

**The Impact of Adverse Childhood
Experiences on Mental Health and Suicidal
Behaviors:
A study from Portuguese Language Countries**

Daniela Filipa Nunes Silveira

Dissertação para obtenção do Grau de Mestre em
Psicologia Clínica e da Saúde
(2º ciclo de estudos)

Orientador: Prof. Doutor Henrique Marques Pereira

junho de 2022

Declaração de Integridade

Eu, Daniela Filipa Nunes Silveira, que abaixo assino, estudante com o número de inscrição M10770 de Psicologia Clínica e da Saúde da Faculdade de Ciências Sociais e Humanas, declaro ter desenvolvido o presente trabalho e elaborado o presente texto em total consonância com o **Código de Integridades da Universidade da Beira Interior**.

Mais concretamente afirmo não ter incorrido em qualquer das variedades de Fraude Académica, e que aqui declaro conhecer, que em particular atendi à exigida referência de frases, extratos, imagens e outras formas de trabalho intelectual, e assumindo assim na íntegra as responsabilidades da autoria.

Universidade da Beira Interior, Covilhã, 28/06/2022

Daniela Filipa Nunes Silveira

Acknowledgments

Acredito que somos feitos de pessoas; de todas aquelas com quem nos cruzamos, as que ficam e as que vão – somos um pouco de todas elas. São elas que nos encorajam nos piores dias, que nos fazem sorrir, que nos inspiram a ser melhores. A conclusão desta dissertação representa o término de uma etapa de grandes desafios, onde me cruzei com diversas pessoas que marcaram o meu percurso. E porque, no final do dia, as conquistas se elevam na partilha com outras pessoas, deixo umas palavras de agradecimento profundo às minhas pessoas:

Ao professor Henrique Pereira, pela disponibilidade e pelo apoio constante; por me desafiar e me motivar; por facilitar o processo e acreditar no resultado; por todos os ensinamentos, que sempre guardarei.

Aos meus pais, por acreditarem e encorajarem os meus sonhos.

Ao meu irmão Bruno, pelo carinho, disponibilidade e incentivo, transparecidos em cada telefonema.

À Andreia, pelo exemplo que é e por todos os sorrisos que distribui.

Ao Pedro, por ser amor em forma de paciência, apoio, carinho, conforto e coragem; por todos os momentos envoltos em sorrisos.

À EncantaTuna, que é e sempre será família; pelas experiências que me fizeram crescer, pelos desafios, pela luta, e por todas as pessoas incríveis que me trouxe.

À minha madrinha Juliana, que é norte e conselho sábio e me ajuda, dia após dia, a ser melhor.

Às minhas afilhadas, Luísa, Ana e Micaela, que me concederam o privilégio de ser sua madrinha e partilhar com elas os anos mais memoráveis.

À Inês, que é amizade, amor, companhia, coragem, persistência, ..., e me alegra todos os dias por estar na minha vida.

À Cas e à Joana, por serem amigas no sentido cheio da palavra; por se fazerem presente e serem uma sorte na minha vida.

À Duda e ao Cabral, amigos que a vida me trouxe, e fazem questão de se manter por perto; por todas as palavras de incentivo e os momentos de descontração.

À Vi e à Maio, as pessoas com quem partilhei este percurso. Difícil será escrever palavras à altura de tão significativo agradecimento, mas a vida encarregar-se-á de nos manter juntas para poder refleti-lo em gestos de amizade.

À Inês Branco, pela amizade desde o primeiro dia e pela confiança, nos períodos mais turbulentos.

À Dani, que foi uma lufada de ar fresco neste ano e em todos os piores dias.

A todos os colegas e professores que, ao longo deste percurso, me acompanharam e contribuíram para a pessoa que sou hoje.

À Universidade da Beira Interior, por ter sido Casa ao longo destes cinco anos e permitir o meu crescimento, enquanto profissional e pessoa.

À Covilhã, a minha cidade natal, e agora também a cidade que viu este sonho crescer e ganhar asas.

Abstract

Adverse childhood experiences (ACEs) are frequent and intense experiences of stress during childhood (WHO, 2020a), which can be associated with physical and mental health problems throughout the life course.

In March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic (WHO, 2020b), which led to the adoption of several measures by different countries and governments, aiming to prevent the spread of the virus and protect the population. However, these measures, such as social isolation, seem to have unintentionally contributed to children and adolescents, coming from dysfunctional households and with a history of ACEs, being continuously exposed to these events (Bryce, 2020). The literature demonstrates that the pandemic had negative effects on the parents' mental health (Brown et al., 2020; Zafar et al., 2021), which may have potentiated the occurrence of ACEs.

Few studies have examined this topic in the Community of Portuguese Language Countries (CPLC), therefore this Dissertation and the study developed aim to assess the impact of ACEs on mental health and suicidal behaviors in a sample of participants from the CPLC. This study used an online survey that included a sociodemographic questionnaire, the Brief Symptom Inventory-18 (BSI-18) to assess somatization, depression, and anxiety symptoms, and overall mental functioning, the Suicidal Behaviors Questionnaire-Revised (SBQ-R) to assess suicidal behaviors, and the Family Adverse Childhood Experiences Questionnaire to assess the report of ACEs. The sample consists of 1006 participants aged between 18 and 80 years (mean=41.76; SD=14.19).

Emotional abuse was the most reported ACE (32.7%) and participants from Brazil had higher levels of somatization, depression, anxiety, and suicide ideation and attempt, while participants from Portugal had a higher probability of suicide in the future. ACEs were strong and significant predictors of psychological symptoms and the likelihood of suicide in the future, with emotional abuse and emotional neglect being the domains with the greatest contribution, respectively.

The results obtained demonstrate that ACEs are a prevalent and general phenomenon across countries. Therefore, it is urgent to alert policymakers and mental health professionals of the need to intervene with children and families to ensure their adjusted development, thus promoting the quality of life and well-being of populations.

Keywords

ACEs;mental health;suicide ideation;suicide attempt;childhood;CPLC.

Resumo Alargado

As experiências adversas na infância (EAI) são eventos frequentes, indutores de stress significativo, que ocorrem durante a infância (WHO, 2020a) e podem estar associados a problemas de saúde física e mental ao longo da vida tais como, sintomas depressivos e de ansiedade, ideação e tentativa de suicídio, abuso de substâncias e comportamentos de risco para a saúde. Ao longo dos últimos anos, tem existido um progressivo investimento teórico no campo das EAI, o que reflete um crescente reconhecimento concedido à importância desta temática e uma compreensão mais integrada do conceito, contemplando os seus impactos a nível biológico, social, educativo, económico, etc. (Struck et al., 2021).

Em março de 2020, a COVID-19 foi declarada, pela Organização Mundial de Saúde (OMS), como uma pandemia (WHO, 2020b), o que conduziu à adoção de várias medidas pelos diversos países e governos, com o objetivo de impedir a disseminação do vírus e proteger as populações. Contudo, estas medidas, como o isolamento social, parecem ter contribuído, de forma involuntária, para que as crianças e adolescentes, provenientes de ambientes familiares disfuncionais e com histórico de EAI, fossem continuamente expostas a esses mesmos eventos (Bryce, 2020). A permanência em casa pode aumentar as probabilidades de ocorrência de abuso e/ou negligência infantil e, por outro lado, interferir com os mecanismos de denúncia, na medida em que impede a identificação dos casos em risco (Green, 2020). Estima-se que uma em cada duas crianças, dos 2 aos 17 anos, experiencie qualquer tipo de violência (física, emocional ou sexual) a cada ano (Hillis et al., 2016) e, de acordo com o Relatório da OMS, relativo à Prevenção da Violência Contra Crianças, de 2020 (WHO, 2020c), a pandemia COVID-19 pode ter contribuído para o aumento do risco de violência intrafamiliar. Estes episódios de violência a que as crianças estão expostas, ou dos quais são vítimas, têm, por um lado, efeitos imediatos a nível individual, familiar e comunitário e, por outro lado, efeitos a longo prazo, que comprometem o desenvolvimento e o potencial das crianças e jovens.

A experiência da pandemia foi distinta para cada família, porém, múltiplas preocupações indutoras de stress foram transversais a muitos pais (ex.: encargos financeiros, adaptação a um novo modelo de educação dos seus filhos via aulas-online, a incerteza associada à situação, etc.). Estas preocupações revelaram-se mais frequentes em famílias que reportaram, durante o período de confinamento, a adoção de práticas parentais negativas (Zafar et al., 2021). Durante a pandemia, os pais

reportaram sintomas depressivos e de ansiedade, assim como pobre qualidade de sono, sintomas que foram associados a níveis mais elevados de stress parental percebido e uma maior probabilidade de abuso infantil (Brown et al., 2020). Desta forma, é perceptível que a pandemia teve efeitos negativos na saúde mental dos pais, o que poderá ter potenciado a existência de EAI.

Dado o efeito negativo e significativo destas experiências na vida das crianças e jovens, esta dissertação procurou, através do estudo desenvolvido, avaliar o impacto das EAI na saúde mental e comportamentos suicidários de uma amostra de participantes provenientes da Comunidade de Países de Língua Portuguesa (CPLP), dada a escassez de estudos nesta temática nesta comunidade. Os dados foram recolhidos online, através de um website construído para o efeito, entre maio e outubro de 2021. Os instrumentos utilizados foram um questionário sociodemográfico; o *Brief Symptom Inventory 18* (BSI 18) para avaliar sintomas de somatização, depressão e ansiedade, como medida de funcionamento mental; o *Suicidal Behaviors Questionnaire - Revised* (SBQ-R) para avaliar os comportamentos suicidários; e o *Family Adverse Childhood Experiences Questionnaire* para avaliar as EAI. A amostra é composta por 1006 participantes com idades compreendidas entre os 18 e 80 anos (média=41.76; DP=14.19), dos quais 576 são mulheres (57.3%) e 424 são homens (42.1%).

