in stressful situations, it has hardly been studied in high-conflict divorces. In fact, most studies have focused on the children's resilience (Schmidt & Grigg, 2023), rather than on ex-spouses' (Frisby et al., 2012).

Following all of the above, this research aims to study, through a profile analysis, the relationship between physical and psychological symptomatology and co-parenting and parental emotion socialization skills in high-conflict divorces. Even if, as a sample of high-conflict divorced parents it can be assumed that co-parenting will not be very high, previous literature has been consistent in its positive relevance to some post-divorce outcomes (Ferraro et al., 2016; Lamela et al., 2016). Therefore, it seems relevant to analyze whether it is a factor that can make a difference in families and in the consequences of divorce in a person-centered analysis, rather than a variable-centered approach. This methodology follows the line of previous studies that have tried to assess the impact of divorce from a multidimensional perspective (Elam et al., 2016; Perrig-Chiello et al., 2015). The main goal of this approach is to capture individual differences through a combination of family variables i.e., parental symptomatology and co-parenting to see which may best explain parents' ability to socialize the emotions in their children.

The reason for considering this approach is that one person may have low co-parenting, low physical symptomatology, and high psychological symptomatology, and will not be measurable by group-level variable. However, by a person-centered analysis, we can consider how these variables may impact parents and their emotional parenting skills.

As a second objective, this study also aims to analyze the moderating role of resilience between the profiles and the emotion socialization of parents. Resilience has demonstrated to be an intrinsic personal resource that acts as protective and modulates the impact of adverse or stressful situations. Even if it has been studied as a protective mechanism in children of high-conflict divorced parents (Schmidt & Grigg, 2023), so it might be expected the same function in the parents themselves, this has never been considered yet.

Additionally, the role of some control variables, such as the gender of parents, the type of custody, the frequency of contact with children, the time elapsed since divorce, and the length of the relationship, will also be analyzed. For the sake of clarity, the term divorce will be used interchangeably for divorced and separated parents.

More specifically, it is expected to find clearly differentiated profiles of parents (Hypothesis 1) and a relationship of these profiles to patterns of emotion socialization (Hypothesis 2). Furthermore, it is expected to find a moderation of parental resilience in the described relationship (Hypothesis 3). Identifying this interconnection may help researchers and practitioners better understand the different profiles and characteristics of divorced parents in a context of destructive conflict so that specific needs can be better addressed (Frisby et al., 2012).

Method

Participants

The sample comprised 239 parents, of whom 109 were men and 130 were women, recruited at Family Visitation Centers, that is, services that regulate exchanges and supervised visits of non-resident parents and their children in high-conflict divorces (De la Torre, 2018). The sociodemographic characteristics of the sample can be seen in Table 1. For the participants' inclusion, they should be separated, regardless of marital status (separation, divorce, singleness, or new relationship) with a high level of interparental conflict, and they could not share the same home with the ex-partner. Finally, they should be capable of understanding and answering the questionnaires. The absence of previous psychiatric pathology was also considered as an inclusion criterion. More than half of the participants had middle-school studies (53.8%) and were actively employed (51.7%). The mean number of children per participant was 2 ($SD = .857$) and the type of custody was exclusive in 52.5% of the cases, mainly of the mothers (79.2%). Most of the participants had no contact with their ex-partner (72%). In particular, for 70% of mothers and 75.2% of fathers this relationship was non-existent. Even if they generally had daily contact with their children (52.5%), in the case of the fathers this rate was 21.1%, being more frequent for them to have contact every two weeks (30.3%).

Table 1

Sociodemographic characteristics of the sample

	Mothers (<i>n</i> = 130)		Fathers (<i>n</i> = 109)		Total (<i>n</i> = 239)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Number of children	2	0.93	2	0.76	2	0.62
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Educational level						
Less than primary education	3	2.3	7	6.4	10	4.2
Primary studies	64	49.2	64	58.7	129	53.8
High school	8	6.2	3	2.8	11	4.6
BUP or FP	20	15.4	16	14.7	36	15
Medium career	10	7.7	6	5.5	16	6.7
Higher career	11	8.5	9	8.3	20	8.3

Master's or PhD	13	10	4	3.7	17	7.1
Employment						
Unemployed	17	13.1	5	4.6	22	9.2
Active	57	43.8	66	60.6	124	51.7
Retired	9	6.9	3	2.8	12	5
Disabled	17	13.1	14	12.8	31	12.9
Sick leave	10	7.7	9	8.3	19	7.9
Other	18	13.8	9	8.3	27	11.3
Marital status						
Single	57	43.8	46	42.2	103	43.1
Separated	10	7.7	4	3.7	14	5.9
Divorced	49	37.7	38	34.9	87	36.4
Married, not a first marriage	11	8.5	13	11.9	24	10
Common law couple	1	0.8	3	2.8	4	1.7
Time since separation						
Not separated yet	10	7.7	12	11	23	9.6
Only submitted the papers	4	3.1	1	< 1	5	2.1
Less than two months	-	-	1	< 1	1	< 1
Two to six months	3	2.3	3	2.8	6	2.5
Six months to one year	10	7.7	5	4.6	15	6.3
One to two years	13	10	11	10.1	24	10
Two to three years	13	10	16	14.5	29	12.1
More than three years	48	36.9	34	31.2	82	34.2
Relationship with ex-spouse						
Non-existent	91	70	82	75.2	173	72.4
Very scarce	9	6.9	5	4.6	14	5.9
Restricted	21	16.2	16	14.7	37	15.5
Fluid	5	3.8	4	3.7	9	3.8
Type of custody						
Shared	9	6.9	12	11	21	8.8
Exclusive	103	79.2	23	21.1	126	52.5
Non-custodial	18	13.8	73	67	92	38.3
Contact with the child						
Every day	103	79.2	23	21.1	126	52.5
Several days a week	7	5.4	22	20.2	29	12.1
Once a week	6	4.6	22	20.2	28	12.1
Every two weeks	11	8.5	33	30.3	44	18.3
Every month	-	-	1	< 1	2	0.8
Less frequently	3	2.3	8	7.3	11	4.6

Instruments

The variables gender, type of custody, number of children, educational level, employment, marital status, time since divorce, relationship with ex-spouse, and contact with the child were collected through an ad hoc questionnaire, along with other variables describing each participant.

Physical Symptomatology was measured using the Physical Symptoms Inventory (PSI18; Spector & Jex, 1998; Spanish Version by Rosario et al., 2014). The PSI-18 questionnaire assesses somatic and physical health symptoms, considering conditions/states of which a person is aware (e.g., “Headache”) across 18 items. Respondents were asked to indicate for each symptom if they did not have it, had it, or saw a doctor for it in the past 30 days. Thus, each item has three response choices: 1 (*No*), 2 (*Yes, but I didn’t see a doctor*), and 3 (*Yes, and I saw a doctor*). The total score for physical symptomatology is obtained by summing all responses 2 and 3. Regarding reliability the Cronbach alpha obtained was .90 and McDonald’s ω was = .91.

Anxiety and Depression Symptoms were measured using the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983; Spanish version. Herrero et al., 2003). The HADS is a 14-item, self-reporting screening scale that contains two scales that measure symptoms of anxiety and depression: The Anxiety scale (7 items) which measures mainly symptoms of generalized anxiety disorder (e.g., “I get a sort of frightened feeling as if something awful is about to happen”) and the Depression scale (7 items) which is mostly focused on anhedonia, the main symptom of depression (e.g., “I still enjoy the things I used to enjoy”). All items were rated on a 4-point Likert scale ranging from 0 to 3, which measures the frequency with which the recorded feelings have been perceived over the last week. The HADS is scored by summing the ratings for the 14 items to yield a total mental health score. Regarding reliability the α obtained was .91, and the ω was .90 for the total scale, and α = .89 and ω = .90 for Anxiety, and α = .82 and ω = .81 for Depression.

Co-parenting was measured using the Divorce-Separation Adaptation Questionnaire (CAD-S; Yárnoz-Yaben & Comino, 2010). This questionnaire consists of 20 items and evaluates the adaptation to divorce of the whole family, completed by one

of the parents experiencing high-conflict divorces. The instrument has four dimensions: Psychological difficulties of adjustment to divorce, Conflict with the ex-partner, Negative consequences of separation, and Willingness to co-parent. The subscale used in this study was Willingness to co-parent (5 items) which describes perceptions of the ex-spouse's level of cooperation to act for the benefit of their children, helping and supporting the other parent when necessary (e.g., "My ex-partner helps me to raise our children"). All items are rated on a 5-point Likert scale ranging from 1 (*Strongly disagree*) to 5 (*Strongly agree*). In this study, the reliability obtained by Willingness to co-parent was $\alpha = .76$ and $\omega = .76$.

Emotion socialization was measured with the Emotion-Related Parenting Styles Self-Test (ERPS; Paterson et al., 2012), a 20-item short-form questionnaire that produces scores on four different emotion-related parenting styles. Emotion coaching (5 items), assesses a parent's acceptance of their child's emotion expression and the desire to teach the child about emotions, (e.g., "When my child is sad, I try to help them explore what is making them sad"). Parental rejection of negative emotion (5 items) measures the degree to which parents reject their children's experience of negative emotions (e.g., "When my child gets angry, my goal is to get them to stop"). Parental acceptance of negative emotion (5 items) assesses the extent to which parents tend to accept negative emotions but provide little guidance in helping the child work through those emotions (e.g., "I think it's good for kids to feel angry sometimes"). Feelings of uncertainty/ineffectiveness in emotion socialization (5 items) assesses whether parents feel uncertain or ineffective about handling their child's experience of negative emotions (e.g., "When my child is angry, I'm not quite sure what they want me to do"). All items are rated on a 5-point Likert scale ranging from 1 (*Always false*) to 5 (*Always true*). To calculate the score of the scales, the item responses for each scale were averaged. In this study, the reliability

obtained by each subscale was $\alpha = .97$ and $\omega = .97$ for Emotion Coaching; $\alpha = .97$ and $\omega = .97$ for Parental Rejection of Negative Emotion; $\alpha = .96$ and $\omega = .96$ for Acceptance of Negative Emotion; and $\alpha = .97$ and $\omega = .97$ for Feelings of Uncertainty/Ineffectiveness. The total reliability score for this questionnaire was $\alpha = .99$ and $\omega = .99$.

Resilience was examined using the 14-item Resilience Scale (RS-14) (Sánchez-Teruel & Robles-Bello, 2014). This scale is based on the Resilience Scale (RS-25) by Wagnild and Young (1993). It measures the degree of individual resilience, considered as a positive personality characteristic that allows people to adapt to adverse situations. The RS-14 measures two factors: Personal Competence (11 items) assesses self-confidence, independence, decisiveness, resourcefulness, and perseverance (e.g., “I usually manage in one way or another”), and Self and Life Acceptance (3 items) includes adaptability, balance, flexibility, and a stable outlook on life (e.g., “I am a person with an adequate self-esteem”). All items are rated on a Likert scale ranging from 1 (*Strongly disagree*) to 7 (*Strongly agree*). To calculate the score of the scale, the total score of the questionnaire was averaged. In this study, the reliability of the Resilience Scale was $\alpha = .89$ and $\omega = .89$.

Procedure

This study was carried out during the years 2022-2023 with the approval of the University’s Ethics Committee (ETK-38/21-22), and it also complied the original Declaration of Helsinki. It was developed in Spain, and included more than 30 national Family Visitation Centers. All existing national centers, for which contact information was available, were contacted through email and phone calls to inform them about the project. Meetings were arranged for those whose managers showed interest to detail the aim, requirements, and confidentiality, and solve possible doubts. Necessary agreements were also requested. All the centers had the permission and support of the municipalities

and related ministerial services. The final participation rate was 60%. The rest of the centers claimed work overload or incompatibility due to participation in other research projects.

After these initial meetings, a detailed information document was given to the corresponding professionals so that they could share them with the families. In these sheets, the main goals of the study, the voluntary nature of their participation, and the confidentiality of their data were detailed. In addition, the technicians were informed of the inclusion criteria, so that they could check them in the clinical history and/or the judicial referral report. Once the parents agreed to participate, and before completing the questionnaires, they had to fill out an informed consent form. The questionnaires were completed individually, with an approximate duration of 20 minutes. The confidentiality of the participants was maintained at all times, with no other identifying information besides the email address or telephone number.

Data analysis

The present study examines whether symptomatology (physical and psychological) and co-parenting are related to emotion socialization. Different latent profiles based on the psychological and physical symptomatology were developed for this aim, through a Latent Profile Analysis (LPA) (Vermunt & Magdison, 2002) using Mplus 8.10 (Muthén & Muthén, 2017).

In particular, we followed the three-step method proposed by Asparouhov and Muthén (2014). First, we compared LPA models with one to four latent profiles to estimate the number of underlying profiles. The best model was established considering some indicators such as Akaike's Information Criterion (AIC), the Bayesian Information Criterion (BIC), the mean-adjusted Bayesian Information Criterion (aBIC), the entropy, the Lo-Mendell-Rubin adjusted likelihood ratio test (LMRa), and the Bootstrap

Likelihood Ratio test (BLRT) (Hu & Bentler, 1999). To decide the number of profiles, we also considered parsimony, the theoretical interpretation, and the size of the profiles (Porcu & Giambona, 2017). The second step was to identify the most likely profile for each individual based on the probability of belonging to each profile found in the previous step (Hypothesis 1). In the third step, we analyzed the antecedents and outcomes of the obtained profiles. Regarding the antecedents, we tested whether physical and psychological symptomatology and co-parenting influenced the likelihood of belonging to a certain profile, while controlling for parents' gender, type of custody, frequency of contact with the children, time elapsed since divorce, and duration of the marriage. At the level of outcomes, which is related to Hypothesis 2, we analyzed the predictive differences of each profile in the four dimensions of emotion socialization (emotion coaching, feelings of uncertainty/ineffectiveness in emotion socialization, emotion approval, and emotion rejection).

After analyzing the profiles, we tested the moderator role of parental resilience to explain the differential levels of the emotion socialization as a function of parental anxiety, depression, and physical symptomatology (Hypothesis 3). For this purpose, we tested the interactions between resilience and the classes obtained in the previous LPA analyzes.

Results

First, we calculated the descriptive statistics for the total sample, which are displayed in Table 1. Second, in the LPA, although the 2-profile model showed a significant BLRT and a higher level of entropy compared to the 3- and 4-profile models, all other indicators were worse. In addition, the level of BLRT was better in the 3-profile model, being a preferential value when choosing one model or the other. Finally, even if the 4-profile model showed a better fit considering LMRa and aBIC, when the distribution

of the classes was checked, it was found that the fourth class consisted of 0.08% of the sample, so it was not sufficiently representative. Also, the entropy was slightly better in the 3-profile model, so it was selected (Table 2).

Table 2

Model fit and model comparisons of Latent Profile Analyses

Model	AIC	BIC	aBIC	Entropy	LMRa	BLRT
1-Profile model	5701.030	5728.517	5703.517	—	-	-
2-Profile model	5471.703	5516.952	5475.745	.865	230.900***	239.327***
3-Profile model	5425.321	5487.972	5430.917	.827	54.397***	56.382***
4-Profile model	5406.044	5486.098	5413.194	.800	28.246	29.277***

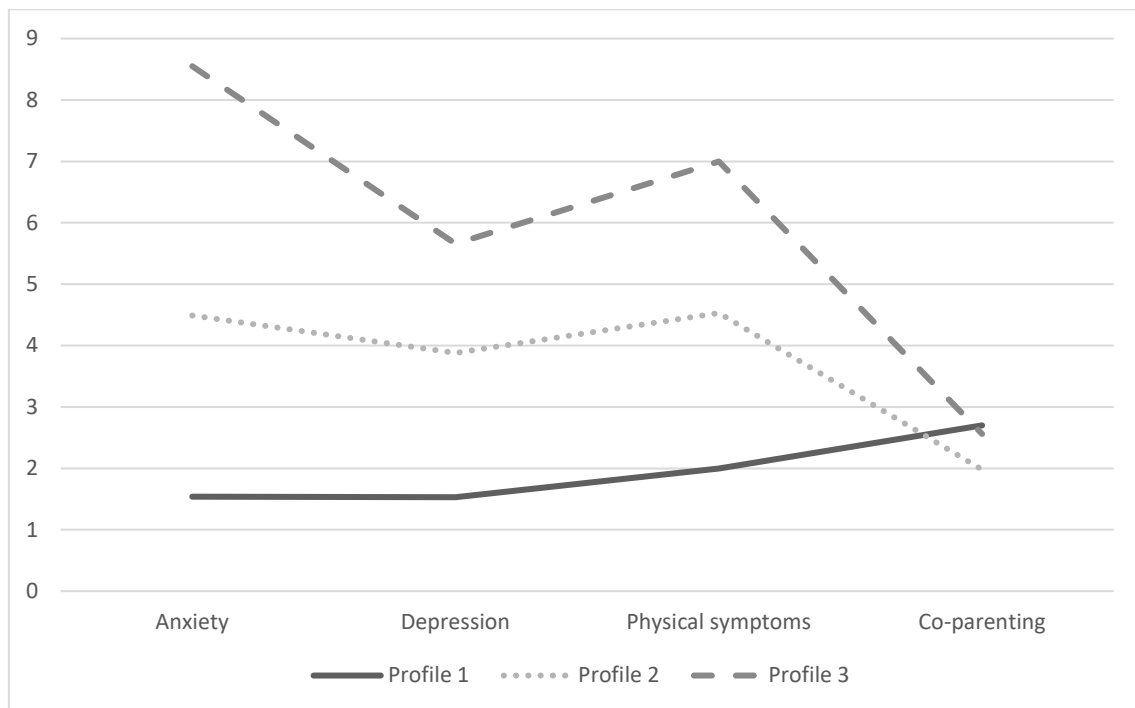
After this decision, we observed the characteristics (Table 3 and Figure 1) and composition (Table 4) of the profiles. Profile 1 represented 52% of the sample and showed the lowest levels of anxiety, depression, and physical symptomatology, and the highest level of co-parenting. Profile 2 represented 36% of the sample and showed the lowest levels in co-parenting. Although if these levels of physical and psychological symptomatology were higher than those of Profile 1, they were lower than those of Profile 3. Finally, Profile 3 represented 12% of the sample and showed the highest level of anxiety, depression, and physical symptoms, and also slightly higher levels of co-parenting. In all of the profiles, the variables studied were significant. To conclude, these results indicate the presence of three differential post-divorce profiles, which supports Hypothesis 1.

Table 3

Descriptive statistics of each profile

	Anxiety		Depression		Physical		Co-parenting	
	M	SD	M	SD	M	SD	M	SD
Profile 1	3.24	2.18	3.22	2.67	3.59	3.09	5.40	5.00
Profile 2	9.43	2.28	8.10	3.56	8.15	4.31	3.96	3.97
Profile 3	17.96	1.89	11.88	4.87	12.62	3.48	5.12	5.93

Note. Physical = Physical symptomatology

Figure 1*Characteristics of the profiles***Table 4***Estimates of the 3-Profile Model*

	Profile 1		Profile 2		Profile 3	
	Estimate	<i>p</i>	Estimate	<i>p</i>	Estimate	<i>p</i>
Anxiety	1.39	< .001	3.89	< .001	7.50	< .001
Depression	1.00	< .001	2.40	< .001	3.61	< .001
Physical	0.97	< .001	2.25	< .001	3.49	< .001
Co-parenting	1.13	< .001	0.86	< .001	1.07	< .001
Profile n	126		86		36	
% of the sample	53%		36%		12%	

Note. Physical = Physical symptomatology

In the third step of the LPA, we analyzed the antecedents and outcomes of the profiles (see Table 5a and 5b). Regarding antecedents, the multinomial logistic regression analyses using the three-step procedure showed that the participants' gender predicted a higher probability of belonging to Profile 1 versus Profile 2 and Profile 3. The rest of the factors did not yield any differences concerning membership in a certain profile.

