

Article

A Visual–Emotional Analysis of Perception in the Homes of Chronic Patients during Confinement by COVID-19 in Spain

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Abstract: One of the highest risk groups the highest during COVID-19 were chronic patients. In addition to being a population at risk, in the lockdown they had to combine the pandemic with their own disease. Through a qualitative study of visual–emotional analysis, the perception of patients and their social environment (immediate support network) about the domestic confinement in Spain was requested during the State of Alarm in the Spring of 2020. For this, 33 participants filled out an online questionnaire with narratives and images describing their experiences. They were asked to share their experiences about quarantine from several perspectives of the housing spaces: the workplace (or alternatively, if they did not work, the most used occupational space), the least pleasant spaces or aspects of the dwelling and the most pleasant or comfortable area. The results suggested the importance for participants of natural and adequate lighting in spaces and tidiness, with both being linked to well-valued spaces. Moreover, rest was the activity most undertaken, for those who did not telework. Likewise, the narratives provided by participants were mostly positive, despite their condition, maybe due to their own coping with the disease. Dwellings were the adaptive means to tackle the situation of physical isolation as a place of protection against an external threat. The living room and bedrooms were chosen as the most prominent places. The characteristics of the dwellings conditioned the experiences lived during the quarantine of chronic patients.

Keywords: COVID-19 lockdown; chronic patients; home perception; Photovoice; sentiment analysis; qualitative; confinement; home spaces; housing



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1. Introduction

At the end of 2019, a new coronavirus, SARS-CoV-2, was detected. Within six months, its worldwide transmission provoked a pandemic [1], with 10,000,000 confirmed cases and 500,000 deaths, causing a health crisis unusual in the last century [2].

Shortly after the end of the State of Alarm in Spain, on 2 July 2020, a total of 249,000 people diagnosed and more than 28,000 deaths were already quantified. Spain became one of the European countries most affected by COVID-19 [3].

Due to the health competencies of the Autonomous Communities (regions) in Spain, they dealt with COVID-19 unevenly. At the national level, the National Health System suffered due to the scarcity of resources, equipment and personnel in a climate of restlessness and uncertainty in health services. Faced with the threat generated shortly before the Spring of 2020, the national government decreed the State of Alarm, which led to mandatory confinement in homes, except for force majeure or attention to essential services, as well as the closure of all schools [4,5].

In Europe, the main causes of mortality and morbidity are due to chronic diseases. Many of them are related to population aging, lifestyle and genetic predisposition. The management of chronic diseases is a priority for policy makers and the scientific community [6]. In Spain, almost half of men (49.3%) and more than a half of women (59.1%) over 15 years old develop some disease or chronic health problem [7].

Non-pharmacological interventions were the main measures taken by most countries to combat the spread of COVID-19 during the first waves of infection [8]. The confinement forced citizens to remain in their homes [9]. In the case of Spain, as a result of Royal Decree 463/2020, due to the health emergency situation, the government adopted this measure, especially recommended for vulnerable groups (elderly people [10], chronic [11] and immunosuppressed patients) [12]. Indeed, quarantine was especially impactful on these segments of the population [13], standing out as children and young [14,15], elderly [16] and chronic patients [17]. In the latter, the feeling of insecurity and uncertainty and their own fears of contagion were joined by other episodes of anxiety and discomfort due to both the fear of a greater vulnerability and of their already deteriorated health [18], as well as a lack of health support [19] and social support networks, based on family, friends or closest contacts [20].

By establishing compulsory confinement for the population, the home became the main refuge [21] and the only space available and safe for citizens [22]. All daily activity began to take place at home [23], causing alterations in the habits and consumption of dwellings [24–28]. It also meant a change in the way of working [29,30] or studying [31]. All this highlighted the importance of the characteristics of the house, taking into account the unusual situation of confinement.

Housing is defined as an intermediate determinant related to social inequalities in health, according to the conceptual framework adapted from the WHO by Vásquez-Vera et al. In fact, it was supposed to be a key factor during the first wave. Domestic spaces changed their uses and meanings for their dwellers, turning out to be the center of operations for families [32]. Housing during the pandemic became shelter and, especially for vulnerable groups, such as the chronically ill among others [33], constituted a basic human need, a structure or physical space. The home is a safe haven that protects from external threats [34] and is the preferred place to be cared for when receiving palliative care [35]. Likewise, 85% of chronic patients who receive home care have a longer life expectancy than patients who do not [36].

The built environment design directly affects the habitability of homes [26]. Moreover, the home is associated with emotions, memories and comfort. For many people, leaving home is disturbing and depressing [37]. Having stability in the home reduces the stress produced in the search for a home and in the adaptation to the place itself [38]. In this sense, several studies reported mental health consequences for chronic patients during confinement, such as stress, anxiety and depression [39–42] or managing their own disease during the pandemic [43–47]. The perception of patients during a situation as extreme as COVID-19 isolation helps to understand the interactions between people and domestic environments through their testimonies and emotions experienced. COVID-19 meant an alteration to their lifestyles for this group; they had to stay home longer than usual [48], had greater difficulty with health care [49] and were even affected in their own care [17,50]. This generated inequalities among chronic patients themselves in access to resources, support and health services [51].

