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Covid-19 Lockdown Loneliness and Mental Health: The Mediating Role of Basic Need Satisfaction and the Moderating Role of Age

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This thesis is dedicated to my parents for their endless support, love and belief in me throughout this process.

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Resumo

A Covid-19 e as suas medidas de isolamento têm desafiado o bem-estar das pessoas e levado a uma variedade de problemas de saúde mental. Numerosos estudos foram realizados para compreender os efeitos das medidas de confinamento na saúde mental. Até à data, a maioria destes estudos não avaliam percursos psicológicos e efeitos condicionais. Este estudo visa acrescentar à literatura sobre o covid-19 e o seu impacto na saude mental, identificando variáveis mediadoras e moderadoras no processo psicológico. Com referência a teoria da autodeterminação e a teoria psicossocial do desenvolvimento, o presente estudo testou se a relação entre a solidão associada ao confinamento e a saude mental é mediada através da satisfação das necessidades psicológicas básicas (relação, autonomia e competência) e se as associações são exacerbadas para grupos etários mais jovens. Um total de 339 participantes completaram um inquérito anónimo na Internet durante o confinamento em Março de 2021. Os resultados corroboram uma ligação significativa entre a percepção de solidão e a saúde mental. Análises de mediação paralelas mostraram que a competência mediava consistentemente a ligação entre a solidão e a saúde mental no confinamento. As análises mediadas moderadas confirmaram que o caminho psicossocial se aplicava mais fortemente aos grupos etários jovens. Estas conclusões sublinham o factores sociais para a satisfação das necessidades de competência e saúde mental entre os mais jovens, em particular durante o confinamento em Portugal. Os resultados apontam também as medidas de prevenção no ensino superior para mitigar os efeitos nocivos que a exclusão social pode provocar.

Palavras-chave: Covid-19, saúde mental, solidão, necessidades psicológicas básicas, grupos etários

Códigos de Classificação da APA:

    3300 Saúde e Saúde Mental Tratamento e Prevenção

    3000 Psicologia Social

    2800 Psicologia do Desenvolvimento

x

Abstract

Covid-19 and its lockdown measures, including social distancing such as curfews, quarantines, and stay-at-home orders have uniquely challenged people's wellbeing and led to a variety of mental health problems. Numerous studies have been carried out to understand the effects of such lockdown measures on mental health. Yet, to date most of these studies do not assess psychological pathways and conditional effects. This study aims to add to the Covid-19 mental health literature by identifying relevant mediating and moderating variables. By drawing on self-determination theory and the psychosocial theory of development, the present study tested whether the relationship between lockdown loneliness and mental health is mediated via basic psychological needs satisfaction (relatedness, autonomy, and competence) and whether these associations are exacerbated for younger age groups. A total of 339 Portuguese residents completed an anonymous web-based survey during the Covid-19 lockdown in March 2021. The results corroborate a significant link between perceived loneliness and anxiety as well as depression. Parallel mediation analyses showed that competence consistently mediated the lockdown loneliness-mental health link. Moderated mediated analyses also confirmed that the psychosocial pathway applied most strongly to younger age groups. These findings highlight the role of social factors for competence need satisfaction and mental health among younger people and in particular during the Covid-19 lockdown in Portugal. The results also point to potential avenues for future prevention measures in tertiary education to mitigate the harmful effects that social exclusion can bring about.

Key words: Covid-19, mental health, loneliness, basic psychological needs, age groups

APA Classification Codes:

3300 Health & Mental Health Treatment & Prevention

3000 Social Psychology

2800 Developmental Psychology

Index

Index of Figures and Tables

Glossary of Acronyms

BPNSFS	New Basic Psychological Need Satisfaction and Frustration Scale
Covid-19	Coronavirus Disease 2019
DASS	Depression Anxiety Stress Scale
EADS	Escala De Ansiedade, Depressão e Stress
e.g.	Exempli gratia
H1, H2, H3	Hypothesis 1, hypothesis 2, hypothesis 3
i.e.	Id est
ISCTE	Instituto Universitário de Lisboa/ University Institute of Lisbon
MPIR	Master in Psychology of Intercultural Relations
SDT	Self Determination Theory
SES	Socioeconomic status
SPSS	Statistical Package for the Social Sciences
STADI	State-Trait-Anxiety-Depression Inventory
T1, 2, 3, …	Timepoint one, two, three, …
UCLA	UCLA Loneliness Scale
US	United States

CHAPTER 1

Introduction

Covid-19 and related interventions are often associated with lockdowns that uniquely affect the wellbeing of the entire population, leading to a staggering increase in mental health problems. For instance, 49.2% of the Portuguese population reported that the pandemic has led to severe mental health impairments (Paulino et al., 2021). Because lockdown measures significantly limited opportunities for social interaction, loneliness and related mental health problems were of particular concern. A meta-analysis that included 36 articles on pandemic-related mental health problems in the broader population demonstrated a high incidence of anxiety (31.9%) and depression [33.7% (Salari et al., 2020)]. The Harvard Gazette recently published an article stating that emerging adults were most affected by loneliness during the pandemic (Walsh, 2021). This assumption is based on a Harvard report that found 43% of young adults experience increased levels of pandemic-related loneliness and 63% of young people exhibit increased symptoms of anxiety or depression (Weissbourd et al., 2020). Emerging adults are particularly vulnerable to increased loneliness and related mental health problems during the Covid-19 pandemic because they are at a developmental stage in which they are especially dependent on social interactions to meet their basic psychological needs for relatedness, autonomy, and competence (Arnett, 2000; Erikson, 1968; Levinson, 1978; Neugarten et al., 1965).

Numerous studies have been carried out to understand the effects of Covid-19 lockdown measures on mental health (Costa et al., 2022; Dimmock et al., 2021). However, as research on this phenomenon is novel, most studies have not yet assessed psychological pathways and conditional effects nor is there sufficient cumulative research on the Portuguese context. This is an important research gap that limits the development of targeted prevention interventions in Portugal that could mitigate the harmful effects of loneliness perceptions within and outside of the Covid-19 context. Appropriate interventions to address loneliness are extremely important and can have a lasting impact on mental health. Therefore, this study aims to add to the Covid-19 mental health literature by identifying relevant mediating and moderating effects in the Portuguese context. This study investigates whether challenges to basic psychological needs for relatedness, autonomy, and competence, during the second hard lockdown in Portugal in March 2021, impacted the mental health of the Portuguese population and whether they were more harmful for younger people.

Numerous drastic measures were adopted by governments worldwide to reduce the rapidly increasing infections with the Sars-Covid virus (Helmich & Bloem, 2020). These measures comprised social distancing measures, including curfews, quarantines, and stay-at-home orders, commonly referred to as lockdown measures. Portugal experienced several pandemic waves: 1) In March 2020 the state of emergency was declared, which included the aforementioned measures as well as the closure of inessential businesses, schools, gatherings, and the restriction of movement and visiting of care facilities. This state of emergency was extended until May 2020 (República Portuguesa - XXII Governo, 2020); 2) From October to December 2020 a tiered approach was used with varying levels of severity based on each municipality's incidence rate; 3) Around Christmas 2020 these measures were repealed and infection rates increased sharply (Torres et al., 2022). In this third pandemic wave, from December 2020 to March 2021, Portugal recorded a 14-day incidence of 1,667 known cases of infection per 100,000 people. This led to a renewed nationwide hard lockdown. In addition, schools were closed to contain the severe overload on the healthcare system (Torres et al., 2022). The lockdowns in Portugal were characterized by a high compliance and adherence to the measures by the Portuguese population (Pinho et al., 2022; Santos et al., 2022). As a result, the high infection and mortality rates were controlled. This distinguished Portuguese lockdowns from lockdowns in other European countries. Due to the very high number of infections and the severity of the lockdown in March 2021, as well as the response of the Portuguese citizens, we are particularly interested in the third wave of the pandemic and its impact on the mental health of the Portuguese population.

CHAPTER 2

Theoretical Background

2.1. Loneliness and Mental Health

Social interactions are a central component of human existence, which may explain why difficult social relations, such as loneliness, have been particularly targeted by the academic community (Russell et al., 1980). There is a lot of research on the origins of loneliness and associated mental health problems. The first research emerged as early as the 1970s and laid the foundation for how loneliness is defined in psychological research (Peplau & Perlman, 1982; Perlman & Peplau, 1981; Sadler & Weiss, 1975; Smith, 2021). Over the course of time, especially two definitions have become established (Smith, 2021). Firstly, Sadler and Weiss (1975) differentiate between emotional and social aspects in their theory on types of loneliness (Smith, 2021). Emotional loneliness focuses on insecure or anxious attachment styles that can result in relationship anxiety, social isolation, and a lack of intimacy related to key attachment figures such as parents, partners, or friends. The social dimension of loneliness illustrates that people may feel bored, alienated, estranged, or frustrated in their social relationships. This manifestation of loneliness causes negative inner psychological states stemming from the dissatisfaction with social interactions (Sadler & Weiss, 1975; Smith, 2021). The second influential theory of loneliness by Peplau & Perlman (1981) acknowledges that loneliness occurs when an individual recognizes a discrepancy between the actual and the desired quality of contacts. In contrast to the first theory of loneliness (Sadler & Weiss, 1975), this theory emphasizes the subjectivity of the perception of loneliness (Peplau & Perlman, 1982; Perlman & Peplau, 1981). In other words, this means that individuals may feel lonely even though they have many contacts or may not be lonely even though they have only a few contacts (Holt-Lunstad et al., 2015). Due to the subjectivity of the concept of loneliness we refer to perceived loneliness in the scope of this paper. In addition, this study draws on the definition of Peplau and Perlman (1981) as it provides a valuable framework for understanding how perceived loneliness impacted the mental health of some individuals during the Portuguese Covid-19 pandemic, as all people were affected similarly by the lockdown measures but not all felt lonely.

While the lockdown measures described above were beneficial in reducing the rapidly increasing infection numbers, it has now also become evident that they had a detrimental effect on people's mental health. Loneliness perceptions and associated mental health problems were of particular concern during the pandemic (Macdonald & Hülür, 2021). Lockdown measures

significantly reduced the possibility to connect with colleagues, friends and relatives which may have enhanced pre-existing perceptions of loneliness or altered experiences of loneliness in individuals that had not been affected in the pre-pandemic context (Hoffart et al., 2022; Holmes et al., 2020). Emerging findings provide evidence for an increased prevalence of perceived loneliness during the Covid-19 pandemic (Buecker & Horstmann, 2021; Kovacs et al., 2021; Macdonald & Hülür, 2021). A recent meta-analysis, which included 34 longitudinal studies comparing perceived loneliness during the lockdown to pre Covid-19 loneliness levels, found that feelings of loneliness increased significantly during the pandemic (Ernst et al., 2022).

There is cumulative evidence that perceived loneliness is related to adverse mental health outcomes, such as anxiety and depression, outside the Covid-19 context (Heinrich & Gullone, 2006; Jackson & Cochran, 1991; Koenig et al., 1994; Mijuskovic, 1986; Nolen-Hoeksema & Ahrens, 2002; Weeks et al., 1980). One of the few longitudinal studies in the Portuguese context examined the mental health of 150 Portuguese participants by comparing pre- and post-pandemic mental health data and demonstrated that Covid-19 lockdown measures were linked to an increase in depressive symptoms, and a decrease in quality of life, which was associated with loneliness perceptions. Furthermore, the study revealed that perceived loneliness during the lockdown was significantly correlated with increased anxiety-related symptoms (Nogueira et al., 2021). These findings are in line with research from other countries supporting the association between perceived loneliness as a central predictor of depression and anxiety in the Covid-19 context (González-Sanguino et al., 2020a; Gozansky et al., 2021; Killgore et al., 2020). We therefore expect that:

> **H1**: Perceived loneliness is related to adverse mental health outcomes (anxiety and depression)

2.2.   The Mediating Role of Basic Need Satisfaction

Self-determination theory (SDT; Deci & Ryan, 2000) provides a framework to explain human motivation and suggests that the human organism is inherently proactive and growth-oriented. Humans aim to integrate their various psychological elements into a unified self-image and into social structures. The organismic-dialectical perspective of this theory implies that the environment must provide basic elements to enable organismic integration as well as the regulation of intrapsychic processes (Deci & Ryan, 2000).

