Psychological Effects of Secondary Prisonization on Older Parents

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Abstract

Secondary prisonization refers to the impact of the incarceration of a relative on the members of their family. This study aimed to analyze the psychological effects of secondary prisonization on older parents. Specifically, levels of depression, anxiety, stress, and well-being (emotional, psychological, and social) were analyzed by means of quantitative and automatic speech analysis methods in a sample of over 65-year-old parents of Basque prisoners incarcerated in remote prisons. The statistical analysis of data and the automatic spontaneous speech analysis showed that secondary prisonization has a negative impact on older parents' levels of depression, anxiety, stress, and well-being. These results lead us to conclude that remote imprisonment of adult children has negative psychological effects on older parents.

Keywords Secondary prisonization · Older parents · Mental health · Depression · Anxiety · Stress · Well-being

Introduction

The present study analyzes the effects of secondary prisonization on older parents of Basque prisoners incarcerated in Spain. Secondary prisonization refers to the impact of a relative's incarceration of on the members of their family (Comfort, 2003). This is an important and contemporary question, even more so if we consider that, according to the World Prison Brief online database (2021) hosted by

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the Institute for Crime and Justice Policy Research, Spain has one of the highest incarceration rates in the European Union, with a prison population rate of 122 per 100,000 of national population.

Article 12 of the General Penitentiary Law of 5 October 1979 establishes that the location of prisons shall avoid the social uprooting of prisoners. Therefore, Spanish prisoners incarcerated in Spain must serve their sentences in prisons located close to their homes and those of their families. However, as a result of the specific penitentiary regime applied to Basque prisoners incarcerated for political reasons, these prisoners serve their sentences in prisons located far from their homes and those of their families. This situation restricts the right to respect for private and family life (Article 8 of the European Human Rights Convention) as was stated by the European Court of Human Rights in cases such as the Rodzevillo sentence against Ukraine, of 14 January 2016.

The effects on relatives of incarceration close to the places of residence of prisoners and their families have been studied, but little is known about the effects of remote incarceration on prisoners' relatives. Consequently, the present study attempted to shed light on the psychological effects of secondary prisonization on older parents of Basque prisoners incarcerated in remote prisons.

As mentioned, secondary prisonization refers to the effects that imprisonment of a family member has on their relatives (Comfort, 2003). Loss of rights and resources, as well as the negative psychological and social effects on family members of being a prisoner's relative, are included in secondary prisonization. In relation to psychological effects, five domains have been identified (Observatori del Sistema Penal i els Drets Humans, 2006): psychological disorders, those related to affectivity (loneliness, lack of support), low self-esteem, distorted perception of the world, and defenselessness and hostility towards penitentiary institutions.

One important dimension of secondary prisonization is mental health. Traditionally, mental health has been conceptualized as absence of symptoms of psychological disorders. This conceptualization of mental health is known as the *pathogenic approach* and aims to identify, avoid, manage, and cure illness (Taylor, 1990).

Although the pathogenic approach has traditionally been the main position related to mental health, mental health is now considered “... a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization, 2001:1). This definition reflects the *salutogenic approach* to mental health, which aims to gain knowledge about mental health and the factors that determine it.

An integrative model of mental health has recently been proposed. This model is called *The Two Continua Model of Mental Health* (Keyes, 2005), which brings together both pathogenic and salutogenic perspectives of mental health. According to this model, mental health and mental illness would not be the opposite ends of a single continuum, but, rather, two related continua: the psychopathological continuum and the positive mental health continuum. The psychopathological continuum relies on the pathogenic perspective, where common psychiatric and clinical disorders and symptoms are identified. The Positive Mental Health continuum (Keyes, 2002) refers

to a dimension of mental health composed of emotional, psychological, and social human well-being, and it describes the salutogenic view of health (Keyes, 2002).

Emotional well-being refers to the total amount of positive emotions and satisfaction with life an individual can have. Psychological well-being, instead, refers to six aspects of the way a person lives their life: (a) *self-acceptance*; (b) *the affective quality of close relationships*; (c) feelings of *personal growth*; (d) the perception of *purpose in life*; (e) the *mastery of the personal environment*; and (f) the capacity or *autonomy* to defend their own ideas when they do not form part of general beliefs (Keyes, 2002).