However, there are fewer studies that address confinement and housing in chronic patients from a qualitative perspective. Considering that the home was the refuge of all people, this study is relevant to provide findings that allow knowledge of the the perception of patients in an adverse situation, such as confinement due to COVID-19.

The aim of this qualitative study is to understand the perception by chronic patients of their environment during the lockdown, particularly their occupational spaces and other aspects related to the home, the place that was the refuge for all confined people. Their experiences might contribute to develop strategies and public policies on how to prevent certain situations (such as social isolation or difficulties on health-care attention), or at least to make up contingency plans to copy for health emergencies such as this one.

2. Theoretical Framework

2.1. Visual Methods in Qualitative Research

There is an increasing interest and acceptance of qualitative research in the health sciences [52] and more and more reputable medical journals are publishing these qualitative studies [53]. Qualitative research is considered necessary for public health. It allows the study of people's health and disease [54].

Qualitative research has been evolving in reducing the time and cost of studies, using new techniques to accelerate the processes of data collection and analysis [55]. Among the different methods used in qualitative research are visual methods. Visual methods are used to interpret and understand images, which can be collected in different ways, such as photographs, drawings and paintings, among other media. Visual methodologies have evolved in recent years and are accepted tools in qualitative research. In addition, their use has spread in different disciplines [56–58], including health research.

Visual methods are useful, since they enhance findings by uncovering more detailed information that cannot be obtained by other verbal and written methods. Their versatility allows them to be applied when working with any population [56].

Among the different image-based methods to allow participants to express themselves, Photovoice stands out [59]. Photovoice is characterized by its versatility, since its methodology can be adapted to different contexts. It also uses a participatory research approach, promotes individual reflection and does not require direction by the researcher. Images are combined with the narrative of participants [31,60,61]. The Photovoice originally promotes giving “voice” to those who usually do not have it, also eliciting community debate for critical awareness, detection of shortcomings and the proposal of solutions. During the confinement, an adaptation was elaborated, given the circumstances, urging participants to reflect individually.

2.2. Sentiment Analysis to Understand Emotions

Sentiment analysis is a field of research to analyze and understand human emotions [62–64]. It uses natural language processing techniques and text analysis, allowing the detection of emotional content in narratives. Through sentiment analysis, two different metrics can be obtained: one is the polarity and the other the subjectivity of the analyzed texts [62]. Polarity analysis allows the identification of the sentiments in a text [57]. There are three types of polarity: positive, negative and neutral [31]. This approach allows us to assess those emotions perceived from the participants' narratives.

3. Materials and Methods

To carry out the research, the methodology proposed by Cuerdo-Vilches and Navas Martín [31] was called visual–emotional analysis. This methodology was characterized by combining two qualitative methods: on the one hand, the collection of images and narratives from the participants through an online data collection platform, as a methodological adaptation of the Photovoice technique. On the other hand, the use of sentiment analysis and text mining for the analysis of textual content, where the intention was not only to making the photograph (as an explanatory argument), but also to analyze the mood and other potentially implicit emotional aspects in the messages by their authors, through their polarity.

This kind of approach usually finds relevant the personal interaction in data collection, by the uniqueness of the context. Thus, it was necessary to reinvent the original participatory methodological approach, adapting data collection techniques [65]. Due to the COVID-19 pandemic circumstances, social research techniques without a physical presence were appropriate [66].

In addition, participants were asked for sociodemographic data and information on their condition as patients. Next, they were asked to share photographs taken by themselves, on four specific issues (the first two options being exclusive depending on

whether the person teleworked or not). The topics they were asked for photographs about were the following:

- An image that defined the teleworking space at home (T1), or, failing that, an image that represented the space in which they spent most of their time (T2);
- An image that reflected the least pleasant aspect of their home (T3);
- An image that showed the most comfortable domestic space for them (T4).

Likewise, they were asked to tag the images with three keywords per image, to categorize them. A written narrative contextualization was also requested, answering, for each of the images, the following five open questions:

- What do you see in the picture? (Q1);
- What is happening in the picture? (Q2);
- Why did you take this picture? (Q3);
- What does this picture express about your life now, during confinement? (Q4);
- What message could this picture give to other people, to improve their lives? (Q5).

This contextualization allows the researchers to categorize the images according to the intentions of the participants as well as the subsequent content analysis and finally the mixed analysis.

3.1. Participants and Procedures

For the recruitment of participants (Table 1), a purposive non-probabilistic sampling was taken, with the collaboration of the Más-Que-Ideas Foundation. This foundation is a non-profit organization whose mission is to improve, promote and contribute to a change in the health sector, focused on improving the quality of life of patients and their environment. The foundation has a wide network of contacts between different organizations and patient associations. With their intermediation, the dissemination was carried out through the email and social networks of the foundation itself. The data collection period was established from 20 May to 4 June, when the State of Alarm decreed by the Spanish government was in force [67], so the population was still confined to their homes.

The inclusion criteria to participate were as follows: to be adults (over 18) and to be patients or close to one of them, as cohabitants in the same household (joined a patient association).

Participation had the approval of the foundation. In addition, online consent was explicitly obtained from the participants themselves, accessing the qualitative questionnaire after reading a study description and the conditions of participation. In total, 33 responses (photos and texts) were validated, according to Table 1.

Table 1. Sample of participants in the qualitative questionnaire.