Table 5a*Profile comparison: Antecedents*

Antecedents	Profile 1 vs. 3		Profile 2 vs. 3		Profile 1 vs. 2	
	β	Adj. OR^a	β	Adj. OR^a	β	Adj. OR^a
Sex	-1.29***	0.28***	-0.02	0.98	-1.26***	0.28***
Type of custody	0.42	1.52	0.11	1.11	0.32	1.37
Time since separation	0.24	1.27	0.24	1.27	-0.00	1.00
Time of relationship	-0.03	0.98	0.01	1.01	-0.03	0.97
Frequency of contact	0.29	1.34	0.12	1.13	-0.54	1.19

Note. Adj. OR = Adjusted Odds Ratio.** $p < .05$. *** $p < .001$.**Table 5b***Profile comparison: Outcomes*

Outcomes	Profile 1 vs. 3		Profile 2 vs. 3		Profile 1 vs. 3	
	χ^2	p	χ^2	p	χ^2	p
Emotion coaching	34.66	.000	0.49	.485	42.95	.000
Feelings of uncertainty/ineffectiveness	0.32	.574	0.78	.378	0.26	.612
Emotion rejection	35.57	.000	16.77	.019	5.49	.000
Emotion approval	0.33	.565	2.55	.110	0.18	.673

** $p < .05$. *** $p < .001$.

The main outcome considered was emotion socialization. We measured four types of emotion socialization (emotion coaching, feelings of uncertainty or ineffectiveness in emotion socialization, parental acceptance of negative emotions, and parental rejection of negative emotions). Profile 1 ($M = 13.61$, $SE = 1.13$), the one that showed fewer symptoms and higher co-parenting, was more likely to employ active emotion socialization patterns or emotion coaching compared to Profile 2 ($M = 6.07$, $SE = 0.61$) and Profile 3 ($M = 5.53$, $SE = 0.48$). There were no differences between Profile 3 and Profile 2 in emotion coaching. In addition, we also found differences in emotion rejection, with Profile 1 ($M = 11.16$, $SE = 1.00$) again more likely to present emotion rejection behaviors than Profile 2 ($M = 4.57$, $SE = 0.47$) and Profile 3 ($M = 8.19$, $SE = 7.75$). At

the same time, Profile 2, which presented more symptomatology than Profile 1, but also the lowest level of co-parenting, was more likely to use emotion rejection behaviours than Profile 3. As for the other dimensions of emotion socialization, no significant differences were found between the three profiles.

Finally, based on the differences between the profiles, we tested whether resilience played a moderating role in the relationship between each profile and emotion socialization. Concerning the results obtained from the resilience interactions with each profile, and taking Profile 3 as a reference, neither in emotion rejection (Profile 1: $B = .07$, $SE = .15$; Profile 2: $B = -.03$, $SE = .14$) nor in emotion acceptance (Profile 1: $B = .07$, $SE = .21$; Profile 2: $B = -.09$, $SE = .18$) were the interactions significant. This was also observed in emotion coaching (Profile 1: $B = .19$, $SE = .21$; Profile 2: $B = .08$, $SE = .12$) and feelings of uncertainty/ineffectiveness in emotion socialization (Profile 1: $B = .07$, $SE = .20$; Profile 2: $B = .03$, $SE = .20$), so the moderation hypothesis could not be confirmed.

Discussion

The present study makes an important contribution to our understanding of the impact of high-conflict divorce, through a person-centered analysis, and identifies concurrent patterns in parents' emotion socialization. To date, this is the first study to consider the relationship between parental symptomatology, co-parenting, and emotion socialization in a sample of high-conflict divorced people.

The results obtained partly support the proposed hypotheses. First, we identified three clearly differentiated profiles based mainly on parental physical and psychological symptomatology (anxiety and depression) (Hypothesis 1). The most frequent was Profile 1 (52%), characterized by low physical and psychological symptomatology. Profile 2 also represented a significant amount of participants (36%), and had mid-levels of parental

symptomatology. Finally, Profile 3 comprised the smallest number of participants (12%), and showed the highest levels of anxiety, depression, and physical symptomatology. Moreover, men were more likely to belong to Profile 1. This is not surprising because, as has been reported in prior literature, women tend to have a higher level of symptomatology after divorce (Sbarra & Whisman, 2022; Wolfe & Thomeer, 2020), especially when children are involved (Shor et al., 2012).

Regarding the distribution of the profiles (Hypothesis 2), the results indicate a relationship between parental symptomatology and emotion socialization. On the one hand, the profile with the lowest psychological and physical symptoms (Profile 1) was related both to higher emotion coaching and higher emotion rejection towards their children. A priori, this result might seem contradictory, as emotion coaching refers to parents' acceptance of their children's emotion expression, and the desire to teach them about emotions (e.g. “when they are sad, I try to help them explore what makes them sad”), whereas emotion rejection is characterized by the rejection of children's experience of negative emotions (e.g. “children acting sad are usually just trying to get adults to feel sorry for them”) (Paterson et al., 2012; Scott, 2012).

Previous literature has shown that parents with less symptomatology will probably be more capable of attending their children's emotions and actively trying to help them identify, understand, manage, and express them (Seddom et al., 2020). However, it is important to remember that although Profile 1 showed a lower level of symptomatology and a higher ability to process and accept their own and their children's emotions (Bertie et al., 2021; Breaux et al., 2016), these parents still present a high level of conflict. Being more conscious of their own emotions while living in a context of constant conflict with the ex-partner, charged with negative emotionality, can cause them to feel overwhelmed (Afifi et al., 2016; Fretwell, 2023), which may lead to a loss of effective parenting

practices. In this case, even if the parents have active patterns when socializing their children's emotions, they may also feel greater rejection when the children express negative emotions (anger and sadness). They may even think that children use them to get attention (Scott, 2012).

On the other hand, Profile 2, showed lower levels of symptomatology but also higher emotion rejection than Profile 3. This is in line with the mentioned idea of less symptomatology being linked to more emotion socialization behaviors (Breaux et al., 2016; Van der Pol et al., 2016), even if they are not always effective. In contrast, parents with higher levels of conflict and higher symptomatology, as in Profile 3, may be so immersed in their own conflicts and distress that they cannot pay attention to their children's emotional needs (Lee & Brophy-Herb, 2018), respond to their negative emotions (Breaux et al., 2016), or even to make some attribution or seek an explanation for these emotional states. Thus, when parental symptomatology is very high, parent's emotional burnout may lead them to distance themselves from their children emotionally, as has been shown by Mikolajczak and Roskam (2020). Moreover, it has been found that this attitude is even more common among women (Lebert-Charron et al., 2018), which is also in line with the findings of our study.

Regarding co-parenting, the results were contrary to our expectations. Although the level of perceived co-parenting was low in 80% of the cases, there were no differences in the distribution of the participants in the three profiles regarding co-parenting. This distribution is consistent with previous studies highlighting that, when there is a high level of destructive conflict, the need to maintain co-parental contact may lead to an increase of hostility and tension between the ex-partners rather than mitigating it, as they tend to use childcare-related issues as another source of conflict and mutual criticism (Elam et al., 2016; Herrero et al., 2020). However, from a Family Systems Theory, the co-parental

and parental subsystems are independent (Ren & Xu, 2019). Thus, even when there is open contention against the other parent, at a personal level if their symptomatology is low enough to carry out their daily functioning adequately, they may be able to focus on attending to the needs of their children (Amir et al., 2019) beyond the interparental conflict and co-parental difficulties.

Finally, we considered the moderating role of resilience (Hypothesis 3), but we found no significant result, that is, resilience does not seem to moderate the relationship between any of the three profiles and emotion socialization. This may be partly explained by the conflictive nature of the sample, as the magnitude of the conflict and subsequent symptomatology may lead to an emotional burnout that outweighs the protective effect of resources such as resilience (Afifi et al., 2016; Cassé et al., 2018). However, this does not mean that these families are not resilient, as the scores obtained show that they perceived themselves as having a high level of resilience. Instead, we can conclude from all these results that the level of destructive conflict and the subsequent symptomatology is what makes the real difference in parental functioning and emotion socialization (Bertie et al., 2021; Breaux et al., 2016; Van der Pol et al., 2016).

Despite the above, this study is not without limitations and its results should be taken with caution. First, most of the participants had been divorced for more than three years and, besides that, they still come to the Family Visitation Centers. It might be interesting to compare parents at different times after divorce, controlling for the time elapsed, and see how the chronification of the conflict may affect the development of subsequent symptomatology or the co-parental relationship and their resilience. In the same line, it would be of interest to consider this relationship in divorced parents without conflict, as co-parenting and resilience in this study were not significant, probably due to the level of conflict and symptomatology (Cassé et al., 2018; Herrero et al., 2020).

Second, another main limitation is the cross-sectional nature of the study, which does not allow establishing causal associations.

Finally, it should be noted that this study only considered parents' perceptions of their skills in socializing their children's emotions. Nevertheless, as emotion socialization has a fundamental impact on children's wellbeing and emotional development (Warmuth et al., 2019), it would be worthwhile for future research to consider their point of view as well.

In spite of these limitations, this study offers important implications for future research and clinical practice. First, it is worth noting that, to date, to our knowledge, this has been the first study to analyze emotion socialization in high-conflict divorces. High-conflict divorces are a difficult population to access, so this study makes an important contribution to better understanding the needs and characteristics of these families, which may open the door for future studies to continue deepening on this relationship between variables that had never been considered before. Further research is encouraged to analyze this relationship considering other populations such as parents experiencing high-conflict divorces without conflict, and some factors such as gender, which previous literature has considered controversial (Raley & Sweeney, 2020), but which seems to play a role in parental functioning in a sample of high-conflict parents experiencing high-conflict divorces.

In addition, our findings can help practitioners working with people in high-conflict divorces to better tailor interventions to their specific needs and characteristics, regardless of the context (legal, clinical, or community) (Ferraro & Lucier-Greer, 2022). It is important to bear in mind that, in high-conflict divorces, maintaining interparental contact may not be beneficial, but instead can actually increase the tension and associated distress (Herrero et al., 2020). Therefore, it is essential to reduce the destructiveness of

the conflict and, specially, the associated parental symptomatology (Lamela et al., 2016) before focusing on establishing any co-parental communication and arrangements.

In short, it is important to note that when analyzing high-conflict divorce, both research and clinical practice should focus not only on the conflict, but more on the parents' symptomatology and well-being. Parent's physical and psychological symptoms seem to be key to adjustment to divorce and parenting skills. Keeping this in mind may help health professionals to generate preventive and intervention programs that promote an adequate emotional environment so that children can develop well emotionally after divorce.

References

- Afifi, T. D., Merrill, A. F., & Davis, S. (2016). The theory of resilience and relational load. *Personal Relationships*, 23(4), 663-683. <https://doi.org/10.1111/pere.12159>
- Amir, H. A. G., Moradi, O., Arefi, M., & Ahmadian, H. (2019). The effectiveness of acceptance and commitment therapy on cognitive-emotional regulation, resilience, and self-control strategies in divorced women. *Psycho Physiology*, 6(4), 195-202. <http://doi.org/10.32598/ajnp.6.4.5>
- Arikan, G., & Kumru, A. (2021). Patterns of associations between maternal symptoms and child problem behaviors: The mediating role of mentalization, negative intentionality, and unsupportive emotion socialization. *Child Psychiatry and Human Development*, 52, 640-653. <https://doi.org/10.1007/s10578-020-01046-w>
- Asparouhov, T., & Muthén, B. (2014). Auxiliary variables in mixture modelling: Three-step approaches using Mplus. *Structural Equation Modelling: A Multidisciplinary Journal*, 21(3), 329-341.
- Becher, E. H., Kim, H., Cronin, S. E., Deenanath, V., McGuire, J. K., McCann, E. M., & Powell, S. (2019). Positive parenting and parental conflict: Contributions to

- resilient co-parenting during divorce. *Family Relations*, 68(1), 150-164.
<https://doi.org/10.1111/fare.12349>
- Bertie, L. A., Johnston, K., & Lill, S. (2021). Parental emotion socialization of young children and the mediating role of emotion regulation. *Australian Journal of Psychology*, 73(3), 293-305. <https://doi.org/10.1080/00049530.2021.1884001>
- Breaux, R. P., Harvey, E. A., & Lugo-Candelas, C. I. (2016). The role of parent psychopathology in emotion socialization. *Journal of Abnormal Child Psychology*, 44(4), 731–743. <https://doi.org/10.1007/s10802-015-0062-3>
- Cassé, J. F. H., Finkenauer, C., Oosterman, M., Van der Geest, V. R., & Schuengel, C. (2018). Family conflict and resilience in parenting self-efficacy among high-risk mothers. *Journal of Interpersonal Violence*, 33(6), 1008-1029.
<https://doi.org/10.1177/0886260515614280>
- Centers for Disease Control and Prevention (2023). *Marriage and Divorce*.
<https://www.cdc.gov/nchs/fastats/marriage-divorce.htm>
- Cooklin, A. R., Giallo, R., & Rose, N. (2011). Parental fatigue and parenting practices during early childhood: an Australian community survey. *Care, Health and Development*, 38(5), 654-664. <https://doi.org/10.1111/j.1365-2214.2011.01333.x>
- De la Torre, J. (2018). *Los divorcios conflictivos: Guía de intervención en los Puntos de Encuentro Familiar* [Conflictive divorces: Intervention guide in the Family Visitation Centers]. Morata.
- Eisenberg, N. (2020). Findings, issues, and new directions for research on emotion socialization. *Developmental Psychology*, 56(3), 664-670.
<https://psycnet.apa.org/doi/10.1037/dev0000906>

- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9(4), 241-273. https://doi.org/10.1207/s15327965pli0904_1
- Elam, K. K., Sandler, I., Wolchik, S., & Tein, J. Y. (2016). Non-residential father-child involvement, interparental conflict and mental health of children following divorce: A person-focused approach. *Journal of Youth and Adolescence*, 45(3), 581-593. doi:10.1007/s10964-015-0399-5
- Eurostat (2023). *Marriage and divorce statistics*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Marriage_and_divorce_statistics#:~:text=Some%201.7%20million%20marriages%20and,for%20the%20EU%20Member%20States.
- Fernandes de Magalhães, J. R., Pereira, A., Pereira, N., Ferreira da Silva, A., Matheus, F., Arão da Silva, M., & Araújo, M. (2021). Meanings of intrafamily violence experienced in childhood/adolescence present in the discourses of men. *Revista Brasileira de Enfermagem*, 74(3), <http://dx.doi.org/10.1590/0034-7167-2020-0238>
- Ferraro, A. J., Malespin, T., Oehme, K., Bruker, M., & Opel, A. (2016). Advancing co-parenting education: Toward a foundation for supporting positive post-divorce adjustment. *Child and Adolescent Social Work Journal*, 33, 407-415. <https://doi.org/10.1007/s10560-016-0440-x>
- Ferraro, A. J., & Lucier-Greer, M. (2022). The case for multidimensional co-parenting behaviors as sources of chronic stress: Understanding pathways to mental health symptomatology among divorced and separating adults. *Journal of Family Nursing*, 28(4), 353-367. <https://doi.org/10.1177/10748407221124235>
- Fretwell, J. (2023). *An investigation of the relationship among emotional competence, co-parenting relationship, and parental burnout in divorced parents*. [Doctoral

Thesis. Hofstra University. Hempstead].

<https://www.proquest.com/docview/2845416846?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>

Frisby, B. N., Booth-Butterfield, M., Dillow, M. R., Martin, M. M., & Weber, K. D. (2012). Face and resilience in divorce: The impact on emotions, stress, and post-divorce relationships. *Journal of Social and Personal Relationships*, 29(6), 715-735. <https://doi.org/10.1177/0265407512443452>

Haddad, L., Phillips, K. D., & Bone, J. M. (2016). High-conflict divorce: A review of the literature. *American Journal of Family Law*, 29(4), 243-258.

Hakim-Larson, J., Parker, A., Lee, C., Goodwin, J., & Voelker, S. (2006). Measuring parental meta-emotion: Psychometric properties of the Emotion-Related Parenting Styles Self-Test. *Early Education and Development*, 17(2), 229-251. https://doi.org/10.1207/s15566935eed1702_2

Hald, G. M., Strizzi, J., Cipric, A. & Sander, S. (2019). The divorce conflict scale. *Journal of Divorce and Remarriage*, 61(2), 83-104. <https://doi.org/10.1080/10502556.2019.1627150>

Hale, M. E., Price, N. N., Borowski, S. K., & Zeman, J. L. (2023). Adolescent emotion regulation trajectories: The influence of parent and friend emotion socialization. *Family Process*, 33(3), 735-749. <https://doi.org/10.1111/jora.12834>

Herrero, M. J., Blanch, J., Peri, J. M., De Pablo, J., Pintor, L., & Bulbena, A. (2003). A validation study of the hospital anxiety and depression scale (HADS) in a Spanish population. *General Hospital Psychiatry*, 25(4), 277-283. [https://doi.org/10.1016/S0163-8343\(03\)00043-4](https://doi.org/10.1016/S0163-8343(03)00043-4)

- Herrero, M., Martínez-Pampliega, A., & Álvarez, I. (2020). Family communication, adaptation to divorce and children's maladjustment: The moderating role of co-parenting. *Journal of Family Communication*, 20(2), 114-128. <https://doi.org/10.1080/15267431.2020.1723592>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modelling*, 6(1), 1-55.
- Kelly, R., & Sweeney, M. (2020). Divorce, repartnering and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82(1), 81-99. <https://doi.org/10.1111/jomf.12651>
- Knöpfli, B., Morselli, D., & Perrig-Chiello, P. (2016). Trajectories of psychological adaptation to marital breakup after a long-term marriage. *Gerontology*, 62(5), 541-552. <https://doi.org/10.1159/000445056>
- Kolodziej-Zaleska, A., & Przybyla-Basista, H. (2016). Psychological well-being of individuals after divorce: The role of social support. *Current Issues in Personality Psychology*, 4(4), 206-216.
- Lamela, D., Figueredo, B., Bastos, A., & Feinberg, M. (2016). Typologies of post-divorce co-parenting and parental well-being, parenting quality, and children's psychological adjustment. *Child Psychiatry and Human Development*, 47, 716-728. <https://doi.org/10.1007/s10578-015-0604-5>
- Lebert-Charron, A., Dorard, G., Boujut, E., & Wendland, J. (2018). Maternal burnout syndrome: Contextual and psychological associated factors. *Frontiers in Psychology*, 9(885). <https://doi.org/10.3389/fpsyg.2018.00885>

- Lee, Y. E., & Brophy-Herb, H. E. (2018). Dyadic relations between interparental conflict and parental emotion socialization. *Journal of Family Issues*, 39(13), 3564-3585. <https://doi.org/10.1177/0192513X18783803>
- Levite, Z., & Cohen, O. (2012). The tango of loving hate: A couple dynamics in high-conflict divorce. *Clinical Social Work Journal*, 40, 46-55. <https://doi.org/10.1007/s10615-011-0334-5>
- Lunkheimer, E., Hamby, C. M., Lobo, C. M., Cole, P. M., & Olson, S. L. (2020). The role of dynamic, dyadic parent-child processes in parental socialization of emotion. *Developmental Psychology*, 56(3), 566-577. <https://dx.doi.org/10.1037/dev0000808>
- Martínez-Pampliega, A., Herrero, M., Cormenzana, S., Corral, S., Sanz, M., Merino, L., Iriarte, L., Ochoa de Alda, I., Alcañiz, L., & Álvarez, I. (2021). Custody and child symptomatology in high conflict divorce: An analysis of latent profiles. *Psicothema*, 33(1), 95-102. <https://doi.org/10.7334/psicothema2020.224>
- Mikolajczak, M., & Roskam, I. (2020). Parental burnout: Moving the focus from children to parents. *Child and Adolescent Development*, 174, 7-13. <https://doi.org/10.1002/cad.20376>
- Mirabile, S. P. (2014). Parents' inconsistent emotion socialization and children's socioemotional adjustment. *Journal of Applied Developmental Psychology*, 35(5), 392-400. <https://doi.org/10.1016/j.appdev.2014.06.003>
- Muthén, L. K., & Muthén, B. O. (2017). *Mplus Statistical Analysis with Latent Variables. User's guide*. Muthén & Muthén.
- Nikupeteri, A., & Laitinen, M. (2022). High-conflict separations and differentiated professional responses – from confrontational interaction to post-separation

