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RESEARCH ARTICLE

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# Pregnancy during the COVID-19 pandemic: A cross-sectional observational descriptive study

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## Abstract

**Aim:** To provide data on the fears of pregnant women during the confinement period and to learn about the factors, which may have exacerbated fear in Spanish pregnant women during the pandemic.

**Design:** A cross-sectional observational and descriptive study.

**Methods:** An anonymous survey was carried out using virtual media in a pregnant population (aged ≥18 years) during the confinement period from 1 April to 1 May 2020.

**Results:** The total sample comprised of 62 individuals, with a mean age of 33.6 ± 3.6 years and a mean gestation time of 23.6 ± 9.8 weeks. All of the women used preventive measures against SARS-CoV-2. The most common preventive measures were social isolation (82.3%, $n = 51$) and frequent handwashing (69.4%, $n = 43$). The most common feeling was fear (29%, $n = 18$). The main fears were related to transplacental infection (27%, $n = 16$), loneliness during childbirth, and being separated from the newborn (27%, $n = 16$). In addition, 59.7% ($n = 37$) considered changing their child-rearing practices after the pandemic.

**KEYWORDS**
childbirth, confinement, coronavirus infections, COVID-19, pandemic, pregnancy

## 1 | INTRODUCTION

COVID-19 is a syndrome that is manifested by the respiratory infection caused by the SARS-CoV-2 virus. It was first identified in Wuhan, Hubei Province, China, on 31 December 2019, following the exposure of large numbers of people to the virus at a wholesale market involving seafood, fish, and live animals. On 7 January, it was identified as a new virus of the *Coronaviridea* family and was subsequently named SARS-CoV-2 after an international consensus (Wiersinga et al., 2020). The rapid spread and aggressiveness of the COVID-19 around the world prompted governments to take drastic measures, causing widespread panic and concern amongst the population and affecting particularly vulnerable population groups (Li et al., 2020; Iyer et al., 2020).

## 2 | BACKGROUND

In this sense, pregnant women are one of the most vulnerable subgroups, as their natural physiological changes and mechanisms increase their risk of infection (Dashraath et al., 2020). In the context of a COVID-19 pandemic, the uncertainty during pregnancy and the risk of vertical transmission in newborns forced prenatal care to be modified. For example, childbirth preparation classes were halted, as were physical medical visits and attendance at basic tests such as analytics or ultrasounds, in favour of new online-based classes (Iorga et al., 2021). All of these changes and others have had a statistically significant impact on women of reproductive age (Xiong et al., 2020), particularly pregnant women (Preis et al., 2020), increasing stress, anxiety, depression and sleep problems (Túlio De-Mello et al., 2020).

Although pregnancy in a pandemic-free context is already stressful, with high levels of anxiety and depression in some cases (Yirmiya et al., 2021), the mental health of pregnant women has become critical not only for their own well-being but also for the well-being of their child and family (Kinser et al., 2021). High levels of maternal stress during pregnancy have been shown to increase the risk of preterm birth and intrauterine growth restrictions (Kirchengast & Hartmann, 2021); therefore, knowing the fears that pregnant women experienced during the first months of the pandemic would be of great interest in attempting to ameliorate them and designing strategies for mitigating their impact.

## 3 | METHODS

### 3.1 | Design

Cross-sectional observational and descriptive study, with sample collection using an anonymous survey with online and virtual media. Dissemination of the questionnaire began on 1 April 2020 and ended on 1 May 2020.

### 3.2 | Participants and Settings

Inclusion criteria: The included participants were pregnant women over 18 years of age who received the questionnaire online through one of the dissemination platforms (social networks) and who voluntarily agreed to complete the survey.

Exclusion criteria: Subjects who did not authorize the use of the data for scientific purposes, those aged under 18 years and those who failed to complete any item of the questionnaire were excluded.

Non-probability convenience sampling was used. No sample size was established, and all those subjects who voluntarily wished to complete the questionnaire after accepting the use of their data were included. No financial compensation was provided for completing the questionnaire. Whether or not the subjects had been infected with COVID-19 was not taken into account.