Participant Code	Gender	Age Group	Chronic Disease	Patient Association
1	Woman	55–64	No	Yes
2	Woman	45–54	Yes	Yes
3	Woman	55–64	No	Yes
4	Woman	45–54	Yes	Yes
5	Woman	25–34	No	Yes
6	Woman	45–54	Yes	Yes
7	Woman	55–64	Yes	Yes
8	Woman	35–44	Yes	Yes
9	Woman	45–54	No	Yes
10	Man	45–54	No	Yes
11	Woman	55–64	Yes	Yes
12	Man	65–74	Yes	Yes
13	Woman	25–34	Yes	Yes
14	Man	45–54	Yes	Yes

Table 1. *Cont.*

Participant Code	Gender	Age Group	Chronic Disease	Patient Association
15	Man	55–64	Yes	Yes
16	Woman	45–54	Yes	Yes
17	Woman	55–64	Dk/Da	Yes
18	Woman	>74	Yes	Yes
19	Woman	35–44	Yes	Yes
20	Man	65–74	No	Yes
21	Man	45–54	Yes	Yes
22	Man	65–74	Yes	No
23	Man	35–44	No	Yes
24	Woman	45–54	Yes	Yes
25	Woman	45–54	Yes	Yes
26	Woman	45–54	No	Yes
27	Woman	25–34	No	Yes
28	Woman	45–54	No	Yes
29	Man	35–44	Yes	No
30	Woman	45–54	Yes	Yes
31	Woman	55–64	Yes	Yes
32	Man	35–44	No	Yes
33	Woman	55–64	No	Yes

3.2. Data Collection

The online platform SurveyMonkey® was used for data collection. This platform allowed the questionnaire to be completed through any electronic device with a Web browser and an available Internet connection. One of the main characteristics of the platform was its ease for directly taking photos, allowing the participants to take them using their own smartphones, in real time (while they finished filling in the remaining fields of the questionnaire).

3.3. Data Analysis

The images provided by the participants were analyzed by selecting the most relevant ones and categorizing them according to the topics. The photo selection took into account the intentionality of the participants as described in the answers to the open-ended questions. The relevance of the materials was established according to the relationship between the general and specific research objectives, following the content analysis carried out. The contents were coded and then categorized according to similarities and differences found in the photos.

A content analysis from narratives was also carried out. On the one hand, a word frequency cloud was performed to quantify the terms that showed the highest frequency. For this purpose, empty words were eliminated and the root word was used for further analysis. On the other hand, the most significant verbatims were selected. Finally, a sentiment analysis was performed to know the polarity from the participants' testimonies, being the three polarity types, as indicated above.

For qualitative data analysis, the NVIVO release 1.3.1 program was used. For the sentiment analysis, the programming software R version 4.0.3 was applied.

4. Results

Of the total of 33 participants (Table 1), 30.3% were men ($n = 10$) and 69.7% were women ($n = 23$). Additionally, 60.6% ($n = 20$) stated that they were chronic patients, compared to 36.4% ($n = 12$) who answered they were not. Almost the total, 93.9% ($n = 31$) stated that they belonged to some patient association, compared to 6.1% ($n = 2$) who answered that they did not.

Regarding the contents, a total of 67 images, 171 labels and 334 written answers to the open questions related to the photos were collected. The thematic distribution of images

was as follows: 11 images on teleworking (T1); 22 on other occupational spaces (T2) (thus, a third of the total sample were teleworking, and the remaining people spent their time in other activities); 20 on the least pleasant domestic aspect/space (T3); and 14 pictures on the most comfortable domestic space (T4).

4.1. Visual Analysis

4.1.1. Selection of Photos

Below, a selection of 24 images from participants is presented, as evidence of the quarantine experiences from several perspectives for domestic spaces: teleworking spaces (T1) (Figure 1), other occupational spaces (T2) (Figure 2)—if they declared they did not telework, less pleasant domestic aspects (T3) (Figure 3), and more pleasant spaces (T4) (Figure 4), provided by participants.



Figure 1. Exclusive or usual spaces for teleworking (T1), many equipped with computers and laptops.



Figure 2. Spaces where most of the time was spent (occupational areas) (T2), corresponding with different home areas.

