



What Have We Learned from the Impact of the Pandemic on Our Relationship with Nature? The Importance of Views from Home

Marco Garrido-Cumbrera and Olta Braçe

13.1 INTRODUCTION. THE IMPORTANCE OF NATURE VIEWED FROM HOME

We cannot imagine a house without windows as they provide us with light, allow the air to enter inside the house, enable us to judge the weather and connect us with the nature outside. For some people, windows are an escape route that can soothe feelings of claustrophobia, monotony or boredom (Collins, 1975). Inside buildings, windows are

M. Garrido-Cumbrera (✉)

Health & Territory Research (HTR) and Department of Physical Geography and Regional Geographic Analysis, Universidad de Sevilla, Seville, Spain
e-mail: mcumbrera@us.es

O. Braçe

Health & Territory Research (HTR) and Department of Human Geography, Universidad de Sevilla, Seville, Spain
e-mail: obrace@us.es

the primary means of connection to the outdoors, and nature views even through a window may have restorative effects on the occupants (Ko et al., 2020). Furthermore, windows with views allow contact with the outside world and, when well designed, provide ‘visual rest centres’ (Markus, 1967). Views from windows are the most important in the everyday life of a person living in an urban area (Honold et al., 2016). Therefore, when people choose their home, they are concerned about the views they are going to experience from the windows of their home. Given its importance, real estate companies have always used views surrounding a building to attract the interest of buyers, even using them as an attraction to increase the price of a property (Bond et al., 2002).

13.2 THE INFLUENCE OF VIEWS ON MENTAL HEALTH AND WELL-BEING

Previous studies have shown that indirect exposure to nature through window views can positively influence stress reduction, increased attention span, mental health and overall well-being (Ko et al., 2020; Li & Sullivan, 2016). Viewing the sky and other features of the natural world can support psychological restoration, thus preserving health and well-being (Kaplan, 2001). Restoration implies the renewal of physical, psychological and/or social resources that have been exhausted in efforts to meet the demands of daily life (Hartig, 2021). Likewise, views of natural elements—including trees/woodland and lawn/mown grass—from office windows have been shown to influence employee well-being more positively than time spent outdoors during break periods (Gilchrist et al., 2015). Moreover, Dzhambov et al. (2018) in a study assessing university students found that those exposed to green and blue spaces views reported higher levels of concentration and better mental health.

A study by Kaplan (1983) demonstrated greater satisfaction with a neighbourhood when residents of blocks of flats or apartments could contemplate more natural than built environments. A few years later, the same author showed that being able to see natural elements from a window contributes substantially to neighbourhoods satisfaction and overall well-being in Ann Arbor, Michigan (USA) (Kaplan, 2001). Another study highlighted the restorative value of window view of the sky and greenness in a context of high urban density in Tehran (Iran) (Masoudinejad & Hartig, 2020). Elsadek et al. (2020) found how, in high-rise buildings in Shanghai (China), windows with green space views

contributed to psychological well-being. While a study by Vemuri et al. (2011) found that residents of the Baltimore metropolitan area (USA) who viewed a greater number of trees from the windows of their residence reported higher life satisfaction. Additionally, Honold et al. (2016) reported that residents with views of vegetation from their home had significantly lower hair cortisol levels as a biomarker of chronic stress reduction in Berlin (Germany).

13.3 THE VALUE OF HOME VIEWS DURING THE COVID-19 PANDEMIC

Although previous studies have demonstrated the influence and impact of views from home on health and well-being, the COVID-19 pandemic provided us with an unprecedented situation in which our entire society was confined to their homes, either totally or partially. The conditions created during the pandemic resulted in many cases of a lack of direct exposure to nature. During the COVID-19 pandemic, many countries took extremely strict measures as part of their public health strategies, not allowing people to leave their homes or, in the best cases, limiting their movements to a small area near their homes. Owing to these restrictive measures, physical barriers were established that did not allow people to interact with the natural environment, with consequences on their lifestyles.