Therefore, SDT assumes that people universally strive to satisfy their innate *basic psychological needs* for *autonomy* (the ability to act and choose freely the things one wants to do), *competence* (the ability to act effectively with one's environment and accomplish difficult tasks), and *relatedness* (the feeling of having meaningful connections to other people and the ability to develop interpersonal relationships) - needs that are critical to human psychological functioning and wellbeing in a variety of contexts (Deci & Ryan, 2000).

2.2.1 Perceived Loneliness and Basic Need Satisfaction

The proponents of STD assert that changes in the social context can affect the *satisfaction of basic psychological needs* (Deci & Ryan, 2012; Vansteenkiste & Ryan, 2013). Accordingly, the social environment can either hinder or facilitate the satisfaction of basic needs and thus determine whether optimal psychological functioning and wellbeing are facilitated (Guardia et al., 2000, 2000, 2008; Vansteenkiste & Ryan, 2013). For example, a facilitating environment may create a sense that social actors, such as professors, teachers, or supervisors, support the satisfaction of basic psychological needs (Behzadnia & FatahModares, 2020; Vansteenkiste & Ryan, 2013). As mentioned above basic psychological need satisfaction is related to the intrinsic motivation for integration into the social sphere. It can be inferred that meaningful social interactions are an important component for need satisfaction (Guardia et al., 2000).

Rudert et al. (2021) provide a social psychological review on the Covid-19 pandemic by describing facilitating and hindering factors to the satisfaction of basic psychological needs. They argue that perceived loneliness is a stressor to the satisfaction of the need for relatedness. Whereas stable social networks are seen as buffers for the satisfaction of all three needs during the pandemic (Rudert et al., 2021). There is little empirical evidence on the link between perceived loneliness and basic need satisfaction. However, a recent study from Italy including 1,344 participants assessed basic need satisfaction before (T1), during (T2) and after one month (T3) of lockdown in Italy and found a significant decrease of need satisfaction during and after one month of implemented lockdown measures (Costa et al., 2022). Furthermore, the study evaluated the longitudinal link between on- and offline social support, basic need satisfaction and anxiety. On- and offline support were measured using the translated Offline/Online Social Support Scale (Wang & Wang, 2013). Results demonstrated that both on- and offline social support were linked to increased satisfaction of all three basic psychological needs leading to reduced anxiety (Costa et al., 2022).

A longitudinal study during the Australian lockdown provides additional evidence for the link between on- and offline social interaction, basic need satisfaction, and wellbeing

(Dimmock et al., 2021). A total of 127 students aged 18 to 53 completed questionnaires at six measurement points from April to July of 2020. Basic need satisfaction was measured using the Basic Psychological Needs Satisfaction and Frustration Scale (Chen et al., 2015), wellbeing was measured by the Warwick Edinburgh Mental Wellbeing Scale (Clarke et al., 2011) and social interactions were measured using a scale specifically created for the study (Dimmock et al., 2021). Results indicated that autonomy satisfaction was a significant mediator in the relationship between offline interactions and wellbeing, while relatedness mediated the association between online interactions and wellbeing in the Covid-19 context (Dimmock et al., 2021).

It is noteworthy that scholars distinguish between the lack of satisfaction of needs and the frustration of these needs (Chen et al., 2015). The latter involves the active blocking and thwarting of needs, which may result in mental health issues (Chen et al., 2015; Vansteenkiste & Ryan, 2013). While other researchers have considered both need satisfaction and frustration in the context of the pandemic, we argue that the context of the pandemic did not actively block needs, but rather that people had fewer opportunities to satisfy their needs because the lockdown measures restricted an environment conducive to needs. Hence, in the context of this study, we refer to lack of need satisfaction or need dissatisfaction as affecting psychological wellbeing and functioning.

Building on SDT and the empirical evidence on the importance of social interactions and support for basic need satisfaction we expect that perceived loneliness is linked to reduced basic psychological need satisfaction (path a, see Figure 2.1).

2.2.2 Basic Need Satisfaction and Mental Health

Research has consistently shown that basic need satisfaction is a precondition for good mental health across different domains, such as health care and university contexts (Ng et al., 2012; Vansteenkiste et al., 2006). There is a growing research body replicating this link in the Covid-19 context (Cantarero et al., 2021; Levine et al., 2022; Schutte & Malouff, 2021; Schwinger et al., 2020; Vermote et al., 2022). For instance, Levine et al. (2022) used a cross-lagged-panel design to assess the relation between basic needs, negative affect, and depression in a Canadian sample ($N = 379$ students) during the Covid-19 pandemic. Results demonstrated that basic need dissatisfaction was a robust indicator for negative affect and depression over a one-year period (Levine et al., 2022). In an Australian study, including 340 participants, the satisfaction of all three basic needs was related to better mental health which was measured by lower anxiety and depression scores (Schutte & Malouff, 2021). Moreover, a large German Covid-19 study ($N =$

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1,086) examined the impact of reduced need satisfaction for autonomy and relatedness on mental health in the general population. The results showed that autonomy dissatisfaction in particular was associated with increased anxiety and depression. (Schwinger et al., 2020). Additionally, a Belgian longitudinal study including 835 participants and two assessment points (T1: baseline, and T2: 1-week follow-up), found that uncertainty perceptions during the lockdown, the dissatisfaction and frustration of basic psychological needs both separately led to increased anxiety and depression. Furthermore, the study found that basic psychological needs significantly mediated the association between feelings of uncertainty and mental health. The results highlight that the satisfaction of three basic needs are vital for human mental health in uncertain times such as the Covid-19 pandemic (Vermote et al., 2022).

This strongly suggests that the dissatisfaction of basic psychological needs is associated with adverse mental health outcomes (path b, see Figure 2.1). Past research assessing the role of basic need satisfaction and mental health in the Portuguese population has not yet tested a comprehensive model, including mediator and moderator variables. Thus, we aim to analyze the psychological pathways by assessing the mediating role of basic need satisfaction in the link between perceived loneliness and mental health in the Portuguese population during the March 2021 lockdown. Accordingly, we propose that:

> **H2:** Basic psychological need satisfaction (regarding relatedness, autonomy, and competence) mediates the relationship between perceived loneliness and mental health (anxiety and depression).

2.3   The Moderating Role of Age

As noted earlier, the organismic-dialectical perspective of SDT emphasizes the importance of the environment in providing basic elements (e.g., functioning social networks) so that wellbeing and psychological functioning can be attained. (Deci & Ryan, 2000). While theorists suggest that *basic need satisfaction* is essential for human wellbeing and functioning in all life stages, it is noteworthy that the possibilities of satisfying needs are closely related to development (Ryan & La Guardia, 2000). This includes, among other things, age-related changes in 1) internal resources and strategies and 2) social demands and support. Accordingly, these changes lead to different challenges in the fulfillment of needs (Ryan & La Guardia, 2000).

2.3.1   Age Effects for Perceived Loneliness and Basic Need Satisfaction

In his *psychosocial theory of development*, Erikson (1968) proposes that human life span development comprises eight developmental stages. Each stage is characterized by certain development tasks and crises, which must be solved before the next stage of development can be reached (Erikson, 1968). According to Erikson's theory, individuals in their adolescence and emerging adulthood are in a particularly important transitional stage. Adolescence is characterized by the identity crisis, in which the self is explored and slowly detached from its inherited family (Erikson, 1968). When this crisis is successfully resolved, the developmental stage of the emerging adulthood follows. This stage is described in the developmental psychology literature as the age range between 18 and 29 and was introduced because it is characterized by particular challenges and opportunities that differ from other stages such as adolescence and young adulthood (Arnett, 2004). Emerging adulthood is characterized by the crisis of intimacy, which is characterized by the pursuit of connections with others and establishing intimate relationships. Successfully overcoming this crisis leads to successful connectedness, whereas avoiding it can lead to a sense of loneliness. The psychological wellbeing of emerging adults depends on positive mastery of these crises (Erikson, 1968). Other life span development theorists also suggested that emerging adults are particularly focused on the development of social connections and intimate relationships (Arnett, 2000; Levinson, 1978; Neugarten et al., 1965). These social connections may have an impact in life span relatedness by providing a base for strong social networks throughout the entire adulthood (Arnett, 2000; Erikson, 1968; Levinson, 1978; Neugarten et al., 1965).

Looking at the importance of social connections in emerging adulthood, it becomes apparent that they are essential in the satisfaction of basic psychological needs. Indeed, emerging adulthood is dominated by the simultaneous development of autonomy and relatedness, which is essential for emerging adults' wellbeing (Arnett, 2001; Tesch-Rümer & Albert, 2018). Carstensen's (1993, 1998) *socioemotional selectivity theory* provides further explanation for the developmental changes in intention behind social interactions. The theory is based on the assumption that humans select their social interactions partially as a reflection of their developmental goals and needs throughout life (Carstensen, 1993, 1998). For emerging adults, social interactions are important for their competence and relatedness experiences, as social contact can fulfill an informational function, instrumental value and fulfill the need for relatedness (Ryan & La Guardia, 2000). Thus, it can be inferred that emerging adults partially select their social interactions to satisfy their developmental needs for relatedness, autonomy, and competence. Accordingly, we suggest that the association between perceived loneliness

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and basic need dissatisfaction is especially strong for emerging adults, as social connections are particularly important for young people's satisfaction of basic psychological needs (path a, see Figure 2.1).

2.3.2 Age Effects for Perceived Loneliness and Mental Health

Additionally, emerging adults are in a developmental stage in which they are particularly vulnerable to develop mental health problems such as anxiety and depression (Patten, 2017). A large research body confirms that emerging adults have been particularly affected to the experience of perceived loneliness, anxiety and depression during the Covid-19 pandemic (Ausín et al., 2022; Carson et al., 2020; Groarke et al., 2020; Luchetti et al., 2020; McDonald et al., 2022). For instance, a Spanish longitudinal study including 1,041 participants and two measurement points (after 2 and 5 weeks) during the first Covid-19 pandemic wave, found that young age was a predictor for depression and anxiety development during the lockdown (González-Sanguino et al., 2020b). Further longitudinal evidence from the US, including 564 emerging adults and two measurements (pre- and during pandemic), confirmed that the lockdown led to increased loneliness perceptions in young adults and that these perceptions were predictive of depressive symptoms (Lee et al., 2020). A large Canadian study, including 7,021 participants, confirmed this assumption by assessing age and gender effects on the association between loneliness and anxiety symptoms. The results corroborate that young age moderated the loneliness-anxiety link (McDonald et al., 2022). However, loneliness was operationalized using a single direct item, which limits the generalizability of these findings and might explain the found age effect. Anxiety was measured using the Generalized Anxiety Disorder-7 questionnaire (Spitzer et al., 2006).

2.3.3 Age Effects for Basic Need Satisfaction and Mental Health

Research has also shown that for young people, basic need satisfaction is related to mental health and wellbeing in different contexts (Emery et al., 2015; Eryilmaz, 2012; Tian et al., 2014). In a sample of 638 Chinese adolescents the direct and indirect effects of basic need satisfaction on depression during the pandemic was tested. All three basic needs were negatively related to depression. Furthermore, perceptions of security mediated the association between basic need satisfaction and depressive symptoms during the Chinese lockdown (Liu et al., 2022).