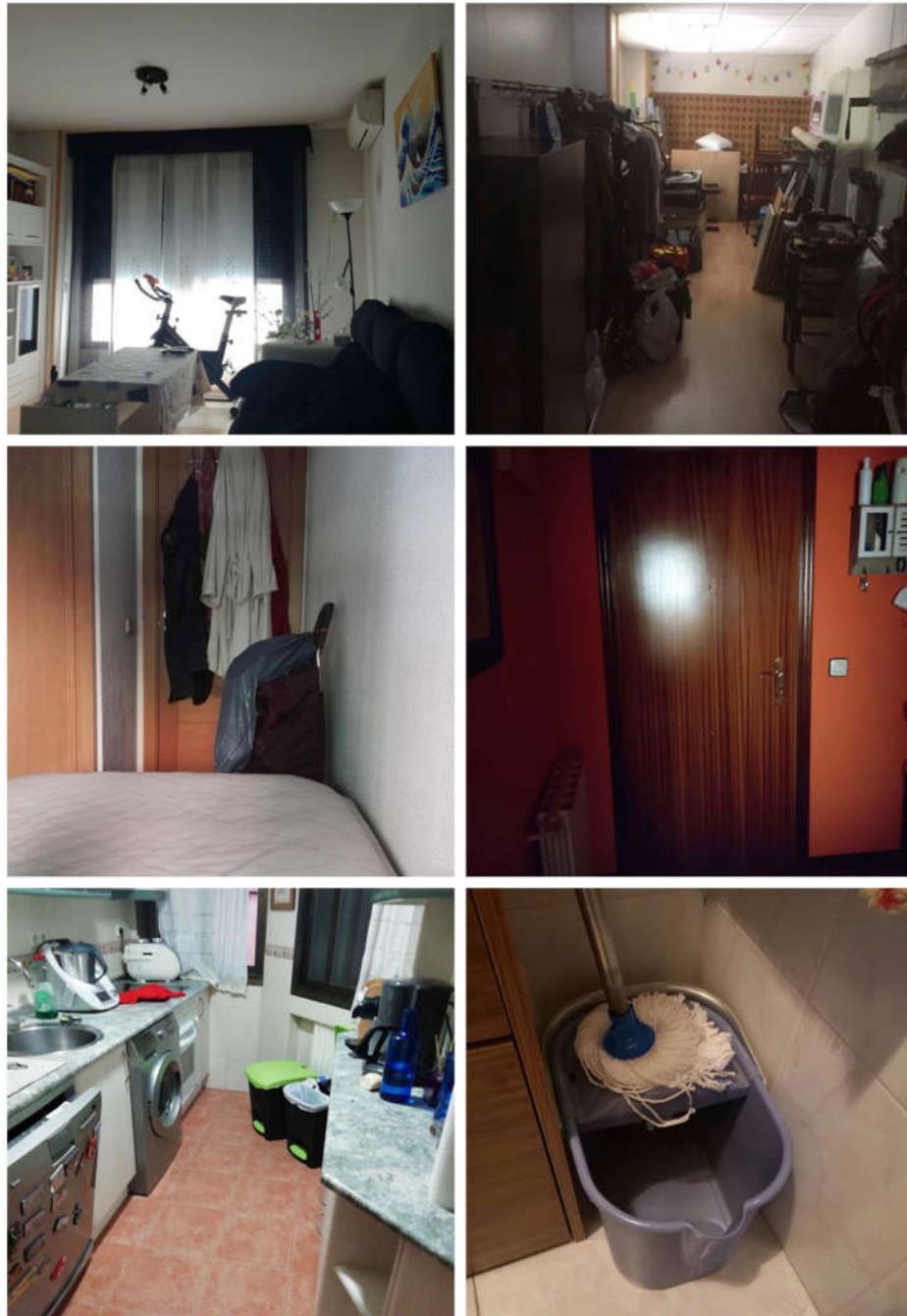


Figure 3. Examples of uncomfortable home aspects (T3), referring to living room and storage room disorders; bedroom size; entrance as barrier; kitchens; and cleaning elements.