- violence and stalking. *Journal of Divorce and Remarriage*, 63(7-8).
<https://doi.org/10.1080/10502556.2022.2157667>
- Nunes, C. E., De Roten, Y., y El Ghaziri, N. (2021). Co-parenting programs: A systematic review and meta-analysis. *Family Relations*, 70(3), 759-776.
<https://doi.org/10.1111/fare.12438>
- Ordway, A. M., Moore, R. O., Casasnovas, A. F., & Asplund, N. R. (2020). Understanding vicarious trauma, burnout, and compassion fatigue in high-conflict divorce. *The Family Journal: Counselling and Therapy for Couples and Families*, 28(2), 187-193. <https://doi.org/10.1177/1066480720904028>
- Paterson, A., Babb, K. A., Camodeca, A., Goodwin, J., Hakim-Larson, J., Voelker, S., & Gragg, M. (2012). Emotion-related Parenting Styles (ERPS): A short form for measuring parental meta-emotion philosophy. *Early Education and Development*, 23(4), 583-602. <http://dx.doi.org/10.1080/10409289.2011.569316>
- Peisch, V., Dale, C., Parent, J., & Burt, K. (2019). Parent socialization of coping and child emotion regulation abilities: A longitudinal examination. *Family Process*, 59(4), 1722-1736. <https://doi.org/10.1111/famp.12516>
- Pellón, I., Martínez-Pampliega, A., & Cormenzana, S. (2023). Post-divorce adjustment, coparenting and somatisation: Mediating role of anxiety and depression in high-conflict divorces. *Journal of Affective Disorders Reports*.
<https://doi.org/10.1016/j.jadr.2023.100697>
- Perrig-Chiello, P., Hutchison, S., & Morselli, D. (2015). Patterns of psychological adaptation to divorce after a long-term marriage. *Journal of Social and Personal Relationships*, 32(3), 386-405. <https://doi.org/10.1177/0265407514533769>
- Polak, S., & Saini, M. (2019). The complexity of families involved in high-conflict disputes: A postseparation ecological transactional framework. *Journal of*

- Divorce and Remarriage*, 60(2), 117-140.
<https://doi.org/10.1080/10502556.2018.1488114>
- Porcu, M., & Giambona, F. (2017). Introduction to latent class analysis with applications. *The Journal of Early Adolescence*, 37(1), 129-158.
- Raley, R. K., & Sweeney, M. M. (2020). Divorce, repartnering, and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82, 81-99.
<https://doi.org/10.1111/jomf.12651>
- Ren, L., & Xu, W. (2019). Co-parenting and Chinese preschoolers' social-emotional development: Child routines as a mediator. *Children and Youth Services Review*, 107. <https://doi.org/10.1016/j.childyouth.2019.104549>
- Rosario, E., Rovira, L. V., Rodríguez, A., Rivera, B. E., Fernández, L. N., López, R. S., Segarra, C., Torres, L. N., Burgos, M. Z., González, A., Ortiz, M. A., Padilla, M. K., & Torres, N. (2014). Cardiovascular health and their relationship with psychosocial risk factors in a sample of employees in Puerto Rico. *Revista Puertorriqueña de Psicología*, 25(1), 98-116.
- Sánchez-Teruel, D., & Robles-Bello, M. A. (2015). Escala de Resiliencia 14 ítems (RS-14): Propiedades psicométricas de la versión en español [14-item Resilience Scale (RS-14): Psychometric properties for the Spanish version]. *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica*, 2(40), 103-113.
- Sbarra, D. A., Hasselmo, K., & Bourassa, K. J. (2015). Divorce and health: Beyond individual differences. *Current Directions in Psychological Science*, 24(2), 109-113. <https://doi.org/10.1177/0963721414559125>

- Sbarra, D. A., & Whisman, M. A. (2022). Divorce, health, and socioeconomic status: An agenda for psychological science. *Current Opinion in Psychology*, 43, 75-78.
<https://doi.org/10.1016/j.copsyc.2021.06.007>
- Schmidt, C. D., & Grigg, J. (2023). Counselling high conflict: Navigating the complexities of high conflict divorce. *The Family Journal*, 32(1), 71-80.
<https://doi.org/10.1177/10664807231173689>
- Scott, S. A. (2012). *Parental meta-emotion: Validity of the emotion-related parenting styles self-test and emotion-related parenting styles*. [Doctoral Thesis. Electronic Theses and Dissertations. University of Windsor].
<https://scholar.uwindsor.ca/etd/5538/>
- Seddom, J. A., Abdel-Baki, R., Feige, S., & Thomassin, K. (2020). The cascade effect of parent dysfunction: An emotion socialization transmission framework. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.579519>
- Shor, E., Roelfs, D. J., Bugyi, P., & Schwartz, J. E. (2012). Meta-analysis of marital dissolution and mortality: Reevaluating the intersection of gender and age. *Social Science and Medicine*, 75, 46-59.
<https://doi.org/10.1016/j.socscimed.2012.03.010>
- Spector, P. E., & Jex, S. M. (1998). *Physical Symptoms Inventory (PSI)*. APA PsycTests.
<https://psycnet.apa.org/doi/10.1037/t07344-000>
- Tan, P. Z., Oppenheimer, C. W., Ladouceur, C. D., Butterfield, R. D., & Silk, J. S. (2020). A review of associations between parental emotion socialization and the neural substrates of emotional reactivity and regulation in youth. *Developmental Psychology*, 56(3), 516-527. <https://psycnet.apa.org/doi/10.1037/dev0000893>
- Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: An affect-regulation framework. *Annual Review*

- of Psychology*, 74, 547-576. <https://doi.org/10.1146/annurev-psych-020122-041854>
- Van der Pol, L. D., Groenveld, M. G., Endendijks, J. J., Van Berkel, S. R., Hallers-Haalboom, E. T., Bakermans-Kranenburg, M. J., & Mesman, J. (2016). Associations between fathers' and mother' psychopathology symptoms, parental emotion socialization, and preschoolers' social-emotional development. *Journal of Child and Family Studies*, 25, 3367-3380. <https://doi.org/10.1007/s10826-016-0490-x>
- Vermunt, J. K., & Magidson, J. (2002). Latent profile cluster analysis. In J. A. Haennars & A. L. McCutcheon (Eds.), *Applied latent profile analysis* (pp. 89-106). Cambridge University Press.
- Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the resilience scale. *Journal of Nursing Measurement*, 1, 165-178
- Warmuth, K. A., Cummings, E. M., & Davies, P. T. (2019). Constructive and destructive interparental conflict, problematic parenting practices, and children's symptoms of psychopathology. *Journal of Family Psychology*, 34(3), 301-311. <https://psycnet.apa.org/doi/10.1037/fam0000599>
- Wolfe, J. D., & Thomeer, M. B. (2020). Divorce, economic resources, and survival among older black and white women. *Journal of Marriage and Family*, 83(1), 173-190. <https://doi.org/10.1111/jomf.12702>
- Yáñez-Yaben, S., & Comino, P. (2010). El CAD-S, un instrumento para la evaluación de la adaptación al divorcio-separación [The CAD-S, an instrument to assess adaptation to divorce-separation]. *Psicothema*, 22(1), 157-162.

Zigmond, A. S., & Snaith, R. P. (1983). The Hospital Anxiety and Depression Scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370. <https://doi.org/10.1111/j.1600-0447.1983.tb09716.x>

8. Study 4. Spanish version of the Family Hardiness Index (FHI)

Pellón, I., Martínez-Pampliega, A., & Cormenzana, S. (under review). *Versión Española del Índice de Resistencia Familiar (FHI)*.

Abstract

To date, there is no study that has validated a Spanish version of an instrument to measure family hardiness. Therefore, the present research aims to analyze the psychometric properties of the Family Hardiness Index (FHI) in Spanish population. This instrument measures the ability of the family to cope with and overcome stress through four dimensions: Commitment, Confidence, Challenge, and Control. The sample consisted of 511 parents with children between 12 and 18 years old. We analyzed construct validity through a Confirmatory Factor Analysis and concurrent validity through the correlation between the FHI and the dimensions of the Brief Symptom Inventory (BSI-18). The results showed an adequate fit of a three-dimensional structure extracted from the original four-dimensional one ($CFI = .920$, $RMSEA = .054$, and $SRMS = .056$), and consistent correlations of these dimensions with anxious, depressive, somatic, and panic symptomatology. As a secondary aim, we tested factorial invariance of the FHI in mothers and fathers, identifying the existence of configural invariance. Thus, this study provides preliminary data that support the psychometric structure of the FHI for its use in the general Spanish population.

Keywords: Family Hardiness, measurement, instrument, parents, gender

Family, as the main development system, must face different changes and transformations throughout the life cycle that have an impact on all its members (García et al., 2006; Rukaj, 2020). When these transformations are perceived as stressful, families try to maintain or recover their well-being, a process known as homeostasis (McCubbin et al., 1986; Reiter, 2019). As stress has been linked to negative consequences for family functioning and the well-being of its members (Reknes et al., 2022), it is important to understand the mechanisms through which the family copes with these situations (Peng et al., 2021). In this sense, the most studied mechanism when focusing on growth in the

face of adversity has been resilience (Sánchez & Robles, 2014). Initially, resilience was considered at the individual level, but later it began to be studied in the family context as well (Ungar, 2015).

Research has distinguished different resources derived from resilience, one of them being hardiness (Cunha et al., 2016). The first person to talk about hardiness was Kobasa (1979). According to this author, this construct has three dimensions: Commitment, Control, and Challenge. Commitment implies a curiosity about life and the ability to search for meaning or significance; Control refers to the perception of the influence that one's actions have on the consequences of life events; and Challenge reflects the belief that change is a normal part of life, and the ability to see it as something stimulating and growth-enhancing, rather than a threat. Hardiness combines aspects of cognitive functioning with the behaviors that are carried out to deal with change, to transform and try to learn from the circumstances and life events, and to incorporate them into the life plan (McCubbin et al., 1986). Thus, people with low hardiness tend to feel powerless and have a more passive attitude towards changing situations (Persson et al., 2016). Hardiness has also demonstrated to buffer the harmful effects of stress on health (Eschleman et al., 2010; Reknes et al., 2022). Kobasa (1979) was also the first to develop an instrument to assess hardiness at the individual level. It is a 50-item questionnaire divided into the three dimensions mentioned above. Based on this initial scale, other authors have developed several instruments to assess individual hardiness (Bartone, 1991; Maddi, 1997; Nia et al., 2022; Pollock, 1986).

Considering also Kobasa's first approach (1979), McCubbin et al. (1986) studied hardiness at the family level. In their Resilience Model of Family Adjustment and Adaptation, these authors defined family hardiness as an adaptive mechanism that acts buffering the effects of stress and life demands, and promoting family stability and

adjustment to the contextual demands (Cunha et al., 2016). In order to have an assessment tool for this family resource, they developed the Family Hardiness Index (FHI - McCubbin et al., 1986). Currently, there are two versions of the FHI available for use in research: one based in the three original dimensions of Kobasa (1979) and the other in which McCubbin et al. (1986) included a fourth dimension named Confidence. This dimension refers to the ability to cope with difficulties, plan for the future, and have an interest in life (Gugliandolo et al., 2022; Shin et al., 2019). To date, several studies have used the FHI, and have assessed the association between hardiness and other indicators of family strength (family flexibility, family time, routines, family satisfaction, marital satisfaction, and community satisfaction) (McCubbin & McCubbin, 1988).

Overall, this instrument has become a reference for measuring family hardiness. McCubbin et al. (1988) carried out comparative studies with different populations and, especially, in clinical and work contexts. One of the main uses of the instrument has been and is to assess hardiness in families with serious or chronic illnesses (Caples et al., 2018; Gugliandolo et al., 2022; Peng et al., 2021; Shin et al., 2019). In addition, it has also been validated in other countries, such as Sweden (Persson et al., 2016), Portugal (Cunha, 2011), or China (Liu et al., 2014). However, some of these authors have questioned the dimensionality of the FHI, especially with regard to the Control subscale. Finally, it is worth noting that, despite the extensive use of this instrument, there are no studies that have reported detailed data on the psychometric robustness of the FHI in the Spanish population.

After all that has been mentioned, it is clear that there is a need for instruments to assess the resources of families to cope with stressful life situations (Persson et al., 2016), and that there is an absence of such instruments applicable to the Spanish population. Therefore, the aim of the present study was to validate the FHI in a sample of Spanish

families. In addition, this study aims to contribute to clarify the dimensionality of the construct, and to test its factorial invariance (configural, metric, scalar, residual, and structural) considering the gender of the participants. This may be of interest, as there is evidence of gender differences in relation to coping mechanisms (Eisenbarth, 2019) and, more specifically, when talking about hardiness as a personality trait (Nasser, 2019). However, this difference has not been studied regarding family hardiness.

Method

Participants

The sample consisted of 510 participants, 75 fathers and 434 mothers. The majority of the participants were Caucasian (57% of fathers and 50% of mothers). Regarding educational level and employment, 36% of mothers and 37% of fathers had high school education, and 87% and 93%, respectively, were employed. Concerning marital status, 77% of mothers and 80% of fathers were married or cohabiting (see Table 1).

Table 1

Socio-demographic characteristics of the study sample

	Mothers (n = 434)		Fathers (n = 75)	
	n	%	n	%
Ethnicity:				
Caucasian	219	51	43	57
Hispanic	205	47	30	40
Arabian	1	<1	-	-
Other	9	2	2	3
Marital status:				
Cohabiting	48	11	12	16
Married	288	66	48	64
Single	58	13	6	8
Separated	4	1	1	1
Divorced	18	4	7	9
New partner ^a	9	2	-	-
In a relationship ^b	9	2	-	-
Educational level:				
Primary studies	7	2	2	3
High school	94	22	16	21

Medium degree	64	15	12	16
Gratuated	156	36	28	37
Master, doctorate	113	26	17	23
Employment:				
Active	378	87	70	93
Unemployed	15	4	3	4
Retirement	1	<1		
Sick leave	11	3	2	3
ERE or ERTE ^c	7	2	-	-
Another situation	22	5	-	-

Note. ^aNot first marriage. ^bAfter the separation from his/her children. ^cEmployment

Regulation Order or Record of Temporary Employment Regulation

Instruments

Sociodemographic questionnaire. It was constructed ad hoc to collect general data on the sociodemographic characteristics of the participants: age, sex, nationality, marital status, educational level, and employment.

Family Hardiness Index (FHI; McCubbin et al., 1986). As mentioned in the introduction, this instrument aims to measure family hardiness as a coping mechanism in face of stress through 20 items distributed in three or four subscales. The four-subscale version, used in this study, consists of Commitment (8 items) "In the long run, the bad things that happen to us are balanced by the good things that happen"; Challenge (5 items) "When our family plans activities we try new and exciting things"; Control (3 items) "Trouble results from mistakes we make"; and Confidence (4 items) "It is not wise to plan ahead and hope because things do not turn out anyway ". It is answered on a Likert-type scale from 0 to 3 (0 = *False*, 1 = *Mostly False*, 2 = *Mostly True*, and 3 = *True*). In addition, the sum of the four subscales makes up a global scale to assess Family Hardiness. Both the three-dimensional and four-dimensional versions have shown adequate reliability indexes (Cronbach's alpha between .65 and .81, and .52 to .85, respectively) (McCubbin et al., 1986).

Brief Symptoms Inventory (BSI-18; Derogatis, 2001; Spanish version. Andreu et al., 2008). This is the abbreviated version of the Brief Symptom Inventory (BSI; Derogatis, 1993) that measures psychological distress along 18 items distributed in four subscales or dimensions. The first two subscales are composed of 6 and the last two of 3 items each: Somatization, which measures discomfort caused by physiological symptoms, "Faintness or dizziness"; Depression, which measures symptoms of dissatisfaction and dysphoric mood, "Feeling no interest in things"; Anxiety, which measures symptoms of nervousness, tension, and motor agitation, "Nervousness or shakiness inside"; and Panic, which measures states of fear and panic, "Feeling fearful". It is answered on a Likert-type scale from 0 to 4 (0 = *Not at all*, 1 = *Not at all*, 2 = *Fairly*, 3 = *Quite a lot*, and 4 = *Very much*). The Spanish adaptation of the BSI-18 showed a reliability of $\alpha = .89$.

Procedure

The development of the present cross-sectional correlational study was supported by the regional government and approved by the Research Ethics Committee of the Institution (Ref: ETKK-2/21-22), and all procedures related to this work complied with the original Declaration of Helsinki. To get the sample, the study was first distributed among public and private Pre-school, Primary, High-School, and Vocational Training Centers. In the end, 511 parents from 29 schools were interviewed. The voluntary nature of participation and the confidentiality of the data were explicitly mentioned. Participants were also informed that if they had any doubts when filling in the protocols, they could contact the principal investigators of the study. They could also decide to stop participating at any time they wished. There was no financial remuneration for participating in the study. Data management followed the guidelines established by Organic Law 3/2018 on Personal Data Protection.

Data analysis

Due to the absence of references to any study that had carried out a back-translation procedure with the Family Hardiness Index (FHI), the original version was adapted to Spanish using this methodology (Cha et al., 2007). The comparison of the two English versions, back-translated and original, allowed us to verify the conceptual equivalence. Finally, the Spanish version was reviewed and compared with the version translated by the authors of the original study, also checking the equivalence between them.

Next, the item distribution of the Family Hardiness Index (FHI) was analyzed through the mean, standard deviation, median, and Cronbach's Alpha coefficient value in the case of eliminating each item. To assess univariate normality, the Kolmogorov-Smirnov test was performed, considering the skewness and kurtosis indexes. Absolute values below 3 and 10, respectively, were considered adequate (Kline, 2015). Likewise, the Mardia coefficient was used to test for multivariate normality. In this case, the criterion of adequacy was obtaining a non-significant value. Finally, the internal consistency of the scale was measured through the Cronbach's Alpha reliability coefficient (α) and McDonald's Omega (ω), which is more accurate than Alpha in the absence of tau-equivalence or in the presence of asymmetric items (Trizano-Hermosilla and Alvarado, 2016). A value of .70. was considered as the cut-off score for reliability (Tavakol & Dennick, 2011). The criteria for the possible elimination of items were: having few coincidences, showing a Pearson's correlation coefficient of less than .40 between the item and the scale, and an increase in Cronbach's Alpha of more than .03 when eliminating the item. The scale-items interrelationship was analyzed through the Kaiser-Meyer-Olkin index (KMO) and the Bartlett's test of Sphericity, with scores above

.70 and statistically significant sphericity being indicative of the suitability for conducting the Factor Analysis.

Having fulfilled all these criteria, the next step was to carry out a Confirmatory Factor Analysis (CFA) using R Commander 4.2.1 and the Weighted Least Squares Mean Variances (WLSMV) method (Flora & Curran, 2004). The goodness-of-fit of the model was tested through the Chi-square test (χ^2), which should be non-significant or show low values (Teo et al., 2013). However, the χ^2 is very sensitive to sample size, so the Root Mean Square Error of Approximation (RMSEA) and its 90% confidence interval were also considered, with values between .05 and .08 being adequate and values below .05 being very good. The Comparative Fit Index (CFI) was also used, whose values should be above .90-.95 (Bentler, 1990; Bollen, 1989; Brown, 2006). Finally, the Standardized Root Mean Squared Residuals (SRMR) was taken into account, which should be less than .08 for a good fit (Alavi et al., 2020). For concurrent validity, the correlation of the FHI with the Somatization, Anxiety, Depression, and Panic dimensions of the Brief Symptom Inventory (BSI-18) was assessed through Pearson's *r* coefficient.

Finally, with the aim of analyzing the invariance of the FHI in men and women, we carried out a Multigroup Confirmatory Factor Analysis (MFCMG) using the R Commander 4.2.1 program. In the first model (M1), which is the base and allows us to measure configural invariance, there are no equality restrictions in any of the estimated parameters. To continue with the subsequent analyses, an adequate fit of this model is required (Byrne, 2001). The following tests consist of comparing a restricted model (constrained), with all the parameters set to be equal in both groups, with a model that does not include the equality requirement (unconstrained) (Nien & Duda, 2008). In the second model (M2), metric invariance, the factor loadings of the items are fixed to ensure their equivalence. In the third model (M3), scalar invariance, equivalence to intercept

values is added as a constraint. In the fourth model (M4), residual invariance, equality restrictions are added to the variances and covariances. Finally, in the fifth model (M5) the invariance in the mean structure is measured. In order to confirm invariance, we considered significance greater than .05 for chi-square differences (χ^2) and variances of ΔCFI and ΔRMSEA less than .01 and 0.15, respectively (Fan & Sivo, 2009; Ventura et al., 2019).