In addition, a cross-sectional study in the Portuguese population of 1,404 participants assessed, among other things, anxiety-related symptoms and satisfaction of basic psychological

needs during the first wave of the pandemic in April 2020 (Antunes et al., 2020). Anxiety was measured using the translated State-Trait Anxiety Inventory (Renner et al., 2016) and Basic Need Satisfaction was assessed by the Basic Need General Satisfaction Scale (Sousa et al., 2012). The aim of the study was to analyze gender and age-related differences in different variables. Results demonstrated age differences in anxiety and the satisfaction of the need for competence When comparing different age groups, the youngest group (18 to 34 years) demonstrated significantly lower satisfaction of the need for competence compared to older age groups (35 to 44 years, 45 to 54 years, 55 to 64 years) and higher anxiety scores when compared to all age groups (35 to 44 years, 45 to 54 years, 55 to 64 years, < 65). This strongly indicates that young age could be a potential moderator in the link between basic need satisfaction and mental health (Antunes et al., 2020). However, the study did not include an analysis of the association of basic need satisfaction, anxiety, and age, but only included bivariate associations, which limits the generalizability of these findings. The goal of our study is to overcome this methodological limitation by integrating all variables into a comprehensive model. Additionally, Antunes and colleagues (2020) study was conducted during a different timepoint of the pandemic, specifically during the first state of emergency, in April 2020. In contrast, our study is particularly interested in the third pandemic wave in March of 2021 as it was characterized by high infection rates and high compliance of the Portuguese population (Pinho et al., 2022; Santos et al., 2022; Torres et al., 2022).

Building on the *psychosocial theory of development* (Erikson, 1968) and drawing on the wealth of empirical evidence we suggest that perceived loneliness during the lockdown was more harmful for emerging adults mental health compared to older adults because they could not satisfy their basic needs while being in a life stage in which they are sensitive to a lack of needs satisfaction. Consequently, we developed the following hypothesis.

H3: Age moderates the direct and indirect relations between perceived loneliness and mental health in such a way that young age exacerbates these links.

## 2.4   The Present Study

Even though a few studies have demonstrated the impact of lockdown measures during the Covid-19 pandemic and their associations with mental health, research in this area is still underdeveloped (Schutte & Malouff, 2021; Vermote et al., 2022). In other countries, studies tested the mediating effect of basic need satisfaction in the relation between social interactions

and mental health (Costa et al., 2022; Dimmock et al., 2021). Additionally, the moderating effect of young age in the association between perceived loneliness and mental health has been tested in a Canadian sample (McDonald et al., 2022). However, as research on this phenomenon is novel, most studies have not yet assessed psychological pathways and conditional effects in the Portuguese population. This is an important research gap which limits the development of targeted prevention measures in Portugal that could mitigate the harmful effects of loneliness perceptions in and outside the Covid-19 context. It is of utmost importance to test the boundary conditions of the loneliness-mental health link, as appropriate interventions to combat loneliness are essential and can have a lasting impact on mental health. Portugal provides a particularly intriguing context, as the lockdowns were characterized by high compliance with the lockdown measures across the population (Pinho et al., 2022; Santos et al., 2022). Accordingly, the entire population was similarly affected by the measures.

Thus, the aim of the present study was two-fold: 1) To test whether basic need satisfaction would mediate the association between perceived loneliness and mental health in the Portuguese population, 2) to test whether the direct and indirect effect of the relation between loneliness perceptions and mental health would be moderated by age. Integrating these two aims, a moderated mediation model was tested (see Figure 1). The conditional model addresses both how perceived loneliness is linked to mental health (mediation model) and which conditional mechanisms underly its relationship (moderation).

Figure 2.1

Proposed Moderated Mediation Model Illustrating the Exacerbating Effect of Young Age on the Direct and Indirect Effect of Perceived Loneliness on Mental Health.
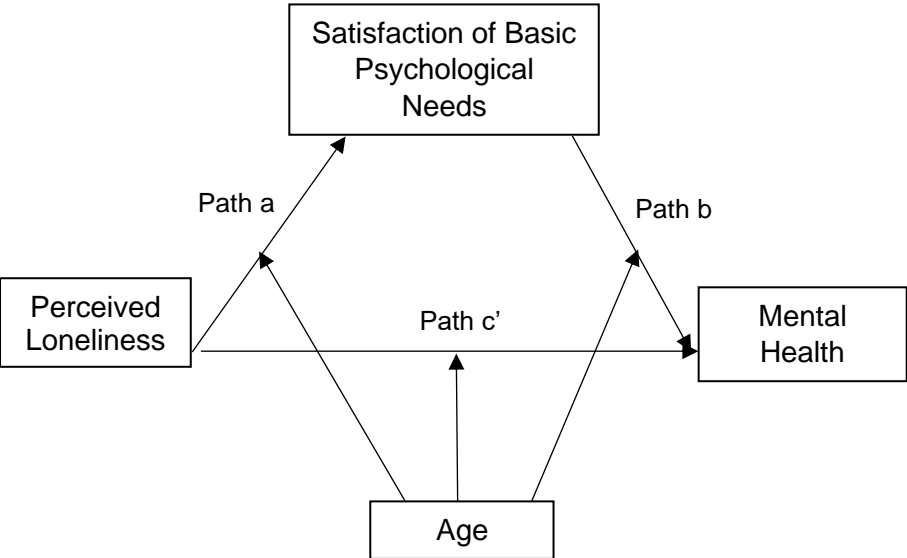
CHAPTER 3

Methods

3.1   Participants

As in a previous study (Williams & Lewis, 2019) we based our sample size on Fritz and MacKinnon's (2007) recommendations for mediation analysis which indicates that at least 116 participants are needed to detect a medium effect of $R^2 = .13$, taking an α of .05, power of .80. These recommendations were obtained from bias-corrected bootstrap resampling approaches (Fritz & MacKinnon, 2007; Williams & Lewis, 2019). In line with William and Lewis (2019) we derived our sample size for moderated mediation analyses based on the recommendations of Preacher, Rucker, and Hayes (2007). Here, at a minimum 200 participants are required to find a medium effect of $R^2 = .13$, with an α of .05 and power of .80 (Williams & Lewis, 2019). Consequently, our sample size of $N = 339$ exceeded the recommended sample size to achieve adequate power and to detect a medium effect for all our calculated models.

Data were collected among a convenience sample of 387 participants who were asked to complete an anonymous web-based survey. Participants took part from March 24th to April 12th, 2021. Participants had to be 1) at least 18 years old and 2) residents in Portugal during the second hard lockdown period in March 2021, to take part in this study. A total of 387 participants retrieved the survey, of which 12 participants did not meet these inclusion criteria. Additionally, 48 participants were excluded as they did not respond to any of the scales included in this analysis. Hence, the final sample included 339 participants.

Most of the participants were Portuguese (79 %, $n = 266$). The participants age ranged from 18 and 73 years old with a mean age of 28 ($SD = 11.87$, $Mdn = 22.00$). The age variable was right-skewed. A bit more than half of the sample, 63 % participants ($n = 214$), were women and 19 % ($n = 64$) were men while 18 % ($n = 61$) did not report their sex. Almost half of the participants (44 %, $n = 152$) had a completed secondary education, 26 % ($n = 87$) had a higher education degree or equivalent, 9 % ($n = 32$) had a master's degree or equivalent, 3 % ($n = 10$) did not complete secondary education and 17 % ($n = 58$) did not report their education. Regarding occupational status, 42 % ($n = 141$) were students, 24 % ($n = 80$) were workers, 7 % ($n = 23$) were working and studying simultaneously, 6 % ($n = 19$) reported that they were unemployed, while 2 % ($n = 6$) were in lay-off and 1 % ($n = 4$) were retired. Finally, 2 % ($n = 8$) indicated "other" as occupational status and 17 % ($n = 58$) individuals did not report their status. Furthermore, the participants' socioeconomic status (SES) was measured on a 7-point

Likert scale (ranging from 1= *far below average* to 7= *far above average*). The mean SES was 4.30 (*SD* = 1.07), which corresponds to an average standard of living.

3.2   Procedure

We obtained ethical approval for this study from ISCTE´s ethical committee (approval nr. 75/2021). Participants were recruited via personal contacts and social media outlets by posting a survey link. We used an anonymous, web-based survey which was administered via Qualtrics. Participants were asked to fill in the questionnaire after giving informed consent (see Annex A for informed consent used in this study). Furthermore, participants were informed about the anonymity of their data. All measures and instructions were given in Portuguese. Scales that were originally in English were translated into Portuguese using the committee approach with a group of bilingual research assistants. The survey took about 10 to 15 minutes to answer. Upon completion, participants were debriefed and thanked, and the focus of the study was explained (see Annex C for the debriefing used in this study). Further resources were provided to access in case participants wanted to gather more information about mental health support during the pandemic or to provide comments. Additionally, the principal researcher´s contact information was shared.

3.3   Materials and Measures

This study was part of a larger project in which a survey was administered with several scales related to wellbeing during the Covid-19 pandemic (see Annex B for the Covid-19 Mental Wellbeing Survey). The following measures were included in the analysis of the present study.

3.3.1   Demographics

The following sociodemographic information were assessed using self-report measures: Gender, age, nationality, time living in Portugal, occupation, education, socioeconomic status, religious affiliation, faith, religion, and civil status.

3.3.2   The UCLA Loneliness Scale

The validated self-report measure [UCLA (Russell et al, 1978)] was used in this study to assess perceived loneliness during the March 2021 lockdown in Portugal. In this study perceived loneliness is operationalized as the subjective feeling of a discrepancy between the desired and actual state of social contacts which has an emotional state character and is based on the

conceptual framework of loneliness provided by Perlman and Peplau (1981). The UCLA is the most widespread measure to assess multiple facets of loneliness including loneliness as an affective state (Allen & Oshagan, 1995; Hartshorne, 1993). The validated Portuguese version [UCLA-16-Escala de Solidão (Pocinho et al., 2010)] was used in this study consisting of 9-items that can be answered on a four-point Likert scale (ranging from 0 = *I have never felt this way* to 3 = *I have frequently felt that way*). An example item is: "There is no one I can turn to". The UCLA-16 demonstrated excellent internal consistency of .91 in the original study and has demonstrated concurrent, predictive and construct validity and correlates significantly with other known loneliness measures (Russell et al., 1980). In the current sample, the estimated Cronbach's Alpha was excellent (α = .89).

3.3.3 New Basic Psychological Need Satisfaction and Frustration Scale

The New Basic Psychological Need Satisfaction and Frustration Scale [BPNSFS; (Poprawa et al., 2020)] was used in this study to assess the satisfaction of the need of autonomy, competence, and relatedness. The Portuguese version of the BPNSFS [translated version (Cordeiro et al., 2016)] comprises 12 items. Responses were given on a five-point Likert scale (ranging from 1= *completely false* to 5= *completely true*). The items are grouped into three subscales measuring the Basic Psychological need satisfaction with three types of needs: 1) relatedness (four items), 2) autonomy (four items) and 3) competence (four items). All items related to need frustration were removed because frustration of needs is a matter of actively blocking the satisfaction of needs. However, in the pandemic, needs were not actively blocked, but the context did not allow the needs to be satisfied. For this reason, there was a lack of need satisfaction and no active need frustration (Chen et al., 2015). The distinction can be exemplified by the measurement of relatedness. An example item for relatedness satisfaction is: "I feel that the people I care about also care about me." While need frustration, implements an active blocking component, for example: "Sometimes I feel a bit rejected by others". In our study examples of items include: "I feel that the people I care about also care about me" (relatedness), "I feel that I have been doing the things that really interest me." (autonomy), "I feel confident that I can do things well" (competence). Higher scores on these measures indicate greater perceived relatedness autonomy, and competence. The item "I feel a sense of choice and freedom in the things I undertake" was removed from the autonomy subscale as it demonstrated poor internal consistency (α = 0.57). After removing the item, the internal consistency for the subscales in this study ranged from acceptable to good (relatedness α = 0.82; autonomy α = 0.67; and competence α = 0.84).