### 3.3 | Variables

An ad hoc questionnaire was developed for data collection and sent digitally (Qualtrics® corporate software), with the objective of improving dissemination and data privacy. The questionnaire consisted of the following variables:

- Sociodemographic variables: age, age range (20 to 30 years, 30 to 40 years and >40 years).
- Pregnancy-related variables: first pregnancy (yes/no), number of pregnancies (numerical identification of the number of pregnancies), week of gestation (numerical identification of the week of gestation), type of gestation (single/twin).
- Childbirth-related variables: preferred type of birth (vaginal/caesarean section), preferred birth partner (free text), preferred type of pain relief (free text).
- Variables related to preventive measures against COVID-19: use of measures (yes/no), type of measures (free text).
- Variables related to feelings: how the individual felt about living through the pandemic while being pregnant (free text). Classification of positive feelings in terms of the following expressions: feeling well, calm, and bored. Classification of negative feelings in terms of the following expressions: feeling overwhelmed, anxious, afraid, tired, strange, powerless, fearful, nervous, worried, mediocre, lonely, sad.
- Fear-related variables: Fears while being pregnant during the pandemic (free text).
- Variables relating to raising the baby after living through the COVID-19 pandemic (free text).

### 3.4 | Process

The electronic survey "Pregnancy in times of COVID-19" was designed by a multidisciplinary group of scientists from Jaume I University. Following a structured review of the literature, a draft survey was created, which was reviewed and edited by the researchers of the project. The questionnaire was prepared using the Qualtrics® application, with a score of Fairly Good obtained using the ExpertReview analyzer powered by iQ®. After reaching a consensus with respect to the final version, the survey was shared using WhatsApp™. The people who received the survey also participated in sharing through the link provided. The survey was structured into two blocks. The first block contained information about the study, its objectives, the research team, ethical information and acceptance of inclusion in the study. The second block contained all the questions relating to the research.

The responses to the free-text questions were categorized based on the most commonly reported responses (response patterns). Two members of the research team assigned each response to each of the established patterns, with a consensus on the assignments. In the event of a discrepancy, a third researcher was consulted.

### 3.5 | Analysis

The statistical analyses were performed using IBM SPSS Statistics version 26 (IBM Corporation). The continuous variables were described using means ±standard deviation. The categorical variables were expressed using the frequency (n) and percentages (%). The influence of age on the dichotomous qualitative variables of the questionnaire was analysed using the Student's *t* test for quantitative independent samples. Fisher's exact test was used for qualitative variables as they did not meet normality criteria. Statistical significance was set at $p < .05$.

Using the Qualtrics® computer application the anonymity of the participants and the confidentiality of the data were guaranteed. The data were not accessible to individuals outside the study. All the study participants responded to the first question of the questionnaire (relating to presentation of the research team, the objectives, and the ethical principles upon which data processing was based), thus leaving a written record of their acceptance or rejection. The subjects who accepted began completing the questionnaire and were able to stop at any time, with data being collected up until that point.

## 4 | RESULTS

### 4.1 | Diagram of the process

A total of 89 people followed the link provided. After presentation of the study, $n = 27$ agreed to participate but did not respond to all of the questions. Finally, $N = 62$ pregnant women agreed to participate and responded to all of the questions.

### 4.2 | Description of the population

#### 4.2.1 | Sociodemographic characteristics

The mean age was 33.6 years, with a standard deviation of 3.6. The youngest individual was 26 years of age and the oldest was 44 years old. By age ranges, 16.1% ($n = 10$) were between 20 and 30 years old, 77.4% ($n = 48$) were between 30 and 40 years old and 6.5% ($n = 4$) were aged over 40.

#### 4.2.2 | Pregnancy-related characteristics

The mean number of previous pregnancies was 1.8. The mean length of gestation was 23.6 weeks and 98.3% were single pregnancies (see Table 1).

#### 4.2.3 | Childbirth-related characteristics

All of the women in this study preferred a vaginal birth. Most (93.5%, $n = 58$) wished to be accompanied by their partner and favoured pharmacological pain relief measures such as epidurals (67.7%, $n = 42$) (see Table 1).