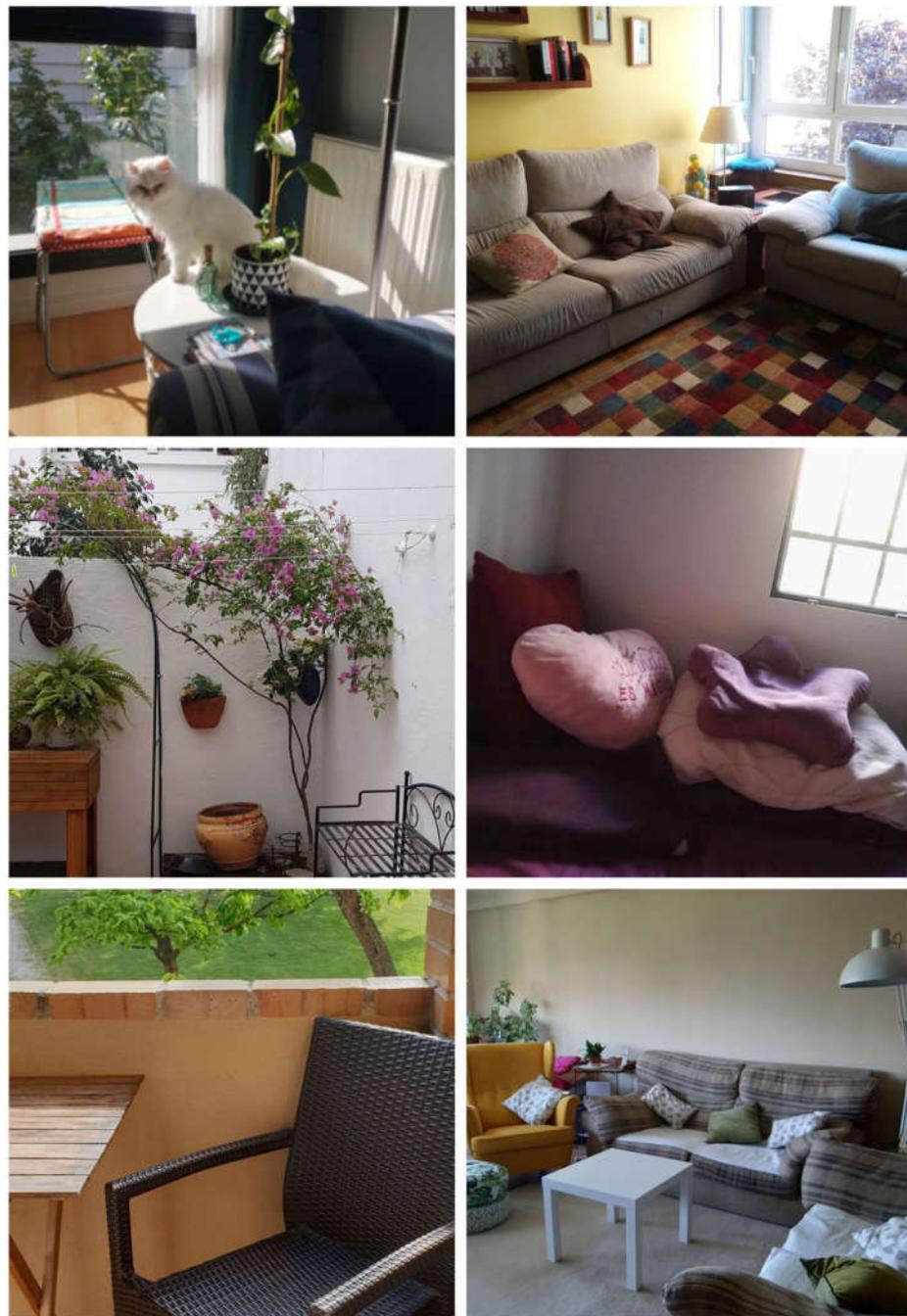


Figure 4. Comfortable spaces (T4), referring to illuminated areas and resting places.

4.1.2. Categorization of Photos

A total of 14 categories and 54 subcategories were obtained from the total of the images analyzed, in relation to teleworking spaces (T1) (Table 2), occupational spaces (T2) (Table 3), less pleasant aspects of homes (T3) (Table 4), and more pleasant areas (T4) (Table 5).

Table 2. Categorization of picture content related to teleworking spaces (T1).

Concept/Category	Subcategory	Frequency
Lighting	Natural	6
	Enough	6
Furniture	Adequate	4
	Inadequate	4
Computer	Desktop	4
	Laptop	3
Window	Adequate	4
	Open	2
Solar device	Blind	3
Surrounding	Bookshelf	3
	Vegetation	2
Use type	Exclusive	3
	Eventual	2
	Shared	2

Table 3. Categorization of picture content related to occupational spaces (by no teleworking participants) (T2).

Concept/Category	Subcategory	Frequency
Lighting	Natural	19
	Adequate	15
	Inadequate	4
Organization	Tidy	16
	Loaded	11
	Clear	7
	Messy	1
Activity	Rest	11
	Reading	6
	Computer	6
	Music	5
	Television	4
	Cooking	3
	Plants	3
Stay	Bedroom	5
	Living room	5
	Kitchen	2
	Office	2
	Dining room	2

Table 4. Categorization of picture content related to uncomfortable domestic aspects (T3).

Concept/Category	Subcategory	Frequency
Lighting	Natural	13
	Adequate	11
	Inadequate	6
Organization	Artificial	4
	Loaded	9
	Tidy	9
	Untidy	3
Lack	Clear	2
	Freedom	6
	Company	4
	Space	4
	Motivation	4

Table 4. *Cont.*

Concept/Category	Subcategory	Frequency
Size	Thermal comfort	2
	Lighting	2
	Terrace	2
	Reduced	4
	Large	3
Views	Buildings	3
	Nature	2
Activity	Uncomfortable rest	2
	Observe	2
	Stay-at-home	2
Stay	Telework	2
	Dining room	2
	Bedroom	2
	Hall	2

Table 5. Categorization of picture content related to comfortable spaces (T4).

Concept/Category	Subcategory	Frequency
Lighting	Natural	11
	Adequate	9
Organization	Inadequate	3
	Tidy	11
	Loaded	6
Location	Clear	5
	Interior	9
	Exterior	4
Preferences	Rest	6
	Plants	5
	Freedom	4
	Internal leisure	3
	Family meeting	3
	Safety	2
Stay	Living room	5
	Office	2
Views	Garden	4

4.2. Textual Analysis

4.2.1. Labels

Through the tags, the participants initially categorized their images. Table 6 shows the word clouds from labels provided by participants associated with each type of image.

Table 6. Word cloud, word frequencies and percentages of the most-repeated tags according to each topic.

Telework (T1). Word Clouds for Photo Tags.			
Word	Frequency	Percentage	
comfort	4	11.76	
house	3	8.82	
room	2	5.88	

Table 6. Cont.