Results

Table 2 shows the descriptive and discrimination data for the items that compose the FHI. The means and standard deviations for each scale were 17.25 and 3.93, respectively, for Commitment; 9.96 and 2.03 for Confidence; 10.08 and 2.60 for Challenge; and 6.39 and 1.7 for Control. The items did not follow a normal distribution in any of the dimensions, showing a significance of $p < .001$. In all four dimensions, kurtosis was less than 3 and skewness was negative, which indicates that most scores were far from the mean and placed at the higher extreme. All items correlated significantly (greater than $r = .40$) with their corresponding subscale. Commitment and Challenge showed adequate reliability, with Cronbach's Alpha and McDonald's Omega values above .70. Although eliminating items 4 and 16 would improve the reliability of the subscale, none of them exceeded the maximum criterion of .03. Confidence obtained lower reliability values ($\alpha = .66$ and $\omega = .67$), but they are still considered acceptable. Finally, Control showed low reliability with $\alpha = .45$ and $\omega = .51$. Furthermore, removing item 1 would improve the reliability of the subscale from .45 to .64, thus exceeding the maximum criterion of .03, so we decided to remove it. The inter-item correlation coefficients ranged from .50 to .79, showing homogeneity among them (Streiner & Norman, 2014). Regarding internal consistency, the total Alpha value obtained was $\alpha =$

.80 and McDonald's Omega was $\omega = .78$, indicating an adequate level of reliability of the FHI.

Table 2

Descriptive and discrimination data for the items of the FHI subscales

Scale	Item	Range	<i>M</i>	<i>SD</i>	<i>Me</i>	<i>Sk</i>	<i>Ku</i>	<i>r</i>	α	ω	K-S
Commitment	4	0-3	1.85	.93	2	-.47	-.60	.50**	.82		
	5		2.02	.79	2	-.58	.03	.71**	.76		
	6		1.91	.80	2	-.32	-.43	.63**	.78		
	7		2.31	.70	2	-.68	-.12	.68**	.77		
	9		2.30	.73	2	-.95	.84	.68**	.77		
	11		2.36	.70	2	-.84	.20	.75**	.75		
	13		2.20	.71	2	-.47	-.35	.56**	.79		
	18		2.31	.71	2	-.77	.17	.70**	.76		
Total		0-24	17.25	3.93	17	-.43	-.09	-	.80	.79	.08**
Confidence	2	0-3	2.48	.74	3	-1.26	.82	.72**	.58		
	3		2.18	.86	2	-.74	-.36	.75**	.61		
	8		2.48	.74	3	-1.32	1.09	.73**	.58		
	10		2.82	.49	3	-3.17	11.06	.63**	.62		
Total		0-12	9.96	2.03	10	-1.40	2.64	-	.66	.67	.19**
Challenge	12	0-3	1.80	.78	2	-.23	-.36	.76**	.61		
	14		1.90	.79	2	-.36	-.26	.62**	.69		
	15		1.85	.76	2	-.31	-.18	.76**	.61		
	16		2.25	.75	2	-.72	.01	.54**	.73		
	17		2.28	.75	2	-.76	-.01	.70**	.64		
Total		0-15	10.08	2.60	10	-.38	.10	-	.71	.71	.12**
Control	1	0-3	1.74	.89	2	-.10	-.85	.61**	.64		
	19		2.20	.85	2	-.83	-.07	.75**	.18		
	20		2.45	.74	3	-1.21	.79	.72**	.18		

Total	0-9	6.39	1.7	7	-.67	.79	-	.45	.51	.15**
-------	-----	------	-----	---	------	-----	---	-----	-----	-------

Note. *Me* = Median; *Sk* = Skewness; *Ku* = Kurtosis; *r* = Item correlation with the rest of

the scale; α = Alpha in case the item is removed; ω = McDonald's Omega; K-S =

Kolmogorov-Smirnov normality test.

** $p < .001$; * $p < .05$.

In order to carry out the CFA, the Control dimension after eliminating item 1 consisted of only two items. Statistically, it has been argued that subscales must have at least three items to be considered reliable (Frías-Navarro, 2022; Lloret-Segura et al., 2014). In addition, as noted in the introduction, some authors who have versioned the instrument have questioned the adequacy of the Control dimension (Cunha et al., 2016; Persson et al. 2016). Thus, we decided to follow this approach and remove the whole subscale. After doing so, multivariate normality was assessed again. The remaining three dimensions showed a significance of $p < .001$ and therefore did not meet the normality criterion. For this reason, we used the WLSMV Method. The KMO index showed a value of .85 and Bartlett's sphericity index obtained a significance of $p < .001$, indicating an adequacy of the data to proceed with the Factor Analysis.

Considering the results of the CFA (see Table 3), the first analysis showed that the model did not meet the fit criteria. Items 4 ($\lambda = .25$) and 16 ($\lambda = .23$) obtained factor loadings below .30, so a second CFA was carried out after removing them, which also failed to obtain an adequate fit. Therefore, as item 14 ($\lambda = .37$) showed a factor loading close to .30 and the previous models did not obtain good fit indexes, a third analysis was carried out after eliminating it. In this case, the CFI = .920, the RMSEA = .054 (90% Confidence Interval [CI] [.045-.064]), and the SRMS = .056 achieved acceptable values. The final model is depicted in Figure 1.

Once the adequacy of the questionnaire was confirmed with the elimination of the mentioned items, its internal consistency was recalculated. The reliability indexes showed

values of $\alpha = .83$ and $\omega = .82$, thus improving its reliability compared to the original 20-item version. Regarding the subscales, the values obtained were $\alpha = .81$ and $\omega = .81$ for Commitment, $\alpha = .66$ and $\omega = .67$ for Confidence, and $\alpha = .77$ and a $\omega = .78$ for Challenge. Therefore, reliability increased for the dimensions Commitment and Challenge, and stayed the same for Confidence.

Table 3

FHI global adjustment indexes

	χ^2	<i>df</i>	<i>p</i>	CFI	RMSEA	RMSEA 90% CI	SRMS
FHI Model 1	354.150	116	< .001	.850	.063	.056-.071	.073
FHI Model 2	275.977	87	< .001	.872	.065	.057-.074	.069
FHI Model 3	185.215	74	< .001	.920	.054	.045-.064	.056

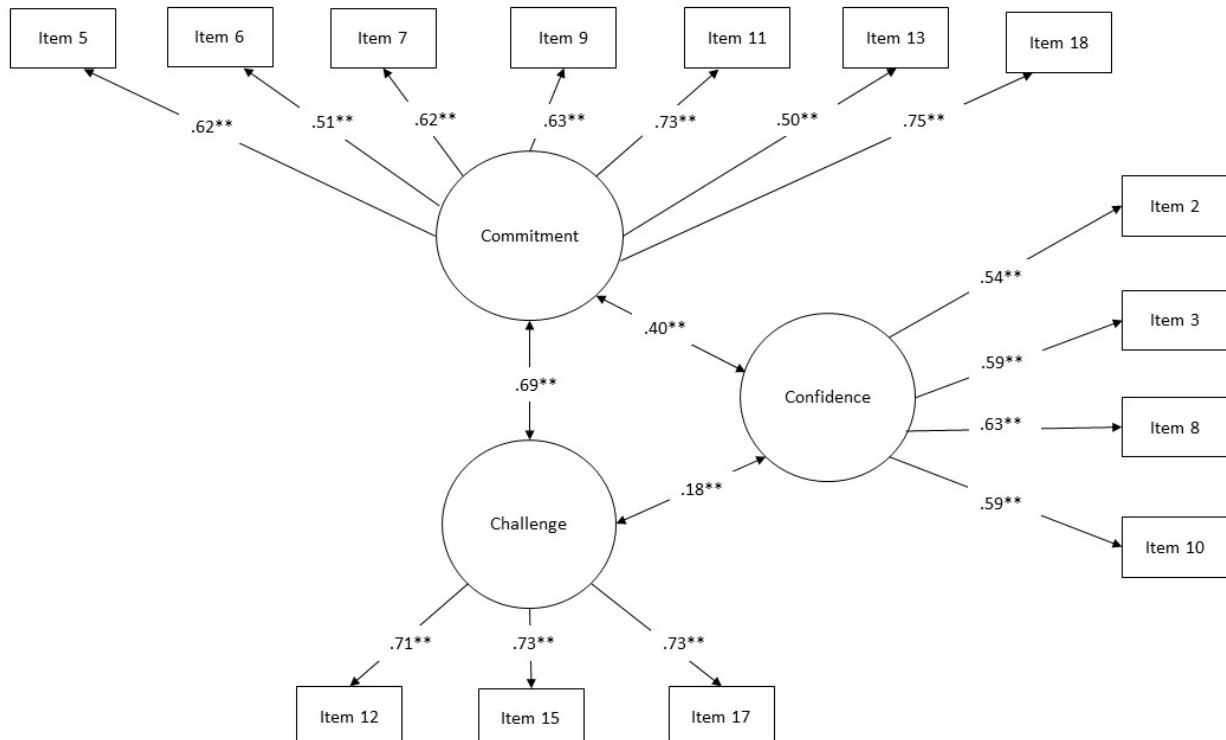
Note. χ^2 = chi-square; *df* = degrees of freedom; *p* = significance; CFI = Comparative Fit

Index; RMSEA = Root Mean Square Error of Approximation; RMSEA (90% CI) =

RMSEA Confidence Interval; SRMS = Standardised Root Mean Square Index.

Figure 1

Confirmatory Factor Analysis of the Family Hardiness Index (FHI)



With regard to the interrelations between the dimensions, a positive correlation of Commitment with Confidence ($\sigma = .40, p < .001$) and with Challenge ($\sigma = .69, p < .001$), and of Confidence with Challenge ($\sigma = .18, p = .010$) was observed. Finally, considering the association between the dimensions of the FHI and those of the BSI-18 (Somatization, Anxiety, Depression, and Panic) (see Table 4), all dimensions of both questionnaires correlated significantly and negatively.

Table 4

Correlations between FHI and BSI-18 dimensions

	Somatization	Anxiety	Depression	Panic
Commitment	-.138**	-.146**	-.263**	-.142**
Confidence	-.311**	-.300**	-.408**	-.371**
Challenge	-.110**	-.107*	-.228**	-.088*

** $p < .001$. * $p < .05$

Finally, with respect to the analysis of the invariance of the FHI by gender, since there was such a significant difference between the number of fathers and mothers participating, a random sample of 75 women was taken to make two equivalent groups. Table 5 shows that the baseline model with the reduction of items (M1) got adequate fit indexes, so that configural invariance between fathers and mothers was assumed. In contrast, the difference between M1 and M2 (metric invariance), and between M2 and M3 (scalar invariance) did not meet the ΔCFI criterion, whose value in both cases was above .01. The lack of invariance at this level did not allow further analyses of the remaining invariance (residual and mean structure).

Table 5

Global fit indexes for the measurement of FHI invariance in fathers and mothers (small sample)

	χ^2	<i>df</i>	<i>p</i>	CFI	ΔCFI	RMSEA	$\Delta RMSEA$
Mothers-Fathers							
M1. Configural invariance	93.026	148	-	.962	-	.033	-

M2. Metric invariance	137.387	159	.422	.923	.039	.046	.012
M3. Scalar invariance	150.322	170	.570	.909	.013	.046	.002

Note. χ^2 = chi-square; *df* = degrees of freedom; *p* = probability; CFI = Comparative Fit

Index; Δ CFI = Difference in CFI values; RMSEA = Root Mean Square Error of Approximation; Δ RMSEA = Difference in RMSEA values.

Discussion

The present study focused on analyzing the structure, psychometric properties, and gender invariance of the Spanish version of the Family Hardiness Index (FHI), which resulted on a valid and reliable 14-item instrument, structured in three dimensions: Commitment, Confidence, and Challenge. It assumes configural invariance between fathers and mothers. This scale is the first instrument for the study of Family Hardiness in Spanish version (FHI-VE).

First, regarding the structure, it is important to note that it is not exact to the one of the original version. Initially, the study was based on the four-dimensional version, as it was supported by the most recent research (Persson et al., 2016). However, after the first analyses, the Control subscale was omitted, since we found statistical difficulties from the beginning (Frías-Navarro, 2022). This result is also consistent with the findings of previous authors (Cunha et al., 2016; Persson et al., 2016). In fact, in the Swedish version, the authors also justified removing the entire subscale, as doing so would lead to an increase in the reliability of the instrument. For these reasons, it may be necessary to check the composition and content of this subscale. Indeed, following the argument of Persson et al. (2016), perhaps due in part to cultural differences, it can be difficult to distinguish between dimensions (e.g. between Confidence and Control, or between Commitment and Control). Therefore, it might be advisable to review the terms used or to add new, more specific, items for this dimension. The same could be considered in the case of items 4 ("In the long run, the bad things that happen to us are for the good") and

8 ("We do not feel we can survive if another problem hits us"), as they presented factor loadings below .30. Both items are part of the Commitment scale, but their content could be interpreted as belonging more to the Control and Confidence scales, respectively. As for the rest of the items, in the final version of this questionnaire all of them obtained high factor loadings (close to .70) that were in the expected direction, showing a representativeness of the construct to which they belonged (Ventura, 2020).

Thus, the results have yielded a reliable and valid structure for use in the general Spanish population. It remains for further studies to revise its suitability in samples with different characteristics. After examining the responses to the items of the FHI, it was possible to observe the tendency in the responses towards scores far from the mean, and more specifically, located at the upper end. This may indicate that the items did not follow the criteria of a normal distribution, which is consistent with the 'ceiling effect' mentioned by Persson et al. (2016). These authors stated that this trend in responses may be explained, at least partly, due to the sociodemographic characteristics of the sample. In our study, the majority of parents were Caucasian, highly educated, and employed, so it can be assumed that they belonged to an upper-middle class in terms of their socioeconomic, cultural, and educational background. Taking into account the homogeneity of this sample, it would be interesting to check whether this tendency is maintained in Spanish-speaking families with different sociodemographic characteristics, both national and international. Apart from this effect, the means, standard deviations, and item-subscale correlation indexes were adequate.

Concerning reliability, the total Alpha value obtained in this study was higher than all previous versions ($\alpha = .83$). McCubbin et al. (1986) and Persson et al. (2016) showed an Alpha of .82, Cunha et al. (2016) of $\alpha = .76$, and Liu et al. (2014) $\alpha = .80$. Specifically, considering each dimension, the original three-dimensional version obtained values of α

= .81, .80, and .65 for Commitment, Challenge, and Control, respectively. However, there is no data available for the original four-dimensional version (McCubbin et al., 1986). Persson et al. (2016), on the four-dimensional version (Commitment, Challenge, Control, and Confidence), got Alphas of .88, .70, .17, and .71 respectively, and they found a higher internal consistency of this version compared to the three-dimensional one. Liu et al. (2014), however, did not report reliability data for each subscale. Finally, Cunha et al. (2016), in the three-dimensional version, observed a reliability of $\alpha = .73$ for Commitment, $\alpha = .71$ for Challenge, and $\alpha = .38$ for Control.

With regards to the concurrent validity, the data supported the hypothesised relationship between the dimensions of the BSI-18 and those of the FHI. That is, as expected, families who perceive themselves as united and able to adapt and cope with adverse situations, who are able to plan together for the future, perceive life as interesting and meaningful, and value change as positive and beneficial, have fewer symptoms of anxiety, depression, somatization, and fear or panic (Kowalski & Schermer, 2019; Ng & Lee, 2020). These findings support the idea that family hardiness may be a potentially beneficial resource in the face of the negative consequences of stress and a good indicator of family adaptation (Caples et al., 2018; Shin et al., 2018).

Finally, with respect to the invariance of the FHI, only configural invariance was found. This means that fathers and mothers understand the concept of family hardiness in the same way. In contrast, fathers and mothers differ in their interpretation of the items (metric invariance) and subscales (scalar invariance) of the questionnaire (Schmitt & Kuljanin, 2008; Putnick & Bornstein, 2016). It should be noted that this is not a difference regarding the construct of hardiness, but in the way the items are interpreted in both groups (Gregorich, 2006). That is, some items seem to be more relevant for one group than for the other. Moreover, the scores recorded are significantly higher or lower in one

group compared to the other (Split et al., 2012). In any case, these differences in the interpretation of men and women (Millsap & Kwok, 2004) may be related to the size of the sample. In this study, it was necessary to extract an equal sample of women to carry out the invariance analyses. Thus, the number of participants was greatly reduced, being quite low based on the recommended standards (Costa et al., 2015). We would therefore recommend for future research to replicate these analyses using larger samples and to treat these findings with caution.

Following the above, some limitations can be mentioned in the present study. First, it has been carried out with parents from different dyads, so the scores obtained reflect their individual perceptions of family hardiness. This may make sense, considering that the FHI is an individual response questionnaire despite it measures a family construct (McCubbin et al., 1986; Persson et al., 2016). However, it could be interesting to further studies to explore dyads or to consider the perception of members belonging to the same family unit. In addition, it may also be relevant for further research to analyze family hardiness across the different stages of the family life cycle, to see how parents perceive their ability to cope with the demands of each phase.

Second, we found a lack of gender balance among the participants, with a higher number of mothers compared to fathers. This disproportion reflects the unequal participation of parents in tasks, studies, and evaluations related to family and children's life (Frank et al., 2015; Parent et al., 2017). Therefore, it may be of great importance for future research to encourage the participation of men (Cabrera et al., 2016), to allow for a deeper understanding of gender differences when studying constructs related to the family unit, such as family hardiness.

Third, as mentioned above, there are limitations regarding the homogeneity of the sample, so it could be interesting for future research to replicate this study with

populations that are more heterogeneous in their sociodemographic characteristics (economic and educational level, ethnicity, etc.) (Bornstein et al., 2013). Also, it is worth noting that most studies have been carried out in clinical contexts, since this instrument has been and is mostly used with families with serious or chronic illnesses (Caples et al., 2018; Cunha et al., 2016; Gugliandolo et al., 2022; Liu et al., 2014; McCubbin et al., 1986; Peng et al., 2021; Shin et al., 2019), so it may also be relevant to replicate it in different contexts, such as divorced families.

Finally, it should be noted that in the original version by McCubbin et al. (1986), only overall results of the reliability and validity of both the FHI and its subscales were reported, but not of the Factor Analyses (Persson et al., 2016). Therefore, although similar results have been obtained regarding internal consistency, it is difficult to make a detailed comparison between the factor structure of the Spanish version and the original one. Moreover, there are also differences compared to the other versions of the FHI. On the one hand, with respect to the dimensionality of the questionnaire, as in all other versions, except the Swedish one, they used the three-dimensional version. On the other hand, in terms of the sample, as all of the other versions have been developed in a clinical context (with family members or people with chronic pathologies) (Cunha et al., 2016; Liu et al., 2014; Persson et al., 2016).

In short, due to the increasing attention not only on risk factors, but also on family resources or protective factors in face of adversity, it is important to build solid, valid, and reliable tools that measure constructs such as family hardiness in different contexts and populations. This study has been the first to validate the FHI in Spanish families, and has provided an instrument for use in the study and analysis of family functioning (Caples et al., 2018), as well as for interventions focused in family stress and coping resources (Cunha et al., 2016; McCubbin et al., 1986; Shin et al., 2019). It is also an easy-to-use

tool, which increases its utility with large samples or in contexts where it is difficult to use in-depth interviews (Gordo et al., 2019). However, although the results support the adequacy of the FHI, we highly recommend to continue exploring the applicability of the Spanish version with different family members, family units or dyads, and families from diverse contexts or with different sociodemographic characteristics, in order to review some of its items and its structure, and thus try to improve its internal consistency.