3.3.4 Depression Anxiety Stress Scale

The Portuguese version of the Depression, Anxiety and Stress Scale [DASS; (Lovibond & Lovibond, 1995)] was used in this study to assess anxiety and depression symptoms during the lockdown [translated version: Escala De Ansiedade, Depressão e Stress; EADS (Pais-Ribeiro et al., 2004)]. The short version of the validated self-report measure consists of 21-items that are separated into three subscales: 1) Anxiety (7 items), 2) depression (7 items) and 3) stress (7 items). In this study we only integrated the first two subscales (14 items) to measure experiences of anxiety and depression due to perceived loneliness. Responses can be given on a four-point Likert scale (ranging from 0= *did not apply to me* to 3= *applied to me most of the time)*. Based on the tripartite model, anxiety and depression partially overlap and differ (Clark & Watson, 1991; Renner et al., 2016). A complete representation of the outcome variables is only possible if both the overlap domain and the specifics are included in the operationalization. The overlap domain is expressed in states of negative affectivity. In depression, this is referred to as dysthymia; in anxiety, it manifests as worry. Furthermore, specific to anxiety are physical hyperarousal, whereas specific to depression is the lack of positive affect, called anhedonia (Clark & Watson, 1991). For this reason, items from both areas are included in the operationalization of the present study. Examples of items include: "My mouth felt dry." (Anxiety-physical hyperarousal), "I worried about situations where I might panic and make myself look ridiculous." (Anxiety-worry), "I couldn't feel any positive feelings." (Depression-anhedonia) and "I felt discouraged and melancholic." (Depression-dysthymia). In this sample, the estimated Cronbach's Alpha ranged from good to excellent (anxiety $\alpha = 0.86$; depression $\alpha = 0.91$).

3.4 Control Variables

Research suggests that experiences of the lockdown have been worse for women which is why we incorporated gender as a covariate (Antunes et al., 2020). Additionally, general subjective wellbeing has been found to negatively correlate with anxiety, and depression (Gargiulo & Stokes, 2009; Yilmaz & Arslan, 2013). Thus, we incorporated gender and general subjective wellbeing as covariates in all our analysis.

General subjective wellbeing was measured in this study using two items from the European Social Survey. The items asked for participants general happiness and general satisfaction with life before the pandemic. Responses were given on a six-point Likert scale (ranging from 0= *extremely unhappy/ unsatisfied* to 5= *extremely happy/ satisfied).*

3.5   Data Analytic Plan

To test our hypothesis, we used SPSS PROCESS macro (version 4.0) by Hayes (2013). PROCESS is a program providing a conditional path analysis function. The macro can calculate total, direct, indirect (mediation models) as well as conditional indirect effects [moderated mediation models (Hayes, 2013; Mach et al., 2022)]. We tested our first and second hypothesis by conducting a mediation analysis. To do this, we used Hayes (2013) model 4 of the PROCESS Macro. To test the third hypothesis, we calculated a moderated mediation using Hayes (2013) model 59 of the PROCESS Macro. We performed all of our calculations using 5,000 bootstrap resampling and 95% bias-corrected confidence intervals (Hayes, 2013; Williams & Lewis, 2019). Significant effects were established in the present sample by examining the 95 % confidence intervals. If the confidence intervals for the direct and indirect effects did not include zero, a significant effect was identified (Hayes, 2013).

Results

4.1   Preliminary Results

A summary of means, standard deviations, variable range, internal consistency and intercorrelations for the main study variables is provided in Table 4.1. Significant correlations could be found between the main variables of the hypothesized model. For example, perceived loneliness was negatively and significantly correlated with all three basic psychological need subscales: Need for relatedness ($r = -.42$, $p < .001$) autonomy ($r = -.21$, $p < .001$), and competence ($r = -.24$, $p < .001$). Furthermore, perceived loneliness was positively correlated with depression ($r = .59$, $p < .001$), and anxiety ($r = .48$, $p < .001$), which suggests that hypothesis 1 can be accepted.

4.2   The Mediating Role of Basic Need Satisfaction

To test hypothesis 1 and 2, we calculated a parallel mediation analysis using Model 4 of the SPSS Macro PROCESS (Hayes, 2013). We entered general subjective wellbeing and gender as covariates in all our analysis. However, gender was consistently a non-significant covariate. Thus, we re-ran all models where we only entered subjective wellbeing as a covariate.

In order to verify hypothesis 1, we examined the total effect in the mediation model when taking into account the covariate general subjective wellbeing and found that perceived loneliness was significantly related to anxiety ($B = .420$, $SE = .047$, 95 % CI [.327, .513]) and depression ($B = .573$, $SE = .049$, 95 % CI [.477, .668]) therefore supporting our first hypothesis (see Table 4.2).

To confirm hypothesis 2, we tested the satisfaction of three basic psychological needs (for autonomy, relatedness, and competence) as mediators in the relationship between loneliness perceptions and mental health. While all three mediators could be entered simultaneously, we calculated two separate models for each of the mental health outcomes (anxiety and depression).

Perceived loneliness was positively and significantly related to anxiety ($B = .390$, $t = 108$, $p < .001$), and depression ($B = .498$, $t = 10.704$, $p < .001$). Perceived loneliness also had a negative and significant effect on all three basic needs: Relatedness ($B = -.390$, $t = -6.930$, $p < .001$), autonomy ($B = -.190$, $t = -3.080$, $p = .002$), and competence ($B = -.227$, $t = -3.517$, $p = .001$). In turn, competence predicted significantly and negatively both anxiety ($B = -.319$, $SE = .054$, 95 % CI [-.424, -.213]) and depression ($B = -.096$, $SE = .029$, 95 % CI [-.153, -.038])

while relatedness and autonomy did not have a significant effect on either mental health outcome.

Furthermore, as can be seen in Table 4.2, there was a significant indirect effect of perceived loneliness on anxiety (B = .072, SE = .026, 95% CI [.026, .127]), and depressive symptoms (B = .066, SE = .022, 95 % CI [.025, .114]), via need for competence satisfaction. Yet, relatedness satisfaction did not significantly mediate the relationship between perceived loneliness and mental health. Other significant indirect effects only emerged in the case of autonomy mediating perceived loneliness and depressive symptoms (B = .022, SE = .013, 95 % CI [.001, .052]), but not anxiety (see table 4.2).

The mediation analysis results exemplified above supported our second hypothesis that basic need satisfaction significantly mediates the relationship between perceived loneliness and mental health. Perceived loneliness had a robust indirect effect on mental health via need for competence satisfaction, but not via relatedness satisfaction while autonomy only mediated the relationship between perceived loneliness and depression. Relatedness did not significantly mediate any other perceived loneliness and mental health associations.

Table 4.1

Descriptives and Bivariate Correlations Among All Main Study Variables

	Variables	*M*	*SD*	*Range*	α	1	2	3	4	5	6	7	8
1	Perceived Loneliness	1.25	0.74	0-3	0.89	—	-.42***	-.21***	-.24***	.48***	.59***	-.19**	-.23***
2	Relatedness	4.07	0.79	1-5	0.82		—	.51***	.47***	-.26***	-.42***	.16**	.32***
3	Autonomy	3.70	0.77	1-5	0.67			—	.69***	-.23***	-.45***	.17**	.22***
4	Competence	3.8	0.81	1-5	0.84				—	-.41***	-.52***	.31***	.22***
5	Anxiety	0.70	0.66	0-3	0.86					—	.69***	-.29***	-.23***
6	Depression	0.98	0.76	0-3	0.91						—	-.33***	-.34***
7	Age	27.48	11.87	18-73	-							—	.01
8	General subjective wellbeing	3.94	1.11	0-6	-								—

Note. N = 274, *M* = Mean; *SD* = standard deviation, α = Cronbach's alpha. *p < 0.05, **p <.01, ***p <.001

Table 4.2

Total, Direct and Indirect Effects of Perceived Loneliness on Mental Health via Basic Need Satisfaction

	Relatedness (M1)			Autonomy (M2)			Competence (M3)			Anxiety (Y1)			Depression (Y2)		
	Coefficient	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*
Covariate (Wellbeing)	**.171*****	.037	[.098, .244]	**.135****	.041	[.055, .215]	**.113****	.042	[.030, .197]	**-.062***	.030	[-.122, -.002]	**-.096****	.029	[-.153, -.038]
X (Loneliness)	**-.390*****	.056	[-.501, -.280]	**-.190****	.062	[-.311, -.069]	**-.227****	.064	[-.353, -.100]	**.390*****	.048	[.295, .485]	**.498*****	.047	[.407, .590]
M1 (Relatedness)	-	-	-	-	-	-	-	-	-	.066	.053	[-.039, .171]	.034	.051	[-.067, .136]
M2 (Autonomy)	-	-	-	-	-	-	-	-	-	.087	.058	[-.027, .200]	**-.114***	.056	[-.223, -.004]
M3 (Competence)	-	-	-	-	-	-	-	-	-	**-.319*****	.054	[-.424, -.213]	**-.096*****	.029	[-.153, -.038]
Constant	**3.886*****	.181	[3.530, 4.242]	**3.389*****	.198	[2.999, 3.779]	**3.627*****	.207	[3.220, 4.034]	**1.079*****	.248	[.590, 1.568]	**2.117*****	.240	[1.644, 2.590]
F	44.439*** (2, 281)			13.381*** (2, 281)			12.631 *** (2, 281)			30.834*** (5, 278)			65.188*** (5, 278)		
R²	.240			.087			.082			.357			.540		

Total, direct, and indirect effects of X on Y

	Anxiety (Y1)			Depression (Y2)		
	Boot effect	*Boot SE*	*Bias-correlated & accelerated CI*	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*
Total effect of X on Y	**.420**	.047	**[.327, .513]**	**.573**	.049	**[.477,.668]**
Direct effect of X on Y	**.390**	.048	**[.295, .485]**	**.498**	.047	**[.407, .590]**
Indirect effect of X on Y through **relatedness**	-.026	.020	[-.066, .011]	-.013	.023	[-.062, .031]
Indirect effect of X on Y through **autonomy**	-.016	.012	[-.045, .003]	**.022**	.013	**[.001, .052]**
Indirect effect of X on Y through **competence**	**.072**	.026	**[.026, .127]**	**.066**	.022	**[.025, .114]**

Note. *N* = 284. X = Independent variable; Y = Dependent variable, M = Mediator; *SE* = Standard error; *CI* = Confidence interval. *CI*s not containing zero are interpreted as significant. Variables were mean centered prior to the analyses. Analyses were run separately for each dependent variable. The control variable included as covariate was always general subjective wellbeing. Results are based on 5,000 bootstrap samples. *p < .05. **p < .01. ***p < .001.

4.3 The Moderating Effect of Age

According to our hypotheses 3, we expected participant age to be a boundary condition for the psychosocial pathway linking perceived loneliness during lockdown to mental health. To evaluate the moderated mediation, we estimated the moderating effect of age on 1) the relation between perceived loneliness and mental health (path c'); the relation between perceived loneliness and basic need satisfaction (path a); and the relation between basic need satisfaction and mental health (path b). To do so we used the PROCESS macro model number 59 [Figure 4.1, (Hayes, 2013)]. All three mediators were entered simultaneously in the model. However, we calculated two separate models for each mental health outcome (anxiety, and depression). Additionally, we controlled for general subjective wellbeing.

Table 4.3 demonstrates the results for the moderated mediation. The conditional direct and indirect effects were evaluated at the 16th, 50th and 84th percentiles of age due to the right-skewed distribution of the age variable. Based on developmental psychology literature, the 16th (age of 20) and 50th (age of 22) percentiles fall into the age range of emerging adults (ranging from age 18 to 29), whereas the 86th (age of 40) percentile represents middle aged adulthood (Arnett, 2004).