**TABLE 1** Pregnancy and childbirth-related characteristics ($N = 62$)

| | X ± s.d (min.-max.) |
|---|---|
| Number of previous pregnancies | 1.8 ± 0.5 (1–3) |
| One | 43 (70.5) |
| Two | 17 (27.8) |
| Three | 1(1.7) |
| Week of gestation | 23.6 ± 9.8 (6–40) |
| Type of pregnancy | *n* (%) |
| Single | 61 (98.3) |
| Twin | 1 (1.7) |
| Preferred type of birth | |
| Vaginal | 62 (100) |
| Caesarean | - |
| Preferred birth partner | |
| Partner | 58 (93.5) |
| Sister | 2 (3.2) |
| Mother | 2 (3.2) |
| Preferred type of pain relief | |
| No pain relief | 7 (11.3) |
| Pharmacological pain relief | 42 (67.7) |
| Non-pharmacological relief | 13 (21.0) |

*Note:* X: mean; s.d: standard deviation; min.: minimum; max.: maximum

#### 4.2.4 | Characteristics related to preventive measures against COVID-19

All of the surveyed pregnant women used measures against COVID-19 infection. The most common measures were social isolation (82.3%, $n = 51$), frequent handwashing (69.4%, $n = 43$), and use of masks (50%, $n = 31$) (see Table 2).

#### 4.2.5 | Feelings

The most commonly described feelings were fear (33.9%, $n = 21$) and of being overwhelmed (25.9%, $n = 16$) (see Table 3).

#### 4.2.6 | Fears

Overall, 95.2% ($n = 59$) presented with some type of fear, particularly with respect to transplacental infection (27.1%, $n = 16$), loneliness during childbirth (27.1%, $n = 16$) and being separated from their newborn as a result of their own infection (27.1%, $n = 16$). There

**TABLE 2** Preventive measures and changes in child-rearing following the COVID-19 pandemic ($N = 62$)

| | *n (%)* |
|---|---|
| Greater use of hygiene measures due to the COVID pandemic | |
| Yes | 62 (100) |
| No | - |
| Types of measures | |
| Confinement and social isolation | 51 (82.3) |
| Use of masks | 31 (50.0) |
| Use of gloves | 21 (33.9) |
| Frequent handwashing | 43 (69.4) |
| Disinfecting clothes on entering the home | 30 (48.4) |
| Disinfecting food prior to storage in the home | 25 (40.3) |
| Considering changes in child-rearing as a result of COVID | |
| Yes | 37 (59.7) |
| No | 25 (40.3) |
| Type of change | |
| Restriction of visits | 26 (76.5) |
| Reconsideration of breastfeeding after having initially ruled out the opportunity | 6 (17.6) |
| Unsure of which changes to make but certain of wanting to make some sort of change | 2 (5.9) |

were no differences between mothers with more than one pregnancy and primigravid women (see Table 3).

### 4.2.7 | Changes in child-rearing after experiencing the COVID-19 pandemic

Overall, 59.7% ($n = 37$) of the future mothers considered making changes in the upbringing of their baby after the outbreak of the pandemic. The primary changes were restriction of visits (76.5%, $n = 26$) and reconsideration of breastfeeding after having initially ruled out the opportunity (17.6%, $n = 6$) (see Table 2).

### 4.2.8 | Bivariate analysis of age with the rest of the variables under study

The specific fears were not related to any sociodemographic variables or aspects related to pregnancy, childbirth, preventive measures against COVID-19, feelings or changes in parenting (see Table 4).

The presence of the greatest number of positive feelings was related ($p = .022$) to pain relief preferences, where the more positive pregnant women opted for non-pharmacological approaches to the palliation of labour pain (50.0%, $n = 6$). The more negative pregnant women opted for pharmacological treatments for pain relief (74.0%, $n = 37$). The pregnant women with more positive feelings presented fewer fears (16.6%, $n = 2$) compared to those with more negative

**TABLE 3** Feelings and fears-related characteristics ($N = 62$)

| | *n (%)* |
|---|---|
| Feelings | |
| Overwhelmed | 16 (25.9) |
| Anxious | 8 (12.9) |
| Bored | 2 (3.2) |
| Well | 16 (25.8) |
| Tired | 4 (6.4) |
| Strange | 4 (6.4) |
| Powerless | 1 (1.6) |
| Afraid | 21 (33.9) |
| Worried | 5 (8.1) |
| Mediocre | 1 (1.6) |
| Lonely | 15 (24.2) |
| Sad | 8 (12.9) |
| Classification of feelings | |
| Positive | 12 (19.4) |
| Negative | 50 (80.6) |
| Fear | |
| Yes | 59 (95.2) |
| No | 3 (4.8) |
| Specific fear | |
| Fear of transplacental infection | 16 (27.1) |
| Fear of being alone during childbirth and separated from the newborn | 16 (27.1) |
| Fear of infection of the family | 5 (8.5) |
| Fear of complications during childbirth | 7 (11.9) |
| Fear relating to provision of health services and changes in management | 9 (15.3) |
| Fear relating to the lack of knowledge about the effects of COVID in babies | 6 (10.2) |

feelings (2.0%, $n = 1$). None of the other aspects were related to positive or negative feelings (see Table 5).