The third component of positive mental health is social well-being. This dimension refers to the perceived fit between a person and society. Five variables describe this dimension: (a) *social integration* is the perception that a person has something in common with the rest of people and that they belongs to a society; (b) *social contribution* refers to how a person feels they have something to offer to their fellow citizens; (c) *social coherence* is the perception that society is coherent and knowable or understandable; (d) *social growth* is the perception that society has a positive trajectory—the overall sense that, despite social conflicts and problems, people have improved society; and (e) *social acceptance* is the acknowledgment of positive qualities in the average citizen, qualities that include trustworthiness, altruism and industriousness (Keyes, 2002).

Thus, instead of understanding well-being as the same as pleasure (emotional well-being), positive mental health proposes that an overall comprehension of well-being requires taking into account the way a person lives their life (psychological well-being) and the way a person perceives society and their own role within it (social well-being).

The psychopathological and the positive mental health continua are independent, that is, they are created by different factors and go in different directions. For instance, a person might have a psychiatric problem, and thus, this person would be situated “high” on the psychopathological dimension of mental health, but would also have good positive mental health, that is, they are hopeful in regard to their problem and are completely committed to their recovery. In another case, a person could be mentally healthy in the sense that they have no mental health diagnosis, but may feel discouraged, finding no meaning to their life, and experience very little joy and happiness.

As these two continua are unrelated, the relationship between them is low (a correlation of -0.53 in a study conducted with a large sample; these continua share only 28.1% of variance; Keyes, 2005).

Based on this theoretical point of view, the present research aims to analyze the effects of secondary prisonization on levels of psychopathology (depression, anxiety, and stress) and positive mental health (psychological, social, and emotional well-being) in a sample of over 65-year-old parents of prisoners incarcerated at a great distance from the Basque Country.

Various studies have addressed the effects of secondary prisonization on prisoners’ relatives incarcerated close to their residences. These studies have mainly been carried out with prisoners’ children and partners (Aiello & McCorkel, 2018; Comfort, 2003; Murray et al., 2012). In contrast, few studies have been conducted in relation to the effects of secondary prisonization on prisoner’s parents. One of these studies

was carried out with a sample of prisoners' mothers, and it was found that having a son/daughter in jail was related to their mothers' psychological suffering (Green et al., 2006).

In all the aforementioned studies, the samples were of relatives of prisoners incarcerated in prisons close to their and their families' places of residence. The only study where the effects of remote incarceration on family members have been examined was conducted by Intxaurre et al. (2017). In this study, a sample of 14 prisoners' relatives (parents, partners, children, brothers, and sisters) were interviewed, and it was found that remote incarceration entails the suffering of prisoner's relatives, mainly when they are older adults.

Objective

In order to fill the gap in the literature on the effects of secondary prisonization on relatives of prisoners incarcerated in remote prisons, the present study had a primary objective: to analyze the psychological effects of secondary prisonization on older parents of Basque prisoners. Specifically, the effects on levels of depression, anxiety, stress, and well-being (emotional, psychological, and social) were analyzed. With this aim in mind, we compared the two continua of mental health (psychopathology and positive mental health) in the case of older parents of Basque prisoner's and older parents from the general Basque population.

Thus, two hypotheses were proposed. Firstly, it was hypothesized that, compared with older parents from the general population, Basque prisoners' older parents would show higher levels of psychopathology. Specifically, it was expected that older parents of Basque prisoners would show higher levels of depression, anxiety, and stress. Secondly, it was hypothesized that, compared with older parents from the general population, those of Basque prisoners would show lower levels of positive mental health. Specifically, older parents of Basque prisoners were expected to show lower levels of emotional, psychological, and social well-being.