As EAI mais reportadas pela amostra foram o abuso emocional (32.7%), a doença mental/suicídio de um membro da família (30.8%) e a negligência emocional (29.9%) e verificou-se uma associação forte entre abuso emocional e abuso físico ($r=.678$; $p<.001$). Os participantes do Brasil apresentaram níveis mais elevados de somatização, depressão e ansiedade e de ideação e tentativa de suicídio, tanto ao longo da vida, como no último ano, comparativamente com os participantes de Portugal e dos Países Africanos de Língua Oficial Portuguesa (PALOP). Contudo, os participantes de Portugal apresentaram maior probabilidade de suicídio no futuro. As EAI demonstraram-se preditoras fortes e significativas de sintomas psicopatológicos e da probabilidade de suicídio no futuro, sendo o abuso emocional ($\beta=.125$; $p<.05$) e a negligência emocional ($\beta=.148$; $p<.001$) os domínios com maior contributo, respetivamente.

Os resultados demonstram que as EAI são um fenómeno prevalente e transversal aos sistemas culturais estudados, com um impacto negativo e significativo nos sintomas psicopatológicos e nos comportamentos suicidários da amostra. Estes resultados alertam para a urgência de serem estabelecidas políticas de saúde mental e de prevenção do suicídio, que visem as crianças e jovens e as suas famílias, de forma a facilitar um desenvolvimento mais adaptativo, promovendo, dessa forma, o bem-estar das populações.

Palavras-chave

EAI;saúde mental;ideação suicida;tentativa de suicídio;infância;CPLP.

Index

Introduction.....	1
Chapter 1. The Impact of Adverse Childhood Experiences on Mental Health and Suicidal Behaviors: A Study from Portuguese Language Countries.....	3
Abstract.....	5
Keywords	5
1. Introduction	6
1.1. Sociodemographic Disparities in ACEs	6
1.2. Long-Term Health Impact of ACEs	7
1.3. Community of Portuguese Language Countries (CPLC).....	9
2. Methods	10
2.1. Participants	10
2.2. Measurement instruments	12
2.3. Procedures	13
2.4. Data analysis.....	13
3. Results.....	14
4. Discussion.....	20
5. Conclusion.....	24
References.....	24
Chapter 2. General Discussion	31
References.....	33
Anexos.....	37

List of Tables

Table 1 – Sociodemographic characteristics.....	11
Table 2 – Prevalence of ACEs by country of residence.....	14
Table 3 – Results for symptoms of somatization, depression, and anxiety by country of residence.....	16
Table 4 – Results for suicidal behaviors by country of residence.....	17
Table 5 – Results for correlation values among variables.....	18
Table 6 – Results for the hierarchical multiple linear regression predicting anxiety, depression, and somatization symptoms.....	19
Table 7 – Results for the hierarchical multiple linear regression predicting suicidal behaviors.....	20

List of Acronyms

ACE	Adverse Childhood Experiences
BSI-18	Brief Symptom Inventory-18
CPLC	Community of Portuguese Language Countries
CPLP	Comunidade de Países de Língua Portuguesa
EAI	Experiências Adversas na Infância
GSI	Global Severity Index
OMS	Organização Mundial de Saúde
PALOP	African Countries with Portuguese as an Official Language
SBQ-R	Suicidal Behaviors Questionnaire-Revised
WHO	World Health Organization

Introduction

This dissertation is part of the 2nd Cycle of Studies in Clinical and Health Psychology, leading to a Master's degree, by the Faculty of Social and Human Sciences of the University of Beira Interior.

ACEs are traumatic events that occur during childhood (Felitti et al., 1998), being considered some of the most frequent and main sources of stress that children can suffer in early life (WHO, 2020a). Early adversity and the high stress levels to which these children and adolescents are exposed disturb the normal development of identity tasks (Turner & Butler, 2003) and socialization skills (Basto-Pereira & Maia, 2019; Turner & Butler, 2003), necessary for their mental balance, which can lead to the adoption of risk behaviors, which tend to become chronic (Boullier & Blair, 2018; Felitti et al., 2019). In this sense, assessing the psychosocial characteristics of people with ACEs is a priority, as they are considered a higher risk group for mental health problems (Boullier & Blair, 2018).

The COVID-19 pandemic, which we've been facing since March 2021, has confronted us with stressors (e.g., financial burden, adapting to a new model of education including online classes, the uncertainty associated with the situation, etc.), which have affected the mental health of the population and, particularly, parents (Brown et al., 2020; Zafar et al., 2021). All these factors may have potentiated the existence of ACEs.

This Dissertation, which encompasses two chapters, seeks to explore the subject of ACEs, specifically, in the CPLC, responding to the scarcity of studies developed in this community. The first chapter describes the quantitative, cross-sectional, descriptive, comparative, and predictive study developed with the purpose of assessing the impact of ACEs on the mental health and suicidal behaviors of a sample of participants from the CPLC. The second chapter consists of a final reflection that integrates the results of the research developed. Additionally, future lines of action are outlined that seek to respond to the needs of children, families, and communities and promote more adjusted interventions, based on the results obtained.

The Impact of ACEs on Mental Health and Suicidal Behaviors

Chapter 1. The Impact of Adverse Childhood Experiences on Mental Health and Suicidal Behaviors: A Study from Portuguese Language Countries

This chapter was written according to the following scientific activities:

- Publications:

Silveira, D., & Pereira, H. (Submitted). The Impact of Adverse Childhood Experiences on Mental Health and Suicidal Behaviors: A Study from Portuguese Language Countries. *Journal of Child & Adolescent Trauma*. (Anexo 1)

Silveira, D., & Pereira, H. (2022). O impacto das experiências adversas na infância na saúde mental e no comportamento suicidário de uma amostra da Comunidade de Países de Língua Portuguesa (CPLP). II Congresso Internacional Interdisciplinar sobre Representações Sociais e sobre Qualidade de Vida do Vale do São Francisco – CIRSQVASF (Brasil), 16 Dezembro de 2021. *Sağlık Akademisi Kastamonu*, 7(1), pp. 77.

- Oral Presentations:

Silveira, D., & Pereira, H. (16 de dezembro de 2021). *O impacto das experiências adversas na infância na saúde mental e no comportamento suicidário de uma amostra da Comunidade de Países de Língua Portuguesa (CPLP)*. II Congresso Internacional Interdisciplinar sobre Representações Sociais e sobre Qualidade de Vida do Vale do São Francisco – CIRSQVASF (Universidade Federal do Vale de São Francisco).

Silveira, D., & Pereira, H. (3 de junho de 2022). *O Impacto das Experiências Adversas na Infância na Saúde Mental e no Comportamento Suicidário: Um estudo na Comunidade de Países de Língua Portuguesa (CPLP)*. I Conferências Internacionais em Psicologia Clínica e da Saúde da Universidade da Beira Interior (Universidade da Beira Interior).

The Impact of ACEs on Mental Health and Suicidal Behaviors

Abstract

Background: Research on adverse childhood experiences (ACEs) demonstrates that they can be associated with physical and mental health problems throughout the life course. However, few studies have examined this topic in the Community of Portuguese Language Countries (CPLC).

Objective: This study aims to assess the impact of ACEs on mental health and suicidal behaviors in a sample of participants from the CPLC.

Participants and Setting: The sample consists of 1006 participants aged between 18 and 80 years (mean=41.76; SD=14.19).

Methods: This study used an online survey that included a sociodemographic questionnaire, the Brief Symptom Inventory-18 (BSI-18) to assess somatization, depression, and anxiety symptoms, and overall mental functioning, the Suicidal Behaviors Questionnaire-Revised (SBQ-R) to assess suicidal behaviors, and the Family Adverse Childhood Experiences Questionnaire to assess ACEs.

Results: Emotional abuse was the most reported ACE (32.7%). Participants from Brazil had higher levels of somatization, depression, anxiety, and suicide ideation and attempt, while participants from Portugal had a higher probability of suicide in the future. ACEs were strong and significant predictors of psychological symptoms and the likelihood of suicide in the future, with emotional abuse and emotional neglect being the domains with the greatest contribution, respectively.

Conclusions: ACEs are a prevalent and general phenomenon across several countries. It is urgent to alert policymakers and mental health professionals of the need to intervene with children and families to ensure their harmonious and adjusted development, thus promoting quality of life and well-being of populations.

Keywords

ACEs; mental health; suicide ideation; suicide attempt; childhood; CPLC.

1. Introduction

Adverse childhood experiences (ACEs) are traumatic events that occur during childhood, which can have a significant negative impact on the physical and mental health of a person during their lifespan (Felitti et al., 1998). They are some of the most frequent and main sources of stress that children can suffer in early life (World Health Organization, 2020) and their implications in health were first described in the study of Felitti and colleagues (1998), where they were viewed as a risk factor (Boullier & Blair, 2018). ACEs can be classified as abuse experiences (emotional, physical, and sexual), dysfunctional family environment (domestic violence, substance abuse by a member of the household, divorce/parental separation, incarceration of a family member, and mental illness/suicide of a family member), and neglect (physical and emotional) (Silva & Maia 2008).

ACEs can cause profound, lasting, and cumulative damage (Boullier & Blair, 2018; Chapman et al., 2004; Felitti et al., 1998) to child and adolescent health, predisposing them to various challenges in later stages of development (Chang et al., 2019), which will be discussed later.

ACEs have been found to be highly prevalent in community populations and many studies indicate that more than half of the sample reported having experienced at least one domain of childhood adversity (Anda et al., 2006; Campbell et al., 2016; Chang et al., 2019; Chapman et al., 2004; Craig et al., 2020; Felitti et al., 2019; Font & Maguire-Jack, 2016; Merrick et al., 2017; Mersky et al., 2013). Additionally, a high proportion of the population has been exposed to multiple domains of adversity, with the probability of being exposed to more than one domain varying between 65-93% (Felitti et al., 2019).

The most frequently reported domains of ACEs, according to the reviewed literature, are emotional abuse (16.2-18.3%) (Riedl et al., 2020; Thompson et al., 2019), substance abuse in the household (25.6%) (Felitti et al., 1998) and parental separation (27.5-43%) (Schilling et al., 2007; Wong et al., 2019), whereas the least reported domains are exposure to criminal behavior in the household (3.4%) (Felitti et al., 1998), death of one of the parents (4.7%) (Thompson et al., 2019), and incarceration of a family member (9%) (Wong et al., 2019).