References

- Alavi, M., Visentin, D. C., Thapa, D. K., Hunt, G. E., Watson, R., & Cleary, M. (2020). Chi-square for model fit in confirmatory factor analysis. *Journal of Advanced Nursing*, 76(9), 2209-2211. <https://dx.doi.org/10.1111/jan.14399>
- Andreu, Y., Galdón, M. J., Dura, E., Ferrando, M., Murgui, S., García, A., & Ibáñez, E. (2008). Psychometric properties of the Brief Symptoms Inventory-18 (BSI-18) in a Spanish sample of outpatients with psychiatric disorders. *Psicothema*, 20(4), 844-850. Recuperado de: <https://reunido.uniovi.es/index.php/PST/article/view/8740>
- Bartone, P. T. (1991). *Development and validation of a short hardiness measure*. American Psychological Society Annual Convention. Recuperado de chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/http://www.hardiness-resilience.com/docs/aps91b.pdf
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238-246. <https://doi/10.1037/0033-2909.107.2.238>
- Bollen, K.A. (1989). *Structural equation with latent variables*. Wiley.
- Bornstein, M. H., Jager, J., & Putnick, D. L. (2013). Sampling in developmental science: Situations, shortcomings, solutions, and standards. *Developmental Review*, 33, 357-370. <http://dx.doi.org/10.1016/j.dr.2013.08.003>

- Byrne, B. M. (2001). *Structural equation modelling with AMOS. Basic concepts, applications, and programming*. Lawrence Erlbaum Associates.
- Cabrera, N. J., Volling, B. L., & Barr, R. (2016). Fathers are parents, too! Widening the lens on parenting for children's development. *Child Development Perspectives*, 12(3), 152-157. <https://doi.org/10.1111/cdep.12275>
- Caples, M., Martin, A. M., Dalton, C., Marsh, L., Savage, E., Knafl, G., & Van Riper, M. (2018). Adaptation and resilience in families of individuals with down syndrome living in Ireland. *British Journal of Learning Disabilities*, 46(3), 146-154. <https://doi.org/10.1111/bld.12231>
- Cha, E. S., Kim, K. H., & Erlen, J. A. (2007). Translation of scales in cross-cultural research: Issues and techniques. *Journal of Advanced Nursing*, 58(4), 386-395. <https://doi.org/10.1111/j.1365-2648.2007.04242.x>
- Costa, D. S. J., Aaronson, N. K., Fayers, P. M., Pallant, J. F., Velikova, G., & King, M. T. (2015). Testing the measurement invariance of the EORTC QLQ-C30 across primary cancer sites using multi-group confirmatory factor analysis. *Quality of Life Research*, 24, 125-133. <https://doi.org/10.1007/s11136-014-0799-0>
- Cunha, A. I. (2011). *Histórias e trajetórias de adaptação e resiliência familiar na doença crónica pediátrica*. Dissertação de Doutoramento não publicada. Faculdade de Psicologia e Ciências da Educação. Universidade de Coimbra. Recuperado de <http://hdl.handle.net/10316/20310>
- Cunha, A. I., Major, S., & Relvas, A. P. (2016). Family Hardiness Index (FHI). In A. P. Relvas, & S. Major, (Eds.). *Avaliação Familiar: Vulnerabilidade, stress e adaptação*. Vol. II. Impresa da Universidade de Coimbra. https://doi.org/10.14195/978-989-26-1268-3_3

- Derogatis, L. R. (1993). *Brief Symptom Inventory (BSI) administration, scoring, and procedures manual* (3rd ed.). NCS Pearson, Inc.
- Eisenbarth, C. A. (2019). Coping with stress: Gender differences among college students. *College Student Journal*, 53(2), 151-162.
- Eschleman, K. J., Bowling, N. A., & Alarcon, G. M. (2010). A meta-analytic examination of hardiness. *International Journal of Stress Management*, 17(4), 277-307.
<https://doi/10.1037/a0020476>
- Fan, X., & Sivo, S. A. (2009). Using Δ goodness-of-Fit indexes in assessing mean structure invariance. *Structural Equation Modelling*, 16, 54-69.
<https://doi.org/10.1080/10705510802561311>
- Flora, D. B., & Curran, P. J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory analysis with ordinal data. *Psychological Methods*, 9(4), 466-491.
- Frank, T. J., Keown, L. J., Dittman, C. K., & Sanders, M. R. (2015). Using father preference data to increase father engagement in evidence-based programs. *Journal of Child and Family Studies*, 24, 937-945.
<https://doi.org/10.1007/s10826-014-9904-9>
- Frías-Navarro, D. (2022). *Apuntes de estimación de la fiabilidad de consistencia interna de los ítems de un instrumento de medida*. Universidad de Valencia. Recuperado de: <chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.uv.es/friasnav/AlfaCronbach.pdf>
- García, M., Rivera, S., Reyes, I., & Díaz, R. (2006). Construcción de una escala de funcionamiento familiar. *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica. RIDEP*, 22(2), 91-110.

- Gordo, L., Iriarte-Elejalde, L., & Martínez-Pampliega, A. (2019). Versión española del Cuestionario de Función Reflexiva Parental (CFRP-18). *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica. RIDEP*, 2(55), 6-17.
- Gregorich, S. E. (2006). Do self-report instruments allow meaningful comparison across diverse population groups? Testing measurement invariance using the Confirmatory Factor Analysis framework. *Medical Care*, 44(11, Suppl. 3), 78-94.
<https://doi.org/10.1097%2F01.mlr.0000245454.12228.8f>
- Gugliandolo, M. C., Liga, F., Larcán, R., & Cuzzocrea, F. (2022). Parents of children with developmental disorders: Family hardiness and resilience. *Journal of Intellectual and Developmental Disability*.
<https://doi.org/10.3109/13668250.2022.2079056>
- Kline, R. B. (2005). *Principles and practice of structural equation modelling* (2nd ed.). The Guilford Press.
- Kobasa, S. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, 37(1), 1-11.
<https://doi.org/10.1037/0022-3514.37.1.1>
- Kowalski, C. M., & Schermer, J. A. (2019). Hardiness, perseverative cognition, anxiety, and health-related outcomes: A case for and against psychological hardiness. *Psychological Reports*, 122(6), 2096-2118.
<https://doi.org/10.1177/0033294118800444>
- Liu, Y., Yang, J. Q., Ye, B. L., Shen, Q., Zhu, J. M., & Chen, M. Q. (2014). Reliability and validity of the Chinese version of Family Hardiness Index. *Journal of Nursing Administration*, 14(11), 770-772.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: Una guía práctica, revisada y

- actualizada. *Anales de Psicología*, 50(3), 1151-1169.
<http://dx.doi.org/10.6018/analesps.30.3.199361>
- Maddi, S. R. (1997). Personal Views Survey II: A measure of dispositional hardiness. In C. P. Zalaquett, & R. J. Woods, (Eds.). *Evaluating stress: A book of resources* (pp. 293-310). University Press.
- McCubbin, M. A. McCubbin, H. I., & Thompson, A. I. (1986). Family Hardiness Index (FHI). In H. I. McCubbin, A. I. Thompson, & M. A. McCubbin, (Eds.). *Family Assessment: Resiliency, Coping and Adaptation – Inventories for Research and Practice*, (pp. 239-305). University of Wisconsin Publishers.
- McCubbin, H. I., & McCubbin, M. A. (1988). Typologies of resilient families: Emerging roles of social class and ethnicity. *Family Relations*, 37, 247-254.
<https://doi.org/10.2307/584557>
- Millsap, R. E., & Kwok, O. (2004). Evaluating the impact of partial factorial invariance on selection in two populations. *Psychological Methods*, 9, 93-115.
<https://doi.org/10.1037/1082-989X.9.1.93>
- Nasser, O. D. (2019). The number of years in displacement and gender as mediating factors of the relation between ways of confronting psychological stresses and psychological hardiness. *European Scientific Journal*, 15(25), 239-261.
<http://doi.org/10.19044/esj.2019.v15n25p239>
- Ng, S. M., & Lee, T. M. C. (2020). The mediating role of hardiness in the relationship between perceived loneliness and depressive symptoms among older. *Aging and Mental Health*, 24(5), 805-810. <https://doi.org/10.1080/13607863.2018.1550629>
- Nia, H. S., Froelicher, E. S., Hosseini, L., & Farahani, M. A. (2022). Evaluation of psychometric properties of Hardiness Scales: A systematic review. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.840187>

- Nien, C. L., & Duda, J. L. (2008). Antecedents and consequences of approach and avoidance achievement goals: A test of gender invariance. *Psychology of Sport and Exercise*, 9(3), 352-372. <https://doi.org/10.1016/j.psychsport.2007.05.002>
- Parent, J., Forehand, R., Pomerantz, H., Peisch, V., & Seehuus, M. (2017). Father participation in child psychopathology research. *Journal of Abnormal Child Psychology*, 45(7), 1259-1270. <https://doi.org/10.1007%2Fs10802-016-0254-5>
- Peng, Y., Wang, J., Sun, G., & Liu, S. (2021). Family hardiness in patients with heart failure: Exploring protective factors and identifying the mediator. *Psychology Research and Behavior Management*, 14, 355-364. <https://doi.org/10.2147%2FPRBM.S301765>
- Persson, C., Benzein, E., & Årestedt, K. (2016). Assessing family resources: Validation of the Swedish version of the Family Hardiness Index. *Scandinavian Journal of Caring Sciences*, 30(4), 845-855. <https://doi.org/10.1111/scs.12313>
- Pollock, S. (1986). Adaptation to stress. *Texas Nursing*, 58, 101-110.
- Putnick, D. L., & Bornstein, M. H. (2016). Measurement invariance conventions and reporting: The state of the art and future directions for psychological research. *Developmental Review*, 41, 71-90. <https://doi.org/10.1016/j.dr.2016.06.004>
- Reiter, M.D. (2019). Systems Theory. In M.D. Reiter (Ed.). *Substance Abuse and the Family* (pp.240-259). Routledge.
- Reknes, I., Harris, A., & Einarsen, S. (2022). The role of hardiness in the bullying-mental health relationship. *Occupational Medicine*, 68(1), 64-66. <https://doi.org/10.1093/occmed/kqx183>
- Rukaj, J. S. (2020). *Examining family stress, family hardiness, help seeking attitudes, and psychological distress in Albanian Americans*. [Doctoral Thesis]. University of Saint Elizabeth. Available from ProQuest One Academic. (Order No. 28091416).

<https://www.proquest.com/docview/2444920199?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>

- Sánchez-Teruel, D., & Robles-Bello, M. A. (2014). Escala de Resiliencia 14 ítems (RS-14): Propiedades psicométricas de la versión en español. *Revista Iberoamericana de Diagnóstico y Evaluación – e Avaliação Psicológica*, 2(40), 103-113.
- Schmitt, N., & Kuljanin, G. (2008). Measurement invariance: Review of practice and implications. *Human Resource Management Review*, 18(49), 210-222.
<https://doi.org/10.1016/j.hrmr.2008.03.003>
- Shin, J. Y., Steger, M. F., Sin, D. W., Kim, S. Y., Yang, H. K., Cho, J., Jeong, A., Park, K., Kweon, S. S., & Park, J. H. (2019). Patient-family communication mediates the relation between family hardiness and caregiver positivity: Exploring the moderating role of caregiver depression and anxiety. *Journal of Psychosocial Oncology*, 37(5), 557-572. <https://doi.org/10.1080/07347332.2019.1566808>
- Split, J. L., Koomen, H. M. Y., & Jak, S. (2012). Are boys better off with male and girls with female teachers? A multilevel investigation of measurement invariance and gender match in teacher-student relationship quality. *Journal of School Psychology*, 50(3), 363-378. <https://doi.org/10.1016/j.jsp.2011.12.002>
- Streiner, D., & Norman, G. (2014). *Health measurement scales: A practical guide to their development and use*. Oxford University Press.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's Alpha. *International Journal of Medical Education*, 2, 53-55.
<https://doi.org/10.5116%2Fijme.4dfb.8dfd>
- Teo, T., Tsai, L. T., & Yang, C. C. (2013). *Applying structural equation modelling (SEM) in educational research: An introduction*. Sense Publishers.

- Trizano-Hermosilla, I., & Alvarado, J. M. (2016). Best alternatives to Cronbach's alpha reliability in realistic conditions: Congeneric and asymmetrical measurements. *Frontiers in Psychology*, 7, 769. <https://doi.org/10.3389/fpsyg.2016.00769>
- Ungar, M. (2015). Varied patterns of family resilience in challenging contexts. *Journal of Marital and Family Therapy*, 42(1), 19-31. <https://doi.org/10.1111/jmft.12124>
- Ventura, J. (2020). Dos formas fáciles de interpretar las famosas cargas factoriales. *Gaceta Sanitaria*, 33(6), 598-600. <https://doi.org/10.1016/j.gaceta.2019.04.002>
- Ventura, J., Caycho, T., & Domínguez, S. (2019). Invarianza factorial según sexo de la Basic Empathy Scale abreviada en adolescentes peruanos. *Psykhē*, 28(2), 1-11. <https://doi.org/10.7764/psykhe>

CHAPTER III: GENERAL CONCLUSIONS

9. Conclusions

The present study has been developed in the context of family and divorce. Divorce has been considered one of the most powerful interpersonal stressors that take place within the family system. However, most people are able to cope and adapt well to divorce, and its impact depends on a number of inter- and intrapersonal factors, especially destructive conflict (Visser et al., 2017; Martínez-Pampliega et al., 2021). Divorces with a high level of destructive conflict have been shown to have consequences on the health of former spouses, with higher levels of anxiety and depression, and a higher risk of cardiovascular pathologies, diabetes and hypertension, chronic physical pain, and sleep difficulties and fatigue, among others (Herrero et al., 2020; Sbarra & Whisman, 2022; Kiecolt-Glaser, 2018). However, the literature has mostly focused on mental and emotional health, with much less consideration of physical health.

In addition to this direct impact, divorce may also have an indirect impact, for instance because there may be a spillover effect of increased parental symptomatology, which may affect the quality of their parenting (Bertie et al., 2021), including emotion socialization (Godleski et al., 2020). Emotion socialization refers to the ability of parents to facilitate their children's understanding, experience, expression, and regulation of emotions (Tan et al., 2020). However, although emotion socialization has been recognised as an important factor affecting children's short- and long-term development and well-being (Correia, 2020; Seddom et al., 2020), it has hardly been studied in the context of divorce, and even less in high-conflict divorces.

Therefore, the aim of this research was to understand the impact on the emotion socialization of parents going through high-conflict divorces. Apart from the physical and mental health, the role of some mediating and moderating factors such as co-parenting, resilience, and gender were also considered. These variables have been studied in the

context of divorce, but their relationship to each other and to emotion socialization has never been analyzed thus far. To this end, four studies were developed, each of which forms a chapter of the thesis:

- 1) A meta-analysis of divorce and physical health;
- 2) A study of the relationship between divorce and somatization;
- 3) A latent profile analysis based on parental symptomatology, co-parenting, and resilience, on the relationship between divorce and emotion socialization; and
- 4) The validation of a family hardiness instrument.

The findings and contributions of the studies can be seen in Table 1, and will be detailed below.

Table 1

Summary of main empirical findings

Study 1
- Divorcees had a higher risk of self-reported health problems, more physical symptoms, diabetes, joint pathologies, cardiovascular and cerebrovascular conditions, and sexually transmitted diseases as compared to married individuals. - Divorced and married people did not differ in hypertension, hypercholesterolemia, cancer and cancer development, disabilities or limitations, and cognitive pathologies, and overall physical health. - Being a female, unemployed, not having children, and having a lower education increased the risk for overall physical health problems post-divorce. The same applied to heavy alcohol consumption, lack of exercise, and being overweight.
Study 2

-
- Anxiety, not depression, mediated the relationship between adjustment difficulties and somatization.
 - Divorced women with adjustment difficulties had higher levels of anxiety compared to men.
 - Co-parenting was directly and negatively related to somatization.
 - Other factors, such as time elapsed after divorce, frequency of contact with the children, and the relationship with the ex-partner also had an influence on the relationship between divorce and somatization.
-

Study 3

- Parental profiles were differentially distributed depending on their physical and psychological symptomatology.
 - Co-parenting was almost equally distributed in the three profiles.
 - Parents with less symptomatology were more likely to engage in both emotion coaching and emotion rejection behaviors.
 - Resilience did not moderate the relationship between the different parental profiles and emotion socialization.
-

Study 4

- As far as we know, this is the first study to validate an instrument to measure Family Hardiness in Spanish families (FHI-VE).
 - The FHI-VE obtained a valid and reliable structure and functioning for its use on the general population of Spanish families, even if its structure is not exactly the same as the original instrument.
 - The results suggested that the Control subscale and some other items need to be revised.
-

9.1. Study 1. Divorce and physical health: A three-level meta-analysis

After having identified a lack of studies focusing on the relationship between divorce and physical health (Zineldin, 2019), and since no previous meta-analysis that examined general physical health after divorce, the first study was a three-level meta-analysis that aimed to explore this relationship, comparing divorced and married people. For this purpose, separate analyses were conducted to examine specific pathologies of adults after divorce, as well as an analysis to test their overall health. The results supported the idea that there is a higher risk of experiencing physical health problems in divorced people compared to married people. In particular, divorced people tend to perceive their own physical health as more negative, have more physical or chronic pains such as headaches, stomach aches, backaches, etcetera, and are also more at risk of suffering from pathologies such as hypertension, diabetes, arthritis and arthrosis, and sexually transmitted diseases, compared to their married counterparts. This shows that divorce has an impact not only on the mental health of former spouses, but also on their physical health (Bronsele et al., 2008; Kiecolt-Glaser, 2018).

However, divorce is a complex process, and its understanding requires considering the role of moderating variables such as: gender, presence of children, educational level, employment status, and lifestyle habits (Margaroli et al., 2017; Tosi & Van den Broek, 2020). The meta-analytic review showed that divorced women, and divorcees who had a lower level of education, were unemployed, childless, had a high alcohol consumption, were overweight, and did not practice physical exercise had a higher risk of suffering from physical diseases.

Therefore, this study focused on the relationship between divorce and physical health, while integrating intra- and interpersonal factors (Strizzi et al., 2022). The results enabled us to more thoroughly examine the interaction between these factors that may

affect health and to consider their differential role. Consequently, this may allow to improve adequate and specific care to divorced people who come to health services (Kiecolt-Glaser, 2018). However, as the research findings on divorce and physical health is still far from being concluded, the second study aimed to go even deeper into it, analyzing a health condition that has so far hardly been studied in the context of divorce: somatization (Husain-Krautter et al., 2021; Nakamura et al., 2017).

9.2. Study 2. Post-divorce adjustment, co-parenting, and somatization: Mediating role of anxiety and depression

The second study aimed to analyze the relationship between high-conflict divorce and somatization, since there is an absence of studies that have considered this. Moreover, as some previous studies have shown that there is an overlap of somatization with other psychological conditions, such as anxiety and depression (Güney et al., 2015), we also took into account their potential mediating role.

On the one hand, the results showed that people with more difficulties in adjusting to divorce presented greater anxious and depressive symptomatology, something that had already been strongly corroborated in previous research (Strizzi et al., 2021; Hald et al., 2022). In addition, this study found that people with more anxiety reported more health complaints such as back pain, fatigue, gastrointestinal problems, or headaches (Henningsen, 2020).

On the other hand, in terms of gender, women with less contact with their children showed more difficulties in adjusting to divorce (Omrod, 2018; Weitz & Karlsson, 2021), and they also had a higher level of anxiety compared to men. Another relevant finding was that the lower presence of somatic symptomatology in both men and women was related to a greater willingness to co-parent. Along the same lines, divorcees who had more fluent interactions with each other also showed a greater willingness to co-parent.

This could make sense as the type of relationship between the ex-spouses is likely to be reflected in their communication about responsibilities and care for their children (Beckmeyer et al., 2022; Jamison et al., 2014).

Finally, this study showed that the impact of divorce may depend on a number of contextual factors. In line with previous research, it could be observed that the more time since the divorce was related to a better adjustment (Lampraki et al., 2018). However, their willingness to co-parent decreased when more time had elapsed since divorce, which is in line with previous research (Rejaän et al., 2022).

In short, this study, in line with the meta-analysis, shows the need to focus more on the relationship between divorce and health and, especially in the case of high-conflict divorce, as both mental and physical health are undoubtedly affected. In addition to this, this study opens the door to consider a health condition that has hardly been studied so far in the context of divorce, namely somatization (Aragona et al., 2008). It is also important to distinguish between people with anxious and depressive symptoms, on the one hand, and somatic symptoms, on the other. Despite their interrelationship, not all people with psychological symptomatology have somatic symptoms, and vice versa (Henningsen, 2022). Specifically, in the present study, although anxiety was related to somatization, this did not apply for depression. Therefore, their detection and treatment should be made independently, in order to ensure the most specific and tailored intervention possible.