Methods

Participants

To achieve the main objective of the study, two groups were studied: older parents with a son/daughter in a remote prison and older parents without sons/daughters in prison. Non-random sampling was used to obtain these groups. The inclusion criteria for the first group were the following: being older than 65; having a daughter/son incarcerated for political reasons; having a daughter/son incarcerated in a remote prison; living in the Basque Country; giving informed consent. The exclusion criteria for this sample were as follows: being younger than 65; having more than one daughter/son in prison; having a daughter/son incarcerated for reasons unrelated to politics; having a daughter/son in a prison near to their place of residence; not giving informed consent.

In relation to the second sample, the inclusion criteria were the following: being older than 65; not having a daughter/son in prison; living in the Basque Country; and giving informed consent. The exclusion criteria for this group were as follows: being younger than 65; having a daughter/son in prison; not giving informed consent.

To obtain the sample of prisoners' parents, researchers contacted *Etixerat*, an association of family members and friends of Basque prisoners and refugees. *Etixerat* provided the researchers with the contact details of older parents with a daughter or son incarcerated in remote prisons. The daughters and sons of these parents had spent an average of 13 years ($SD = 4.65$) in prisons which are approximately 674 km ($SD = 242.44$) from their homes.

Regarding the representativeness of this group, at the time of the study, 254 Basque prisoners were incarcerated in remote jails. Most of these prisoners had only one parent alive and more than 90% of prisoners' parents were older than 65 (*Etixerat*, 2018). Thus, around 228 parents were more than 65 years old. Thus, the sample of the present study represented 20% of the total sample.

In relation to the sample of parents aged over 65 with no daughters/sons in prison, researchers went to retirement homes and randomly asked residents to participate in the study.

The present study thus consisted of 90 individuals: 59 females (65.6%) and 31 males (34.4%). The mean age of participants was 71.9 ($SD = 6.45$). Specifically, the mean age of the prisoners' parents group was 71.4 ($SD = 5.7$) and the mean age of the controls was 72.4 ($SD = 7.1$). Regarding marital status, most participants were married (64.4%), almost a third of the sample were widowed (27.8%) and a few were divorced (4.4%) or unmarried (3.3%). As for educational level, most of them had completed primary or secondary education (45.6% and 28.9% respectively), while a minority who had higher education qualifications (17.8%) or no studies (7.8%).

No significant differences were found between the two groups regarding age [$t(88) = -0.73$; $p = 0.46$], gender [$\chi^2(1, n = 90) = 0.04$; $p = 0.82$] and education level [$\chi^2(1, n = 90) = 0.57$; $p = 0.90$].

Ethical Issues and Procedure.

To carry out the present study, approval from the Human Research Ethics Committee of the researchers' University was obtained (M10/2018/167).

Once the approval was obtained, a group of psychologists was recruited and trained to interview participants individually. Before the interview, participants were informed about the research and gave their written consent to participate. The interviews were carried out in a calm atmosphere and in a positive and open dialog. They lasted approximately 30 min.

The interviews had two parts. In the first one, participants were asked to answer a questionnaire in order to operationalize the variables that will be explained in the next section. In the second part, each participant was asked to talk about something positive that had happened to him/her and this was recorded on audio. In this way, 5 min of spontaneous positive speech was obtained.

Instruments

Besides sociodemographic variables and the distance from the prison to the parents' home, psychopathology (depression, stress, and anxiety) and positive mental health (psychological, social, and emotional well-being) were assessed. To this end, two mental health measurement methods were applied: the conventional questionnaire method and the automatic analysis of spontaneous speech. In this way, researchers had the chance to test differences in the way both measurements tackle the problem of psychopathology and positive mental health assessment.

The tools used to assess sociodemographic variables, distance from the prison to parents' home, psychopathology (depression, stress, and anxiety), and positive mental health (psychological, social, and emotional well-being) were the following:

Sociodemographic variables: an ad hoc questionnaire was administered to gather data on age, gender, marital status, and education level.

Distance to home: parents were asked where their children were incarcerated in order to measure the distance between the prison and the parents' home.