1.1. Sociodemographic Disparities in ACEs

A substantial body of research has investigated differences in ACEs by demographic variables. Regarding age, for example, the literature suggests that younger ages are

associated with the report of a greater number of ACEs (Campbell et al., 2016; Felitti et al., 1998; Riedl et al., 2020), although another study found that older ages report more frequently the domain of physical neglect (Riedl et al., 2020). Being part of an ethnic/racial minority (non-white) (Campbell et al., 2016; Craig et al., 2020; Turner & Butler, 2003) was also associated with the report of a greater number of ACEs.

Research regarding gender has produced mixed results, with some studies reporting higher levels of exposure to ACEs among men (Craig et al., 2020; Mersky et al., 2013; Turner & Butler, 2003), and others reporting higher levels among women (Campbell et al., 2016; Wong et al., 2019). A consistent finding, however, is that the most prevalent domains of ACEs differ significantly by gender: women report, globally, higher levels of sexual abuse (Edwards et al., 2003; Schilling et al., 2007) and exposure to domestic violence (Edwards et al., 2003), while men report more physical abuse (Chang et al., 2019; Dias et al., 2015; Edwards et al., 2003; Schilling et al., 2007).

Several socioeconomic variables have also been found to be associated with the reporting of a greater number of ACEs, including low socioeconomic status (Turner & Butler, 2003; Wang et al., 2019), low income (Campbell et al., 2016; Font & Maguire-Jack, 2016), living in rural areas (Craig et al., 2020), low educational attainment (Campbell et al., 2016; Felitti et al., 1998; Font & Maguire-Jack, 2016; Wong et al., 2019), and low parental educational attainment (Craig et al., 2020; Turner & Butler, 2003).

1.2. Long-Term Health Impact of ACEs

Multiple studies have sought to identify the main consequences related to the experience of ACEs, and findings indicate that there is a positive correlation between number of ACEs and increased depressive symptoms (Anda et al., 2006; Campbell et al., 2016; Chang et al., 2019; Felitti et al., 1998; Karatekin, 2017; Kong et al., 2021; Merrick et al., 2017; Mersky et al., 2013; Riedl et al., 2020; Schilling et al., 2007; Turner & Butler, 2003; Wong et al., 2019), anxiety (Anda et al., 2006; Karatekin, 2017; Mersky et al., 2013; Riedl et al., 2020), panic reactions (Anda et al., 2006), somatization (Anda et al., 2006; Riedl et al., 2020), stress (Anda et al., 2006; Wong et al., 2019), sleep disturbance (Anda et al., 2006), difficulties in anger control (Anda et al., 2006), and sexual dissatisfaction and promiscuity (Anda et al., 2006; Felitti et al., 2019). There is also a positive correlation between the number of ACEs and suicide attempts (Felitti et al., 1998; Merrick et al., 2017; Thompson et al., 2019), suicidal ideation (Karatekin, 2017; Thompson et al., 2019; Wang et al., 2019; Wong et al., 2019), antisocial behaviors (Schilling et al., 2007), and substance abuse (Anda et al., 2006;

Felitti et al., 2019; Merrick et al., 2017; Mersky et al., 2013; Schilling et al., 2007) including alcohol use (Chang et al., 2019) and tobacco use (Felitti et al., 1998).

In general, childhood adversity is related to adopting unhealthy behaviors and, consequently, worse mental (Edwards et al., 2003; Chapman et al., 2004; Merrick et al., 2017; Mersky et al., 2013; Wade et al., 2016) and physical health outcomes, including frequent chronic diseases (Boullier & Blair, 2018; Chang et al., 2019; Kong et al., 2021) and severe obesity (Anda et al., 2006; Felitti et al., 1998). Simultaneously, persons exposed to such adverse events perceive low levels of family support (Jones et al., 2018; Turner & Butler, 2003), self-esteem (Turner & Butler, 2003; Wong et al., 2019), and life satisfaction (Mersky et al., 2013).

Research has tried to understand which domains of ACEs are most associated with certain consequences such as depression, suicidal behaviors, and overall physical and mental health. In relation to depression, emotional abuse is considered by some authors as the biggest risk factor for the disorder (Dias et al., 2015; Chang et al., 2019; Chapman et al., 2004), although other authors recognize a strong relation with other domains, like physical abuse (Campbell et al., 2016; Font & Maguire-Jack, 2016; Pinto et al., 2015), sexual abuse (Campbell et al., 2016; Font & Maguire-Jack, 2016; Giano et al., 2021), mental illness of a family member (Campbell et al., 2016; Font & Maguire-Jack, 2016; Giano et al., 2021; Pinto et al., 2015), substance abuse (Campbell et al., 2016; Font & Maguire-Jack, 2016; Pinto et al., 2015) and incarceration of a household member (Campbell et al., 2016). On the other hand, in a study done by Merrick and colleagues (2017), incarceration of a household member was the only domain not significantly associated with depressive symptoms.

Emotional abuse is also considered to be the main risk factor for suicide attempt, (Merrick et al., 2017; Thompson et al., 2019), although sexual and physical abuse, suicide attempt of a family member (Thompson et al., 2019), physical neglect, substance abuse, and family history of mental illness are also well-documented risk factors (Pinto et al., 2015). The ACE risk factors for suicidal ideation mimic those of suicide attempt, but also include emotional neglect, isolation/rejection by peers (Wang et al., 2019), and incarceration of a family member (Thompson et al., 2019). In the realms of general mental and physical health, Riedl and colleagues (2020) concluded that emotional abuse is also the domain most consistently associated.

The literature is clear regarding the consequences associated with ACEs, however, the way ACEs lead to such implications is not established, as there are several mediating factors. One explanation is that early adversity and the high stress levels to which these

children and adolescents are exposed disturb the normal development of identity tasks (Turner & Butler, 2003) and interpersonal relationship skills (Basto-Pereira & Maia, 2019; Turner & Butler, 2003). This, on the one hand, interferes with their ability to establish lasting bonds and, on the other, promotes dysfunctional and antisocial behaviors (Anda et al., 2006; Basto-Pereira & Maia, 2019). In this sense, they may feel less capable and with fewer resources, developing negative attributions about themselves (Turner & Butler, 2003) and reacting more intensely and negatively to daily stressful situations (Kong et al., 2021). To deal with stress, they may adopt risk behaviors (e.g., smoking, drinking alcohol or antisocial behavior) due to their immediate beneficial effects, which harm health and tend to become chronic (Boullier & Blair, 2018; Felitti et al., 2019). These harmful risk behaviors, in addition to the decreased perceived social support that people with ACEs tend to report (Jones et al., 2018), lead to greater adversity and poorer health in adulthood (Jones et al., 2018; Boullier & Blair, 2018).

1.3. Community of Portuguese Language Countries (CPLC)

The Community of Portuguese Language Countries (CPLC) has a population of close to 250 million and occupies an area of about 10.7 million square kilometers across four continents. Most of these countries are rich in cultural diversity, and at the same time, have a human development index below the global average. Although the CPLC shares the influence of the Portuguese culture, countries within the CPLC have differing socioeconomic development patterns, which may influence the occurrence of ACEs.

In Portugal, according to a report from the Portuguese Association for Victim Support (2021), 1841 children were reported to be victims of some type of abuse in 2020. These child victims were predominantly female, with an average age of 10 years, and were commonly the child of the perpetrator. Another report from the National Commission for the Promotion of the Rights and Protection of Children and Youth (2021) found that, in the same year, 11,995 cases of neglect, 13,363 cases of domestic violence, 1,711 cases of physical abuse, 1,192 cases of emotional abuse, and 712 cases of sexual abuse were reported in Portugal. Research in this area in Portugal has concluded that ACEs are frequent and predict depressive symptoms and suicide attempts (Pinto et al., 2015), and are related to psychosocial problems and persistent criminal behavior in young adulthood (Basto-Pereira et al., 2016; Basto-Pereira & Maia, 2019). Additionally, results have indicated that maltreatment in childhood and adolescence have lasting effects which result in the adoption of antisocial behaviors (Braga et al., 2018).

In Brazil, research regarding ACEs is mainly focused on young ages and less is known about the adult population. However, a recent study concluded that the prevalence of

smoking habits and respective dependence in adulthood are significantly associated with exposure to ACEs (Maia-Silva et al., 2021).

To the best of our knowledge, no research on ACEs has been undertaken in African Countries with Portuguese as an Official Language (PALOP). However, given these regions' historical, sociopolitical, and economic contexts in recent decades, which have been marked by civil wars and poverty, their inclusion in this study seems to us to be extremely important.

Therefore, considering the aforementioned circumstances of the CPLC and the impact of ACEs on individual, group, and social levels of mental health, this study aims to assess the impact of ACEs on mental health and suicidal behaviors in a sample of participants from the CPLC. More specifically it aims to: (1) describe the sociodemographic characteristics of the sample; (2) compare the prevalence of ACEs, mental health functioning, and suicidal behaviors by country of residence; (3) identify which domains of ACEs are the most prevalent in our sample; (4) measure the correlations between ACEs and age, mental health, and suicidal behaviors; (5) assess which domains of ACEs are most predictive of psychological symptoms and suicidal behaviors in the present; and (6) assess the predictive power of the domains of ACEs in explaining mental health and suicidal behaviors of the sample.

2. Methods

2.1. Participants

The sample consists of 1006 participants aged between 18 and 80 years (Mean=41.76; SD=14.19), of which 576 identified as female, 424 as male, and 6 as another gender. Most participants lived in Brazil (40.7%) and about half were white/European. Regarding sexual orientation, 87.5% self-identified as heterosexual, 6.5% as bisexual, and 6% as gay or lesbian. The majority of the sample was professionally active (60.4%), lived in a large urban area (56%), was of average socioeconomic status (58%), and had obtained at least a bachelor's degree (90%). In terms of marital status, 37% of participants were married to a person of the opposite sex and 32.3% lived with their spouse. Finally, 67.2% reported being affiliated with a religion. Table 1 shows the sociodemographic characteristics of the sample in greater detail.