Telework (T1). Word Clouds for Photo Tags.			
	Word	Frequency	Percentage
	space	2	5.88
	study	2	5.88
	activity	1	2.94
	balcony	1	2.94
	brightness	1	2.94
	day	1	2.94
	ergonomics	1	2.94
Other occupational spaces (T2). Word clouds for photo tags.			
	Word	Frequency	Percentage
	room	5	7.94
	comfort	4	6.35
	bedroom	3	6.35
	home	3	4.76
	kitchen	3	4.76
	break	2	3.17
	calm	2	3.17
	confinement	2	3.17
	leisure	2	3.17
	light	2	3.17
Uncomfortable domestic aspects (T3). Word clouds for photo tags.			
	Word	Frequency	Percentage
	dark	3	4.62
	door	2	3.08
	heat	2	3.08
	house	2	3.08
	lack	2	3.08
	small	2	3.08
	terrace	2	3.08
	aggressiveness	1	1.54
	air	1	1.54
	always	1	1.54
Comfortable spaces (T4). Word clouds for photo tags.			
	Word	Frequency	Percentage
	life	3	6.82
	relax	3	6.82
	break	2	4.55
	leisure	2	4.55
	liberty	2	4.55
	living	2	4.55
	natural	2	4.55
	room	2	4.55
	tranquility	2	4.55
beauty	1	2.27	

4.2.2. Narratives

Through the open questions, the narrative related to the images was obtained from the participants. The answers allowed for contextualization and knowledge of the intentionality provided by them.

4.2.3. Most Relevant Verbatims

To complement the analysis, the most relevant verbatims were selected from the responses to each question. Table 7 shows those related to telework spaces (T1) and other occupational spaces (T2). Table 8 reflects verbatims from the least pleasant domestic aspects (T3) and the most pleasant spaces (T4).

Table 7. Relevant verbatims for telework (T1) and occupational spaces (T2).

Question	Participant Code	Verbatim
Telework spaces (T1)		
Q1	1	<i>"My day to day since I am confined"</i>
Q2	8	<i>"I am working at the table in the living room of my house where I used to have family meals"</i>
Q3	23	<i>"That is the office when I can work alone, but I have a son with whom I have had to work at the table in the living room"</i>
Q4	28	<i>"I have to telecommute and I have looked for the place that allows me to have the most joy for the eyes, the most light and airy, as well as the widest."</i>
Q5	33	<i>"It is important to separate the workplace from the rest of the living space"</i>
Other occupational spaces (T2)		
Q1	16	<i>"The place where I rest, where I practice many hobbies that my pathology continues to allow me"</i>
Q2	19	<i>"Food is being made in the kitchen and my daughters are playing in the living room, even though they don't appear in the photo"</i>
Q3	2	<i>"Because it is the space that I like the most in my house"</i>
Q4	12	<i>"It is the place where I read, listen to music and keep in touch with the world"</i>
Q5	16	<i>"Living differently does not mean living worse, even in illness"</i>

Table 8. Relevant verbatims from less pleasant domestic aspects (T3) and most comfortable spaces (T4).

Question	Participant Code	Verbatim
Less pleasant domestic spaces (T3)		
Q1	31	<i>"Clothes hanging on the front door, garbage bag and shopping cart at the foot of my bed"</i>
Q2	2	<i>"You see the street, an insecure place"</i>
Q3	16	<i>"It's the worst thing about confinement and chronic illness, having a place to share and no one to share it with"</i>
Q4	2	<i>"I am without the freedom to go out without fear"</i>
Q5	17	<i>"To avoid tossing and turning in bed, I wait in my armchair with the TV even though I don't watch it"</i>

Table 8. Cont.

Question	Participant Code	Verbatim
Most comfortable spaces (T4)		
Q1	19	<i>"The sofas in the living room. And that the coffee table is in the corner to leave more free space"</i>
Q2	28	<i>"The sofas are waiting to celebrate a meal or family reunion as soon as the day is over, to rest, to watch a movie or listen to pleasant music"</i>
Q3	17	<i>"Because the telephone next to the mobile is my joy to be able to communicate. I am afraid that my mobile will be damaged"</i>
Q4	19	<i>"Although now it's empty, my daughters were playing in it. During this confinement, despite having much more time for everything because we can't work, there are four of us at home and I don't usually get to enjoy it properly until the girls go to bed"</i>
Q5	10	<i>"It is appropriate to have more naturalized spaces in the home to improve our health"</i>

4.2.4. Sentiment Analysis

To find out the polarity (qualification of the emotional charge contained) from answers to the question about *what message they could give to other people through their images to improve their lives*, a sentiment analysis was carried out. The total number of messages analyzed was 69, of which 69.49% ($n = 41$) were positive, 28.81% ($n = 17$) negative and 18.64% ($n = 11$) neutral. Figure 5 shows the result depending on the image topics: teleworking T1, other occupied spaces T2, less pleasant domestic aspects T3 and the most pleasant spaces T4.