Depression. The *Beck Depression Inventory-Second Edition* (BDI-II) was the tool chosen to evaluate depression (Beck et al., 1996; Spanish version by Sanz & Vázquez, 2011). The BDI-II is composed of 21 items that measure various depressive symptoms, such as sadness, crying, guilt, and suicide ideation. The symptoms measured with the BDI-II coincide with the criteria used by the DSM-5 and ICD-11 (American Psychiatric Association, 2013; World Health Organization, 2018). Each item of the questionnaire has four response options (0–3), depending on the severity of the symptoms. However, items 16 and 18 present seven options. For the interpretation of results, scores from 0 to 13 correspond to no depression; 14–19 means weak depression; 20–28 represents moderate depression; and 29–63 indicates severe depression. Regarding psychometric properties, the Spanish version of the BDI-II presents adequate validity and reliability (Sanz & Vázquez, 2011), presenting Cronbach's alphas of above 0.85. Other studies have also validated the BDI-II in Spanish samples, demonstrating good psychometric properties of the Spanish version. In fact, the instrument has been validated in university samples (Sanz et al., 2003a, b) as well as in the general population (Sanz et al., 2003a, b) and in patients with psychological disorders (Sanz et al., 2005) showing adequate reliability and validity.

Anxiety. The *Goldberg Anxiety and Depression Scale* (GADS) was used to evaluate anxiety (Goldberg et al., 1988; Spanish version of Duch et al., 1999). The GADS evaluates depression and anxiety and provides information about their severity. The instrument asks about the presence and severity of symptoms in the last 2 weeks. The two subscales that comprise the instrument (depression and anxiety) have nine items where the participant is asked to say whether or not they have experienced the symptom. The anxiety subscale was used in the present study. The cut-off point is four and the higher the score, the greater is the anxiety. The instrument presents adequate psychometric properties. In particular, and regarding reliability, the GADS showed an 81% internal consistency by Cronbach's alpha coefficient for the full scale, 0.70 for the depression scale and 0.74 for the anxiety scale (Mackinnon et al., 1994). Likewise, the generalized anxiety disorder instrument has shown proper

psychometric properties in its Spanish adaptation with a Cronbach's alpha of 0.936 (García-Campayo et al., 2010).

Stress. The *Perceived Stress Scale* (PSS) was used to evaluate stress (Cohen et al., 1983; Spanish version of Remor, 2006). This self-report instrument measures perceived stress over the last month. The PSS has 14 items scored on a range from 0 (never) to 4 (almost always). The higher the score, the greater is the perceived stress. The PSS-14 presents appropriate psychometric properties. Regarding internal reliability, Cronbach's alpha is 0.81 and the test–retest coefficient $r=0.73$. Likewise, in a study conducted by Pedrero-Pérez et al. (2015), the PSS-14 showed good psychometric properties in the Spanish validation of the instrument, with a Cronbach's alpha of 0.86 in the non-clinical sample and 0.89 in the clinical sample.

Positive Mental Health. Positive mental health was measured by means of the *Mental Health Continuum Short Form* (MHC-SF) (Keyes, 2005; Spanish version of Peña et al., 2017). The MHC-SF measures positive mental health with 14 items scored on a range from 1 (never) to 5 (always). It measures three dimensions: emotional mental health (three items measuring the frequency of happiness/well-being of the last month), social mental health (five items measuring variables such as social contribution or social acceptance), and psychological mental health (five items measuring positive relations, personal growth). A total score is obtained summing all items. The higher the score, the better is the respondent's mental health. The MHC-SF presents adequate psychometric properties. In particular, the instrument presents good internal consistency (Cronbach alpha >0.80 ; in the Spanish version: 0.91). Regarding construct validity, results are promising. In fact, negative correlations have been found between depression and anxiety (Keyes, 2002, 2005). In the same line, applied in a Spanish context, the instrument has shown good psychometric properties for both the global scale and the different dimensions, with a Cronbach's alpha above 0.80 in all the dimensions (Olivos et al., 2014).