The Impact of ACEs on Mental Health and Suicidal Behaviors

Table 1. Sociodemographic characteristics (n=1006; $M_{age}=41.76$; $SD_{age}=14.19$)

		n	%
Gender	Male	424	42.1
	Female	576	57.3
	Other	6	.6
Sexual orientation	Heterosexual	880	87.5
	Bisexual	66	6.5
	Gay/Lesbian	60	6.0
Country of residence	Portugal	296	29.4
	Brazil	409	40.7
	PALOP	301	29.9
Race/ethnicity	White/European	502	50.0
	African/Black	253	25.1
	Mixed Race	251	24.9
Professional status	Employed	608	60.4
	Unemployed	47	4.7
	Student	143	14.2
	Student-worker	82	8.1
	Self-employed	65	6.4
	Retired	52	5.2
	Other	9	.9
Education	High school or less	100	10.0
	Bachelor's degree	249	24.7
	Master's degree	339	33.7
	Doctorate/Ph.D.	318	31.6
Socioeconomic status	Low	35	3.5
	Lower-middle	109	10.9
	Middle	584	58.0
	Upper-middle	227	22.5
	High	51	5.1
Place of residence	Small rural area	71	7.0
	Large rural area	27	2.7
	Small urban area	345	34.3
	Large urban area	563	56.0
Marital status	Single	221	21.9
	Dating	169	16.8
	Same-sex marriage	14	1.4
	Opposite-sex marriage	372	37.0
	De facto same-sex union	12	1.2
	De facto opposite-sex union	134	13.3
	Separated/divorced from same-sex person	11	1.1
	Separated/divorced from opposite-sex person	60	5.9
	Widower of opposite-sex person	13	1.3

The Impact of ACEs on Mental Health and Suicidal Behaviors

Living situation	Living alone	172	17.1
	Living with a partner	146	14.5
	Living with spouse	325	32.3
	Living with children	73	7.2
	Living with parents/father/mother	169	16.8
	Living with friends	47	4.7
	Other	74	7.3
Religion	Yes	676	67.2
	No	330	32.8

2.2. Measurement instruments

A sociodemographic questionnaire was used to collect age, gender, sexual orientation, country of residence, race/ethnicity, professional status, educational attainment, socioeconomic status, place of residence, marital status, living situation, and religion.

To assess the mental health of the sample, the Brief Symptom Inventory-18 (BSI-18) (Nazaré et al., 2017), an instrument for screening psychological distress, was used. Its 18 items are evaluated on a Likert scale ranging from (0) *Never* to (4) *Always*, with the participants' responses referring to their experiences of psychopathological symptoms in the last week. The BSI-18 has three subscales, corresponding to three domains of psychopathological symptoms: somatization, depression, and anxiety. The scale also can be used to calculate a Global Severity Index (GSI) by summing the scores of the 18 items, which reflects the global level of psychological distress experienced by the participants. The somatization subscale assesses the malaise resulting from manifestations of autonomously regulated systems (e.g., cardiovascular, gastrointestinal, etc.); the depression subscale assesses symptoms indicative of depressive disorders (e.g., lack of motivation and interest in activities, loss of energy, suicidal ideation, etc.); and the anxiety subscale assesses symptoms associated with generalized anxiety or panic attacks (e.g., nervousness, tension, motor restlessness, apprehension, etc.). Higher scores on the three subscales and the GSI reflect more intense psychopathological symptoms. Cronbach's alphas for the total scale and the three subscales were calculated to assess the instrument's internal consistency, obtaining results of .93, .78, .86, and .87 for the total scale and the somatization, depression, and anxiety subscales, respectively. Thus, the instrument showed good internal consistency.

The original version of the Suicidal Behaviors Questionnaire-Revised (SBQ-R) (Osman et al., 2001), validated in its Portuguese-language version (Campos & Holden, 2019), was used to assess suicidal behavior. The five items of the SBQ-R assess suicide

ideation, attempt, and intention and are each evaluated on a Likert scale. The total score for the scale ranges from 3 to 18 points, and the cut-off point for screening for the non-clinical Portuguese population is 7.

Finally, the Portuguese-language version of the Family Adverse Childhood Experiences Questionnaire (Silva & Maia, 2008) assessed the report of ACEs through 10 items, adapted from the original 77. Responses were evaluated on a Likert scale from (0) *Never* to (9) *Many times* on an increasing frequency scale. The 10 items constitute 10 domains of adversity: emotional abuse, physical abuse, sexual abuse, emotional neglect, physical neglect, divorce or parental separation, exposure to domestic violence, substance abuse in the family environment, mental illness or suicide of a family member, and incarceration of a family member. The score is obtained by measuring the means of participants' responses, with higher scores describing a higher frequency of exposure to ACEs. To simplify the scoring, we transformed this variable into four categories as follows: no exposure (0), mild exposure (1-3), moderate exposure (4-6), and severe exposure (7-9).

2.3. Procedures

The present study was approved by the Ethics Committee of the University of Beira Interior (CE-UBI-Pj-2021-047), ensuring the ethical principles of informed consent, anonymity, confidentiality, beneficence, respect for the integrity of participants, and right to withdraw from the study.

For the purpose of the investigation, a website was designed to disseminate the online survey through mailing lists and social networks from May to October 2021. With the collected information, a database was built in IBM SPSS Statistics (version 28, Armonk, NY), where the data were cleaned and analyzed according to research objectives. The database was encrypted, making it impossible to access any identifying participant information, such as IP addresses.

2.4. Data analysis

The collected data were submitted to multiple statistical analyses, according to the objectives defined for this investigation.

Descriptive statistics (mean, standard deviation, frequencies, and percentages) were conducted to describe the prevalence of ACEs, levels of psychological symptoms, and reporting of suicidal behavior. Pearson chi-square tests were used to compare differences in ACEs and suicidal behaviors by countries of residence. Two-sample student t-tests were used to compare differences in means of somatization, depression,

and anxiety by countries of residence. To assess the strength and direction of possible associations between age, total BSI-18 score, probability of future suicide, and the ten domains of childhood adversity, Pearson’s correlations were calculated. Finally, two multiple linear hierarchical regressions were performed to assess the predictive power of ACEs on mental health and participants' probability of suicide. For all analyses, a p-value of <.05 was considered statistically significant.

3. Results

Table 2 presents the prevalence of ACEs in the overall sample and by country of residence. Emotional abuse was the most reported domain, with 32.7% of all participants reporting having experienced it at least once. Mental illness or suicide of a family member was the second most reported domain (30.8%), followed by emotional neglect (29.9%). Other ACEs and their respective prevalence can be seen in more detail in Table 2.

Table 2. Prevalence of ACEs by country of residence.

		Absence	Mild	Moderate	Severe	$\chi^2(df)$	<i>p</i>
Emotional abuse	Portugal	215 (21.4%)	43 (4.3%)	18 (1.8%)	19 (1.9%)	21.980(6)	.001*
	Brazil	247 (24.5%)	82 (8.1%)	38 (3.8%)	44 (4.4%)		
	PALOP	215 (21.4%)	56 (5.6%)	11 (1.1%)	17 (1.7%)		
	Total	677 (67.3%)	181 (18.0%)	67 (6.7%)	81 (8.0%)		
Physical abuse	Portugal	243 (24.1%)	26 (2.6%)	15 (1.5%)	10 (1.0%)	19.213(6)	.004*
	Brazil	308 (30.6%)	55 (5.5%)	21 (2.1%)	27 (2.7%)		
	PALOP	220 (21.9%)	57 (5.7%)	8 (0.8%)	13 (1.3%)		
	Total	772 (76.7%)	139 (13.8%)	45 (4.5%)	50 (5.1%)		
Sexual abuse	Portugal	256 (25.4%)	23 (2.3%)	7 (0.7%)	10 (1.0%)	20.015(6)	.003*
	Brazil	300 (29.8%)	57 (5.8%)	26 (2.6%)	25 (2.5%)		
	PALOP	233 (23.2%)	41 (4.2%)	10 (1.0%)	14 (1.4%)		
	Total	789 (78.4%)	123 (12.3%)	44 (4.4%)	50 (5.0%)		
Emotional neglect	Portugal	208 (20.7%)	43 (4.3%)	28 (2.8%)	16 (1.6%)	11.256(6)	.081
	Brazil	271 (26.9%)	65 (6.5%)	43 (4.3%)	33 (3.3%)		
	PALOP	226 (22.5%)	39 (3.9%)	16 (1.6%)	16 (1.6%)		
	Total	705 (70.1%)	147 (14.6%)	88 (8.7%)	66 (6.6%)		
Physical neglect	Portugal	284 (28.2%)	8 (0.8%)	2 (0.2%)	2 (0.2%)	19.529(6)	.003*
	Brazil	360 (35.8%)	35 (3.5%)	9 (0.9%)	6 (0.6%)		
	PALOP	256 (25.4%)	28 (2.8%)	9 (0.9%)	6 (0.6%)		
	Total	900 (89.4%)	72 (7.2%)	20 (2.0%)	14 (1.4%)		

The Impact of ACEs on Mental Health and Suicidal Behaviors

Divorce/parental separation	Portugal	253 (25.1%)	27 (2.7%)	7 (0.7%)	7 (0.7%)	32.610(6)	.000*
	Brazil	287 (28.5%)	67 (6.7%)	25 (2.5%)	31 (3.1%)		
	PALOP	209 (20.8%)	58 (5.8%)	19 (1.9%)	13 (1.3%)		
	Total	749 (74.4%)	153 (15.2%)	52 (5.2%)	52 (5.2%)		
Domestic violence in the household	Portugal	251 (25.5%)	23 (2.3%)	10 (1.0%)	7 (0.7%)	5.980(6)	.425
	Brazil	344 (34.9%)	34 (3.4%)	8 (0.8%)	19 (1.9%)		
	PALOP	252 (25.6%)	24 (2.4%)	8 (0.8%)	6 (0.6%)		
	Total	866 (86.0%)	82 (8.1%)	26 (2.6%)	32 (3.2%)		
Substance abuse in the household	Portugal	236 (23.5%)	21 (2.1%)	18 (1.8%)	18 (1.8%)	16.709(6)	.010*
	Brazil	285 (28.3%)	54 (5.4%)	32 (3.2%)	41 (4.1%)		
	PALOP	220 (21.9%)	44 (4.4%)	19 (1.9%)	16 (1.6%)		
	Total	741 (73.7%)	120 (11.9%)	70 (7.0%)	75 (7.5%)		
Mental illness or suicide of a family member	Portugal	192 (19.1%)	50 (5.0%)	34 (3.4%)	17 (1.7%)	27.775(6)	.000**
	Brazil	263 (26.1%)	77 (7.6%)	39 (3.9%)	34 (3.4%)		
	PALOP	241 (24.0%)	31 (3.1%)	17 (1.7%)	10 (1.0%)		
	Total	696 (69.2%)	158 (15.7%)	91 (9.0%)	61 (6.1%)		
Incarceration of a family member	Portugal	275 (27.8%)	13 (1.3%)	1 (0.1%)	1 (0.1%)	52.291(6)	.000**
	Brazil	319 (32.3%)	56 (5.7%)	16 (1.6%)	13 (1.3%)		
	PALOP	215 (21.7%)	56 (5.7%)	14 (1.4%)	10 (1.0%)		
	Total	824 (81.8%)	127 (12.6%)	31 (3.1%)	24 (2.4%)		