## 5 | DISCUSSION

The aim of this study was to know about the fears that pregnant women experienced during the first months of the pandemic. Fear was expressed by 95% of our sample, lending support to the idea of fear as an emotion aimed at preserving life and mobilizing to self-defence against threats to physical integrity (Iyer et al., 2020; Pavlakis et al., 2020; Salehi et al., 2020). The fear of possible transplacental infection was particularly prevalent, as there is a lack of knowledge surrounding the possible foetal complications that COVID-19 can cause. Recent research indicates that SARS-CoV-2 infection in pregnant women leads to a higher risk of miscarriage (2%), intrauterine growth restriction (10%) and preterm birth (39%) (Dashraath et al., 2020), low birthweight and increase in the number of caesarean section (69,2%) (Abedzadeh-Kalahroudi et al., 2021; Vousden et al., 2021). While these complications are similar to

**TABLE 4** Bivariate analysis of pregnant women's fears ($N = 62$)

| | Fear *n (%)* | | P value |
|---|---|---|---|
| | Yes | No | |
| Age (years) | 33.6 ± 3.7 | 33.6 ± 1.5 | 0.986 |
| Age range | | | |
| 20 to 30 years | 10 (16.9) | - | 0.631 |
| 30 to 40 years | 45 (76.3) | 3 (100) | |
| >40 years | 4 (6.8) | - | |
| First pregnancy | | | 0.219 |
| Yes | 40 | 1 (33.3) | |
| No | 19 | 2 (66.7) | |
| Number of pregnancies | | | 0.305 |
| One | 42 (72.4) | 1 (33.3) | |
| Two | 15 (25.8) | 2 (66.7) | |
| Three | 1 (1.8) | - | |
| Week of gestation | 23.7 ± 9.6 | 21.0 ± 16.6 | 0.641 |
| Pain relief preference | | | 0.132 |
| No pain relief | 7 (11.8) | - | |
| Pharmacological pain relief | 41 (69.6) | 1 (33.3) | |
| Non-pharmacological pain relief | 11 (18.6) | 2 (66.6) | |
| Types of measures | | | 0.410 |
| Leaving the house | | | |
| Yes | 48 (81.4) | 3 (100) | |
| No | 11 (18.6) | - | |
| Use of masks | | | 0.554 |
| Yes | 30 (50.8) | 1 (33.3) | |
| No | 29 (49.2) | 2 (66.7) | |
| Use of gloves | | | 0.984 |
| Yes | 20 (33.9) | 1 (33.3) | |
| No | 39 (66.1) | 2 (66.7) | |
| Handwashing | | | 0.918 |
| Yes | 41(69.5) | 2 (66.7) | |
| No | 18 (30.5) | 1 (33.3) | |
| Greater care in the cleanliness of food | | | 0.800 |
| Yes | 24 (40.7) | 1 (33.3) | |
| No | 35 (59.3) | 2 (66.7) | |
| Cleaning and disinfecting clothing | | | 0.516 |
| Yes | 28 (47.5) | 2 (66.7) | |
| No | 31 (52.5) | 1 (33.3) | |
| Feeling | | | 0.340 |
| Overwhelmed | 15 (25.4) | 1 (33.3) | |
| Anxious | 8 (13.6) | - | |
| Bored | 2 (3.4) | - | |
| Well | 13 (22.0) | 3 (100) | |
| Tired | 4 (6.8) | - | |
| Strange | 4 (6.8) | - | |
| Powerless | 1 (1.8) | - | |
| Afraid | 21 (35.6) | - | |
| Nervous | 5 (1.8) | - | |
| Worried | 1 (1.8) | - | |
| Mediocre | 1 (1.8) | - | |
| Lonely | 12 (20.3) | 3 (100) | |
| Sad | 8 (13.6) | - | |
| Changes in child-rearing | | | 0.853 |
| Restriction of visits | 25 (42.4) | 1 (33.3) | |
| Reconsideration of breastfeeding after having initially ruled out the opportunity | 6 (10.2) | - | |
| Unsure of which changes to make but certain of wanting to make some sort of change | 2 (3.4) | 1 (33.3) | |