Age did not significantly moderate the link between perceived loneliness and mental health outcomes indicating that participants who felt lonely also felt more anxious and depressed and this was independent of age. Hence, the direct effect was not significantly moderated by age. Yet, the results also showed that the link between perceived loneliness and competence satisfaction was significantly moderated by age ($B = .011$, $SE = .005$, 95 % CI [<.001, .021]). A plot of this interaction effect is shown in Figure 4.1.

We further probed into this moderated mediation by conducting a simple slope analysis, which demonstrated that the effect of loneliness on competence was significantly negative for the 16th percentile ($B = -.249$, $SE = .074$, $p = .001$, 95 % CI [-.394, -.104]) and 50th percentile ($B = -.228$, $SE = .069$, $p = .001$, 95 % CI [-.364, -.092]). Yet, for middle-aged participants, there was no significant link between perceived loneliness and competence. We also investigated this by using the Johnson-Neyman-technique which indicated that the effect of perceived loneliness on competence was significant and negative for participants below the age of 32.

Figure 4.1

Competence as a Function of Loneliness and Age. Functions Are Graphed for Three Levels of Age: 16th, 50th and 84th Percentiles
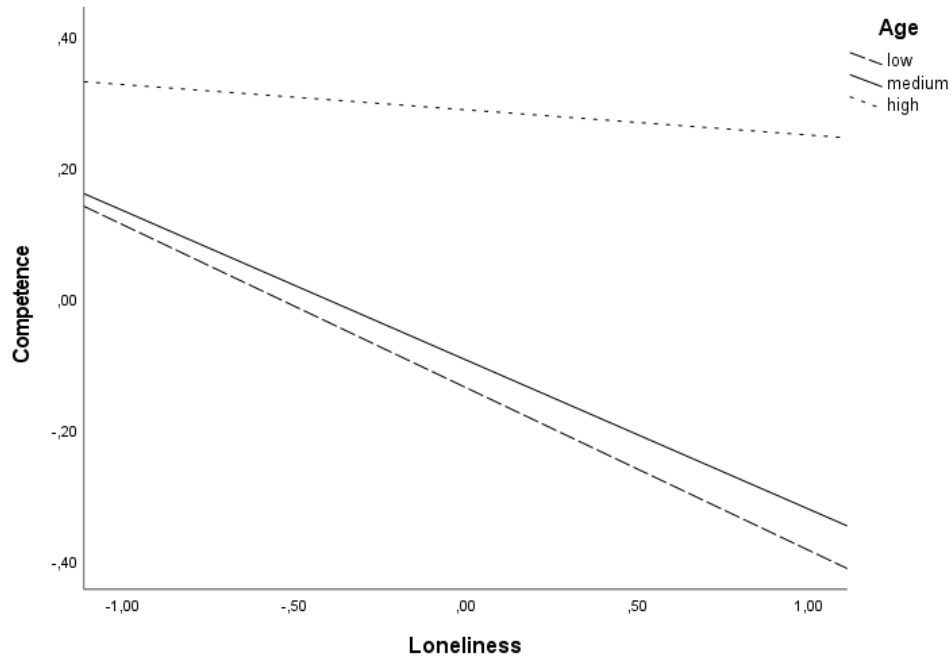
Further, the results of the bias-corrected percentile bootstrap underscored that the indirect effect of competence on the relation between perceived loneliness and anxiety was significant only at the 16th percentile (*B* = .073, *SE* = .030, 95 % *CI* [.023, .139] and 50th percentile of age (*B* = .065, *SE* = .026, 95 % *CI* [.019, .123], but not the 84th percentile of age (*B* = .008, *SE* = .017, 95 % *CI* [-.025, .044]; see table 4.3). This was confirmed also for the indirect effect on depression (16th percentile: *B* = .068, *SE* = .028, 95 % *CI* [.022, .129]; 50th percentile: *B* = .058, *SE* = .024, 95 % *CI* [.018, .110]). The indirect effect of perceived loneliness on mental health via autonomy and relatedness was not moderated by age since the 95% confidence intervals contained zero.

In sum, this study supports the moderated mediation hypothesis (hypothesis 3) regarding competence needs, but not regarding autonomy and relatedness needs. The results indicate that younger people, in particular, suffered from mental health issues during the lockdown because they felt lonely which can be explained with their perceptions of impaired competence.

Table 4.3

Moderated Mediation Model at Values of the Moderator Age.

	Relatedness (M1)			Autonomy (M2)			Competence (M3)			Anxiety (Y1)			Depression (Y2)		
	Coefficient	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*	*Coefficient*	*SE*	*Boot CI*
Covariate (Wellbeing)	**.171*****	.037	[.097, .244]	**.131****	.041	[.051, .211]	**.127****	.041	[.047, .208]	**-.073***	.030	[-.133, -.014]	**-.111*****	.029	[-.169, -.054]
X (Loneliness)	**-.366*****	.058	[-.480, - .251]	**-.142***	.063	[-.266, - .017]	**-.172***	.064	[-.298, -.047]	**.369*****	.049	[.272, .465]	**.470*****	.047	[.377, .563]
X*W	.007	.005	[-.003, .016]	-.005	.005	[-.015, .006]	**.011***	.005	[<.001, 021]	-.004	.004	[-.103, .004]	-.001	.004	[-.009, .007]
M1*W	-	-	-	-	-	-	-	-	-	.002	.005	[-.008, .011]	<.001	.005	[-.009, .007]
M2*W	-	-	-	-	-	-	-	-	-	.006	.006	[-.008, .016]	.004	.006	[-.008, .016]
M3*W	-	-	-	-	-	-	-	-	-	.004	.006	[-.008, .016]	.010	.006	[-.002, .021]
W (Age)	.006	.004	[-.001, .014]	.007	.004	[-.001, .015]	**.021*****	.004	[.013, .029]	**-.012****	.004	[-.019, - .004]	**-.014*****	.004	[-.022, -.007]
M1 Relatedness	-	-	-	-	-	-	-	-	-	.085	.053	[-.020, .190]	.048	.051	[-.053, .149]
M2 Autonomy	-	-	-	-	-	-	-	-	-	.069	.61	[-.051, .189]	**-.143***	.059	[-.258, -.028]
M3 Competence	-	-	-	-	-	-	-	-	-	**-.263*****	.061	[-.383, - .143]	**-.205****	.059	[-.320, -.089]
Constant	-.658***	.152	[-.956, - .359]	**-.522****	.165	[-.847, - .197]	-.482**	.166	[-.808, - .155]	.972***	.123	[.729, 1.214]	1.391***	.118	[1.158, 1.624]
F	21.573*** (4, 273)			7.134 *** (4, 273)			13.852 *** (4, 273)			17,032*** (10, 267)			34,763*** (10, 267)		
R²	.240			.095			.169			.389			.566		

Table 4.3 (cont')

	Conditional direct effect					
	Anxiety (Y1)			Depression (Y2)		
W (Age)	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*
16th percentile	**.399*****	.058	**[.285, .513]**	**.479*****	.056	**[.370, .589]**
50th percentile	**.391*****	.054	**[.285, .497]**	**.477*****	.052	**[.375, .579]**
84th percentile	**.315*****	.074	**[.170, .461]**	**.455*****	.071	**[.315, .594]**

Conditional indirect direct effect of loneliness on mental health through **relatedness** satisfaction at values of the moderator

	Anxiety (Y1)			Depression (Y2)		
W (Age)	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*
16th percentile	-.030	.025	[-.082, .018]	-.021	.030	[-.084, .036]
50th percentile	-.030	.023	[-.077, .018]	-.020	.027	[-.077, .033]
84th percentile	-.030	.017	[-.068, <.001]	-.012	.020	[-.056, .028]

Conditional indirect direct effect of loneliness on mental health through **autonomy** satisfaction at values of the moderator

	Anxiety (Y1)			Depression (Y2)		
W (Age)	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*
16th percentile	-.003	.009	[-.024, .014]	-.018	.016	[-.007, .056]
50th percentile	-.005	.009	[-.026, .011]	-.019	.015	[-.004, .054]
84th percentile	-.028	.026	[-.094, .004]	-.018	.020	[-.019, .062]

Conditional indirect direct effect of loneliness on mental health through **competence** satisfaction at values of the moderator

	Anxiety (Y1)			Depression (Y2)		
W (Age)	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*	*Boot effect*	*Boot SE*	*Bias-correlated & accelerated CI*
16th percentile	**.073**	.030	**[.023, .139]**	**.068**	.028	**[.022, .129]**
50th percentile	**.065**	.026	**[.019, .123]**	**.058**	.024	**[.018, .110]**
84th percentile	.008	.017	[-.025, .044]	.003	.010	[-.014, .026]

Note. $N = 278$. X = Independent variable; Y = Dependent variable; M = Mediator; W = Moderator; *SE* = Standard error. *CI* = Confidence interval. *CI*s not containing zero are interpreted as significant. Variables were mean centered prior to the analyses. Analyses were run separately for each dependent variable. The control variable included as covariate was always general subjective wellbeing. Values for quantitative moderators are the 16th, 50th and 84th percentiles. Results are based on 5,000 bootstrap samples. *p < .05. **p < .01. ***p < .001.

CHAPTER 5

Discussion

This study aimed to add to the literature by examining psychological pathways and boundary conditions for the link between perceived loneliness and mental health during the Covid-19 pandemic. Drawing on *self-determination theory* (Deci & Ryan, 2000) and *psychosocial development theory* (Erikson, 1968), we tested whether the satisfaction of basic psychological needs for relatedness, autonomy and competence mediated the relation between perceived loneliness and mental health, indicated by symptoms of anxiety and depression, during the second hard lockdown in March 2021 in Portugal. We also investigated the moderating role of age on the direct and indirect effects, exacerbated among younger age groups.

The results revealed that perceived loneliness during the lockdown is significantly and positively related to anxiety and depression, which supports our first hypothesis. These findings are in line with several studies in the Covid-19 context demonstrating that increased loneliness perceptions during the pandemic result in adverse mental health issues in different countries (González-Sanguino et al., 2020a; Gozansky et al., 2021; Killgore et al., 2020). Our findings highlight that lockdown measures during the third pandemic wave in Portugal had a detrimental effect on people's mental health by reducing possibilities to connect with colleagues, friends and relatives which may have altered pre-existing loneliness perceptions or even affected individuals that did not experience loneliness before the pandemic (Hoffart et al., 2022; Holmes et al., 2020). In this regard, the results underline the need for interventions targeting loneliness.

Based on SDT, we hypothesized that the satisfaction of all three basic psychological needs (relatedness, autonomy and competence) would mediate the relation between perceived loneliness and mental health. However, contrary to a large research body clearly indicating the proposed associations (Costa et al., 2022; Schutte & Malouff, 2021; Vermote et al., 2022), our results corroborated that only competence was a consistent mediator in the relation between loneliness perceptions and mental health. Autonomy only mediated the relation between perceived loneliness and depression and relatedness was not a significant mediator in any of the tested models.

The satisfaction of competence needs has already been shown to be an important factor for mental health during the Covid-19 pandemic in several studies including different samples, such as university students, people with disabilities and the Portuguese general population

(Antunes et al., 2020; Bentzen et al., 2021; Holzer et al., 2021). The findings from our study point to the importance of social interactions for the satisfaction of competence needs, for example the feeling of being able to act effectively with one's environment and to cope with difficult tasks (Deci & Ryan, 2000). It is conceivable that changes in the social context as triggered by the lockdown measures affected the satisfaction of competence needs, because social actors, such as professors, teachers, and supervisors, were not able to facilitate the satisfaction of this need (Guardia et al., 2000, 2008; Vansteenkiste & Ryan, 2013). Other research has also demonstrated that social support during the pandemic is associated with competence satisfaction which in turn enhanced participants´ sense of control and helped them to manage stress (Zhou & Yao, 2020). Hence, it can be suggested that social support creates conditions that make people feel in control and able to cope with difficult situations such as lockdowns (Bentzen et al., 2021). On the other hand, if people experience loneliness, competence needs are not met which can then reinforce the feeling that difficult tasks cannot be mastered. This may result in increased fear of failure, worry, and doubts about one's abilities (Deci & Ryan, 2000). Future lockdowns or further preventive measures against mental health problems resulting from lockdowns in the Portuguese population should be designed in a way that maintains or creates new opportunities for social interaction that particularly enhance citizens' sense of competence, therefore, allowing for optimal psychological functioning and wellbeing.