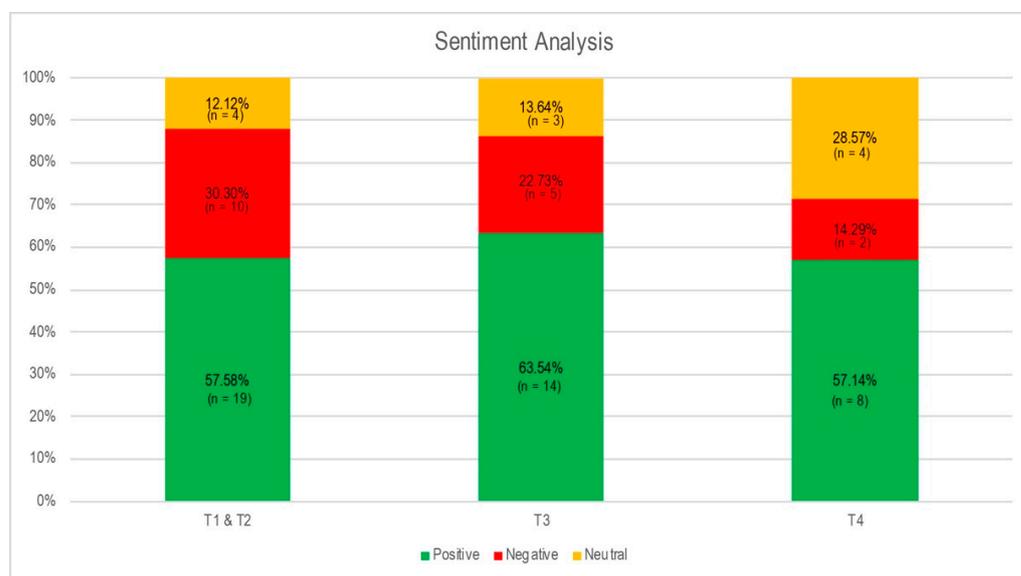


Figure 5. Sentiment analysis for answers to the question Q5 (messages that they could give through their images to improve others' lives) for each photo topic.

5. Discussion

According to the results, in this study, the relations that chronic patients and their surroundings established with their dwellings were tackled. Specifically, different spaces and characteristics defining them were analyzed, to see to what extent the interaction due to this confinement was satisfied by adapting, totally or partially, to their lifestyle, habits or routines. The analysis tried to perceive the participants' way of inhabiting the domestic space in the face of very disruptive and unusual circumstances and from there

understand how it was able to affect the emotional state that emerged from their own written impressions through their testimonies.

Regarding the space devoted to working from home, through visual analysis, 6 categories and 14 subcategories were obtained. They highlighted the use of IT equipment (computers and laptops), good lighting, the presence of windows and solar control elements. According to the relevance of these spatial and environmental characteristics, this is aligned to the association of these preferences to the participants' satisfaction with home design aspects, according to an international study [68]. Some of these parameters, recognized as intervening in people's health, such as natural ventilation, improving indoor air quality and the entry of sunlight indoors [69,70], were especially outstanding during the COVID-19 pandemic, to avoid or mitigate the harmful effects on health, those derived both from diseases and from a greater presence in the home [71] and thus a greater over-exposure to pollutants and other pathogen agents [24].

In relation to the furniture, it was appreciated as both adequate and inadequate, which could affect ergonomics, generating or worsening illness in the medium–long term with intensive use [72]. The type of space found in the photographs responded to different use degrees, whether exclusive, occasional or shared. This coincided with different similar studies, which also responded to sociodemographic and economic factors or household status [21,22]. This is also in line with the adaptations that people had to make to the design of their houses during confinement [73]. Through textual analysis from narrative, the most frequent words were "comfort", "house", "room", "space" and "study". This showed that the needs required to adapt to working from home were referenced, according to the qualitative descriptions of the photos, as defined above.

Following the whole analysis, it highlighted that participants had digital skills to carry out their professional activity. This confirms that teleworking favored people with special needs to be able to work efficiently without having to move elsewhere [74]. Moreover, the participants highlighted the importance of separating the workplace from the remaining home spaces, although some participants had to share them, above all to favor family conciliation. This is consistent with other studies, where it is stated that home characteristics conditioned the workspace during the pandemic [29,30]. Issues such as having good lighting favored a pleasant environment and provided visual comfort [75].

Regarding the occupational space for non-teleworkers, 4 categories and 19 subcategories were obtained. These spaces also stood out for having good lighting and maintaining order. Having good lighting was the most predominant factor during the lockdown [76]. With regard to daily household chores, there were several testimonials that dedicated their time to tidying up [77]. For their location, both bedrooms and living rooms were the most photographed. The most perceived activities were aimed at rest, such as reading, or those related to computer use, listening to music or watching television. The most frequent words were "room", "comfort", "bedroom", "home" and "kitchen". Through the narratives, references were made to a place to disconnect or rest.

Taking into account both the images and the texts, the most used spaces for people who did not telework were places generally perceived as pleasant and comfortable. Their main uses were related to rest, leisure and household chores. The confinement meant a habit change for the general population, producing an increase in the consumption of domestic leisure, such as watching television or listening to music [27,78]. Many people turned to listening to music as a resource to cope with confinement and improve their mood [79,80]. In the case of patients with chronic diseases, it also has a health benefit [81].

In the sentiment analysis from narratives for both working and non-working people, texts about occupational spaces presented the highest percentage (30.30%) of negative messages. This can be interpreted as the confinement context involving an alteration in their lifestyle or in their health benefits [19,21,22,26,27,47], an issue that is perceived negatively in their day-to-day.

In relation to the least pleasant space, 7 categories and 26 subcategories were obtained. Despite being the least pleasant spaces, according to the results in the photo analysis, the

spaces showed good lighting and were well organized. Both the size of the place, the location and the views did not show great differences. Regarding the activities reflected, no subcategory stood out more than another. However, certain deficiencies were perceived, contextualized with responses about the need for freedom, company, space and motivation. Through the analysis of narratives, the terms “dark”, “door”, “heat”, “house”, “lack”, “small” and “terrace” stood out. The testimonies offered were associated with emotional reactions of fear and insecurity, in addition to those exposed above.