those resulting from infections caused by other pathogenic microorganisms (Sass et al., 2017), with the presence of symptoms such as fever, dyspnoea, cough (Abedzadeh-Kalahroudi et al., 2021) or those that can occur in women with high levels of anxiousness during pregnancy (Bussières et al., 2015), uncertainty in the face of the unknown does not help the management of anxiety.

The other main fears were found to arise from loneliness as a result of social isolation, the most commonly used method of protection against infection (Wang et al., 2021). This effective measure against SARS-CoV-2 can cause difficulties in the preparation of the necessary material for the arrival of the baby and complications, such as gestational diabetes (Wagnild et al., 2019), premature birth or low birthweight (Baena-García et al., 2019) derived from sedentary lifestyles. In addition, feelings of nervousness, helplessness and loneliness are generated. This loneliness, possibly accentuated by hospital management strategies such as birth partner restrictions and the elimination of family visits

**TABLE 5** Bivariate analysis of pregnant women's feelings ($N = 62$)

| | Feelings | | P value |
|---|---|---|---|
| | Positive | Negative | |
| Age | 33.7 ± 3.7 | 33.1 ± 3.3 | 0.701 |
| Age range | | | |
| 20 to 30 years | 1 (8.3) | 9 (18.0) | 0.701 |
| 30 to 40 years | 10 (83.3) | 38 (76.0) | |
| >40 years | 1 (8.3) | 3 (6.0) | |
| First pregnancy | | | 0.735 |
| Yes | 9 (75.0) | 32 (64.0) | |
| No | 3 (25.0) | 18 (36.0) | |
| Number of pregnancies | | | 0.531 |
| One | 10 (83.3) | 33 (66.0) | |
| Two | 2 (16.6) | 15 (30.0) | |
| Three | - | 1 (2.0) | |
| Week of gestation | 21.8 ± 11.2 | 24.1 ± 9.6 | 0.348 |
| Pain relief preference | | | 0.022 |
| No pain relief | 1 (8.3) | 6 (12.0) | |
| Pharmacological pain relief | 5 (41.7) | 37 (74.0) | |
| Non-pharmacological pain relief | 6 (50.0) | 7 (14.0) | |
| Types of measures | | | 0.464 |
| Leaving the house | | | |
| Yes | 9 (75.0) | 42 (84.0) | |
| No | 3 (25.0) | 8 (16.0) | |
| Use of masks | | | 0.749 |
| Yes | 7 (58.3) | 24 (48.0) | |
| No | 5 (41.7) | 26 (52.0) | |
| Use of gloves | | | 0.965 |
| Yes | 4 (33.3) | 17 (34.0) | |
| No | 8 (66.7) | 33(66.0) | |
| Handwashing | | | 0.822 |
| Yes | 8 (33.3) | 35 (70.0) | |
| No | 4 (66.7) | 15 (30.0) | |
| Greater care in the cleanliness of food | | | 0.330 |
| Yes | 3 (25.0) | 22 (44.0) | |
| No | 9 (75.0) | 28 (56.0) | |
| Cleaning and disinfecting clothing | | | 0.339 |
| Yes | 4 (33.3) | 26 (52.0) | |
| No | 8 (66.7) | 24 (48.0) | |
| Fears (yes/no) | | | 0.033 |
| Yes | 10 (83.3) | 49 (58.0) | |
| No | 2 (16.6) | 1 (2.0) | |
| Specific fear | | | 0.796 |
| Fear of transplacental infection | 3 (25.0) | 13 (26.0) | |
| Fear of being alone during childbirth and separated from the newborn | 2 (16.6) | 14 (28.0) | |
| Fear of infection of the family | 1 (8.3) | 4 (8.0) | |
| Fear of complications in childbirth | 2 (16.6) | 5 (10.0) | |
| Fear relating to the provision of healthcare services and changes in management | 2 (16.6) | 7 (14.0) | |
| Fear relating to the lack of knowledge on the effects of COVID in babies | - | 6 (12.0) | |
| Types of changes to child-rearing | | | 0.788 |
| Restriction of visits | 5 (41.7) | 21 (42.0) | |
| Reconsideration of breastfeeding after having initially ruled out the opportunity | 1 (8.3) | 5 (10.0) | |
| Unsure of which changes to make but certain of wanting to make some sort of change | - | 2 (4.0) | |