Automatic analysis of spontaneous speech. Language is the most natural way of communication, and its deterioration is often a symptom of illness. Therefore, the analysis of oral communication has emerged as a useful tool to detect cognitive and physiological variations. It is easy to use, effective, cheap, and non-invasive. The speech message, the way of speaking or the silences a person makes, undoubtedly indicates the individual's cognitive and physiological variations. Moreover, oral communication can be a powerful biomarker of mental health and emotional state. Indeed, oral communication is one of the first skills lost in certain neurodegenerative diseases (Alzheimer's disease, Parkinson's disease), and its variation is also a symptom in deterioration of mental health: depression, anxiety, or suicide (Bedi et al., 2015; Cummins et al., 2015; Laske et al., 2015; Lopez-de-Ipina et al., 2013). Thus, variations of the speech signal are often used to study mental health through classic characteristics, such as prosody, pitch, acoustic formants, and energy. In other words, biomarkers/predictors of mental health status can be obtained from a voice signal.

Speech analysis is widely also used to study and precisely measure mental illness, including depression, suicide, and anxiety (Alghowinem et al., 2013; Alonso et al., 2015; Bedi et al., 2015; Cummins et al., 2013, 2015; France et al., 2000; Helfer et al., 2013; Hönig et al., 2014; Laske et al., 2015; Lopez-de-Ipina & Barroso, 2017;

Lopez-de-Ipina et al., 2013; Moore et al., 2004; Mundt et al., 2007; Ozdas et al., 2004; Quatieri & Malyska, 2012; Williamson et al., 2014).

Regarding automatic analysis of spontaneous speech, some of the most typical features have been used to assess psychopathology and positive mental health: pitch, basic frequency F0, energy, frequency components, cepstrums, Mel-cepstrums (MFCC), intensity, harmonics, noise, shimmer, jitter, and their variants. Such features accurately measure the vocal generation system (muscles, oral tract, oral chords, joints, wind flow), as well as brain function. The features were extracted from the speech signal using MATLAB Toolbox (Mathworks, 2020) and PRAAT Program (Boersma & Weenink, 2020).

Data Processing

First, descriptive statistics were obtained for the sample, and the reliability of the scales was then analyzed using Cronbach's alpha. Pearson correlational analysis was performed to examine the relationship between the measured variables. In order to compare older parents of Basque prisoner and those from the general Basque population, an independent samples *t*-test was carried out on the variables under analysis. The effect size test was performed, considering Cohen's *d*, and the following parameters were used in the statistically significant results ($p < 0.05$): small effect size (value 0.20), medium (value 0.50), and large (0.80) (Cohen, 1992). The chi-square test was used to compare the distribution of the two groups according to their level of depression (minimal, mild, moderate, and severe). Effect size was measured using the Phi statistic, where the following parameters were used: small effect size (value 0.10), medium (value 0.30), and large (0.50) (Cohen, 1992). These analyses were run using SPSS 24.0 software.

Results

Internal consistency of the scales used in the study was good for all variables. Specifically, Cronbach's alpha was 0.83 for the BDI-II; 0.76 for the GASD; 0.79 for the PSS-14; and 0.89 for the MHC-SF. The positive mental health subscales also showed good-acceptable reliability (0.79 for emotional well-being; 0.69 for psychological well-being; and, finally, 0.86 for social well-being).

With respect to the relationships between the measured variables, they were as theoretically expected (see Table 1). Specifically, positive correlations were found between depression, anxiety, and stress, and negative correlations between the aforementioned variables and overall positive mental health score.

All correlations were statistically significant ($p < 0.01$).

In relation to the main objective of the study, prisoners' parents' scores in all variables were compared with those of the control group and significant differences were found in depression, anxiety, stress, and positive mental health (see Table 2).

Table 1 Correlations between psychopathology (depression, anxiety, and stress) and positive mental health measures (Pearson's coefficient)

	Anxiety	Stress	Positive mental health
Depression	0.59	0.75	−0.37
Anxiety		0.70	−0.29
Stress			−0.41

Table 2 Averages and standard deviations in psychopathology indicators (prisoners' parents versus control group)

Psychopathology indicators	Group	<i>M</i>	<i>SD</i>
Depression (0–63)	Prisoners' parents	14.27	8.42
	Control	8.53	4.92
Anxiety (0–4)	Prisoners' parents	2.02	1.54
	Control	0.91	1.10
Stress (0–56)	Prisoners' parents	24.09	9.22
	Control	18.24	7.32