9.3. Study 3. Physical and psychological symptomatology, co-parenting, and emotion socialization in high-conflict divorces: A profile analysis

As discussed above, there is a lack of research on the link between divorce and, particularly, high-conflict divorce, and emotion socialization. Thus, the third study aimed to analyze the relationship between post-divorce physical and psychological

symptomatology and co-parenting with emotion socialization, through a Latent Profile Analysis, in a sample of high-conflict divorcees. In addition, we considered the moderating role of resilience. The results showed three clearly differentiated profiles based on the level of symptomatology. The first profile represented 52% of the sample and showed the lowest levels of anxiety, depression, and physical symptomatology. Profile 2 constituted 36% of the sample and showed intermediate levels of symptomatology. Finally, Profile 3 comprised 12% of the sample and showed the highest levels of anxiety, depression, and physical symptoms. These findings are in line with both Studies 1 and 2, which had already shown that divorce is associated with an increased risk of both physical and mental health conditions in parents. In contrast, co-parenting was distributed almost equally across the three profiles.

Regarding the relationship between these profiles and emotion socialization, it could be observed, on the one hand, that the group with lower levels of symptomatology showed a greater tendency towards emotion coaching behaviors, but also towards emotion rejection. On the other hand, Profile 2, had lower symptomatology but also showed higher emotion rejection patterns than Profile 3. These results therefore support previous findings that a higher presence of physical and psychological symptoms is linked to difficulties in the emotion socialization of children (Bertie et al., 2021; Warmuth et al., 2019), especially emotion rejection. Parents with more physical and psychological symptomatology seem to be unable to respond to their children's negative emotions (Breaux et al., 2016), which has been linked to parental burnout theory (Mikolajczak & Roskam, 2020). According to these authors, when there is sustained high stress over time, parents become overwhelmed by parenting. This situation may lead to parental burnout, which is characterized by feelings of exhaustion linked to parenting, emotionally distancing from children, and a decline in parental skills. In contrast, when the level of

symptomatology is reduced, parents are more emotionally able and available to try to meet and respond to their children's needs (Van der Pol et al., 2016), even if not always effectively.

Finally, in our study, resilience did not seem to moderate the relationship between the three profiles and emotion socialization. This may be partly explained by the fact that a high level of destructive conflict and subsequent symptomatology can make it difficult for resources, such as resilience, to exert their protective role (Chen et al., 2023). Hence, there is an evident need to focus primarily on symptomatology and parental well-being when considering high-conflict divorces.

In addition, although in this study resilience did not show to moderate the relationship between the profiles of parents in high-conflict divorces and emotion socialization, it is a well-studied resource in the coping of stressful situations (Perrig-Chiello et al., 2015). Thus, this may merit further study, since in our research resilience was considered as an individual construct, which might not be best suited to situations involving changes in family structure and functioning, potentially affecting all its members, such as high-conflict divorces. For these reasons, and from a systemic approach, we can assume that the consideration of this construct at the family level could yield new information about coping in situations such as divorce and, more specifically, in high-conflict divorce. However, as far as we know, there are no tools that consider this family resource in the Spanish population. Therefore, the last study of the thesis focused on validating an instrument to measure family hardiness in Spanish families.

9.4. Study 4. Spanish version of the Family Hardiness Index (FHI)

The fourth study consisted of the validation of the Family Hardiness Index (FHI), focusing on the construct of family hardiness. Family hardiness is considered a component of resilience that has been transferred to the family context. It is defined as

the family's ability to work together cohesively in the face of adverse life situations (Dunst, 2021). After adaptation, the result was an instrument of 14 items with a three-dimensional structure, composed of some dimensions contained in the original study: Commitment, Confidence, and Challenge, leaving out Control. The various analyses provided evidence that psychometrically supported the suitability of the FHI for its use in the general Spanish population. Furthermore, the instrument was found to meet the criteria for configural invariance, which means that the concept of family resilience is equally understood by fathers and mothers. However, the interpretation of the items and subscales (metric and scalar invariance) did not prove to be equal in relation to gender, so its applicability should be further explored.

This study has been the first adaptation of the FHI instrument for use with Spanish families in the research and analysis of family functioning (Caples et al., 2018). However, as it regarded a preliminary analysis, it is not free of limitations, so it requires a more in-depth study. Also, further research should test the FHI with families of different characteristics, such as divorced families, with and without conflict. This way, it will also be possible to improve its internal consistency by adapting the items and structure to the specific needs of the population.

10. Theoretical and clinical contributions

The results observed have highlighted the need to consider divorce as a major stressor that affects not only the mental but also the physical health of people attending primary care services (Herrero et al., 2020; Martínez-Pampliega et al., 2021). In this way, it will not only be possible to prevent the future development of different physical pathologies, but also to provide better care for people who have somatic complaints and physical health outcomes, whose origin is often unknown (Güney et al., 2015). Moreover, divorce has been found to be closely related to anxiety (Hald et al., 2022), so it may be

important that health care professionals consider whether people who show high levels of anxiety may be going through a complicated, conflictual, or a divorce process to which it is being difficult to adapt. Therefore, it is also imperative to consider other differential factors, such as conflict, that may be further complicating the process of adjusting to divorce, and thus increasing the subsequent symptomatology (Hald et al., 2019; Ordway, 2020). In fact, in this dissertation, in two of the four studies we have been able to count on a population that is difficult to access, such as the users of Family Visitation Centers.

Family Visitation Centers are resources that attend families in crisis situations, acting as mediators, and facilitating the parent-child relationship, guaranteeing the well-being of the children in particular, but also of the parents, in a situation of vulnerability (De la Torre, 2018; Morte & Lila, 2007). Although there is a large literature on divorce, the literature on high-conflict divorce is not as extensive. In this dissertation, the access to a high-conflict sample after divorce has allowed us to identify more specific needs, and to establish relationships between variables that, until now, had not been considered. Moreover, as seen at the beginning, high-conflict divorces make the greatest demands on economic, health, social and legal resources (Haddad et al., 2016; Hald et al., 2019). Hence, more insight into the specific characteristics of these families, such as conflict and associated parental symptomatology, co-parenting, or difficulties in adjusting to divorce, that may complicate parenting, is required. This deepening and understanding could facilitate health professionals to develop preventive programs and more specialized interventions, potentially reducing the excessive consumption of resources and the subsequent associated costs.

Despite the determinant role of conflict and other related risk factors after divorce, it is worth noting the existence of protective factors, that may buffer the negative consequences of divorce. In this sense, resilience has been extensively studied in children

of divorced parents (Schmidt & Grigg, 2023; Van der Wal et al., 2019). However, it has hardly been considered in divorced parents themselves (Mendoza et al., 2020). Families undergoing stressful situations, such as divorce, may show a strong capacity to overcome their harmful effects and even emerge stronger (Troy et al., 2023). However, as this study has shown, resilience on an individual basis does not seem to moderate the impact of high-conflict divorce. Therefore, another contribution of the present research has been to adapt a tool that considers each member's perception of their family's ability to work together, cooperate, and trust each other to cope with life events that threaten to disrupt their stability and functioning. It also measures to which extent they are able to perceive these difficulties as challenges and have a sense of control over what happens to them (Dunst, 2021; McCubbin et al., 1986). As far as we know, there is no other instrument that measures this construct at the family level in the Spanish population, so this study provides a tool for future research to be used with different types of samples, including divorced families, with and without conflict.

Finally, it has also been shown that co-parenting can moderate the impact of divorce on physical health, as in the second study, co-parenting parents who were more willing to co-parent showed less somatic symptomatology. However, when there is a high level of symptomatology derived from high destructive conflict, as in the case of the third study, it seems that co-parenting is not a sufficient resource to protect from these harmful consequences (Herrero et al., 2020). Therefore, the studies in this dissertation provide a new insight into the importance of addressing the symptomatology of former spouses in the first instance, as it is one of the key factors for their daily functioning and their parental and co-parental performance. Once parental symptomatology and distress is reduced, these parents will probably be more able to carry out their daily activities and functioning

adequately again. This, in turn, may help them to be more attentive and responsive to their own and their children's emotions (Breaux et al., 2016; Van der Pol et al., 2016).

Summing up, as has been reported for years in the literature, divorce is a complex phenomenon that depends on a multitude of inter- and intrapersonal factors (Bronselaer et al., 2008; Sbarra et al., 2014; Wilder, 2016). This research has assessed the role of some variables that may influence the impact of divorce on parents' health and their ability for emotion socialization. Among these, the most relevant is gender, although it is also worth considering some factors linked to the personal environment of the ex-spouses, such as educational level, employment, or the presence of children, factors surrounding the context of divorce, such as the time elapsed after the separation, the type of relationship maintained with the ex-partner, or the frequency of contact with the children, and factors related to lifestyle or health habits such as alcohol consumption, lack of physical exercise, or obesity, which have been shown to be relevant in the differential impact of divorce.

In conclusion, this research has highlighted the importance of considering the impact of divorce, especially high-conflict divorce, on the health of former spouses and how this, consequently, may affect emotion socialization. The findings described may be of great interest to ensure comprehensive and specialized care for families in high-conflict divorces and, ultimately, to promote an adequate emotional development of children.

11. Limitations

Regardless of the relevant findings mentioned above, this study is not without limitations. On the one hand, despite the advantages of having a sample that is very difficult to access, this also complicates the extrapolation of the results to the general population of divorced people. Without detracting the relevance of the sample used, it would be desirable for future research to extend the relationships analyzed to other samples of married and/or divorced people without conflict, in order to obtain a broader

and more complete picture of this phenomenon. Furthermore, in contrast to the meta-analysis, in which both married and divorced people were considered, in the second and third study the population was only high-conflict divorced people, so a comparison could not be made with either the married or the divorced population without conflict. Also, in terms of gender, in the second and fourth studies the vast majority of participants were women. This disproportion seems to reflect the fact that, even today, there is still an inequality in the participation of mothers versus fathers in family and divorce-related tasks (Frank et al., 2015; Parent et al., 2017). Therefore, the generalization of the results and the differential study of gender is reduced in these cases.

On the other hand, although a longitudinal study was initially considered, it could not be carried out due to the social and health circumstances, related to the COVID-19 pandemic, which took place since the beginning of the study until almost the last year.

12. Future lines of research

In the light of the above, the present research has findings that provide motivation and input for further studies on the interrelationship between parental physical and psychological symptomatology, co-parenting, resilience, and emotion socialization, that have hardly been analyzed together so far.

First, the results obtained in terms of gender support the idea that women are more affected by divorce compared to men. On the one hand, the meta-analysis showed that divorced women had a potentially higher risk of suffering from overall health problems than men. On the other hand, Studies 2 and 3 also revealed that women in high-conflict divorces had a higher level of anxiety, depression, physical symptoms, and more difficulties in adjusting to divorce compared to men. Even though there has been some controversy in previous literature regarding gender, most studies have supported a greater post-divorce distress in women compared to men (Parker et al., 2022; Yárnoz-Yaben,

2017), which is in line with our results. However, it is worth noting that we found an unequal distribution in the participation of men and women in some of the studies in this thesis, which may result in a lack of power. Therefore, it could be of interest for future research to continue examining these difference with more balanced samples.

Second, there is also a need for further studies on the role of depression in high-conflict divorces. Depression has been strongly linked to post-divorce stress in previous research (Hald et al., 2022), but did not show relevance to the relationship between high-conflict divorce and somatization in the second study. In contrast, since the third study of this dissertation showed that both depression and anxiety were related to emotion socialization, specifically to the dimensions of rejection and emotion coaching, it might be worthwhile to examine the exact role of depression after divorce, and in high-conflict divorces in particular. This may allow to better tailor treatment and interventions to the needs of specific groups of parents after divorce.

Third, in both the second and third studies, the participants were high-conflict divorcees. In fact, the previous literature has shown that it is not the divorce itself, but the circumstances surrounding it that have the greatest impact on all of the family members (Malcore et al., 2010). In this sense, this research has corroborated that the physical and mental health of high-conflict divorcees is affected (Hald et al., 2019), and that this is linked to their ability of emotion socialization. However, although both co-parenting and resilience have been studied as buffering resources against the negative effects of stress, in individuals with a high level of sustained destructive conflict over time and high emotional exhaustion, these resources may not achieve their protective role (Chen et al., 2023; Holman & Jarvis, 2003), as was found in the third study. Future research could focus on the exact role of conflict in coping to divorce, and on factors that may play a buffering role in parental functioning after divorce. Gender differences may be present

here as well (Raley & Sweeney, 2020), and factors such as the process of grief or the socioeconomic status could also seem to play a role (Sbarra & Hazan, 2008) and may be important to investigate further in relation to high-conflict divorce.

Therefore, it is urged that future research compares samples of divorced people with and without high levels of conflict. This way, a more complete picture of the impact of divorce, and especially of destructive conflict, on the health of divorced people can be obtained, and indirectly on their parenting skills such as emotion socialization. In addition, it could be of great relevance to analyze family hardiness in the context of divorce, as studies so far have focused exclusively on resilience at the individual level, and may shed new light on coping resources in situations that disrupt overall family functioning. Finally, it might also be interesting to include not only the perspective of the parents, but also of the children, as the aim of this dissertation was to study family functioning to ensure the well-being of all members in high-conflict divorces.

All in all, the results have opened the door and support the idea that divorce has an impact on emotional health and emotion socialization and have highlighted the need to consider relevant factors that have so far hardly been taken into account in this context. However, these findings should be taken as preliminary, and are not without limitations. Therefore, future research is encouraged to further investigate the explanatory mechanisms of health in the divorce process.

REFERENCES

- Afifi, T. D., & Keith, S. (2004). A risk and resiliency model of ambiguous loss in postdivorce stepfamilies. *Journal of Family Communication*, 4(2), 65-98. https://doi.org/10.1207/s15327698jfc0402_1
- Al-Bahrani, M. A. (2021). Post-divorce experience within Arab context: Gender differences. *International Journal of Social Science and Humanity*, 11(3), 54-58. <https://doi.org/10.18178/ijssh.2021.11.3.1039>
- Amato, P. R. (2000). The consequence of divorce for adults and children. *Journal of Marriage and Family*, 62(4), 1269-1287. <https://doi.org/10.1111/j.1741-3737.2000.01269.x>
- Amir, H. A. G., Moradi, O., Arefi, M., & Ahmadian, H. (2019). The effectiveness of acceptance and commitment therapy on cognitive-emotional regulation, resilience, and self-control strategies in divorced women. *Avicenna Journal of Psycho Physiology*, 6(4), 195-202. <http://dx.doi.org/10.32598/ajnpp.6.4.5>
- Aragona, M., Monteduro, M. D., Colosimo, F., Maisano, B., & Geraci, S. (2008). Effects of gender and marital status on somatization symptoms of immigrants from various ethnic groups attending a primary care service. *German Journal of Psychiatry*, 11, 64-72.
- Arpino, B., Le Moglie, M., & Mencarini, L. (2021). What tears couples apart: A machine learning analysis of union dissolution in Germany. *Demography*, 59(1), 161-186. <https://doi.org/10.1215/00703370-9648346>
- Barnwell, B. J., & Stone, M. H. (2016). Treating high conflict divorce. *Universal Journal of Psychology*, 4(2), 109-115. <https://doi.org/10.13189/ujp.2016.040206>
- Becher, E. H., Kim, H., Cronin, S. E., Deenanath, V., McGuire, J. K., McCann, E. M., & Powell, S. (2019). Positive parenting and parental conflict: Contributions to

- resilient co-parenting during divorce. *Family Relations*, 68(1), 150-164.
<https://doi.org/10.1111/fare.12349>
- Beckmeyer, J. J., Markham, M. S., & Troilo, J. (2022). Domains of ongoing communication between former spouses: Associations with parenting stress and children's post-divorce well-being. *Journal of Family Issues*, 43(6), 1579-1600.
<https://doi.org/10.1177/0192513X211029264>
- Bergman, A. S., & Rejmer, A. (2017). Parents in child custody disputes: Why are they disputing? *Journal of Child Custody*, 14(2-3), 134-150.
<https://doi.org/10.1080/15379418.2017.1365320>
- Bertie, L. A., Johnston, K., & Lill, S. (2021). Parental emotion socialization of young children and the mediating role of emotion regulation. *Australian Journal of Psychology*, 73(3), 293-305. <https://doi.org/10.1080/00049530.2021.1884001>
- Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology*, 7(1), 511-535.
<https://doi.org/10.1146/annurev-clinpsy-032210-104526>
- Bowen, M. C. (1972). Becoming a family therapist. In A. Ferber, M. Mendelson, & A. Napier (Eds.), *The Book of Family Therapy*. Science Hour.
- Breaux, R. P., Harvey, E. A., & Lugo-Candelas, C. I. (2016). The role of parent psychopathology in emotion socialization. *Journal of Abnormal Child Psychology*, 44(4), 731-743. <https://doi.org/10.1007/s10802-015-0062-3>
- Bronselaer, J. L. J., De Koker, B. S. M., & Van Peer, C. M. A. (2008). The impact of divorce on the health status of ex-partners. *Archives of Public Health*, 66, 168-186.

- Brüggmann, D. (2020). Work disability and divorce. In M. Kreyenfelds, & H. Trappe (Eds.), *Parental Life Courses After Separation and Divorce in Europe*. (pp. 289-308). Springer.
- Caples, M., Martin, A. M., Dalton, C., Marsh, L., Savage, E., Knafl, G., & Van Riper, M. (2018). Adaptation and resilience in families of individuals with down syndrome living in Ireland. *British Journal of Learning Disabilities*, 46(3), 146-154. <https://doi.org/10.1111/bld.12231>
- Chen, Y, Ruibo, X., Tan, D., Wang, X., Fan, R., Li, W., & Ding, W. (2023). Bidirectional longitudinal relationships between victimization, resilience, and suicidal ideation of adolescents. *Children and Youth Services Review*, 154. <https://doi.org/10.1016/j.childyouth.2023.107130>
- Correia, P. (2020). The role of parental emotional validation and invalidation on children's clinical symptoms: A study with children exposed to intimate partner violence. *Journal of Family Trauma, Child Custody, & Child Development*, 17(1), 4-20. <https://doi.org/10.1080/15379418.2020.1731399>
- Davidson, R. D., O'Hara, K. L., & Beck, C. J. A. (2014). Psychological and biological processes in children associated with high conflict parental divorce. *Juvenile and Family Court Journal*, 65(1), 29-44. <https://doi.org/10.1111/jfcj.12015>
- De Bel, V., & Van Gasse, D. (2020). Knotting the safety set: A multi-actor family network approach in divorce research. In D. Mortelmans (Ed.), *Divorce in Europe*. (pp. 237-252). Springer.
- De la Torre, J. (2018). *Los divorcios conflictivos: Guía de intervención en los Puntos de Encuentro Familiar*. Morata.
- Diamond, A. (2013). Executive functions. *Annual Review of Psychology*, 64, 135-168. <https://doi.org/10.1146/annurev-psych-113011-143750>

- Dixon-Gordon, K. L., Marsh, N. P., Balda, K. E., & McQuade, J. D. (2020). Parent emotion socialization and child emotional vulnerability as predictors of borderline personality features. *Research on Child and Adolescent Psychopathology*, 48, 135-147.
- Dollberg, D.G., Gamliel, K.H., & Levy, S. (2020). Mediating and moderating links between coparenting, parental mentalisation, parents' anxiety and children's behaviour problems. *Journal of Family Psychology*, 35(3), 324-334. <https://doi/10.1037/fam0000728>
- Dunst, C. J. (2021). Family hardiness and parent and family functioning in households with children experiencing adverse life conditions: A meta-analysis. *International Journal of Psychological Research*, 14(2), 93-118 <https://doi.org/10.21500/20112084.5236>
- Eisenberg, N. (2020). Findings, issues, and new directions for research on emotional socialization. *Developmental Psychology*, 56(3), 664-670. <https://doi/10.1037/dev0000906>
- Eisenberg, N., Cumberland, A., & Spinrad, T. L. (1998). Parental socialization of emotion. *Psychological Inquiry*, 9(4), 241-273. https://doi.org/10.1207/s15327965pli0904_1
- Erdem, G., & Safi, O. A. (2018). The cultural lens approach to Bowen Family Systems Theory: Contributions of Family Change Theory. *Journal of Family Theory and Review*, 10, 469-483. <https://doi.org/10.1111/jftr.12258>
- Eurostat (2023). *Marriage and divorce statistics*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Marriage_and_divorce_statistics#:~:text=Some%201.7%20million%20marriages%20and,for%20the%20EU%20Member%20States.