(Salma, 2021), can result in levels of fear and anxiety not being reduced as the due date approaches, as found in studies prior to the pandemic (Hildingsson et al., 2017). Furthermore, of note are behavioural changes such as the reconsideration of breastfeeding due to its beneficial effects on the development of the newborn´s immune system (Andreas et al., 2015).

The pandemic and confinement were thus the sole factors responsible for increased feelings of loneliness and fear of infection in pregnant women. Factors such as youth (Berthelot et al., 2020), inexperience (Hildingsson et al., 2017) and length of pregnancy (Newham et al., 2012) did not condition these fears, as found in research prior to the pandemic and confinement (Berthelot et al., 2020) or even in research carried out in other countries such as Israel (Taubman-Ben-Ari et al., 2020). These levels of fear could have repercussions in terms of complications such as premature birth, low birthweight or intrauterine growth restriction. Fear could be reduced by ensuring the continuity of prenatal education,

guidance during pregnancy, and follow-up of pregnant women by telephone (Chen et al., 2020; Coşkuner Potur et al., 2017; Lucas & Bamber, 2021). Understanding the fears and emotional states of pregnant women could aid in the implementation of effective mental health prevention measures, particularly during infectious disease epidemics. In this sense, nursing interventions such as encouraging the patient, providing an acceptable environment, actively listening, and involving family members in patient care may be beneficial in reducing the fears of hospitalized patients (Alexis Ramírez-Coronel et al., 2020).

That being said, there are limitations to consider when interpreting these findings. With respect to the limitations in the analysed data, it should be noted that socioeconomic status, level of education and presence of the disease in loved ones or close individuals were not assessed. Other limitations to consider for future research include a small sample size, a single centre and no validation of the questionnaire before use. Rather than concluding the topic, however, this study provides some data for future research to better understand and evaluate the efficacy of healthcare strategies on pregnant women's general well-being and mental health.

## 6 | CONCLUSIONS

Fear was present in 95.2% of pregnant women, with transplacental infection and loneliness during childbirth being the most common fears. The pandemic and confinement were the only factors influencing this increase in fear. Age, inexperience with other births and length of pregnancy were not found to condition these fears. These levels of fear could have repercussions in terms of complications in the baby that could be mitigated by providing effective nursing interventions. In this manner, the importance of the number of fears and the emotional state of pregnant women during the period of confinement found in this study would justify the implementation of effective preventive control strategies for their mental health well-being during infectious disease outbreaks. This information may be of interest in those countries, which continue to fight the epidemic or in those that are experiencing outbreaks and will once again require the implementation of social isolation measures.

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### CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

### AUTHORS CONTRIBUTION

**Ana Folch Ayora:** Conceptualization, Methodology, Writing – Original Draft, Investigation, **Pablo Salas-Medina:** Conceptualization, Methodology, Writing – Original Draft, Validation, Investigation, Project administration, **Eladio Collado-Boira:** Conceptualization, Writing – Original Draft, Writing – Review & Editing, Visualization, **Carmen Ropero-Padilla:** Methodology, Supervision, Investigation, Writing – Review & Editing, Visualization, **Miguel Rodriguez-Arrastia:** Methodology, Supervision, Investigation, Writing – Review & Editing, Visualization, **María Desamparados Bernat-Adell:** Conceptualization, Methodology, Formal analysis, Writing – Original Draft, Supervision, Project administration.

### ETHICAL STATEMENT

The Research Ethics Committee approval was granted by the Ethics Committee at Jaume I University (CD/61/2021). The study was carried out in compliance with the Declaration of Helsinki and the ethical principles of biomedical research. The processing of personal data was in accordance with the provisions of Organic Law 3/2018 of 5 December, on the Protection of Personal Data and Guarantee of Digital Rights and Royal Decree 5/2018 on urgent measures for the adaptation of Spanish law to European regulations on data protection, based on Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data.

### DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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