In relation to the first hypothesis, as expected, prisoners' parents reported a higher level of depression than the control group parents, with a large effect size [$t(70.95)=3.94$; $p<0.001$; $d=0.84$]. Both groups of parents were distributed differently across the four categories of the BDI-II (minimal, mild, moderate, and severe depression) ($\chi^2(3)=16.30$; $p=0.001$; $\Phi=0.43$) (see Table 3). In particular, 51.1% of the prisoners' parents were in the minimum depression category; 24.4% in mild depression; 17.8% in moderate depression; and 6.7% in severe depression. With respect to the control group, 88.9% of the subjects were in the minimum depression category; 8.9% in mild depression; and 2.2% in moderate depression. No participant in this group presented severe depression. The control group showed an average score corresponding to the minimum depression ($M=8.53$), while prisoners' parents showed an average score of mild depression ($M=14.27$).

Similar results were found in relation to anxiety. Prisoners' parents reported a higher level of anxiety ($M=2.02$) than parents in the control group ($M=0.91$), with a large effect size [$t(79.65)=3.93$; $p<0.001$; $d=0.84$]. The subjects in the control group did not reach the minimum level of anxiety, while prisoners' parents did.

In terms of stress, the prisoners' parents reported a higher level of stress ($M=24.09$) their counterparts in the control group ($M=18.24$), with a medium-large effect size [$t(88)=3.33$; $p=0.001$; $d=0.71$].

In relation to the second hypothesis, as expected, significant differences were found in positive mental health (see Table 4). In particular, prisoners' parents reported a lower level of mental health ($M=45.69$) than those in the control group ($M=50.29$), with a medium effect size [$t(88)=-2.37$; $p=0.020$; $d=0.51$]. Analyzing the subscales of positive mental health, significant differences were found in emotional well-being, with a large effect size [$t(83.87)=-4.08$; $p<0.001$; $d=0.88$]. In social well-being, trend differences were found [$t(88)=-1.74$;

Table 3 Depression level by group (prisoners' parents versus control group)

	Prisoners' parents	Control group	Total
Depression level	%	%	%
Minimal	51.1	88.9	70.0
Mild	24.4	8.9	16.7
Moderate	17.8	2.2	10.0
Severe	6.7		3.3
Total	100	100	100

$p=0.086$; $d=0.41$], while no difference was found in psychological well-being [$t(88) = -1.25$; $p=0.215$; $d=0.27$].

With the aim of analyzing and confirming the results for our objective, we carried out automatic analysis of the spontaneous speech. Table 5 shows significant differences in voice analysis features related to anxiety and depression in the prisoners' parents' scores when compared with the control group. As mentioned, after completing the questionnaire, participants were asked to talk about a positive event they had recently experienced. In this context, the prisoners' parents considered the improvement in the prisoners' situation as a generally positive event in their life and described it with great pain as a dramatic situation. This sign of adversity can usually be concealed but not when directly describing the situation in spontaneous speech conditions. As a result, in the speech analysis, the following alterations appear in the selected features: the voice became lower, frequency variations started at low frequencies and the voice broke and they spoke with less energy, even expressing symptoms of fatigue. They wanted to speak about these life experiences, but because it was so painful for them, sadness and fatigue had a clear impact on the flow of the voice. This difference was statistically significant as is shown in the following results of the Student's t -test on voice features: F0_std [$t(79)=3.16$; $p<0.002$; $d=13.96$]; MFCC5_mean [$t(79)=3.24$; $p<0.002$; $d=0.73$]; MFCC7_mean [$t(79)=3.53$; $p=0.001$; $d=0.61$], with a medium–large effect size.