One of the great losses that people experienced during the periods of home confinement was the lack of direct contact with the nature, owing to the dwelling being effectively converted into an opaque obstacle that prevented interaction between the environment and the human being. In this home confinement situation, the only option to mitigate this feeling of loss and establish contact with nature was to have access to views from home windows (Ugolini et al., 2021). In the case of home confinement, the only form of contact with nature was through indirect exposure, contemplating views from a window and thus not requiring any physical presence in nature. Thus, in a period of home confinement during the COVID-19 outbreak, when many occupants were able to benefit greatly from the restorative effects of window views from their home (Batool et al., 2021), the importance of assessing visual contact with nature has emerged.

13.4 THE GREENCOVID STUDY

Living this experience of pandemic and lockdown measures prompted an interdisciplinary group of researchers from the University of Seville (Spain), University of Winchester (England) and Maynooth University (Ireland), to join forces and to conduct the GreenCOVID study. This study addressed the perception, the relationship with nature and the health of the population at a special time—during the first wave of the COVID-19 pandemic—when contact with nature was limited or non-existent. The main objective of GreenCOVID was to assess the impact of the COVID-19 lockdown on access and exposure to nature and its impact on well-being and mental health of the general population in three European countries (Spain, England and Ireland) (Garrido-Cumbrera et al., 2023). We focused on assessing the value of home views and contact with nature as a protective factor against anxiety and depression during the first wave of the pandemic.

This cross-sectional study analysed information collected through an online survey that was disseminated to unselected adults over 16 years residing in Spain, England and Ireland. The questionnaire was designed by researchers from the Health and Territory Research (HTR) group at the University of Seville to gather information on sociodemographic characteristics, household/housing, behaviours and routines, outdoor contact, physical health, mental health and well-being as well as information on pre- and post-lockdown -closure perceptions and use of green and blue spaces. The GreenCOVID survey was disseminated through social media channels of the University of Seville and the Spanish Association of Geography (AGE). The survey remained open in Spain from April 7 to 25, 2020, using the SurveyMonkey platform.

Researchers from England and Ireland joined the initiative at a second stage. Translated versions of the survey were disseminated during the period from May 28 to July 24 2020 (Guzman et al., 2020), by the PeopleScapes Research Group, at the University of Winchester and from June 3 to July 1, 2020, by Maynooth University. As a result of this survey, 2500 responses were gathered in Spain, 500 in England and 261 in Ireland. Survey participants who did not respond to at least 70% of the questionnaire were excluded from the analysed sample for the purpose of obtaining a more robust sample with a reduced percentage of missing values. After data cleaning, 3127 respondents (2464 from

Spain, 420 from England and 243 from Ireland) who fulfilled the condition of having fully responded to the sociodemographic variables and the Hospital Anxiety and Depression, (HAD) scale were included in the analyses.

13.5 EVALUATION OF VIEWS FROM HOME

In the total sample, including the three GreenCOVID countries, 60.2% lived in a flat or apartment. This is due to the large proportion of people living in apartments in Spain (72.1%)—the country with the higher sample size—while in England it is more common to live in a house (51.7%) and in Ireland 47.3% of people live, respectively, in single family houses and 25.7% in semi-detached houses. Related to how being in/seeing/hearing the outdoors helped people cope with the pandemic crisis, in England and Ireland participants gave a high rating while for Spain this rating was significantly lower (Table 13.1). This is due potentially to the large number of people in Spain who live in a flat or apartment with difficulties accessing the outdoors.

It is remarkable that during the COVID-19 lockdown, respondents reported that their appreciation and interest in views of blue spaces, such as those to the sea, rivers, lakes, springs, or reservoirs increased significantly compared to their appreciation and interest before the pandemic. This increased interest in blue space views during the pandemic in Spain -compared to England and Ireland- may have been due to greater restrictions, including home confinement, and the fact that the majority of the population lives in flats or apartments. These forms of urban housing often hinder their exposure to nature. Consequently, this may make such views from home more desirable and appreciable in this situation of total lockdown, as was experienced during the first wave of the COVID-19 pandemic (Fig. 13.1).