* p<.05

**p<.001

The average levels of psychopathological symptoms in the sample overall and by country of residence are described in Table 3. Regarding the Portuguese sample, the means found agree with the expected means for community samples (Nazaré et al., 2017). The results obtained for the comparison of means between the three groups showed statistically significant differences for the means of somatization levels ($F(2;988)=4.543$; $p<.05$), depression ($F(2;977)=9,716$; $p<.001$), anxiety ($F(2;974)=17.688$; $p<.001$), and total BSI-18 score ($F(2;991)=11.101$; $p<.001$). Residents of Brazil had higher average levels of somatization ($M=.64$; $SD=.69$), depression ($M=1.04$; $SD=.82$), anxiety ($M=1.12$; $SD=.86$), and total BSI-18 score ($M=.93$; $SD=.71$) than their counterparts from Portugal and PALOP.

The Impact of ACEs on Mental Health and Suicidal Behaviors

Table 3. Results for symptoms of somatization, depression, and anxiety by country of residence.

		Mean (SD)	F(df)	p
Somatization	Portugal	.51 (.55)		
	Brazil	.64 (.69)	4.543 (2;988)	.011*
	PALOP	.52 (.57)		
	Total	.56 (.62)		
Depression	Portugal	.84 (.75)		
	Brazil	1.04 (.82)	9.716 (2;977)	.000**
	PALOP	.79 (.73)		
	Total	.91 (.78)		
Anxiety	Portugal	.92 (.70)		
	Brazil	1.12 (.86)	17.688 (2;974)	.000**
	PALOP	.77 (.69)		
	Total	.96 (.78)		
Total	Portugal	.76 (.58)		
	Brazil	.93 (.71)	11.101 (2;991)	.000**
	PALOP	.71 (.63)		
	Total	.81 (.66)		

* p<.05

**p<.001

Table 4 describes the average scores for the five items that assess suicidal behavior in the sample overall and by country of residence. Statistically significant differences were found in lifetime suicidal ideation ($F(2;945)=11.441$; $p<.001$) and in suicidal ideation in the last year ($F(2;987)=7.112$; $p<.001$) by country of residence, with Brazilian residents showing higher averages for both (lifetime: $M=1.56$, $SD=.66$; last year: $M=1.44$; $SD=.92$). However, Portuguese residents had significantly higher average scores for probability of suicide in the future ($M=1.44$; $SD=.97$) ($F(2.981)=5.525$; $p<.05$).

The Impact of ACEs on Mental Health and Suicidal Behaviors

Table 4. Results for suicidal behaviors by country of residence.

		Mean (SD)	F (df)	p
Lifetime suicide ideation	Portugal	1.48 (.60)		
	Brazil	1.56 (.66)	11.441 (2;945)	.000**
	PALOP	1.33 (.55)		
	Total	1.46 (.61)		
Lifetime suicide attempt	Portugal	1.17 (.58)		
	Brazil	1.20 (.62)	.451 (2;989)	.637
	PALOP	1.16 (.55)		
	Total	1.18 (.59)		
Suicide ideation in the past year	Portugal	1.33 (.86)		
	Brazil	1.44 (.92)	7.112 (2;987)	.000**
	PALOP	1.20 (.63)		
	Total	1.33 (.83)		
Suicide attempt in the past year	Portugal	1.06 (.38)		
	Brazil	1.03 (.23)	1.913 (2;986)	.148
	PALOP	1.08 (.42)		
	Total	1.05 (.34)		
Probability of suicide in the future	Portugal	1.44 (.97)		
	Brazil	1.38 (.99)	5.525 (2;981)	.004*
	PALOP	1.20 (.71)		
	Total	1.35 (.91)		

* p<.05

**p<.001

Table 5 presents the correlation matrix between the following variables: age, total BSI-18 score, probability of future suicide, and scores obtained for each ACE domain. The results showed that the probability of suicide in the future was significantly and positively correlated with total BSI-18 score ($r=.357$; $p<.001$). All ACEs were significantly correlated with each other ($p<.001$), with emotional and physical abuse having the strongest correlation ($r=.678$). There was also a strong correlation between emotional neglect and emotional ($r=.494$), physical ($r=.413$), and sexual ($r=.312$) abuse and a strong correlation between substance abuse in the household and exposure to domestic violence ($r=.428$). All correlations can be seen in greater detail in Table 5.

The Impact of ACEs on Mental Health and Suicidal Behaviors

Table 5. Results for correlation values among variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 – Age	–												
2 – BSI-18 total score	-.238**	–											
3 - Probability of suicide in the future	-.073*	.357**	–										
4 - Emotional abuse	-.082*	.248**	.174**	–									
5 - Physical abuse	.028	.190**	.116**	.678**	–								
6 - Sexual abuse	-.041	.169**	.174**	.264**	.250**	–							
7 - Emotional neglect	-.109**	.269**	.229**	.494**	.413**	.312**	–						
8 - Physical neglect	-.030	.135**	.149**	.254**	.322**	.294**	.318**	–					
9 – Divorce / parental separation	-.111**	.152**	.102**	.238**	.233**	.197**	.274**	.273**	–				
10 - Domestic violence in the household	-.047	.099**	.074*	.326**	.312**	.259**	.291**	.294**	.322**	–			
11 - Substance abuse in the household	-.072*	.129**	.086**	.270**	.229**	.214**	.237**	.315**	.254**	.428**	–		
12 - Mental illness or suicide of a family member	-.062	.151**	.172**	.237**	.213**	.187**	.209**	.233**	.199**	.266**	.354**	–	
13 - Incarceration of a family member	-.034	.149**	.063*	.191**	.198**	.215**	.176**	.296**	.228**	.307**	.261**	.173**	–

* p<.05

**p<.001

The Impact of ACEs on Mental Health and Suicidal Behaviors

To assess the contribution of sociodemographic variables and ACEs on psychopathological symptoms, a hierarchical multiple linear regression was performed (see Table 6). The first model, which included only sociodemographic variables (age, gender, sexual orientation, country of residence, race/ethnicity, socioeconomic status, and marital status), explained 11.8% of the variance in participants' psychopathological symptom scores. In the second model, where we added the 10 ACEs domains, the variance explained by the model increased to 21.0%, which demonstrates the impact of these experiences on the mental health of participants. Of all adversity domains, emotional abuse ($\beta=.125$; $p<.05$), emotional neglect ($\beta=.124$; $p<.05$), and incarceration of a family member ($\beta=.120$; $p<.001$) were the strongest predictors. Other predictors can be observed in more detail in Table 6.

Table 6. Results for the hierarchical multiple linear regression predicting anxiety, depression, and somatization symptoms.

Variable	Model 1			Model 2		
	B	SE B	β	B	SE B	β
Age	-.007	.002	-.160**	-.007	.002	-.154**
Gender	.182	.044	.141**	.153	.043	.119**
Sexual orientation	.104	.042	.084*	.014	.042	.011
Country of residence	.014	.032	.016	.007	.031	.008
Race/ethnicity	-.012	.028	-.015	-.042	.027	-.054
Socioeconomic status	-.167	.028	-.204**	-.142	.027	-.173**
Marital status	.004	.011	.015	.007	.011	.022
Emotional abuse				.033	.012	.125*
Physical abuse				.006	.014	.021
Sexual abuse				.015	.011	.049
Emotional neglect				.034	.011	.124*
Physical neglect				.007	.020	.014
Divorce/parental separation				.018	.011	.058
Domestic violence in the household				-.045	.015	-.116*
Substance abuse in the household				.000	.010	.002
Mental illness or suicide of a family member				.012	.010	.043
Incarceration of a family member				.052	.015	.120**
R ²		.118			.210	
F for change in R ²		16.298**			13.219**	

* $p<.05$

** $p<.001$

Another hierarchical multiple linear regression was performed to assess the contribution of the same variables on the probability of suicide in the future (see Table 7). The first model with sociodemographic variables explained 5.1% of the variance in

probability of suicide. After the inclusion of ACEs, the model was able to explain 12.5% of the variance in probability of suicide in the future. The fact that the variability explained by the model more than doubled when ACEs were added demonstrates the relevance of these experiences in the area of suicide, especially regarding suicide risk in the future. Emotional neglect ($\beta=.148$; $p<.001$), sexual abuse ($\beta=.115$; $p<.05$), and mental illness/suicide of a family member ($\beta=.092$; $p<.05$) proved to be the strongest predictors among the 10 domains.

Table 7. Results for the hierarchical multiple linear regression predicting suicidal behaviors.

Variable	Model 1			Model 2		
	B	SE B	β	B	SE B	β
Age	-.001	.002	-.018	.000	.002	-.003
Gender	.012	.064	.007	-.034	.063	-.019
Sexual orientation	.305	.061	.178**	.189	.061	.110*
Country of residence	-.088	.046	-.074	-.090	.046	-.076*
Race/ethnicity	.001	.041	.001	-.017	.040	-.015
Socioeconomic status	-.114	.040	-.100*	-.085	.040	-.074*
Marital status	.011	.016	.026	.009	.016	.020
Emotional abuse				.028	.018	.076
Physical abuse				-.041	.021	-.093
Sexual abuse				.051	.016	.115*
Emotional neglect				.058	.016	.148**
Physical neglect				.060	.029	.079*
Divorce/parental separation				.020	.016	.044
Domestic violence in the household				-.029	.022	-.054
Substance abuse in the household				-.025	.015	-.066
Mental illness or suicide of a family member				.036	.014	.092*
Incarceration of a family member				.012	.022	.020
R ²		.051			.125	
F for change in R ²		6.556**			7.059**	

* $p<.05$

** $p<.001$

4. Discussion

The main purpose of the present study was to assess the impact of ACEs on mental health and suicidal behavior in a sample of participants from the CPLC. The results show that the prevalence of ACEs in the overall sample is relatively high, ranging from 10.6% (physical neglect) to 32.7% (emotional abuse), with emotional abuse being the most reported. These results are similar to those found in other studies (Riedl et al., 2020; Thompson et al., 2019), demonstrating that ACEs are a worrying phenomenon that impact a wide range of cultural populations.