The pandemic situation for patients with chronic diseases caused an alteration in their routines [48]. Although for some chronic patients confinement meant an improvement in their quality of life, for other people with fewer resources it presented more difficulties [51]. These inequalities were increased between people who, having more resources, were able to adapt their homes due to their illness and those who were not. Instead, the situation of fear and concern was common to all patients [18,82,83]. It is interesting that, when asked about the less pleasant spaces, the participants showed a greater number of positive messages (63.54%). This made us think that, despite the situation they had, patients were able to present positive attitudes, coping with their illness [84] and perhaps reflecting on their life vision and the encouraging prospects for improvement.

Regarding the description of the most pleasant or comfortable domestic spaces, 6 categories and 17 subcategories were obtained. The images shown by participants about these environments also stood out for having adequate lighting and showing orderly spaces. Most of the spaces were indoors, with living rooms being the most frequent locations. Some images reflected views towards green areas and others taken from inside referred to the presence of plants. With regard to the preferences that participants wanted to convey in choosing the images, rest, having plants and the need for leisure stood out. The two most frequent words present in the label analysis were “life” and “relax”. Finally, regarding the analysis of the testimonies, they highlighted the need to be in contact with other people and to rest, mainly through the sofas.

Having views of green areas or plants is related to the need for the well-being and emotional stability that nature transmits [85,86]. The need for relaxation and a change of leisure activities was key during confinement, highlighting art, music or cooking [87,88].

In the COVID-19 lockdown, housing was the adaptive means to cope with the situation of confinement itself. It constituted the place for work, for leisure and for care. Cohabitants had to take advantage of all the space in their home to carry out all the activities. It is interesting to see how each space had a very diverse use among participants but was marked for certain functions within the same home. The living room was featured as the most social place, being the point of rest and disconnection, although some people had to share it to work. In contrast, bedrooms were highlighted as the most reserved places, to disconnect from work or occupation or to isolate oneself in moments of intimacy or concentration. This coincides with other social groups, including the perception of children who telestudied during confinement [31].

This study has several limitations. By the very nature of the qualitative type of study, it cannot be extrapolated to the entire population [89]. However, the origin of data through the use of images and texts can only be approached for analysis from a qualitative perspective. In addition, the qualitative approach allows us to know the behaviors, actions and experiences of the subjects of studies that cannot be carried out through the quantitative approach through statistical analysis, for instance [90].

Another limitation is selection bias, as people without Internet access were excluded [91]. In the study, participants were required to have an Internet connection and a smartphone to take the photos. However, in Spain 93.9% of people between 16 and 74 years old have used the Internet in the last three months [92]. So, the point would be based on a digital competencies bias, since a minimum level of knowledge was required to participate. Finally, there was a lack of control that could be exercised over the respondents [91], since they filled in the questionnaire themselves and thus no interviewers were present. So, any technical doubts they might have had whilst participating could be not solved, although

it is common for people with fewer skills to turn to young people to learn how to use technology [93].

6. Conclusions

Housing characteristics conditioned the experiences lived during stay-at-home orders. Adequate lighting was perceived as the most relevant factor by chronic patients, as well as tidiness, although this might be conditioned for two reasons: one due to having to take the photo and the other for a greater availability of time in the home.

The creation of domestic environments to differentiate work and rest spaces was the usual way to favor disconnection or social contact with other household members, according to the needs. Although the house was understood as a safe refuge, fear and insecurity were perceived by participants and transmitted both through the words in narratives and in the constructive or domestic elements reflected: the dwelling access door as a physical and psychological barrier of protection or the photos from terraces and windows stood out, for instance, facing the street physically and even pointing out the invisible enemy, the COVID-19.

The sentiment analysis allowed the emotional level of the testimonies transmitted by participants to be determined. Despite the situation of fear and insecurity, the messages transmitted were mostly positive.

This study contributes with this graphic and testimonial description and its visual-emotional analysis to show an unusual and disruptive experience that enhances the importance of the domestic environment in the health and well-being of people, especially those called vulnerable. Specifically, it delves into the physical, functional and environmental aspects related to housing, as well as those sensory, emotional and psychological perceptions propitiated both by the situation of general uncertainty and individual uncertainty linked to health and by the way of living with them in the home and other factors linked to their social, physical and environmental surroundings. Moreover, it pursues a better understanding of the home environment's relevance to these segments of the population. The findings of this study can be used to improve the living conditions of these people and specifically under extreme conditions, such as health emergencies, including COVID-19 quarantine.

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Institutional Review Board Statement: The study was conducted in accordance with the guidelines of the Declaration of Helsinki. All participants were previously informed by means of a written informed consent, and they all accepted it. All measures were adopted to ensure anonymous participation, including the instructions to take photographs that did not show any part, element, object or body that directly or indirectly entailed the identification of persons, which was a necessary condition to guarantee it. Otherwise, the photos could be rejected immediately.

Informed Consent Statement: For this study, the Fundación Más que Ideas was previously informed, allowing us to contact the potential patients. An informed consent was requested in the online questionnaire itself, to allow them to decide on the participation. Although this participation was anonymous, each participant accepted and provided informed consent before accessing the questionnaire. Additional information was provided in an information sheet, available for them.

Data Availability Statement: The data are not publicly available due to ethical reasons.

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