Table 13.1
Assessment of the extent to which being/seeing/hearing the outdoors helps to cope during COVID-19 pandemic by countries (N = 3,080)

<i>Country</i>	<i>N</i>	<i>Mean</i> *	<i>SD</i>
Spain	2,464	5.7	3.4
England	379	8.5	2.1
Ireland	237	8.5	1.8
Total	3,080	6.3	3.4

*From 0 to 10

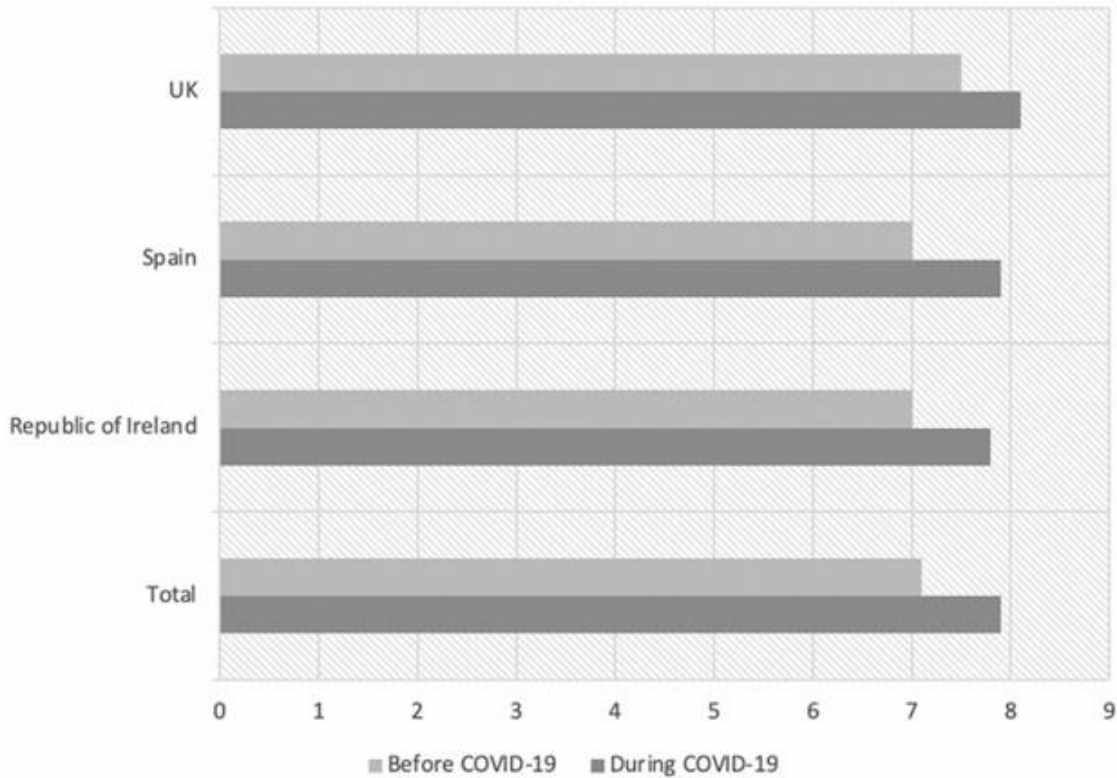


Fig. 13.1 Comparison of the value of views to the sea, rivers lakes, springs, or reservoirs before and during COVID-19 pandemic by countries (N = 3,083)

13.6 CONTACT WITH THE OUTDOORS FROM HOME

It should be noted that the situation of the Spanish population during the first wave of lockdown was quite different compared to the English and Irish population, since during the first wave of confinement they could not access the outdoors, a situation that was aggravated by the factor that most of the Spanish population lived in flats or apartments (Garrido-Cumbrera et al., 2021). Therefore, the only way of contact with nature during lockdown was through a window or balcony, and at the very best, having direct access to a yard or garden. Indeed, people who had been able to use outdoor spaces (courtyards or gardens) or had windows with outdoor views of natural environment reported that they have coped better with the lockdown than those who did not. In Spain, the most common element with outdoor views was the balcony and the communal roof terrace, whereas in England and Ireland, the element that most frequently allowed contact with the outdoors was the private garden or courtyard (Table 13.2).