- Field, T. (2011). Romantic breakups, heartbreak and bereavement. *Psychology*, 2(4), 382-387. <https://doi.org/10.4236/psych.2011.24060>
- Fariña, F., Arce, R., Tomé, D., & Seijo, D. (2020). Validación del cuestionario Actitud ante el Conflicto Parental: Autoinformada y Referenciada (ACPar). *Revista Iberoamericana de Psicología y Salud*, 11(1), 1-14. <https://doi.org/10.23923/j.rips.2020.01.031>
- Frank, T. J., Keown, L. J., Dittman, C. K., & Sanders, M. R. (2015). Using father preference data to increase father engagement in evidence-based programs. *Journal of Child and Family Studies*, 24, 937-945. <https://doi.org/10.1007/s10826-014-9904-9>
- Frisby, B. N., Booth-Butterfield, M., Dillow, M. R., Martin, M. M., & Weber, K. D. (2012). Face and resilience in divorce: The impact on emotions, stress, and positive relationships. *Journal of Social and Personal Relationships*, 29(6), 715-735. <https://doi.org/10.1177/0265407512443452>
- Gao, M., Du, H., Davies, P. T., & Cummings, E. M. (2019). Marital conflict behaviors and parenting: Dyadic links over time. *Interdisciplinary Journal of Applied Family Science*, 68(1), 135-149. <https://doi.org/10.1111/fare.12322>
- Godleski, S. A., Eiden, R. D., Shisler, S., & Livingson, J. A. (2020). Parent socialization of emotion in a high-risk sample. *Developmental Psychology*, 56, 489-502. <http://dx.doi.org/10.1037/dev0000793>
- Gugliandolo, M. C., Liga, F., Larcán, R., & Cuzzocrea, F. (2022). Parents of children with developmental disorders: Family hardiness and resilience. *Journal of Intellectual and Developmental Disability*, 334-339. <https://doi.org/10.3109/13668250.2022.2079056>

- Güney, Z. O., Sattel, H., Cardone, D., & Merla, A. (2015). Assessing embodied interpersonal emotion regulation in somatic symptom disorder: A case study. *Frontiers in Psychology*, 6(68), 1-14. <https://doi.org/10.3389/fpsyg.2015.00068>
- Haddad, L., Phillips, K. D., & Bone, J. M. (2016). High-conflict divorce: A review of the literature. *American Journal of Family Law*, 29(4), 243-258.
- Hald, G. M., Strizzi, J. M., Ciprić, A., & Sander, S. (2019). The Divorce Conflict Scale. *Journal of Divorce and Remarriage*, 61(2), 683-104. <https://doi.org/10.1080/10502556.2019.1627150>
- Hald, G. M., Ciprić, A., Øverup, C. S., Štulhofer, A., Lange, T., Sander, S., Gad Kjeld, S., & Strizzi, J. M. (2020). Randomized controlled trial study of the effects of an online divorce platform on anxiety, depression, and somatization. *Journal of Family Psychology*, 34(6), 740-751. <https://doi.org/10.1037/fam0000635>
- Hald, G. M., Ciprić, A., Sander, S., & Strizzi, J. M. (2022). Anxiety, depression and associated factors among recently divorced individuals. *Journal of Mental Health*, 31(4), 462-470. <https://doi.org/10.1080/09638237.2020.1755022>
- Härkönen, J., Billingsley, S., & Hornung, M. (2020). Divorce trends in seven countries over the long transition from state socialism: 1981-2004. In D. Mortelmans (Ed.), *Divorce in Europe* (pp. 63-92). Springer.
- Haslam, D., Poniman, C., Filus, A., Sumargi, A., & Boediman, L. (2020). Parenting style, child emotion regulation, and behavioural problems: The moderating role of cultural values in Australia and Indonesia. *Marriage & Family Review*, 56(4), 320-342. <https://doi.org/10.1080/01494929.2020.1712573>
- Henningsen, P. (2022). Management of somatic symptom disorder. *Dialogues in Clinical Neuroscience*, 20(1), 23-30. <https://doi.org/10.31887/DCNS.2018.20.1/phenningsen>

- Herdiana, I., Suryanto, & Handoyo, S. (2019). Family resilience: A conceptual review. *Journal of Family Nursing*, 14(1), 33-55. <https://doi.org/10.1177/1074840707312237>
- Herrero, M., Martínez-Pampliega, A., & Álvarez, I. (2020). Family communication, adaptation to divorce and children's maladjustment: The moderating role of coparenting. *Journal of Family Communication*, 20(2), 114-128. <https://doi.org/10.1080/15267431.2020.1723592>
- Hogendoorn, B. (2022). Why do socioeconomic differences in women's living standards converge after union dissolution? *European Journal of Population*, 38, 577-622. <https://doi.org/10.1007/s10680-022-09620-9>
- Holman, T. B., & Jarvis, M. O. (2003). Hostile, volatile, avoiding, and validating couple-conflict types: An investigation of Gottman's couple-conflict types. *Personal Relationships*, 10(2), 267-282. <https://doi.org/10.1111/1475-6811.00049>
- Husain-Krautter, S., & Ellison, J. M. (2021). Late life depression: The essentials and the essential distinctions. *Focus*, 19, 282-293. <https://doi.org/10.1176/appi.focus.20210006>
- INE (2023). *Estadística de nulidades, separaciones y divorcios*. Instituto Nacional de Estadística. https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=estadistica_C&cid=1254736176798&menu=ultiDatos&idp=1254735573206
- Jamison, T. B., Coleman, M., Ganong, L. H., & Feistman, R. E. (2014). Transitioning to postdivorce family life: A grounded theory investigation of resilience in coparenting. *Family Relations*, 63(3), 411-423. <https://doi.org/10.1111/fare.12074>

- Kalmijn, M. (2017). The ambiguous link between marriage and health: A dynamic reanalysis of loss and gain effects. *Social Forces*, 95(4), 1607-1636.
<https://doi.org/10.1093/sf/sox015>
- Kalmijn, M., & Leopold, T. (2021). A new look at the separation surge in Europe : Contrating adult and child perspectives. *American Sociological Review*, 86(1), 1-34. <https://doi.org/10.1177/0003122420973982>
- Kelly, R. & Sweeney, M. (2020). Divorce, repartnering and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82(1), 81-99.
<https://doi.org/10.1111/jomf.12651>
- Keskin, G. (2019). Approach to stress endocrine response: Somatization in the context of gastroenterological symptoms: A systematic review. *African Health Sciences*, 19(3). <https://doi.org/10.4314/ahs.v19i3.29>
- Kiecolt-Glaser, J. K. (2018). Marriage, divorce and the immune system. *American Psychologist*, 73(9), 1098-1108. <https://doi.org/10.1037/amp0000388>
- Kiral, Ö. (2019). *An investigation into the relationship between early maladaptive schemas and romantic dissolution grief in youth: A mixed method study*. [Tesis Doctoral]. Ted University. Available from ProQuest One Academic. (Order No. 30289840). <https://www.proquest.com/docview/2761108730?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>
- Kolodziej-Zaleska, A., & Przybyla-Basista, H. (2016). Psychological well-being of individuals after divorce: The role of social support. *Current Issues in Personality Psychology*, 4(4), 206-216.

- Koppejan-Luitze, H. S., Van der Wal, R. C., Kluwer, E. S., Visser, M. M., & Finkenauer, C. (2021). Are intense negative emotions a risk for complex divorces? An examination of the role of emotions in divorced parents and co-parenting concerns. *Journal of Social and Personal Relationships*, 38(2), 765-782. <https://doi.org/10.1177/0265407520972189>
- Kozłowska, K., Scher, S., & Helgeland, H. (2020). *Functional somatic symptoms in children and adolescents: A stress-system approach to assessment and treatment*. Springer Nature.
- Knöpfli, B., Morselli, D., & Perrig-Chiello, P. (2016). Trajectories of psychological adaptation to marital breakup after a long-term marriage. *Gerontology*, 62(5), 541-552. <https://doi.org/10.1159/000445056>
- Lamela, D., & Figueredo, B. (2015). Coparenting after marital dissolution and children's mental health: A systematic review. *Jornal de Pediatria*, 92(4), 331-342. <https://doi.org/10.1016/j.jped.2015.09.011>
- Lampraki, C., Jopp, D. S., Spini, D., & Morselli, D. (2018). Social loneliness after divorce: Time-dependent differential benefits of personality, multiple important group memberships, and self-continuity. *Gerontology*, 65, 275-287. <https://doi.org/10.1159/000494112>
- Leopold, T. (2018). Gender differences in the consequences of divorce: A study of multiple outcomes. *Demography*, 55(3), 769-797. <https://doi.org/10.1007/s13524-018-0667-6>
- Lorenz, F. O., Wickrama, K. A. S., Conger, R. D., & Elder, G. H. (2006). The short-term and decade-long effects of divorce on women's midlife health. *Journal of Health and Social Behavior*, 47(2), 111-125. <https://doi.org/10.1177/002214650604700202>

- Lunkenheimer, E., Hamby, C. M., Lobo, F. M., Cole, P. M., & Olson, S. L. (2020). The role of dynamic, dyadic parent-child processes in parental socialization of emotion. *Developmental Psychology*, 56(3), 566-577. <https://doi/10.1037/dev0000808>
- Mahrer, N. E., O'Hara, K., Sandler, I. N., & Wolchik, S. A. (2018). Does shared parenting help or hurt children in high conflict divorced families? *Journal of Divorce and Remarriage*, 59(4), 324-347.
- Mafaza, M., & Sarry, S. M. (2022). Emotional regulation ability in early childhood: Role of coparenting and mindful parenting. *Journal An-Nafs: Kajian Penelitian Psikologi*, 7(1). <https://doi.org/10.33367/psi.v7i1.2000>
- Malcore, S. A., Windell, J., Seyuin, M., & Hill, E. (2010). Predictors of continued conflict after divorce or separation: Evidence from a high-conflict group treatment program. *Journal of Divorce and Remarriage*, 51, 50-64. <https://doi.org/10.1080/10502550903423297>
- Malgaroli, M., Galatzer-Levy, I. R., & Bonanno, G. A. (2017). Heterogeneity in trajectories of depression in response to divorce is associated with differential risk for mortality. *Clinical Psychological Science*, 5, 843-850. <https://doi.org/10.1177/2167702617705951>
- Martínez-Pampliega, A., Herrero, M., Cormenzana, S., Corral, S., Sanz, M., Merino, L., Iriarte, L., Ochoa de Alda, I., Alcañiz, L., & Álvarez, I. (2021). Custody and child symptomatology in high conflict divorce: An analysis of latent profiles. *Psicothema*, 33(1), 95-102.
- McCubbin, M. A., McCubbin, H. I., & Thompson, A. I. (1986). FHI: Family Hardiness Index. In H. I. McCubbin, & A. I. Thompson (Eds.), *Family assessment*

- inventories for research and practice* (pp. 125-132). University of Wisconsin at Madison.
- Mendoza, J. E., Tolba, M., & Saleh, Y. (2020). Strengthening marriages in Egypt: Impact of divorce on women. *Behavioral Sciences*, 10(14).
<http://dx.doi.org/10.3390/bs10010014>
- Mikolajczak, M., & Roskam, I. (2020). Parental burnout: Moving the focus from children to parents. *Child and Adolescent Development*, 174, 7-13.
<https://doi.org/10.1002/cad.20376>
- Minuchin, S. (1974). *Families and Family Therapy*. Harvard University Press.
- Morte, E., & Lila, M. (2007). La alternativa al conflicto: Punto de Encuentro Familiar, 16(3), *Intervención Psicosocial*, 16(3), 289-302.
- Musick, K., & Micheltore, K. (2018). Cross-national comparison of union stability in cohabiting and married families with children. *Demography*, 55, 1389-1421.
<https://doi.org/10.1007/s13524-018-0683-6>
- Nakamura, Y., Takeuchi, T., Hashimoto, K., & Hashizume, M. (2017). Clinical features of outpatients with somatization symptoms treated at Japanese psychosomatic medicine clinic. *BioPsychoSocial Medicine*, 11(16).
<https://doi.org/10.1186/s13030-017-0104-x>
- Newton, N. J., Ryan, L. H., King, R. T., & Smith, J. (2014). Cohort differences in the marriage-health relationship for mid-life. *Social Science and Medicine*, 116, 64-72. <https://doi.org/10.1016/j.socscimed.2014.06.040>
- Nikupeteri, A., & Laitinen, M. (2022). High-conflict separations and differentiated professional responses – from confrontational interaction to post-separation violence and stalking. *Journal of Divorce and Remarriage*, 63(7-8), 506-525.
<https://doi.org/10.1080/10502556.2022.2157667>

- Nunes, C. E., De Roten, Y., & El Ghaziri, N. (2021). Co-parenting programs: A systematic review and meta-analysis. *Family Relations*, 70(3), 759-776. <https://doi.org/10.1111/fare.12438>
- Omrod, J. (2018). The challenges facing non-resident mothers following divorce: A literature review. *British Journal of Guidance and Counselling*, 46(6), 694-708. <https://doi.org/10.1080/03069885.2018.1483008>
- Ordway, A. M., Moore, R. O., Casasnovas, A. F., & Asplund, N. R. (2020). Understanding vicarious trauma, burnout, and compassion fatigue in high-conflict divorce. *The Family Journal: Counselling and Therapy for Couples and Families*, 28(2), 187-193. <https://doi.org/10.1177/1066480720904028>
- Øverup, C. S., Ciprić, A., Kjeld, S. G., Strizzi, J. M., Sander, S., Lange, T., & Hald, G. M. (2020). Cooperation after divorce: A randomized controlled trial of an online divorce intervention on hostility. *Psychology of Violence*, 10(6), 604-614. <https://doi.org/10.1037/vio0000288>
- Parent, J., Forehand, R., Pomerantz, H., Peisch, V., & Seehuus, M. (2017). Father participation in child psychopathology research. *Journal of Abnormal Child Psychology*, 45(7), 1259-1270. <https://doi.org/10.1007/s10802-016-0254-5>
- Parker, G., Durante, K. M., Hill, S. E., & Haselton, M. G. (2022). Why women choose divorce: An evolutionary perspective. *Current Opinion in Psychology*, 43, 300-306. <https://doi.org/10.1016/j.copsyc.2021.07.020>
- Peng, Y., Wang, J., Sun, G., & Liu, S. (2021). Family hardiness in patients with heart failure: Exploring protective factors and identifying the mediator. *Psychology Research and Behavior Management*, 14, 355-364. <https://doi.org/10.2147/PRBM.S301765>

- Perrig-Chiello, P., Hutchison, S., & Morselli, D. (2015). Patterns of psychological adaptation to divorce after a long-term marriage. *Journal of Social and Personal Relationships*, 32(3), 386-405. <https://doi.org/10.1177/0265407514533769>
- Polak, S., & Saini, M. (2019). The complexity of families involved in high-conflict disputes: A postseparation ecological transactional framework. *Journal of Divorce and Remarriage*, 60(2), 117-140. <https://doi.org/10.1080/10502556.2018.1488114>
- Raley, R. K., & Sweeney, M. M. (2020). Divorce, repartnering, and stepfamilies: A decade in review. *Journal of Marriage and Family*, 82, 81-99. <https://doi.org/10.1111/jomf.12651>
- Reiter, M. D. (2019). Systems Theory. In M.D. Reiter (Ed.). *Substance Abuse and the Family* (pp.240-259). Routledge.
- Rejaän, Z., Van der Valk, I., & Branje, S. (2022). Postdivorce coparenting patterns and relations with adolescent adjustment. *Journal of Family Issues*, 43(7), 1739-1759.
- Ren, L., & Xu, W. (2019). Coparenting and Chinese preschoolers' social-emotional development: Child routines as a mediator. *Children and Youth Services Review*, 107. <https://doi.org/10.1016/j.childyouth.2019.104549>
- Russell, L. T., Ferraro, A. J., Beckmeyer, J. J., Markham, M. S., Wilkins-Clark, R. E., & Zimmermann, M. L. (2021). Communication technology use in post-divorce coparenting relationships: A typology and associations with post-divorce adjustment. *Journal of Social and Personal Relationships*, 38(12), 3752-3776. <https://doi.org/10.1177/02654075211043837>
- Sbarra, D. A. & Coan, J. A. (2017). Divorce and health: Good data is need of better theory. *Current Opinion in Psychology*, 13, 91-95. <https://doi.org/10.1016/j.copsyc.2016.05.014>

- Sbarra, D. A., Hasselmo, K., & Bourassa, K. J. (2015). Divorce and health: Beyond individual differences. *Current Directions in Psychological Science*, 24(2), 109-113. <https://doi.org/10.1177/0963721414559125>
- Sbarra, D. A., & Hazan, C. (2008). Coregulation, dysregulation, self-regulation: An integrative analysis and empirical agenda for understanding adult attachment, separation, loss, and recovery. *Personality and Social Psychology Review*, 12(2), 141-167.
- Sbarra, D. A., Nojopranoto, W., & Hasselmo, K. (2014). Divorce and health outcomes: From social epidemiology to social psychophysiology. In C. R. Agnew, & S. C. South (Eds.), *Interpersonal Relationships and Health*, (pp. 89-108). Oxford University Press.
- Sbarra, D. A., & Whisman, M. A. (2022). Divorce, health, and socioeconomic status: An agenda for psychological science. *Current Opinion in Psychology*, 75-78. <https://doi.org/10.1016/j.copsyc.2021.06.007>
- Schmidt, C. D., & Grigg, J. (2023). Counseling high conflict: Navigating the complexities of high conflict divorce. *The Family Journal: Counseling and Therapy for Couples and Families*, 1-10. <https://doi.org/10.1177/10664807231173689>
- Schramm, D. G., & Becher, E. H. (2020). Common practices for divorce education. *Family Relations*, 69(3), 543-558. <https://doi.org/10.1111/fare.12444>
- Sedom, J. A., Abdel-Baki, R., Feige, S., & Thomassin, K. (2020). The cascade effect of parent dysfunction: An emotion socialization transmission framework. *Frontiers in Psychology*, 11. <https://doi.org/10.3389/fpsyg.2020.579519>
- Shimkowski, J. R., Punyanunt-Carter, N., Colwell, M. J., & Norman, M. S. (2019). Perceptions of divorce, closeness, marital attitudes, romantic beliefs, and religiosity among emergent adults from divorced and nondivorced families.