Interestingly, the satisfaction of the need for relatedness was less important for the mental health of the Portuguese population during the Covid 19 pandemic. Contrary to our expectations, relatedness satisfaction did not significantly mediate the perceived loneliness-mental health link. These results seem to be contradicting other studies, which found all three needs to be associated with mental health in the Covid-19 context (Levine et al., 2022; Schutte & Malouff, 2021; Vermote et al., 2022). One possible explanation for our findings may be that many people found other ways to satisfy their relatedness needs, for example, through quarantining with family members or via online contact. Indeed, research found that online support was connected to increased basic need satisfaction and in turn reduced mental health issues in the Covid-19 context (Costa et al., 2022). This explanation is also supported by the results of Schwinger et al. (2020) who found that changes in relatedness need satisfaction only had a small effect on associated mental health problems during the lockdown. Another study demonstrated that feelings of relatedness satisfaction even increased during the pandemic (Cantarero et al., 2021). Thus, loneliness perceptions during the lockdown did not affect the

satisfaction of the need for relatedness as people found other ways to stay in contact and feel connected to others (Costa et al., 2022).

Also somewhat surprisingly, autonomy mediated the relation between perceived loneliness and depression, but not anxiety. In other words, perceived loneliness during the Covid-19 lockdown measures restricted individuals´ sense of autonomy which in turn led to depressive, but not to anxiety-related symptoms. This contradicts previous findings, where autonomy was predicting both depression and anxiety in the pandemic context (Schwinger et al., 2020; Vermote et al., 2022).

A possible explanation for these results can be seen in the different operationalization of the outcome variables depression and anxiety in these studies compared to ours. To this end, it is important to understand the conceptual differences and similarities between depression and anxiety (Eysenck & Fajkowska, 2018). In accordance with the tripartite model (Clark & Watson, 1991), anxiety and depression can be described by three sets of symptoms: 1) negative affect, 2) positive affect, and 3) physiological hyperarousal. As previously described, the model allows to highlight the overlapping as well as distinct symptoms of anxiety and depression (Clark & Watson, 1991; Renner et al., 2016). Both variables contain a component of negative affect. In depression, this negative affect is referred to as dysthymia; in anxiety, it is referred to as worry. In addition, depression and anxiety also differ from one another (Clark & Watson, 1991). For example, physical hyperarousal is specific to anxiety and the absence of positive affect, called anhedonia, is specific to depression. A complete representation of the outcome variables is only possible if all three sets of symptoms including the overlap domain and the specifics, are included in the operationalization (Clark & Watson, 1991; Renner et al., 2016). While the other two studies used the negative affect subscales (dysthymia and worry) of the State-Trait-Anxiety-Depression Inventory [STADI; (Renner et al., 2016)] to assess depression and anxiety, our study additionally included items specific to each variable (anhedonia and physical hyperarousal). Hence, in our study depression and anxiety were operationalized based on both their overlapping and distinct characteristics. This may suggest that the lockdown measures and associated feelings of loneliness led to a lack of satisfaction of the need for autonomy, which in turn led to negative emotional states and lack of positive affect but not somatic hyperarousal (Clark & Watson, 1991; Renner et al., 2016). Another possible explanation for the association between autonomy and depression, but not anxiety, could be seen in the uncontrollability of the implemented lockdown measures associated with the pandemic. These measures were characterized by their drastic nature and the fact that individuals could not actively change them. The theory of learned helplessness by Seligman

and Maier (1967) illustrates that individuals react with feelings of helplessness to uncontrollable situations such as lockdown measures. In turn, research has shown that helplessness is a key predictor for the development of depressive symptoms (Miller & Seligman, 1975; Seligman & Maier, 1967). It is conceivable that due to the conceptual similarities of the theory with the dissatisfaction of the need for autonomy (i.e., the feeling of not being able to do what one wants to do), autonomy dissatisfaction may be related to symptoms of depression but not anxiety-related symptoms. Future research is needed to test these assumptions and provide clarity on the relationship between autonomy need satisfaction and anxiety.

It was also hypothesized that age moderates the direct and indirect relations between perceived loneliness and mental health in such way that young age exacerbates these links, which was only supported for the indirect effect. Even though emerging studies in the Covid-19 context found young adults to be particularly affected by loneliness perceptions and associated mental health issues, we could not find support for the moderating role of age in the direct effect between loneliness perceptions and mental health [path c' (Ausín et al., 2022; Carson et al., 2020; González-Sanguino et al., 2020b; Groarke et al., 2020; Lee et al., 2020; Luchetti et al., 2020)]. These findings seem to contradict other studies (McDonald et al., 2022). One possible explanation for these contradictory results could be that, for example, McDonald et al. (2022) examined only the moderation of the total effect between perceived loneliness and mental health, therefore, not taking into account mediating variables as we did. Moreover, they used a single item to assess loneliness experiences during lockdown which might have been less reliable given that previous studies have found that single-item measures of loneliness are biased toward subjective interpretations (McDonald et al., 2022; Nicolaisen & Thorsen, 2014). Hence, this may have been a reason for the observed age effect (McDonald et al., 2022). In contrast, the UCLA loneliness scale used in this study assesses different facets of loneliness and is therefore less susceptible to bias (Russell et al., 1980).

The hypothesis, that age moderates the indirect effect was not supported in terms of the link between basic need satisfaction and mental health (path b) which seems to contradict previous findings in- and outside the Covid-19 context (Antunes et al., 2020; Emery et al., 2015; Eryilmaz, 2012; Liu et al., 2022; Tian et al., 2014). A possible explanation for this finding could be that basic psychological need satisfaction is a perquisite for human wellbeing and psychological functioning across the lifespan (Deci & Ryan, 2000). Our findings highlight the importance of basic need satisfaction for good mental health among all people independent of their age which supports the theory that basic need satisfaction is universal for all age groups'

mental health (Deci & Ryan, 2000; Lataster et al., 2022). The theory holds that the satisfaction of basic psychological needs, even though there may be individual differences, is a prerequisite for the well-being of all people despite their differences (Deci & Ryan, 2000).

The hypothesis, that age moderates the indirect effect between loneliness and mental health via basic need satisfaction, was supported. However, a moderated mediation could only be found in terms of the link between perceived loneliness and competence needs (path a), but not regarding autonomy and relatedness needs. Moreover, the results of the bias-corrected percentile bootstrap revealed a significant indirect effect of perceived loneliness on mental health via need for competence satisfaction was at the 16th and 50th percentiles of age which corresponds to the life stage of emerging adulthood as described in the developmental psychology literature (Arnett, 2004). These results build on existing evidence from the Portuguese context that age-related differences exist only in terms of competence needs but not for relatedness and autonomy needs (Antunes et al., 2020). Antunes and colleagues (2020) study confirmed that the youngest age group (18 to 34 years) demonstrated the lowest levels of competence need satisfaction and highest levels of anxiety during the Portuguese lockdown. However, the study assessed only bivariate associations between these variables and focused on the first pandemic wave in April of 2020. Hence, our study addresses these methodological issues by testing a more comprehensive model including the boundary conditions of the association between perceived loneliness and mental health via the satisfaction of basic psychological needs. In addition, our study focuses on the third pandemic wave in March 2021, which is characterized by the highest number of infections in Portugal to date and is therefore particularly interesting. A large study, including 6,071 participants in Austria and 1,653 in Finland, provides additional support for the centrality of competence satisfaction for emerging adults wellbeing. In this study, need for competence satisfaction was the only predictor for positive emotional outcomes and study motivation in a sample of students during the pandemic (Holzer et al., 2021).

One possible explanation for the centrality of social interactions to emerging adults' sense of competence may be seen in the importance of peer observations, encouragement, and feedback from others (Bandura, 1977; Bandura & Wessels, 1994). There is no research specifically linking social factors to the satisfaction of the need for competence. However, there are some studies that support the link between feedback and related constructs, such as self-efficacy (Brown et al., 2016; Dou et al., 2016). Self-efficacy is described as the ability to successfully accomplish certain tasks. People who rate themselves as self-efficacious are not reluctant to tackle difficult tasks (Bandura, 1977; Bandura & Wessels, 1994), which may be

associated with greater satisfaction of the need for competence. Bandura (1977) distinguishes four types of sources for the development of self-efficacy: 1) past accomplishments, 2) emotional wellbeing, 3) observation of peer success (i.e., vicarious learning), 4) verbal encouragement and feedback from professors, teachers, employers, or peers (Bandura, 1977). Given the conceptual link between self-efficacy and the need for competence, we suggest that the constraints associated with the Covid-19 pandemic resulted in 1) a lack of social comparison (e.g., vicarious learning). In other words, emerging adults had fewer opportunities to observe how their peers successfully accomplish difficult tasks (Dou et al., 2016). Observing peer success may increase one's belief to successfully perform similar tasks which in turn may result in the satisfaction of the need for competence (Bandura & Wessels, 1994). For instance, during the lockdown there was a lack of face-to-face contact in higher education, which is a prerequisite for vicarious learning because it allows students to compare and evaluate their own performance with that of their peers. In line with Dou and colleagues (2016) we assume that although online contact was still possible, contact and exchange with peers was nonetheless limited in the context of the Covid-19 pandemic. This, in turn reduced students opportunities to observe their peers succeed and thus feel self-efficacious (Dou et al., 2016) which may explain the dissatisfaction of competence needs during the lockdown. Furthermore, 2) emerging adults received less verbal feedback and encouragement from others because the lockdown provided fewer opportunities for social interactions (Bandura & Wessels, 1994). In other words, social constraints, such as the shift from face-to-face to online teaching in tertiary education, meant that students studied alone more often and had fewer chances for social interaction with their peers, professors, and teachers. This, in turn, has resulted in less opportunity for verbal encouragement, so students may have felt less capable of completing difficult tasks because they lacked the feedback to assess their abilities, which may have also limited the satisfaction of the need for competence (Bandura & Wessels, 1994).

Another possible explanation for the importance of social interactions for young people's sense of competence may be that emerging adulthood is a developmental stage where relationships are particularly important (Arnett, 2000; Levinson, 1978; Neugarten et al., 1965). The results suggest that emerging adults were particularly vulnerable to lack of social interactions while being in a developmental stage where their need for competence satisfaction still depends on the interaction with other social actors such as peers, teachers and professors (Arnett, 2001; Ryan & La Guardia, 2000; Tesch-Rümer & Albert, 2018). In contrast, older adults need for competence may not rely on the reassurance of other people since they already experience themselves as sufficiently competent. This may be because the experience of

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competence becomes progressively less dependent on feedback and reassurances from other social actors and stabilizes with age. Future research could further examine this assumption by exploring how lack of social contacts reduces the satisfaction of the need for competence in young people. For example, researchers could explore the impact of perceived loneliness on feelings of competence using qualitative research methods such as semi-structured interview guides. This could be useful for gaining deeper insights into how young people's sense of competence was affected during the pandemic. Interviews are particularly appropriate because they allow the exploration of individual experiences during the lockdown, overcoming the limitation of quantitative research methods, which do not allow all possible variables to be covered (Kelle, 2006).

Students, in particular, have experienced fundamental changes in their daily lives, such as online classes (Holzer et al., 2021). Thus, future research could focus on implications in tertiary education. Qualitative studies could also help identify how the experience of competence could be supported through social interactions in the context of higher education. The following questions could be addressed in semi-structured interviews: 1) How did the lockdown impact you as a student? 2) How did the lockdown affect your sense of competence? 3) During the lockdown how did you feel about accomplishing academic tasks? 4) What have you missed during the lockdown that could have supported your sense of competence? 5) How could your university have fostered your sense of competence? 6) To what extent did you feel that virtual interactions were sufficient during the lockdown?