In terms of psychological symptoms, we concluded that although the overall sample does not constitute a clinical sample and psychological symptoms were self-reported, participants from Brazil demonstrated significantly higher levels of somatization, depression, and anxiety symptoms. One potential explanation for this disparity is the country's socioeconomic and sociopolitical context, where high rates of violence and marked social and racial inequalities (Madeira & Gomes, 2018; Weichert, 2017), may contribute to the intensification of psychological symptoms. This explanation would support the fact that depression and other common mental illnesses are more prevalent in Brazil than in Portugal, for instance (WHO, 2017).

Levels of suicidal ideation throughout the lifespan and in the previous year were also significantly higher in participants from Brazil, which is consistent with the fact that Brazil represents one of the ten countries in the world with the most recorded cases of suicide (Barbosa & Teixeira, 2021). On the other hand, the probability of suicide in the future was significantly higher among participants from Portugal, which supports the previous research indicating that higher-income countries have higher suicide rates than low- or middle-income countries (Klonsky et al., 2016; WHO, 2014). One reason for this is that individuals in higher-income countries may be exposed to higher pressure from social and/or economic competition. This pressure could increase the likelihood of suicidal behavior in the future, as suicide may seem to be a way to minimize the suffering of current stressors. On the other hand, suicide ideation and attempt, and the respective evolution from ideation to attempt, must be understood as distinct processes with distinct predictors and explanations (Klonsky et al., 2016). Therefore, high levels of ideation may not always lead to high levels of attempt. The fact that Portuguese residents had lower rates of suicidal ideation and attempt, but higher probability of suicide in the future than Brazilian and PALOP residents can also be explained by the underreporting or biased classification of deaths by suicide in Portugal. Because suicide is a sensitive and little discussed topic in Portugal, deaths by suicide are often registered as deaths by "undetermined causes" or "other causes", which makes this phenomenon, in some way, masked and/or invisible in the country (Nunes, 2017; National Program for Mental Health, 2015; WHO, 2014). This interferes with the way people recognize, think, and communicate suicide ideation and attempt because the report of those experiences implies some level of insight, while probability of suicide represents a form of projection into the future, which may lead to the underreporting of such experiences in surveys.

The manifestation of suicidal behavior also differs according to sociodemographic variables. For example, suicide in Portugal is more frequent among males, older age

groups, and in certain geographical areas with cultural specificities (Nunes, 2017; National Program for Mental Health, 2015), demonstrating how social variables seem to impact suicidal behavior.

A significant, positive, and strong correlation was found between psychological symptoms and the likelihood of suicide in the future, confirming the role of mental health in the manifestation of suicidal behavior, as a multifactorial phenomenon (Brådvik, 2018). The results also demonstrated a strong association between physical and emotional abuse, suggesting that the experience of multiple types of adversity in childhood is highly associated (Descartes et al., 2020; Edwards et al., 2003; Felitti et al., 2019; Karatekin, 2017; Mersky et al., 2013; Riedl et al., 2020), and, specifically, that physical abuse co-occurs with psychological abuse (Descartes et al., 2020; Dias et al., 2015). Exposure to domestic violence was also strongly associated with substance abuse in the household, an association also found in previous studies (Canfield, 2020; Fals-Stewart, 2003). This result may be explained by the fact that substance abuse (e.g., alcohol) may affect brain structures responsible for the inhibitory control of behaviors, inducing primitive forms of behavior, such as aggressive impulses. Also, they affect cognitive functioning and processing, making individuals less capable to process information, which can lead them to act aggressively (Chermack & Giancola, 1997).

ACEs proved to be strong predictors of both psychological symptoms and suicidal behavior in our sample. Emotional abuse was the strongest predictor in explaining psychological symptoms, similar to the results found in other studies (Dias et al., 2015; Chang et al., 2019; Chapman et al., 2004), which considered it as the main risk factor for the development of depression. This result highlights the importance of emotional issues and particularly emotional abuse in children's mental health (Dias et al., 2015), even though they are often overlooked compared to physical abuse. Regarding suicidal behavior, the strongest predictor in our sample was emotional neglect. This differs from results of other studies, which have found that emotional (Merrick et al., 2017; Thompson et al., 2019), sexual, and physical abuse, attempted suicide by a family member (Thompson et al., 2019), physical neglect, substance abuse in the household, and family history of mental illness (Pinto et al., 2015) are the strongest predictors of suicidal behavior. Although this is not one of the predictors usually mentioned in the literature, we believe that characteristics of emotional neglect, including passivity, indifference, and non-responsiveness to needs, can trigger feelings of hopelessness and lack of interest in life. Also, since suicidal behavior is a multifactorial phenomenon, it's expected that the predictors for its occurrence may vary by population and culture as well. Thus, this study reinforces the need to consider the emotional variables of

childhood in order to promote a more harmonious child development, which is demonstrably a predictor of less mental health challenges in adulthood (Dias et al., 2015).

Despite its contributions, our study also had some limitations. The sample was collected online and is highly differentiated, so it is neither representative nor generalizable to the populations studied. Data collection through a questionnaire may be subject to the effects of social desirability and, since adverse experiences were retrospectively reported, the respondents may be subject to memory lapses and/or biases. Additionally, although we value the importance of the contribution of the different CPLC included in the study, their inclusion may be a limitation, as the regions face quite different demographic and sociopolitical realities, especially in terms of human development indexes, which are grouped in an undifferentiated way into single groups in this study. Furthermore, the cross-sectional nature of this study makes it impossible to monitor changes over time and establish causal relationships between ACEs and the mental health and suicidal behavior of the sample. Finally, the lack of prior research regarding PALOP makes it difficult to compare our results with other literature. Moreover, the results found must be interpreted in light of the atypical pandemic context we are going through, as this may've influenced the results.

Although our study had limitations, it also has many strengths, especially regarding the consequences for the practices of promotion, prevention, and intervention in mental health. The results emphasize the urgency to create and implement health, educational, childhood, and family policies to protect children and adolescents in various countries. They also emphasize the need for government accountability, as governments are active agents in the pursuit of children's dignity and rights. In terms of preventing mental health problems and suicide, it is important to develop mechanisms for early identification, assessment, and intervention, focused on preventing child abuse and minimizing potential harmful consequences. This study also provides knowledge of which important areas of psychological functioning are influenced by ACEs, which may help mental health professionals to develop assessment and intervention programs more adjusted to the needs of populations in each geographic area.

Future research should include qualitative studies that assess other developmental indicators, thus promoting broader and more global knowledge on this topic. Studies that work directly with children and adolescents may also be relevant so that the report of ACEs is relative to the present and not retrospective. Longitudinal studies, which allow for the monitoring of changes throughout development and the establishment of causal relationships, will also be important in future research. Finally, future research

should try to include more representative samples in order to draw generalizations for the population.

5. Conclusion

It is concluded that ACEs are a prevalent and general phenomenon across several countries, with a significant negative impact on mental health and suicidal behavior. Therefore, it is urgent to alert policy makers and mental health professionals of the need to intervene with children, young people, and families, in order to ensure children's harmonious and adjusted development, thus promoting the quality of life and the well-being of populations.

References

- Anda, R., Felitti, V., Bremner, J. D., Walker, J., Whitfield, C., Perry, B., Dube, S., & Giles, W. (2006). The enduring effects of abuse and related adverse experiences in childhood: A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, 256(3), 174–186. <https://doi.org/10.1007/s00406-005-0624-4>
- Associação Portuguesa de Apoio à Vítima. (2021). Estatísticas APAV: Relatório anual 2020. https://www.apav.pt/apav_v3/images/pdf/Estatisticas_APAV_Relatorio_Anual_2020.pdf
- Barbosa, B., & Teixeira, F. (2021). Perfil epidemiológico e psicossocial do suicídio no Brasil. *Research, Society and Development*, 10(5), 1–8. <https://doi.org/10.33448/rsd-v10i5.15097>
- Basto-Pereira, M., & Maia, Â. (2019). Early adversity and adult delinquency: The mediational role of mental health in youth offenders. *Ciência & Saúde Coletiva*, 24(8), 2805–2810. <https://doi.org/10.1590/1413-81232018248.27142017>
- Basto-Pereira, M., Miranda, A., Ribeiro, S., & Maia, Â. (2016). Growing up with adversity: From juvenile justice involvement to criminal persistence and psychosocial problems in young adulthood. *Child Abuse and Neglect*, 62, 63–75. <https://doi.org/10.1016/j.chiabu.2016.10.011>
- Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics and Child Health*, 28(3), 132-137. <https://doi.org/10.1016/j.paed.2017.12.008>
- Brådvik L. (2018). Suicide risk and mental disorders. *International Journal of Environmental Research and Public Health*, 15(9), 2018. <https://doi.org/10.3390/ijerph15092028>