- Journal of Divorce and Remarriage*, 59(3), 222-236.
<https://www.tandfonline.com/action/showCitFormats?doi=10.1080/10502556.2017.1403820>
- Shin, J. Y., Steger, M. F., Sin, D. W., Kim, S. Y., Yang, H. K., Cho, J., Jeong, A., Park, K., Kweon, S. S., & Park, J. H. (2019). Patient-family communication mediates the relation between family hardiness and caregiver positivity: Exploring the moderating role of caregiver depression and anxiety. *Journal of Psychosocial Oncology*, 37(5), 557-572. <https://doi.org/10.1080/07347332.2019.1566808>
- Staats, S., Van der Valk, I. E., Meeus, W. H. J., & Branje, S. J. T. (2018). Longitudinal transmission of conflict management styles across inter-parental and adolescent relationships. *Journal of Research on Adolescence*, 28(1), 169-185. <https://doi.org/10.1111/jora.12324>
- Strizzi, J. M., Ciprić, A., Sander, S., & Hald, G.M. (2021). Divorce is stressful, but how stressful? Perceived stress among recently divorced Danes. *Journal of Divorce and Remarriage*, 62(4), 295-311. <https://doi.org/10.1080/10502556.2021.1871838>
- Strizzi, J. M., Koert, E., Øverup, C. S., Ciprić, A., Sander, S., Lange, T., Schmidt, L., & Hald, G. M. (2022). Examining gender effects in postdivorce adjustment trajectories over the first year after divorce in Denmark. *Journal of Family Psychology*, 36(2), 268-279. <https://doi/10.1037/fam0000901>
- Tan, P. Z., Oppenheimer, C. W., Ladouceur, C. D., Butterfield, R. D., & Silk, J. S. (2020). A review of associations between parental emotion socialization and the neural substrates of emotional reactivity and regulation in youth. *Developmental Psychology*, 56(3), 516-527. <https://doi/10.1037/dev0000893>

- Theiss, J. A. (2018). Family communication and resilience. *Journal of Applied Communication Research*, 46(1), 10-13.
<https://doi.org/10.1080/00909882.2018.1426706>
- Tosi, M., & Van den Broek, T. (2020). Gray divorce and mental health in the United Kingdom. *Social Science & Medicine*, 256.
<https://doi.org/10.1016/j.socscimed.2020.113030>
- Troy, A. S., Willroth, E. C., Shallcross, A. J., Giuliani, N. R., Gross, J. J., & Mauss, I. B. (2023). Psychological resilience: An affect-regulation framework. *Annual Review of Psychology*, 74, 547-576. <https://doi.org/10.1146/annurev-psych-020122-041854>
- Van der Pol., L. D., Groeneveld, M. G., Endendijk, J. J., Van Berkel, S. R., Hallers-Haalboom, E. T., Bakermans-Kranenburg, M. J., & Mesman, J. (2016). Associations between fathers' and mothers' psychopathology symptoms, parental emotion socialization, and preschoolers' social-emotional development. *Journal of Child and Family Studies*, 25, 3367-3380. <https://doi.org/10.1007/s10826-016-0490-x>
- Van der Wal, R. C., Finkenauer, C., & Visser, M. M. (2018). Reconciling mixed findings on children's adjustment following high-conflict divorce. *Journal of Child and Family Studies*, 28, 468-478. <https://doi.org/10.1007/s10826-018-1277-z>
- Van Dijk, R., Van der Valk, I., Deković, M., & Branje, S. (2020). A meta-analysis on interparental conflict, parenting, and child adjustment in divorced families: Examining mediation using meta-analytic structural equation models. *Clinical Psychology Review*, 79. <https://doi.org/10.1016/j.cpr.2020.101861>

- Van Gasse, D., & Mortelmans, D. (2020). Reorganizing the single-parent family system: Exploring the process perspective on divorce. *Family Relations*, 69(5), 1100-1112. <https://doi.org/10.1111/fare.12432>
- Visser, M., Finkenauer, C., Schoenmaker, K., Kluwen, E., van der Rijken, R., van Lawick, J., Bom, H., Schipper, J. C., & Lamers-Winkelmann, F. (2017). I'll never forgive you: High conflict divorce, social network and co-parenting conflicts. *Journal of Child and Family Studies*, 26, 3055-3066. <https://doi.org/10.1007/s10826-017-0821-6>
- Walsh, F. (2002). A family resilience framework: Innovative practice implications. *Family Relations*, 51(2), 130-137. <https://doi.org/10.1111/j.1741-3729.2002.00130.x>
- Warmuth, K. A., Cummings, E. M., & Davies, P. T. (2019). Constructive and destructive interparental conflict, problematic parenting practices, and children's symptoms of psychopathology. *Journal of Family Psychology*, 34(3), 301-311. <https://doi/10.1037/fam0000599>
- Weitz, Y. S., & Karlsson, M. (2021). Professional or authentic motherhood? Negotiations on the identity of the birth mother in the context of foster care. *Qualitative Social Work*, 20(3), 703-717. <http://dx.doi.org/10.1177/1473325020912815>
- Wilder, S. E. (2016). Predicting adjustment to divorce from social support and relational quality in multiple relationships. *Journal of Divorce and Remarriage*, 57(8), 553-572. <https://doi.org/10.1080/10502556.2016.1233844>
- Yáñez-Yaben, S. (2017). Grief due to divorce: Relationship with attachment style and effects on subjective well-being and co-parenting. *Estudios en Psicología*, 38(3), 667-688. <https://doi.org/10.1080/02109395.2017.1330305>

- Zartler, U. (2021). Children and parents after separation. In N. F. Schneider, & M. Kreyenfeld (Eds.). *Research Handbook on the Sociology of the Family*, (pp. 300-313). Edward Elgar. <https://doi.org/10.4337/9781788975544.00029>
- Zineldin, M. (2019). TCS is to blame: The impact of divorce on physical and mental health. *International Journal of Preventive Medicine*, 10(1), 141-145. https://doi.org/10.4103%2Fijpvm.IJPVM_472_18

APPENDIXES

Appendix I: Information letter to participants



PUNTOS DE ENCUENTRO FAMILIAR

Desde el Equipo Deusto FamilyPsych de la Universidad de Deusto, se está actualmente llevando a cabo un estudio dirigido a identificar las necesidades de quienes acudís al Punto de Encuentro Familiar. Como centro, estamos colaborando en este proyecto.

Sabemos que la separación o divorcio es un proceso que afecta a todos los miembros de la familia y que se torna incluso más difícil cuando existe conflicto. En muchas ocasiones, además, son los hijos e hijas los más perjudicados/as.

Los Puntos de Encuentro Familiar

Son entornos fundamentales para detectar las necesidades específicas de cada familia que acude. Y es justo esto lo que pretendemos colaborando en este estudio: nos gustaría entender vuestras necesidades y ayudaros en lo que sea posible.

Por ello, necesitamos de vuestra colaboración: necesitamos que nos digáis cómo estáis viviendo el divorcio en vuestra familia y cómo os está afectando, tanto a vosotros/as como a vuestros hijos/as.

¿Cómo podéis colaborar?

Muy sencillo. En la próxima cita, debéis acudir al centro 30 minutos antes con el fin de completar algunos cuestionarios. Y, dentro de un año, volveréis a realizar los mismos cuestionarios.

Se os dará un cheque de Amazon por valor de 10 euros si completáis todo el cuestionario.

¿Estoy obligado/a a colaborar?

No. La participación es totalmente voluntaria.

¿Debo poner nombre y apellidos?

Vuestra respuesta es anónima. Nadie del centro, ni de fuera de él, conocerá vuestras respuestas. Los datos serán analizados anónimamente por un equipo investigador.

¿Mis hijos/as deben también responder?

Es suficiente con que responda uno de tus hijos/as, siempre que tenga, al menos, 12 años. Su opinión es muy valiosa.

Pero, recuerda que debe hacerlo voluntariamente, no obligado. Sus datos serán también anónimos y nadie, ni siquiera el progenitor, conocerá lo que ha respondido.

¿Si mi hijo/a responde, debo indicárselo al otro progenitor?

Por supuesto. Ambos, padre y madre, debéis ser conocedores de todo lo que atañe a vuestros hijos/as en cualquier contexto (colegio, hogar, etc.). Esto se volverá a recordar al realizar el cuestionario.

Y, ahora, si deseo colaborar, ¿qué debo hacer?

1. Habla con la persona del centro que te ha atendido.
2. Acude al centro en el horario que te indiquen.

Decidas lo que decidas, ¡¡gracias por haber leído esta información!! Nuestro deseo es poder ayudaros en este proceso, muchas veces, difícil. Sin vuestra colaboración es imposible.

Appendix II: Information letter to participant centres



PUNTOS DE ENCUENTRO FAMILIAR. EVALUACIÓN DE USUARIOS

Introducción

Desde el Equipo Deusto FamilyPsych de la Universidad de Deusto, estamos actualmente llevando a cabo un proyecto de investigación dirigido a identificar las necesidades de los usuarios de los Puntos de Encuentro Familiar. Este proyecto está apoyado por el Ministerio de Ciencia e Innovación, a través del programa RETOS.

Sabemos que las separaciones y divorcios son una realidad cada vez más presente en la sociedad actual, que conlleva un impacto en todos los miembros de la familia a nivel físico, psicológico y emocional. Esta situación se ve agravada, además, en contextos de alto conflicto, siendo los hijos e hijas los más afectados.

Se ha visto que los niños/as que viven en un contexto de divorcio altamente conflictivo tienden a desarrollar dificultades tanto a nivel emocional, como en su comportamiento, su rendimiento académico y su desarrollo cognitivo. Por una parte, ser testigo directo de situaciones cargadas de alto afecto negativo, tensión, y estrés puede generar un impacto directo sobre los hijos/as. Por otra parte, estas alteraciones pueden darse de forma indirecta, debido a la sintomatología que los padres y madres desarrollan a raíz del conflicto sostenido durante el divorcio y que afecta a sus prácticas parentales. Comprender en profundidad las variables previas que pueden incidir sobre las dificultades de ajuste psicológico de los hijos/as, puede ser clave a la hora de intervenir de manera prematura y evitar el desarrollo de sintomatología grave.

Objetivo

Los Puntos de Encuentro Familiar juegan un papel clave, en la detección de las necesidades específicas de las familias usuarias de estos servicios. La intención del proyecto es llevar a cabo una amplia evaluación que permita identificar los mecanismos a través de los cuales el conflicto interparental afecta al bienestar de los implicados. Fruto del estudio, se pretende generar un protocolo de evaluación útil para los PEFs, que permita obtener informes rápidos sobre los usuarios y ajustar las intervenciones más idóneas. Para la elaboración de este protocolo, se requiere de un trabajo conjunto activo de los/las profesionales de los PEF y los/las investigadores/as del Deusto FamilyPsych.

Método

El estudio consta de tres fases. Al ser los/las profesionales de los Puntos de Encuentro quienes más experiencia y formación tienen en el abordaje de los conflictos, consideramos oportuno que sean quienes realicen la recogida de los cuestionarios

Por ello, en primer lugar, se llevará a cabo la formación de los profesionales. En esta primera fase, se facilitará toda la información referente a los objetivos de la investigación y metodología de aplicación de los cuestionarios. Asimismo, se podrá resolver cualquier duda que pueda surgir respecto al estudio o cualquier otra cuestión. A continuación, tendrá lugar la primera fase de aplicación de los cuestionarios. Antes de responder, todos los/las participantes firmarán un consentimiento en el que queda recogido el objetivo de la evaluación, así como cuestiones referidas a la confidencialidad y naturaleza voluntaria de la participación. La duración de los cuestionarios es de 20 minutos para los progenitores, y 10 para los hijos/as, con opción de cumplimentarlo online o en formato papel. Por último, se llevará a cabo la segunda fase de aplicación de los

cuestionarios un año después. Para esta segunda pasación son las personas responsables del equipo de investigación las encargadas de contactar con los usuarios.

Anonimato y voluntariedad

Cabe destacar que toda la información que proporcione es anónima. En el estudio no aparecerá ningún dato identificativo ni nombres. Asimismo, es totalmente voluntaria, por lo que puede negarse a participar o abandonar el estudio en el momento que desee sin perjuicio alguno. Por último, puede negarse a responder cualquier pregunta si así lo considera. Pero se pide responsabilidad y compromiso con el estudio una vez se acceda a su participación.

Protección de datos

Todos los datos recogidos serán utilizados exclusivamente para el estudio. El equipo de investigación Deusto FamilyPsych puede enviar informes con los datos generales recogidos a los PEF. No se elaborarán, bajo ningún concepto, informes individuales.

Incentivo

Tanto los progenitores como los hijos/as recibirán un bono de 10 euros en Amazon por cada protocolo que completen.

Recursos de apoyo

Los/las técnicos encargados/as de llevar a cabo el estudio dispondrán de una hoja informativa para progenitores y otra para hijos/as, las instrucciones de acceso a la plataforma online con sus correspondientes contraseñas, y un ordenador para la recogida de los datos. Asimismo, contarán con el apoyo del equipo de investigación Deusto

FamilyPsych a través del e-mail, teléfono, reuniones a través de videollamada, e incluso presenciales en caso de considerarlo necesario.

Papel de los PEFs

Los/las técnicos responsables del proyecto en los PEFs deberán animar a los usuarios a participar en el estudio y estar disponibles para resolver posibles dudas durante la cumplimentación de los cuestionarios. Únicamente son responsables de la primera pasación de los cuestionarios.

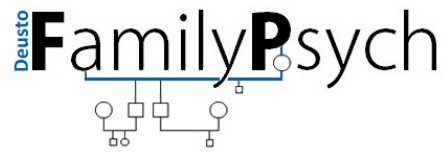
Para cualquier cuestión, consultar:

<http://www.deustofamilypsych.es/>

Y/o contactar con:

pefs.familia@deusto.es

Appendix III: Informed consent for participants



PROTOCOLO DE EVALUACIÓN PARA PADRES/MADRES

El presente cuestionario tiene como objetivo conocer con más profundidad las preocupaciones y dificultades de los usuarios de los Puntos de Encuentro Familiar con el fin de poder darles una respuesta más adecuada a sus necesidades. Es importante que tanto usted como uno de sus hijos/as (si tiene 12 años o más) respondan a un cuestionario, lo que les llevará aproximadamente 20 minutos. En el propio centro se invitará a participar a los dos progenitores.

Los cuestionarios son confidenciales y, si bien se le pide más adelante que indique su dirección de correo electrónico (email), esto será exclusivamente para poder enviarle recordatorios futuros cuando se acerque el momento de que vuelva a responder a este cuestionario (se repetirá solo una segunda vez). Este proceso se realizará de forma automatizada. También nos servirá para agradecerle, con un bono-regalo de 10 euros, su participación cada vez que responda al cuestionario. Los datos incorporados corresponderían al total de participantes y no de manera individual, manteniendo de este modo el anonimato del participante. Es por eso que no se emitirán informes a nivel individual, únicamente grupal, pues se mantendrá en todo momento el anonimato del participante.

Los datos serán enviados directamente, sin conocimiento previo por parte de los profesionales del PEF, a investigadores vinculados a la Universidad de Deusto, quienes no conocen a los usuarios del centro y tratarán sus datos con la mayor confidencialidad

posible. Esta confidencialidad sólo podrá romperse como medida de protección cuando exista certeza de riesgo de daño para usted o para las personas que le rodean.

Por tanto, responda con la máxima sinceridad posible. Si usted tiene alguna duda al responder al cuestionario, puede preguntarle a la persona que le ha atendido en el Punto de Encuentro Familiar.

Una vez que usted haya leído la información previa y aclarado las dudas que tenga puede, si lo desea, proceder a participar, siempre con la posibilidad de interrumpir su participación en el momento en que lo desee.

Si desea obtener más información sobre el estudio o realizar cualquier consulta, puede contactar con el equipo de investigación a través de la siguiente dirección de correo electrónico: pefs.familia@deusto.es

NOTA: En el caso de que uno de sus hijos/as responda al cuestionario, las respuestas del hijo/a serán tratadas igualmente con confidencialidad, no teniendo acceso a su contenido ninguno de los dos progenitores ni ningún otro profesional.

En cumplimiento con el Reglamento (UE) 2016/679 del Parlamento Europeo y del Consejo, del 27 de abril de 2016, relativo a la protección de personas físicas en aquello que respecta al tratamiento de datos personales y a la libre circulación de estos (RGPD), y según lo que dispone la Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos Personales y garantía de los derechos digitales, os informamos que los datos únicamente serán utilizados en el marco de esta investigación.

Dichos datos quedarían protegidos mediante un sistema de encriptación y serán guardados en un fichero que será procesado estadísticamente (programa SPSS), al que únicamente tendrá acceso el equipo de investigación que llevará a cabo el estudio.

El fichero de datos del estudio estará bajo la responsabilidad de la Investigadora principal del estudio, Ana Martínez Pampliega, ante la cual podrá ejercer en todo momento los

derechos de acceso a sus datos personales, rectificar los datos inexactos, solicitar su supresión, limitar alguno de los tratamientos u oponerse a algún uso según establece la Ley Orgánica 3/2018, de 5 de diciembre, de Protección de Datos Personales y garantía de los derechos digitales.

Asimismo, os informamos de vuestro derecho, en caso de no estar de acuerdo con el tratamiento de los datos realizado por la Entidad o por considerar vulnerados vuestros derechos, a presentar una reclamación en todo momento ante la Agencia Española de Protección de datos.

Me han explicado por qué voy a rellenar los cuestionarios	Sí	No	
Sé que puedo hacer preguntas sobre el estudio	Sí	No	
Sé que puedo pedir información sobre los resultados generales de este estudio cuando éste haya concluido	Sí	No	
Conozco el objetivo del estudio	Sí	No	
Acepto participar en el estudio	Sí	No	
Estoy de acuerdo en que mi hijo/a, que tiene 12 años o más, participe en el estudio y que, por ello, se le dé una compensación de 10 euros a través de una tarjeta regalo de Amazon	Sí	No	No tengo un hijo/a en esa franja de edad

Appendix IV: Informed consent for participants in Study 4



DICTAMEN DEL COMITÉ DE ÉTICA EN LA INVESTIGACIÓN DE LA UNIVERSIDAD DE DEUSTO

Ref: ETK-2/21-22

Tras la evaluación del proyecto *Conciliación laboral/familiar y su impacto en la parentalidad: Factores de riesgo y de protección en las familias actuales*, que presenta la Dra. Dña. Ana Martínez Pampliega, en calidad de investigadora responsable del proyecto en la Universidad de Deusto, el Comité de Ética en Investigación de la Universidad de Deusto, tal y como se hace constar en el acta de la reunión del 20 de diciembre de 2021 en la que se tomó el acuerdo, emite un informe favorable.

El Comité de Ética en Investigación considera que desde el punto de vista ético el proyecto es adecuado en todo lo referente a la protección y evitación de riesgos a los participantes y el respeto a la autonomía. Asimismo, se ajusta a los principios metodológicos, éticos y jurídicos que debe tener este tipo de investigación. No se observan riesgos de ningún tipo para los participantes y se establecen medidas adecuadas que ofrecen suficientes garantías éticas durante su desarrollo.

El proyecto tiene en cuenta la regulación sobre de protección de datos personales (UE 2016/679) aprobada por la Comisión y el Consejo de la UE en abril de 2016 en relación al i) procedimiento de consentimiento informado; ii) acceso a datos personales; iii) el uso

de datos para el interés público; y iv) las responsabilidades de los investigadores responsables del proyecto.

Y para que así conste,

Dra. Dña. Cristina de la Cruz Ayuso

Coordinadora del Comité de Ética en Investigación

Universidad de Deusto

Appendix V: Authorisation from the University of Deusto Ethics Committee



Tras la evaluación del proyecto Divorcio conflictivo y socialización emocional: impacto en la sintomatología de los hijos/as a través de la insensibilidad y la inseguridad emocional [RETOS PID2020-112580RB-100 (9-2021)], que presenta la Dra. Dña. Ana Martínez Pampliega, en calidad de investigador responsable, el Comité de Ética en Investigación de la Universidad de Deusto, tal y como se hace constar en el acta de la reunión del 26 de julio de 2022 en la que se tomó el acuerdo, emite un informe favorable.

El Comité de Ética en Investigación considera que desde el punto de vista ético el proyecto es adecuado en todo lo referente a la protección y evitación de riesgos a los participantes y el respeto a la autonomía. Asimismo, se ajusta a los principios metodológicos, éticos y jurídicos que debe tener este tipo de investigación. No se observan riesgos de ningún tipo para los participantes y se establecen medidas adecuadas que ofrecen suficientes garantías éticas durante su desarrollo.

El proyecto tiene en cuenta la regulación sobre de protección de datos personales (UE 2016/679) aprobada por la Comisión y el Consejo de la UE en abril de 2016 en relación al i) procedimiento de consentimiento informado; ii) acceso a datos personales; iii) el uso de datos para el interés público; y iv) las responsabilidades de los investigadores responsables del proyecto.

Y para que así conste,

Dra. Dña. Cristina de la Cruz Ayuso

Coordinadora del Comité de Ética en Investigación

Universidad de Deusto

Appendix VI: Family Hardiness Index – Spanish Version (FHI-VE)

	Falso	Mayormente falso	Mayormente verdadero	Totalmente verdadero
2. No es prudente planificar con anticipación y esperar [buenos resultados] porque las cosas no salen de todos modos*	0	1	2	3
3. Nuestro trabajo y esfuerzos no se aprecian por mucho que lo intentemos y trabajemos*	0	1	2	3
5. Tenemos la sensación de ser fuertes incluso cuando afrontamos grandes problemas	0	1	2	3
6. Muchas veces siento que puedo confiar en que las cosas saldrán bien, incluso en tiempos difíciles.	0	1	2	3
7. Si bien no siempre estamos de acuerdo, podemos contar los unos con los otros para apoyarnos en tiempos de necesidad	0	1	2	3
8. Sentimos que no podemos sobrevivir si otro problema nos golpea*	0	1	2	3
9. Creemos que las cosas funcionarán mejor si trabajamos juntos como familia	0	1	2	3
10. La vida parece aburrida y sin sentido*	0	1	2	3
11. Nos esforzamos juntos y nos ayudamos mutuamente sin importar lo que suceda	0	1	2	3
12. Cuando nuestra familia planifica actividades, probamos cosas nuevas y emocionantes	0	1	2	3

13.Escuchamos los problemas, heridas y temores de los demás	0	1	2	3
14.Tendemos a hacer las mismas cosas una y otra vez Es aburrido*	0	1	2	3
17.Se fomenta la actividad y el aprendizaje de cosas nuevas	0	1	2	3
18.Trabajamos juntos para resolver problemas	0	1	2	3

* Puntuación inversa