The findings from our study point to potential avenues for future prevention efforts in higher education to mitigate the negative effects of perceived loneliness. In addition, exploring students' experiences during the pandemic would allow universities to develop tailored interventions to mitigate the harmful effects of loneliness perceptions. Bolstering interaction among students even in times of online learning could lead to increased competence feelings which in turn could prevent mental health problems. In future lockdowns, universities should take steps to provide opportunities for continued social exchange despite physical distance. For instance, group work with peers, time for feedback and queries could be planned, so that students can continue experiencing themselves as competent actors.

5.1. Limitations

Despite the strengths of this study to examine more complex psychological processes in the context of the Covid-19 pandemic, some limitations need to be considered. First, the

generalizability of the results is limited to the specific context of the study. Replications in other countries and outside the Covid-19 context are needed to validate the robustness and increase the external validity of our findings. A second limitation relates to the exclusive use of self-reports, which may be biased and may not include all relevant variables that reflect people's diverse experiences in the lockdown. For this reason, qualitative studies are needed to explore individual experiences. Another limitation stems from the unbalanced distribution of the age variable. However, we addressed this problem by analyzing the moderation at the 16th,50th, and 84th percentiles of age, corresponding to the age groups of interest, emerging adulthood (16th and 50th percentiles) and middle-aged adults [84th percentile (Arnett, 2004)]. Yet, the lockdown experience of senior adults is not well represented in our data. Another limitation can be seen in the reliability of the autonomy subscale which demonstrated a less than optimal internal consistency. However, we addressed this problem by removing one item from the subscale to achieve an acceptable internal consistency. Moreover, we were still able to find significant and meaningful associations for this variable.

Further limitations emerged in terms of the cross-sectional design of our study which does not allow does not allow assumptions about the causality of the results. Future research could address this by testing possible time-lagged effects using longitudinal designs. For instance, longitudinal studies have found a bidirectional association between loneliness and mental health (Domènech-Abella et al., 2019; McDonald et al., 2022; Santini et al., 2020). Thus, it should be considered that participants with pre-existing mental health problems may also be more vulnerable to feelings of loneliness during the pandemic (McDonald et al., 2022). However, our study sought to assess experiences of loneliness due to the lockdown measures leading to mental health issues. Longitudinal studies would also allow to investigate whether the found age effects can be attributed to the developmental differences of the age groups or whether they can be attributed to the specific cohorts. For example, it is conceivable that younger generations are more likely to be exposed to higher performance pressure (Ng et al., 2010), which in turn may be associated with greater problems with the satisfaction of competence needs. Insight into changes with age can only come from longitudinal study designs that examine the same individuals over their entire lifespan.

Furthermore, we cannot exclude the possibility that the moderating effect of age stems from another variable such as *student-status*. Since students have been particularly affected by Covid-related changes, such as having to attend online classes, this might explain how loneliness reduced competence satisfaction (Holzer et al., 2021). Future research could test whether the model, tested in this study, can be replicated using a student/non-student moderator.

This could be tremendously beneficial, as it is in the context of academic education that prevention measures can be implemented that create opportunities for social interactions and thus satisfy young people's need for competence.

In addition, research has shown that children and adolescents were particularly affected by loneliness and related mental health problems due to school closures and lack of social interactions during the Covid-19 pandemic (Loades et al., 2020). However, these age groups were not represented in our sample. It is of utmost importance to examine whether our findings can be replicated with younger age groups to understand whether the satisfaction of competence needs in children and adolescents was similarly affected by the lockdown measures. Given the lack of specific interventions to prevent loneliness and related mental health problems for children and adolescents, it is particularly important to address factors that may ward of their negative impact (Loades et al., 2020). For instance, in future lockdowns, schools could focus on providing assignments that promote social interactions between children. Furthermore, tasks in the school context should not only take the form of homeschooling with parents, but analogous to the academic environment, schools could offer online classes so that children and young people can continue to interact with each other as well as with their teachers in order to satisfy their competence needs.

5.2.   Future Perspectives

Despite these limitations, the current study advances the literature by providing interesting insights in the role of age on the relation between perceived loneliness, basic need satisfaction and mental health during the Covid-19 pandemic in Portugal. This study has some important implications for practice, as it impeaches which developmental stage particularly benefits from interventions to address loneliness. The results of our study underscore that emerging adults in particular suffer from perceived loneliness the associated decreased satisfaction of the need for competence.

Furthermore, loneliness in tertiary education was found to particularly affect people who belong to minority groups (Mcwhirter, 1997; Quintana et al., 1991). Our findings demonstrate the detrimental effects of loneliness on the experience of competence. Thus, it is conceivable that minorities who are affected by social exclusion may not be able to meet their competence needs. Additionally, minority members are already underrepresented in tertiary education (Kosoko-Lasaki et al., 2006). For this reason, it is particularly important to explore factors that may affect the positive experiences of minorities in higher education that may even impact

college attrition Indeed, previous research has demonstrated that experiences of loneliness and lack of social integration is associated with college attrition and poor academic performance (Mattanah et al., 2012). Therefore, it is of utmost importance for universities to create avenues for social interaction and thus ward off the negative impact of loneliness on minority students. Universities could create frameworks for social interactions via buddy programs, group work, clubs, and study groups, and thus enhance feelings of social integration which in turn, also has an impact on the students' experience of competence. For this reason, future research should examine 1) how far our results can be replicated outside the Covid-19 context, 2) how far minorities in higher education are affected, and 3) what measures can be taken to counteract the harmful effects of social exclusion.

5.3   Conclusion

To our knowledge, this study is the first to test a comprehensive model of mental health predictors in the Covid-19 context in Portugal. The findings of our study add to the existing Covid-19 mental health literature by evaluating the moderating role of age in the relation between perceived lockdown loneliness and mental health via basic psychological need satisfaction. Results confirmed a significant association between perceived loneliness and anxiety and depression. Parallel mediation analyses showed that competence consistently mediated the association between loneliness and mental health. Moderated mediation analyses also confirmed that the psychosocial pathway applied most strongly to younger age groups. Our study highlights the role of social factors in the satisfaction of competence needs and mental health, particularly among younger people during the Covid-19 lockdown in Portugal. The findings also point to potential avenues for future prevention interventions in higher education to mitigate the harmful effects of social exclusion.

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Annexes

Annex A – Informed Consent

CONSENTIMENTO INFORMADO

O presente estudo tem como objetivo geral perceber de que forma é que algumas características individuais, medidas através de questionários de personalidade e crenças, se relacionam com o bem estar no contexto da pandemia Covid-19. Trata-se de um estudo que se insere no âmbito das aulas Práticas e Laboratoriais da unidade curricular Competências Académicas II da Licenciatura em Psicologia no **ISCTE-Instituto Universitário de Lisboa**, coordenado pela professora Christin-Melanie Vauclair (melanie.vauclair@iscte-iul.pt), que poderá contactar caso pretenda esclarecer uma dúvida ou partilhar algum comentário.   A sua participação no estudo, que será muito valorizada pois irá contribuir para o avanço do conhecimento neste domínio da ciência, deverá demorar entre 10 e 15 minutos. Não existem riscos significativos expectáveis associados à participação no estudo.   A participação no estudo é estritamente **voluntária**: pode escolher livremente participar ou não participar. Se tiver escolhido participar, pode interromper a participação em qualquer momento sem ter de prestar qualquer justificação. Para além de voluntária, a participação é também **anónima** e **confidencial**. Os dados obtidos destinam-se apenas a tratamento estatístico e nenhuma resposta será analisada ou reportada individualmente. Em nenhum momento do estudo precisa de se identificar. Tendo tomado conhecimento sobre a informação disponibilizada sobre o estudo, declaro aceitar participar.

○ Sim (1)

○ Não (2)

Skip To: End of Survey If CONSENTIMENTO INFORMADO O presente estudo tem como objetivo geral perceber de que forma = Não

Code Caso lhe tenha sido enviado um código de participação, por favor introduza-o abaixo antes de continuar.

Annex B – Covid-19 Wellbeing Survey

Ten Item Personality Inventory TIPI Gosling et al., 2003 Nunes et al., 2018

Encontra a seguir um conjunto de traços de personalidade que podem ou não aplicar-se a si. Por favor escolhe um número a seguir a cada afirmação indicando em que medida está de acordo ou em desacordo com essa afirmação. Deve avaliar em que medida cada par de traços se aplica a si, mesmo que uma das características se aplique melhor do que a outra.

Vejo-me como uma pessoa:
1. Extrovertida, entudiasta
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
2. Conflictuosa que critica os outros
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
3. . De confiança, com auto-disciplina.
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
4. Ansiosa, que se preocupa facilmente.
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
5. Com muitos interesses, aberta a experiências novas.
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
6. Reservada, calada.
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
7. Compreensiva, afetuosa.
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
8. Desorganizada, descuidada
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
9. Calma, emocionalmente estável
1 (discordo totalment)   2   3   4   5   6   7 (concordo totalmente)
10. Convencional, pouco criativa.

Loneliness (UCLA, Russell et al, 1978; tr.: Pocinho & Karate, 2005)

Por favor, responda às perguntas que se seguem sobre como se tem sentido **no mês passado**.

Durante o mês passado, com que frequência:

1. Se sentiu infeliz por fazer muitas coisas sozinho/a. (1)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

2. Sentiu que não tem alguém com quem falar. (2)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

3. Sentiu que não tem ninguém a quem possa recorrer. (5)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

4. Sentiu que tem falta de companhia. (4)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

5. Sentiu que não tem ninguém a quem possa recorrer. (5)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

6. Não se sentiu íntimo/a de qualquer pessoa. (6)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

7. Se sentiu completamente só. (7)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

8. Se sentiu com muita vontade de ter companhia. (8)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

9. . Se sentiu isolado/a das outras pessoas. (9)

(Nunca me senti assim) 0   1   2   3 (senti me assim frequentemente)

Coping (Pais Ribeiro, J., Rodrigues, A.,2004)

Na seguinte questão são apresentadas ações. Indique em que medida recorre a estas ações, ou seja, que mecanismos tem utilizado **durante a pandemia**?

1. Refugio-me noutras atividades para me abstrair da situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
2. Concentro os meus esforços para fazer alguma coisa que me permita enfrentar situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
3. Tenho dito para mim próprio/a: "isto não é verdade."
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
4. Refugio-me no álcool ou noutras drogas (comprimidos, etc.) para me sentir melhor.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
5. Procuro apoio emocional de alguém (família, amigos).
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
6. Simplesmente desisto de tentar lidar com isto.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
7. Tomo medidas para tentar melhorar a minha situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
8. Recuso-me a acreditar que isto esteja a acontecer comigo.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
9. Fico aborrecido/a e expresso os meus sentimentos.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
10. Peço conselhos e ajuda a outras pessoas para enfrentar melhor a situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
11. Uso álcool ou outras drogas (comprimidos) para me ajudar a ultrapassar os problemas.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
12. Tento analisar a situação de maneira diferente, de forma a torná-la mais positiva.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
13. Faço críticas a mim próprio/a.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
14. Tento encontrar uma estratégia que me ajude no que tenho que fazer.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
15. Procuro o conforto e compreensão de alguém.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
16. Desisto de me esforçar para lidar com a situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)

17. Procuro algo positivo em tudo o que está a acontecer.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
18. Enfrento a situação levando-a para a brincadeira.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
19. Faço outras coisas para pensar menos na situação, tal como ir ao cinema, ver Tv, ler, sonhar, ou ir às compras.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
20. Tento aceitar as coisas tal como estão a acontecer.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
21. Sinto e expresso os meus sentimentos de aborrecimento.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
22. Tento encontrar conforto na minha religião ou crença espiritual.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
23. Peço conselhos e ajuda a pessoas que passaram pelo mesmo.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
24. Tento aprender a viver com a situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
25. Penso muito sobre a melhor forma de lidar com a situação.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
26. Culpo-me pelo que está a acontecer.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)
27. Rezo ou medito.
(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)

28. Enfrento a situação com sentido de humor.

(Nunca faço isto) 1   2   3   4 (Faço quase sempre isto)

Spirituality (Pinto & Pais-Ribeiro, 2017)

As frases/ expressões seguintes referem-se à sua espiritualidade/ suas crenças pessoais durante a
pandemia Covid-19. Por favor, escolha a opção que melhor expressar a sua opinião, **no último mês**. Não existem respostas certas ou erradas.