- Braga, T., Cunha, O., & Maia, Â. (2018). The enduring effect of maltreatment on antisocial behavior: A meta-analysis of longitudinal studies. *Aggression and Violent Behavior, 40*, 91–100. <https://doi.org/10.1016/j.avb.2018.04.003>
- Campbell, J., Walker, R., & Egede, L. (2016). Associations between adverse childhood experiences, high-risk behaviors, and morbidity in adulthood. *American Journal of Preventive Medicine, 50*(3), 344–352. <https://doi.org/10.1016/j.amepre.2015.07.022>
- Campos, R., & Holden, R. (2019). Portuguese version of the suicidal behaviors questionnaire-revised: Validation data and the establishment of a cut-score for screening purposes. *European Journal of Psychological Assessment, 35*(2), 190–195. <https://doi.org/10.1027/1015-5759/a000385>
- Canfield, M., Radcliffe, P., D'Oliveira, A., & Gilchrist, G. (2020). Factors associated with the severity of IPV perpetrated by substance using men towards current partner. *Advances in Dual Diagnosis, 13*(1), 32–45. <https://doi.org/10.1108/ADD-04-2019-0003>
- Chang, X., Jiang, X., Mkandarwire, T., & Shen, M. (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18–59 years. *PLOS ONE, 14*(2), 1–11. <https://doi.org/10.1371/journal.pone.0211850>
- Chapman, D., Whitfield, C., Felitti, V., Dube, S., Edwards, V., & Anda, R. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders, 82*(2), 217–225. <https://doi.org/10.1016/j.jad.2003.12.013>
- Chermack, S., & Giancola, P. (1997). The relation between alcohol and aggression: An integrated biopsychosocial conceptualization. *Clinical Psychology Review, 17*(6), 621–649.
- Comissão Nacional de Promoção dos Direitos e Proteção das Crianças e Jovens (2021). Relatório anual de avaliação da atividade das CPCJ 2020. <https://www.cnpdpcj.gov.pt/relatorio-atividades>
- Craig, S., Austin, A., Levenson, J., Leung, V., Eaton, A., & D'Souza, S. (2020). Frequencies and patterns of adverse childhood events in LGBTQ+ youth. *Child Abuse and Neglect, 107*, 1–12. <https://doi.org/10.1016/j.chiabu.2020.104623>
- Descartes, C., Maharaj, P., Quammie, M., Mills, J., Ramesar, M., & Pulwarty, H. (2020). It's never one type: The co-occurrence of child abuse and neglect among children living in community residences in trinidad. *Journal of Child and Adolescent Trauma, 13*(4), 419–427. <https://doi.org/10.1007/s40653-019-00293-x>

- Dias, A., Sales, L., Hessen, D., & Kleber, R. (2015). Child maltreatment and psychological symptoms in a Portuguese adult community sample: The harmful effects of emotional abuse. *European Child and Adolescent Psychiatry, 24*(7), 767–778. <https://doi.org/10.1007/s00787-014-0621-0>
- Edwards, V., Holden, G., Felitti, V., & Anda, R. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *The American Journal of Psychiatry, 160*(8), 1453–1460. <https://doi.org/10.1176/appi.ajp.160.8.1453>
- Fals-Stewart, W. (2003). The occurrence of partner physical aggression on days of alcohol consumption: A longitudinal diary study. *Journal of Consulting and Clinical Psychology, 71*(1), 41–52. <https://doi.org/10.1037/0022-006X.71.1.41>
- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 14*(4), 245–258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)
- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (2019). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine, 56*(6), 774–786. <https://doi.org/10.1016/j.amepre.2019.04.001>
- Font, S., & Maguire-Jack, K. (2016). Pathways from childhood abuse and other adversities to adult health risks: The role of adult socioeconomic conditions. *Child Abuse and Neglect, 51*, 390–399. <https://doi.org/10.1016/j.chiabu.2015.05.013>
- Giano, Z., Ernst, C., Snider, K., Davis, A., O’Neil, A., & Hubach, R. (2021). ACE domains and depression: Investigating which specific domains are associated with depression in adulthood. *Child Abuse & Neglect, 122*, 1–10. <https://doi.org/10.1016/j.chiabu.2021.105335>
- Jones, T., Nurius, P., Song, C., & Fleming, C. (2018). Modeling life course pathways from adverse childhood experiences to adult mental health. *Child Abuse and Neglect, 80*, 32–40. <https://doi.org/10.1016/j.chiabu.2018.03.005>
- Karatekin, C. (2017). Adverse childhood experiences (ACEs), stress and mental health in college students. *Stress and Health, 34*(1), 36–45. <https://doi.org/10.1002/smi.2761>

- Klonsky, E., May, A., & Saffer, B. (2016). Suicide, suicide attempts, and suicidal ideation. *Annual Review of Clinical Psychology*, *12*, 307–330. <https://doi.org/10.1146/annurev-clinpsy-021815-093204>
- Kong, J., Liu, Y., Goldberg, J., & Almeida, D. (2021). Adverse childhood experiences amplify the longitudinal associations of adult daily stress and health. *Child Abuse and Neglect*, *122*, 1-11. <https://doi.org/10.1016/j.chiabu.2021.105337>
- Madeira, Z., & Gomes, D. (2018). Persistentes desigualdades raciais e resistências negras no Brasil contemporâneo. *Serviço Social & Sociedade*, *133*, 463–479. <https://doi.org/10.1590/0101-6628.154>
- Maia-Silva, K., Zamel, N., Selby, P., Fontes, C., & Santos, U. (2021). Tobacco smoking associated with adverse childhood experiences in a Brazilian community university sample: A case-control study. *Children and Youth Services Review*, *120*. <https://doi.org/10.1016/j.childyouth.2020.105438>
- Merrick, M., Ports, K., Ford, D., Afifi, T., Gershoff, E., & Grogan-Kaylor, A. (2017). Unpacking the impact of adverse childhood experiences on adult mental health. *Child Abuse and Neglect*, *69*, 10–19. <https://doi.org/10.1016/j.chiabu.2017.03.016>
- Mersky, J., Topitzes, J., & Reynolds, A. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse and Neglect*, *37*(11), 917–925. <https://doi.org/10.1016/j.chiabu.2013.07.011>
- Nazaré, B., Pereira, M., & Canavarro, M. (2017). Avaliação breve da psicossintomatologia: Análise fatorial confirmatória da versão portuguesa do Brief Symptom Inventory 18 (BSI 18). *Análise Psicológica*, *35*(2), 213–230. <https://doi.org/10.14417/ap.1287>
- Nunes, A. (2018). Suicide in Portugal: Image of the country. *Jornal Brasileiro de Psiquiatria*, *67*(1), 25–33. <https://doi.org/10.1590/0047-2085000000180>
- Osman, A., Bagge, C., Gutierrez, P., Konick, L., Kopper, B., & Barrios, F. (2001). The suicidal behaviors questionnaire-revised (SBQ-R): Validation with clinical and nonclinical samples. *Assessment*, *8*(4), 443–454. <https://doi.org/10.1177/107319110100800409>
- Pinto, V., Alves, J., & Maia, Â. (2015). Adversidade na infância prediz sintomas depressivos e tentativas de suicídio em mulheres adultas portuguesas. *Estudos de Psicologia*, *32*(4), 617–625. <https://doi.org/10.1590/0103-166X2015000400005>
- Riedl, D., Lampe, A., Exenberger, S., Nolte, T., Trawöger, I., & Beck, T. (2020). Prevalence of adverse childhood experiences (ACEs) and associated physical and mental health problems amongst hospital patients: Results from a cross-sectional

- study. *General Hospital Psychiatry*, 64, 80–86.
<https://doi.org/10.1016/j.genhosppsych.2020.03.005>
- Schilling, E., Aseltine, R., & Gore, S. (2007). Adverse childhood experiences and mental health in young adults: A longitudinal survey. *BMC Public Health*, 7(30), 1-10.
<https://doi.org/10.1186/1471-2458-7-30>
- Silva, S., & Maia, Â. (2008). Versão portuguesa do Family ACE Questionnaire (Questionário da História de Adversidade na Infância). In A. Noronha, C. Machado, L. Almeida, M. Gonçalves, S. Martins, & V. Ramalho (Coord.), *Actas da XIII conferência internacional de avaliação psicológica: Formas e contextos*. Psiquilibrios.
- Thompson, M., Kingree, J., & Lamis, D. (2019). Associations of adverse childhood experiences and suicidal behaviors in adulthood in a U.S. nationally representative sample. *Child: Care, Health and Development*, 45(1), 121–128.
<https://doi.org/10.1111/cch.12617>
- Turner, H., & Butler, M. (2003). Direct and indirect effects of childhood adversity on depressive symptoms in young adults. *Journal of Youth and Adolescence*, 32(2), 89-103. <https://doi.org/10.1023/A:1021853600645>
- Wade, R., Cronholm, P., Fein, J., Forke, C., Davis, M., Harkins-Schwarz, M., Pachter, L., & Bair-Merritt, M. (2016). Household and community-level adverse childhood experiences and adult health outcomes in a diverse urban population. *Child Abuse and Neglect*, 52, 135–145. <https://doi.org/10.1016/j.chiabu.2015.11.021>
- Wang, Y.-R., Sun, J.-W., Lin, P.-Z., Zhang, H.-H., Mu, G.-X., & Cao, F.-L. (2019). Suicidality among young adults: Unique and cumulative roles of 14 different adverse childhood experiences. *Child Abuse and Neglect*, 98. <https://doi.org/10.1016/j.chiabu.2019.104183>
- Weichert, M. (2017). Violência sistemática e perseguição social no Brasil. *Revista Brasileira de Segurança Pública*, 11(2), 106-128.
- Wong, A., Dirghangi, S., & Hart, S. (2019). Self-concept clarity mediates the effects of adverse childhood experiences on adult suicide behavior, depression, loneliness, perceived stress, and life distress. *Self and Identity*, 18(3), 247–266.
<https://doi.org/10.1080/15298868.2018.1439096>
- World Health Organization (WHO) (2014). Preventing suicide: A global imperative. <https://apps.who.int/iris/bitstream/handle/10665/131056/97892?sequence=1>
- World Health Organization (WHO) (2017). Depression and other common mental disorders: Global health estimates. <https://apps.who.int/iris/bitstream/handle/10665/254610/W?sequence=1>

The Impact of ACEs on Mental Health and Suicidal Behaviors

World Health Organization (WHO). (2020, January 28). *Adverse Childhood Experiences International Questionnaire (ACE-IQ)*. [https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-\(ace-iq\)](https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-(ace-iq))

The Impact of ACEs on Mental Health and Suicidal Behaviors

Chapter 2. General Discussion

The COVID-19 pandemic affected the daily lives of populations on a global scale. This impact may have been more significant in groups considered at risk, and a priori more vulnerable. One study found that people with a history of ACEs reported significantly increased levels of psychological distress over the pandemic period, compared with the group that did not experience ACEs (Browne et al., 2022). At the same time, the pandemic may also have enhanced the occurrence and frequency of ACEs through the negative impact it had on parents' mental health (Brown et al., 2020; Zafar et al., 2021). Two authors even argued that the pandemic experience should be considered as an ACE (McManus & Balls, 2020), recommending an idiosyncratic assessment and analysis of each child or adolescent's pandemic experience.