Table 4 Group averages and standard deviations in positive mental health (prisoners' parents versus control group)

	Group	<i>M</i>	<i>SD</i>
Positive mental health (14–70)	Prisoners' parents	45.69	9.31
	Control	50.29	9.07
Emotional well-being (1–5)	Prisoners' parents	3.07	0.88
	Control	3.76	0.70
Psychological well-being (1–5)	Prisoners' parents	3.53	0.81
	Control	3.74	0.75
Social well-being (1–5)	Prisoners' parents	3.05	0.64
	Control	3.31	0.75

Table 5 Some features of the automatic speech analysis

Feature	Group	<i>N</i>	<i>M</i>	<i>SD</i>
F0_std (in Hz)	Prisoners' parents	39	54.09	20.17
	Control group	42	67.79	18.38
Energy	Prisoners' parents	39	31.02	28.56
	Control group	42	80.19	193.94
Number of voicing breaks	Prisoners' parents	39	41.38	32.95
	Control group	42	49.30	37.1
MFCC5_mean	Prisoners' parents	39	0.090	0.95
	Control group	42	0.642	1.06
MFCC7_mean	Prisoners' parents	39	0.35	0.6
	Control group	42	0.26	1.4

Discussion

This study investigated secondary prisonization outcomes in over 65-year-old parents of prisoners incarcerated far from their homes. Our results supported the hypotheses of the study. In relation to the first hypothesis, as compared with the control group, parents with sons/daughters in remote prisons showed higher depressive, anxious, and stress-related symptomatology. In relation to the second hypothesis on positive mental health, parents of individuals incarcerated in remote prisons showed lower levels of positive mental health than parents with no incarcerated adult children.

Regarding the contributions of the present study, first, the study shows the relationship between secondary prisonization and mental health in an integrated way. Mental health is frequently explained exclusively in terms of psychopathological symptomatology. This research went beyond this reductive approach and integrated both psychopathological and salutogenic positive mental health perspectives currently addressed in mental health research. Second, the present study assessed the objective combining two different methodologies, that is, a descriptive methodology and an automatic analysis of spontaneous speech. This is a strength of the present research, as automatic analysis of spontaneous speech complements and contributes to descriptive analysis. In fact, when using self-report questionnaires, participants are unable to express themselves freely and must follow the items established in the questionnaires. In contrast, speech analysis allows participants to explain whatever they want, with this being an objective indicator and permitting researchers to detect features that cannot be detected with self-questionnaires.

Finally, this study addressed a research topic that has largely been ignored: the effects of secondary prisonization on the mental health of older parents whose sons or daughters are incarcerated in remote prisons. Thus, the study makes a significant contribution to the fields of mental health and secondary prisonization.

As for the limitations of the study, the small sample size should be mentioned. In fact, many parents aged over 65 years had health problems and were unable to

participate in the project. In other cases, some parents decided not to participate in the study for other reasons (i.e., they were not available and they thought it was unnecessary). Thus, and taking into account the small sample size, the results should be interpreted with caution.

Related to future lines of research, it would be interesting to assess gender differences between parents of imprisoned daughters/sons in order to better understand how secondary prisonization affects mental health. Likewise, other variables, such as self-esteem or resilience, could be measured in this sample with the aim of improving the parents' situation. Finally, and in light of the above, intervention programs could be designed to help parents in this specific population.

In sum, this study showed that older parents of Basque prisoners, due to the secondary prisonization they experience, have lower levels of mental health than ordinary parents of their age. Many ways to improve the mental health of older parents with incarcerated adult children could be implemented: for example, promoting a more attentive psychological or psychiatric assistance for this group. Indeed, specific groups of people with mental health problems usually demand (public) personalized assistance. Nevertheless, older parents of Basque inmates in remote prisons might constitute a different case because, strictly speaking, they do not suffer an "illness," but a situation that brings suffering to their lives in terms of stress, depression, and anxiety. Therefore, a more direct and easier way to manage the problem would be to implement the necessary changes in penitentiary policies with the purpose of discontinuing remote imprisonment. Changing the stressful situation experienced by these older parents would help improve their mental health.

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Data Availability Data sharing is not applicable for ethical reasons included in the approval of the Ethical Committee for Research Involving Human Beings of the researchers' University.

Declarations

Conflict of Interest The authors declare that they have no conflict of interest.

Ethics Approval Approval of Ethical Committee for Research Involving Human Beings of the researchers' University was obtained (M10/2018/167).

Informed Consent.

Informed consent was obtained from all individual participants included in the study.

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