1. As minhas crenças espirituais/religiosas dão sentido à minha vida durante esta pandemia.
(Não concordo) 1   2   3   4 (Concordo plenamente)
2. A minha fé e crenças dão-me forças nos momentos difíceis desta pandemia.
(Não concordo) 1   2   3   4 (Concordo plenamente)
3. Vejo o futuro com esperança, mesmo que o presente seja difícil.
(Não concordo) 1   2   3   4 (Concordo plenamente)
4. Sinto que, durante esta pandemia, a minha vida mudou para melhor.
(Não concordo) 1   2   3   4 (Concordo plenamente)
5. Durante esta pandemia, aprendi a dar valor às pequenas coisas da vida.
(Não concordo) 1   2   3   4 (Concordo plenamente)

Healthy routine (WHO recommendation, IPAQ, translated)

Tendo em consideração **os últimos 30 dias** e os seus hábitos diários, indique a sua posição na escala relativamente à **<u>discrepância</u>** entre o que considera ideal fazer para manter uma rotina diária saudável na medida do possível e o que efetivamente fez durante os últimos 30 dias.

1. Levanto-me e deito-me por volta da mesma hora todos os dias.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

2. Mantenho a minha higiene pessoal.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

3. Como refeições saudáveis a horas regulares.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

4. Faço exercício físico regularmente.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

5. Realizo uma gestão de tempo eficaz e equilibrada relativamente ao tempo de trabalho e ao tempo para descanso.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

6. Reservo tempo para fazer coisas de que disfruto (e.g., passatempos).
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

7. Caminho durante pelo menos 10 minutos no meu tempo de lazer.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

8. Faço atividades físicas vigorosas como aeróbica, corrida ou bicicleta rápida no meu tempo de lazer.
(Nenhuma Discrepância) 0   1   2   3   4   5   6 (Discrepânica muito elevada)

Basic Needs (Cordeiro et al.,2016)

Indique em que medida concorda com cada afirmação referente a experiências que podem ou não **ocorrer na sua vida em geral**, selecionando o número que corresponde à sua opção.

1. Tenho a possibilidade de escolher e a liberdade para fazer as coisas que faço.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

2. Faço a maior parte das coisas porque têm de ser feitas.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

3. Sinto que as pessoas de quem gosto também gostam de mim.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

4. Sinto-me excluído/a do grupo a que gostava de pertencer.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

5. Confio na minha capacidade para fazer as coisas bem-feitas.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

6. Duvido seriamente que consiga fazer alguma coisa bem.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

7. Sinto que as minhas decisões refletem aquilo que realmente quero.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

8. Sinto-me obrigado/a a fazer muitas coisas que não quero.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

9. Sinto-me ligado/a a pessoas que se preocupam comigo e com quem eu me preocupo.

(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
10. Sinto que as pessoas que considero importantes se mostram frias e distantes comigo.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
11. Sinto que tenho capacidade para fazer bem as coisas que faço.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
12. Sinto-me desiludido/a com muitos dos meus desempenhos.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
13. As escolhas que faço revelam a pessoa que eu sou.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
14. Faço a maior parte das coisas porque sou pressionado/a pelas outras pessoas.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
15. Sinto-me próximo/a e ligado/a a pessoas que considero importantes para mim.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
16. Tenho a impressão que a(s) pessoa(s) com quem eu passo o tempo não gostam de mim.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
17. Sinto que sou capaz de alcançar os meus objetivos
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
18. Sinto-me inseguro/a em relação às minhas capacidades.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
19. Sinto que que tenho vindo a fazer as coisas que realmente me interessam.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
20. As minhas atividades diárias são feitas por obrigação.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
20. Sinto-me bem junto das pessoas com quem passo a maior parte do tempo.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
21. Sinto que as relações que tenho são apenas superficiais
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
22. Consigo ser bem-sucedido/a em tarefas difíceis.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)
23. Sinto que sou um fracasso por causa de todos os erros que tenho cometido.
(Completamente falso) 1   2   3   4   5 (Completamente verdadeiro)

Subjective Wellbeing (European Social Survey)

Gostaríamos de saber como se sentia em relação à sua vida **antes** da pandemia**?**

1. Considerando todos os aspetos da sua vida, qual o grau de felicidade que sentia?
(Extremamente 0   1   2   3   4   5   6 (Extremamente Feliz)
Infeliz)
2. Tudo somado, qual era o seu grau de satisfação com a vida em geral?
(Extremamente 0   1   2   3   4   5   6 (Extremamente
insatisfeito/a   satisfeito/a
Covid-19 Perceived Stress Scale (PSS; Pedrozo-Pupo et al., 2020; translated)

Relativamente aos **últimos 30 dias**, responda, da forma mais sincera possível, às seguintes questões:

1. Com que frequência se sentiu afetado/a devido a algo sério que aconteceu de forma inesperada durante a pandemia?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

2. Com que frequência se sentiu incapaz de controlar coisas importantes na sua vida devido à pandemia?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

3. Com que frequência se sentiu nervoso/a ou stressado/a pela pandemia?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

4. Com que frequência se sentiu confiante na sua capacidade de lidar com os seus problemas pessoais relacionados com a pandemia?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

5. Com que frequência sentiu que as coisas aconteceram da maneira como esperava no período de pandemia?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

6. Com que frequência sentiu que não conseguiria lidar com todas as coisas a fazer para controlar a possível infeção?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

7. Com que frequência foi capaz de controlar dificuldades na sua vida relativas ao risco de infeção?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

8. Com que frequência sentiu que todos os aspetos da sua vida, relacionados com a pandemia, estavam sob controlo?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

9. Com que frequência esteve perturbado/a ou transtornado/a devido a coisas relacionadas com a pandemia, e que estiveram fora do seu controlo?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

10. Com que frequência sentiu que as dificuldades, relacionadas com a pandemia, acumularam-se de tal forma que não conseguiria resolvê-las e ultrapassá-las?

(Nunca) 0   1   2   3   4   (Muito frequentemente)

EADS-21

Por favor, leia cada uma das afirmações abaixo e assinale 0, 1, 2 ou 3 para indicar quanto cada afirmação se aplicou a si **durante o último mês**. Não há respostas certas ou erradas. Não leve muito tempo a indicar a sua resposta em cada afirmação.

1. Senti a minha boca seca.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

2. Não consegui sentir nenhum sentimento positivo.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

3. Senti dificuldades em respirar.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

4. Tive dificuldade em tomar iniciativa para fazer coisas.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

5. Senti tremores (por ex., nas mãos).

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

6. Preocupei-me com situações em que podia entrar em pânico e fazer figura ridícula.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

7.   Senti que não tinha nada a esperar do futuro.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

8.   Senti-me desanimado/a e melancólico/a.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

9.   Senti-me quase a entrar em pânico.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

10. Não fui capaz de ter entusiasmo por nada.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

11. Senti que não tinha muito valor como pessoa.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

12. Senti alterações no meu coração sem fazer exercício físico.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

13. Senti-me assustado/a sem ter tido uma boa razão para isso.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

14. Senti que a vida não tinha sentido.

(Não se aplicou a mim) 0   1   2   3 (Aplicou-se a mim a maior parte das vezes)

PANAS (Galinha & Ribeiro, 2012)

Esta escala consiste num conjunto de palavras que descrevem diferentes sentimentos e emoções. Leia cada palavra e marque a resposta adequada.

Indique em que medida, geralmente, tem sentido cada uma destas emoções, ou seja, como é que se tem sentido durante a pandemia?

1.   Interessado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

2.   Aflito/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

3.   Estimulado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

4.   Aborrecido/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

5.   Forte

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

6.   Culpado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

7.   Assustado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

8.   Hostil

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

9.   Entusiasmado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   10. Orgulhoso/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   11. Irritável

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   12. Atento/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   13. Envergonhado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   14. Inspirado/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   15. Nervoso/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   16. Decidido/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   17. Atencioso/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   18. Inquieto/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   19. Ativo/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

   20. Medroso/a

(Nada ou muito ligeiramente) 1   2   3   4   5 (extremamente)

Sociodemographics

Caracterização sócio-demográfica

Por favor, não escreva o seu nome.

Por favor, indique a sua **idade**. _____

Gender **Sexo**

   ○ Feminino (1)

   ○ Masculino (2)

   ○ Outro/ não desejo responder (3)

Nation Por favor, indique a sua **nacionalidade:**

   ○ Portuguesa (1)

   ○ Outra. (2)

Por favor, especifique: _____

Time_PT Por favor indique **há quanto tempo vive em Portugal**: _____

Educ Qual é o seu nível de escolaridade?

○ Ensino básico (1)

○ Ensino Secundário incompleto (9º ano) (2)

○ Ensino Secundário completo (12º ano) (3)

○ Ensino Superior ou equivalente (4)

○ Mestrado ou equivalente (5)

○ Doutoramento ou equivalente (6)

Occup Quais das seguintes situações se aplicam melhor ao que fez nos **últimos 30 dias?**

○ Trabalhador/a (1)

○ Estudante (2)

○ Trabalhador/a-estudante (3)

○ Desempregado/a (4)

○ Lay-off (5)

○ Na reforma (6)

○ Outra (7) _____

SES Numa escala de 1 a 7, como considera o nível de vida (estatuto económico) da sua família?

○ 1 - Muito abaixo da média (1)

○ 2 - Abaixo da média (2)

○ 3 - Um pouco abaixo da média (3)

○ 4 - Médio (4)

○ 5 - Um pouco acima da média (5)

○ 6 - Acima da média (6)

○ 7 - Muito acima da média (7)

Rel Qual é a sua afiliação religiosa?

○ Católico/a (1)

○ Protestante (2)

○ Outra (3) _____

Em geral, quão próximo/a se sente de Deus? (1)
(nada próximo) 1   2   3   4 (Tão próximo/a quanto possível)

Independentemente de pertencer a uma religião em particular, numa escala de 0 a 6, diria que é uma pessoa…:
(nada religiosa) 0   1   2   3   4   5 (muito relgiosa)

Civil Qual das seguintes situações se aplica melhor ao seu estado civil legal actual?

- ◯ Casado/a (1)
- ◯ Separado/a (2)
- ◯ Divorciado/a (3)
- ◯ Viúvo/a (4)
- ◯ Solteiro/a (5)

Annex C - Debriefing

DEBRIEFING/EXPLICAÇÃO DA INVESTIGAÇÃO

Muito obrigado por ter participado neste estudo. Conforme adiantado no início da sua participação, o estudo incide sobre o bem estar no contexto da pandemia Covid-19. Reforçamos os dados de contacto que pode utilizar caso deseje colocar uma dúvida, partilhar algum comentário, ou assinalar a sua intenção de receber informação sobre os principais resultados e conclusões do estudo: ProfªChristin-Melanie Vauclair, melanie.vauclair@iscteiul.pt.

Se tiver interesse em aceder a mais informação sobre o tema do estudo, pode ainda consultar as seguintes fontes: https://www.ordemdospsicologos.pt/pt/covid19/comunicacao_social.

Mais uma vez, obrigado pela sua participação.