The main objective of this Dissertation was to assess the impact of ACEs on mental health and suicidal behaviors in a sample of CPLC, responding to the scarce research developed in this field and this community. ACE were found to be strong predictors of both psychopathological symptoms and suicidal behavior, with emotional abuse and neglect being the strongest predictors. These results warn about the importance of designing interventions that consider emotional variables, aiming at more adjusted child development. This reinforces the role of emotional aspects, often neglected in comparison with physical aspects. On the other hand, a strong positive correlation was found between emotional and physical abuse, which was expected, since multiple domains of adversity are often experienced (Descartes et al., 2020; Edwards et al., 2003; Felitti et al., 2019; Karatekin, 2017; Mersky et al., 2013; Riedl et al., 2020). A strong positive correlation was also identified between the BSI-18 score and the likelihood of suicide in the future, which suggests the necessity to develop suicide prevention and intervention measures that consider the psychopathological symptoms.

From the results found, implications can be extrapolated at the level of promotion, prevention, and intervention practices in mental health with children and adolescents, their families, and the community itself. It is imperative to develop mechanisms that allow for the early identification of cases at risk, especially during potentially traumatic periods, such as the pandemic we are experiencing. At the same time, rigorous assessment and intervention methods must be developed, aimed at minimizing possible negative consequences.

Actions can also be outlined regarding political involvement, which should seek to regulate, through the implementation of health, education, childhood, and family laws,

a context that protects children and young people, reduces risk factors, and fosters protective factors.

In accordance with the expectations of EuroPsy - The European Certificate in Psychology (EFPA, 2015), the development of this Dissertation enabled the acquisition and consolidation of research skills, namely bibliographic skills, statistical analysis, and writing of scientific papers, through the production of this study. The scientific activities carried out and named at the beginning of the first chapter also promoted the development of oral scientific communication skills. Similarly, the realization of this project fostered knowledge about ethical principles and their application in a careful and committed way.

Research in the area of ACEs has increased in recent years (Struck et al., 2021), which has contributed to the growing awareness of populations about the impact of these events, from an individual to a more macro level. However, future research should continue to be developed based on the existing body of theory and considering the identified gaps, in order to contribute to a progressively richer and more adjusted psychology practice to people's reality and difficulties.

References

- Basto-Pereira, M., & Maia, Â. (2019). Early adversity and adult delinquency: The mediational role of mental health in youth offenders. *Ciência & Saúde Coletiva*, 24(8), 2805–2810. <https://doi.org/10.1590/1413-81232018248.27142017>
- Boullier, M., & Blair, M. (2018). Adverse childhood experiences. *Paediatrics and Child Health*, 28(3), 132-137. <https://doi.org/10.1016/j.paed.2017.12.008>
- Brown, S., Doom, J., Lechuga-Peña, S., Watamura, S., & Koppels, T. (2020). Stress and parenting during the global COVID-19 pandemic. *Child Abuse & Neglect*, 110. <https://doi.org/10.1016/j.chiabu.2020.104699>
- Browne, A., Stafford, O., Berry, A., Murphy, E., Taylor, L., Shevlin, M., McHugh, L., Carr, A., Burke, T. (2022). Psychological flexibility mediates wellbeing for people with adverse childhood experiences during COVID-19. *Journal of Clinical Medicine*, 11(2). <https://doi.org/10.3390/jcm11020377>
- Bryce, I. (2020). Responding to the accumulation of adverse childhood experiences in the wake of the COVID-19 pandemic: implications for practice. *Children*, 45(2), 80-87. *Australia*, <https://doi.org/10.1017/cha.2020.27>
- Descartes, C., Maharaj, P., Quammie, M., Mills, J., Ramesar, M., & Pulwarty, H. (2020). It's never one type: The co-occurrence of child abuse and neglect among children living in community residences in trinidad. *Journal of Child and Adolescent Trauma*, 13(4), 419–427. <https://doi.org/10.1007/s40653-019-00293-x>
- Edwards, V., Holden, G., Felitti, V., & Anda, R. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the adverse childhood experiences study. *The American Journal of Psychiatry*, 160(8), 1453–1460.
- European Federation of Psychologists' Associations (EFPA). (2015). *EuroPsy - Certificado Europeu de Psicologia*.
- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 14(4), 245-258. [https://doi.org/10.1016/S0749-3797\(98\)00017-8](https://doi.org/10.1016/S0749-3797(98)00017-8)

- Felitti, V., Anda, R., Nordenberg, D., Williamson, D., Spitz, A., Edwards, V., Koss, M., & Marks, J. (2019). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventive Medicine*, 56(6), 774–786. <https://doi.org/10.1016/j.amepre.2019.04.001>
- Green, P. (2020). Risks to children and young people during COVID-19 pandemic. *BMJ*, 369. <https://doi.org/10.1136/bmj.m1669>
- Hillis, S., Mercy, J., Amobi, A., & Kress, H. (2016). Global prevalence of past-year violence against children: a systematic review and minimum estimates. *Pediatrics*, 137(3).
- Karatekin, C. (2017). Adverse childhood experiences (ACEs), stress and mental health in college students. *Stress and Health*, 34(1), 36–45. <https://doi.org/10.1002/smi.2761>
- McManus, M., & Balls, E. (2020). COVID-19 should be considered an Adverse Childhood Experience (ACE). *Journal of Community Safety and Well-Being*, 5(4), 164-167. <https://doi.org/10.35502/jcswb.166>
- Mersky, J., Topitzes, J., & Reynolds, A. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse and Neglect*, 37(11), 917–925. <https://doi.org/10.1016/j.chiabu.2013.07.011>
- Riedl, D., Lampe, A., Exenberger, S., Nolte, T., Trawöger, I., & Beck, T. (2020). Prevalence of adverse childhood experiences (ACEs) and associated physical and mental health problems amongst hospital patients: Results from a cross-sectional study. *General Hospital Psychiatry*, 64, 80–86. <https://doi.org/10.1016/j.genhosppsych.2020.03.005>
- Struck, S., Stewart-Tufescu, A., Asmundson, A., Asmundson, G., & Afifi, T. (2021). Adverse childhood experiences (ACEs) research: A bibliometric analysis of publication trends over the first 20 years. *Child Abuse & Neglect*, 112. <https://doi.org/10.1016/j.chiabu.2020.104895>
- Turner, H., & Butler, M. (2003). Direct and indirect effects of childhood adversity on depressive symptoms in young adults. *Journal of Youth and Adolescence*, 32(2), 89-103. <https://doi.org/10.1023/A:1021853600645>

- World Health Organization (WHO). (2020a, January 28). *Adverse Childhood Experiences International Questionnaire (ACE-IQ)*. [https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-\(ace-iq\)](https://www.who.int/publications/m/item/adverse-childhood-experiences-international-questionnaire-(ace-iq))
- World Health Organization (WHO). (2020b, March 11). *WHO director-general's opening remarks at the media briefing on COVID-19*. <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020>
- World Health Organization (WHO). (2020c, June 18). *Global status report on preventing violence against children 2020*. <https://www.who.int/publications/i/item/9789240004191>
- Zafar, N., Naeem, M., Zehra, A., Muhammad, T., Sarfraz, M., Hamid, H., Enam, K., Moaz, M., Shah, B., Ishaque, S., Muhammad, N. (2021). Parenting practices, stressors and parental concerns during COVID-19 in Pakistan. *Child Abuse & Neglect*. <https://doi.org/10.1016/j.chiabu.2021.105393>

The Impact of ACEs on Mental Health and Suicidal Behaviors

Anexos

Journal of Child & Adolescent Trauma

The Impact of Adverse Childhood Experiences on Mental Health and Suicidal Behaviors: A Study from Portuguese Language Countries --Manuscript Draft--

Manuscript Number:	WCAT-D-22-00072
Full Title:	The Impact of Adverse Childhood Experiences on Mental Health and Suicidal Behaviors: A Study from Portuguese Language Countries
Article Type:	Original Research
Funding Information:	
Abstract:	<p>Background</p> <p>Research on adverse childhood experiences (ACEs) demonstrates that they can be associated with physical and mental health problems throughout the lifecourse. However, few studies have examined this topic in the Community of Portuguese Language Countries (CPLC).</p> <p>Objective</p> <p>This study aims to assess the impact of ACEs on mental health and suicidal behaviors in a sample of participants from the CPLC.</p> <p>Participants and Setting</p> <p>The sample consists of 1006 participants aged between 18 and 80 years (mean=41.76; SD=14.19).</p> <p>Methods</p> <p>This study used an online survey that included a sociodemographic questionnaire, the Brief Symptom Inventory-18 (BSI-18) to assess somatization, depression, and anxiety symptoms, and overall mental functioning, the Suicidal Behaviors Questionnaire-Revised (SBQ-R) to assess suicidal behaviors, and the Family Adverse Childhood Experiences Questionnaire to assess ACEs.</p> <p>Results</p> <p>Emotional abuse was the most reported ACE (32.7%). Participants from Brazil had higher levels of somatization, depression, anxiety, and suicide ideation and attempt, while participants from Portugal had a higher probability of suicide in the future. ACEs were strong and significant predictors of psychological symptoms and the likelihood of suicide in the future, with emotional abuse and emotional neglect being the domains with the greatest contribution, respectively.</p> <p>Conclusions</p> <p>ACEs are a prevalent and general phenomenon across several countries. It is urgent to alert policymakers and mental health professionals of the need to intervene with children and families to ensure their harmonious and adjusted development, thus promoting quality of life and well-being of populations.</p>
Corresponding Author:	Henrique Pereira University of Beira Interior Covilhã, PORTUGAL
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	University of Beira Interior
Corresponding Author's Secondary Institution:	

First Author:	Daniela Silveira
First Author Secondary Information:	
Order of Authors:	Daniela Silveira
	Henrique Pereira
Order of Authors Secondary Information:	
Author Comments:	N/A
Suggested Reviewers:	