Table 13.2 Type of elements in home that facilitate the contact with the outdoors during COVID-19 pandemic by countries (N = 2,953)

<i>Country</i>	<i>N (%)</i>			
	<i>Spain</i>	<i>England</i>	<i>Ireland</i>	<i>Total</i>
Balcony	1,340 (57.5)	21 (5.5)	17 (7.1)	1,378 (46.7)
Terrace ⁵	–	20 (5.3)	2 (5.0)	32 (1.1)
Private rooftop	391 (16.8)	4 (1.1)	0 (0.0)	395 (13.4)
Communal rooftop terrace	531 (22.8)	0 (0.0)	5 (2.1)	536 (18.2)
Private garden/yard	338 (14.5)	332 (87.6)	204 (84.6)	874 (29.6)
Communal garden ¹	229 (9.8)	–	–	229 (7.8)
Private yard ²	566 (24.3)	–	–	566 (19.2)
Communal yard ³	348 (14.9)	–	–	348 (11.8)
Farmyard ⁴	36 (1.5)	–	–	36 (1.2)
Other ⁶	–	50 (13.2)	10 (4.1)	60 (2.0)
None of the above	312 (13.4)	25 (6.6)	18 (7.5)	355 (12.0)

^{1,3,4}Communal garden, communal yard and farmyard were terms only used in Spain. ²In Spain, the term private yard was defined separately from the private garden. ^{5,6}The categories ‘terrace’ and ‘other’ were not used in Spain

13.7 RATING OF VIEWS OF NATURE FROM THE HOME

Overall, according to the participants’ opinions, the rating was 5.8 out of 10, which is due to the low score registered in Spain (5.6 out of 10). Whereas in England (6.5 out of 10) and Ireland (7.3 out of 10) the rating was higher. It should be noted that people tend to use outdoor spaces more frequently during the pandemic rather than indoor spaces with a view. However, the use of all spaces that can create a connection with nature was highly preferred by respondents in all countries (Table 13.3).

In Spain, the most frequent views from the living room or dining room were of streets with traffic (31.0%), followed by views of parks and gardens (26.7%). In contrast, in England and Ireland the most frequent views from the living room were of gardens (57.1% and 45.3%, respectively), followed by streets with little traffic (36.9% and 37.8%, respectively). This is because most people in England and Ireland live in houses that are equipped with courtyards or gardens (Table 13.4).

When the views contained greenery elements, it is worth noting that most respondents reported having views of plants or shrubs from their homes. In England and Ireland, views of more than ten trees were

Table 13.3 Use of any locations in home during COVID-19 pandemic (N = 3,067)

<i>Country</i>	<i>n (%)</i>			
	<i>Spain</i>	<i>England</i>	<i>Ireland</i>	<i>Total</i>
Outdoor spaces ¹	1,201 (48.7)	131 (36.0)	84 (35.3)	1,416 (46.2)
Spaces with views from windows	426 (17.3)	41 (11.3)	12 (5.0)	479 (15.6)
Both spaces	394 (16.0)	171 (47.0)	120 (50.4)	685 (22.3)
Not used them	146 (5.9)	5 (1.4)	5 (2.1)	156 (5.1)
Don't have any of them	212 (8.6)	18 (4.9)	15 (6.3)	245 (8.0)
Not allowed to use them	85 (3.4)	1 (0.3)	2 (0.8)	88 (2.9)

¹Including rooftop, terrace, balcony, garden and yard

Table 13.4 Views from lounge or dining room by countries (N = 3,008)

<i>Country</i>	<i>N (%)</i>			
	<i>Spain</i>	<i>England</i>	<i>Ireland</i>	<i>Total</i>
No window	35 (1.9)	20 (5.5)	5 (2.2)	60 (2.0)
Inner courtyard	458 (24.4)	1 (0.3)	0 (0.0)	459 (15.3)
Street with traffic	749 (31.0)	4 (1.1)	0 (0.0)	753 (25.0)
Busy street with traffic ¹	–	34 (9.3)	17 (7.6)	51 (1.7)
Street with little traffic	518 (21.4)	135 (36.9)	85 (37.8)	738 (24.5)
Pedestrian area	282 (11.7)	48 (13.1)	32 (14.2)	362 (12.0)
Mostly houses ²	–	124 (33.9)	75 (33.3)	199 (6.6)
Waste ground ³	95 (3.9)	–	–	95 (3.2)
Industrial site/factories ⁴	–	7 (1.9)	0 (0.0)	7 (0.2)
Offices ⁵	–	2 (0.5)	0 (0.0)	2 (0.1)
Park ⁶	–	22 (6.0)	15 (6.7)	37 (1.2)
Gardens ⁷	–	209 (57.1)	102 (45.3)	311 (10.3)
Park or gardens ⁸	645 (26.7)	–	–	645 (21.4)
Countryside ¹⁰	–	92 (25.1)	43 (19.1)	230 (7.6)
Hills ⁹	–	53 (14.5)	28 (12.4)	81 (2.7)
River or lake	25 (1.0)	10 (2.7)	0 (0.0)	35 (1.2)
Sea/beach/coastline	66 (2.7)	14 (3.8)	0 (0.0)	80 (2.7)

^{1,2,4,5,9}These answers were not given in Spain. ³This answer was only given for Spain. ^{6,7,8}In Spain, parks and gardens were not defined separately. ¹⁰This term was translated as 'waste ground' in Spain

Table 13.5 View of nature elements from home by countries (N = 3,067)

<i>Country</i>	<i>N (%)</i>			
	<i>Spain</i>	<i>England</i>	<i>Ireland</i>	<i>Total</i>
Lawn	673 (27.3)	305 (84.3)	193 (80.1)	1,171 (38.2)
Plant or shrubs	1,340 (54.4)	330 (91.2)	211 (87.6)	1,881 (61.3)
1–3 trees	797 (32.3)	88 (24.3)	66 (27.4)	951 (31.0)
3–10 trees	654 (26.5)	108 (29.8)	59 (24.5)	821 (26.8)
More than 10 trees	686 (27.8)	171 (47.2)	113 (46.9)	970 (31.6)
None of these	1,498 (60.8)	2 (0.6)	9 (3.7)	1,509 (49.2)

common, while in Spain it was most common not to have any element of nature at all (Table 13.5).

13.8 VIEWS AS A PROTECTIVE FACTOR AGAINST DEPRESSION, ANXIETY AND FOR WELL-BEING

According to the GreenCOVID study, there was a higher prevalence of poor well-being in Spain (62.1%) than in England (47.2%) and Ireland (44.8%), as measured by the World Health Organisation-Five Well-Being Index (WHO-5) (Garrido et al., 2023). This may have been due to the greater impact of the pandemic and the more severe restrictions applied in Spain during the first wave of the pandemic (Garrido-Cumbrera et al., 2021), compared to the less restrictive environments of Ireland and England during the data collection period in those countries. In the overall sample including the three countries, poor well-being was specially associated with a younger age cohort, female respondents, students, individuals who were not physically active and those living in Spain. Poor well-being was also associated with poor quality of views from home and less perceived help from such views in coping with the lockdown.

Furthermore, in Spain a high proportion of people at risk of anxiety or depression was determined, measured using the Hospital Anxiety and Depression Scale (HADS). This result showed that the respondents did not have views of elements of nature from their home or the views they did have access to, were of poor quality. Because of this situation, they reported that they had not coped well with the effects of confinement compared with people who had views of nature. In addition, the risk of depression was higher in people who did not use outdoor spaces

and window views. Thus, it can be affirmed that contact with nature and appreciation of nature contributed to reduce the risk of anxiety and depression among the general population in Spain during the COVID-19 pandemic.

These results are in line with the study conducted during the lockdown period by Fullana et al. (2020), in which performing activities of daily living such as staying outdoors or enjoying the view from the window at home were the best predictors of lower levels of depressive symptoms. The same findings were obtained in the study by Braçe et al. (2020), in which views of green spaces were associated with a lower risk of anxiety and depression, helping to cope with the impact caused by the COVID-19 pandemic, especially for those people who were under strict lockdown (Pouso et al., 2020). Another study showed that green views from windows were associated with higher levels of self-esteem, life satisfaction, perceived happiness and lower feelings of loneliness (Soga et al., 2021).

In Spain, those living mainly in flats or apartments, with no outdoor spaces other than windows and/or balconies, had no access to natural environments and a greater sense of poor well-being. Meanwhile, the situation in England and Ireland was different, as most of those living in houses had access to private gardens (Garrido-Cumbrera et al., 2022).

13.9 DISCUSSION

Nature is, therefore, important to the population and some natural elements such as trees, plants, shrubs, rivers, lakes or seas and wildlife, are particularly appreciated. This appreciation for nature has increased during the pandemic as people have more time to reflect and spend indoors. Apartment blocks are usually located in urban areas of higher population, building and traffic density, which makes it more important to enjoy visual access—through the windows of the home—to nature. In contrast, people who live in rural areas—surrounded by nature—or who have plants and gardens within their own homes are not as much in need of such a view of the outdoors.

In times of crisis such as the COVID-19 pandemic, when the population must stay at home for longer periods of time, it is necessary to assess the importance of views from home on their mental health and well-being. At the same time, the comparison of the situation in

Spain versus England and Ireland provides us with comparative evidence-based information. This confirms our initial hypothesis that the greater the restrictions and the less contact with nature, the worse the mental health and emotional well-being. In fact, during this unusual period of lockdown, nature surrounding the home may play a key role in mitigating adverse mental health outcomes (Soga et al., 2021). A similar study in Beijing (China) indicated that the population showed a greater appreciation for urban green spaces during the pandemic (Zhu & Xu, 2020). Likewise, an international survey conducted during the pandemic revealed that urban residents perceived an increased need for accessible urban green spaces, mainly for physical exercise, relaxation and nature observation (Ugolini et al., 2020).

GreenCOVID results have shown how during the first wave of the pandemic, participants in Spain—who mostly live in a flat or apartment, which greatly hindered their physical contact with nature—increased their appreciation for urban nature to a greater extent, compared to respondents in England and Ireland (Garrido-Cumbrera et al., 2022). In addition, GreenCOVID also revealed that the number of people living in flats or apartments in Spain was high (72.1%)—compared to only 12.7% in England and 12.9% in Ireland—reducing the possibilities for interaction with the outside world in this country. This explains the fact that in England/Ireland people had a greater access to private gardens inside the home (Garrido-Cumbrera et al., 2021). Home confinement meant that people living in flats, lacking outdoor spaces other than windows and balconies, missed access to natural environments more than those living in houses with access to private gardens (Garrido-Cumbrera, 2021). In fact, living in flats or apartments without views or with limited views of natural elements from their windows or balconies and poorer appreciation of views have had a significant impact on people's mental health and well-being during the pandemic. Furthermore, people who did not use outdoor spaces and window views and lacked contact with the outdoors were at far greater risk of anxiety or depression (Garrido-Cumbrera et al., 2022).

It should also be noted that the launch of the survey coincided with the most restrictive period of the first wave of the COVID-19 pandemic, when most people living in Spain were prevented from leaving home whereas there were far less restrictive measures in England and Ireland. In these cases, the population was allowed to move within certain zones of influence, close to their homes. In general, our survey also showed

that the COVID-19 pandemic affected more women and young people (Garrido-Cumbrera et al., 2022), but did also impact those living alone and/or in nursing homes, such as the elderly and people with disabilities (Giri et al., 2021).

One of the strengths of the GreenCOVID study is the large sample size gathered in three European countries during the most severe period of the first wave of the COVID-19 pandemic. In addition to analysing factors associated with poor emotional well-being, sociodemographic, lifestyle and home environment characteristics were studied based on seven different factors. A limitation of the study was that the sample was mainly from Spain, compared with the UK, and Ireland, so the results cannot be extrapolated to the general population of these three countries. Another limitation had to do with the different survey periods in each country, as different timing and different lockdown policies adopted by the governments of each of the three countries may have affected the results. In short, the results of this study reaffirm the importance of visual contact with the natural environment from home in mitigating and coping with the negative effects on the mental health and well-being of the population. Visual contact with the natural environment is especially vital during periods of limited contact with the outside world, such as during the first wave of the COVID-19 pandemic.

Conclusions

House windows should not be seen as elements that only serve to allow light and air to enter, but as places that provide contact with the outside world, indirect exposure to nature and, ultimately, elements with capacity for recovery or restoration. Views from home have been fundamental in coping with the effects of the restrictive measures adopted to contain the spread of the SARS-CoV-2 virus. The value of views from home windows has been higher during times of home confinement and lower in places where there were no restrictions on walking and access to green or blue spaces.

Considering that window views are a fundamental aspect of the home, especially in crisis situations, improving people's views from their homes should become a priority as a key intervention to reduce mental health disorders and improve emotional well-being. This would involve increasing urban vegetation by adding plant species (trees, shrubs, herbs and flowering plants) on residential streets, as well as establishing urban

planning and design guidelines that include the quality of views from residential dwellings. It is, therefore, incumbent upon urban planners and policy makers to design greener cities where more citizens can have access to views of nature and landscapes from their homes.

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