Home Care for COVID-19 positive cases: Suitability of the Residential Setting and ability of cases to adhere to the required preventive measures

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Abstract

Introduction:

With the upsurge of COVID-19 cases, Lebanese hospitals are overburdened and hospital care was prioritized for COVID-19 patients with the highest probability of poor outcomes. This paper aimed to assess the suitability of residential settings for home isolation and to explore the patient's ability to adhere to the required precautions measures.

Methods:

All COVID-19 cases reported between February, 21 and the end of June 2020 and who had mild or moderate symptoms, were contacted via phone calls by a healthcare professional to fill out a standardized questionnaire developed to assess the suitability of the residential setting for home care. Inpatient cases were required, before their discharge from the hospitals, to sign consent related to their adherence to the mandatory precautionary measures. They were also asked to complete, on daily basis, the symptoms monitoring log form. A referral system to health facilities was established to manage cases with worsening health status. A collaborative framework to address violations of home isolation rules was also put in place.

Results:

Of the 600 cases assessed, 44.7% of them were isolated in a living building apartment (67.2%) with one entrance (85.5%) including four to eight rooms (71%). Around one-quarter of patients have children (< 5 years) and 75% of them were living with elderly people. Most of the patients confirmed the availability of a well-ventilated single room (96.2%) and a separate bathroom (80.17%). As for infrastructure, more than 90% of patients confirmed the availability of drinking and tank water, heating facilities, electricity, and safe trash elimination. Similarly, more than 90% of them had access to personal hygiene items, disinfectants, and personal protective equipment. The bulk of homes care were rated as easily reachable. As for awareness and ability to self-serving, 94.5% of patients were knowledgeable about the required preventive measures, able to serve themselves and to adhere to the isolation requirements as well. Only 51.8% of them had access to psychological support.

Conclusion:

Proper assessment of the residential setting for home care of COVID-19 cases combined with close monitoring of the adherence of patients to the required precaution measures are highly needed for limiting the spread of infection within the household and the community.

Introduction

COVID-19 is an acute illness caused by a new coronavirus that was first identified in Wuhan, China towards the end of 2019 [1, 2]. Human-to-human transmission of SARS-CoV-2 was confirmed on January 20, 2020 [3]. However, humans have never been exposed to this new virus before and therefore have no immunity to it. Thus, the virus rapidly spread globally, causing a pandemic declared by the World Health Organization (WHO) on March 11, 2020 [4]. WHO has recommended the isolation of all laboratory-confirmed cases of COVID-19 in health facilities. Of note, isolation of cases initially applied in hospital settings, is a common intervention for controlling infectious disease outbreaks [5]. It was defined as the separation or restriction of activities of an ill person with a contagious disease from those who are well. However, in situations where

isolation in health facilities is not possible, it is emphasized to prioritize hospital care for those with a high probability of a poor outcome.

In Lebanon, the first case of COVID-19 was confirmed on February 21, 2020 [6]. In fact, since the early phase of the pandemic, Lebanon has been strengthening and maintaining its national capacities as required under the International Health Regulations (IHR 2005) [7]. A holistic approach involving all stakeholders, including proactive measures, was taken to prevent and control the spread of COVID-19 and to effectively respond to further spread of the disease, including isolation of COVID-19 cases in designated hospitals. However, an escalation in the COVID-19 infection rates in Lebanon and its associated fatalities was recorded, accompanied by an economic meltdown as a result of the lockdown implemented to curb the spread of the infection. Given that health facilities have reached their limits due to limited space and staff, it becomes untenable to isolate all COVID-19 cases in a hospital setting. As a result, there was an urgent need to prioritize hospitalization for severe cases. These include those with severe and critical illnesses and those with a risk factor (age > 60 years and those with underlying medical comorbidities). Based on the Ministry of Public Health data as of April 2020, 74% of cases were asymptomatic, 18% were mild, and 8% were severe and critical cases requiring hospitalization. Lebanon has so far recorded 1622 confirmed cases and 32 deaths from the disease as of June 23, 2020, of whom 58% are males [8, 9]. In such a situation, home isolation could be a reasonable option for the decongestion of health facilities. However, it might require intensive public health joint efforts to effectively monitor the adherence of COVID-19 cases to home isolation requirements. According to the WHO guidance for home care, before proceeding to home isolation for positive cases, there is a need to assess the stability of the health status of positive cases, as well as to assess the suitability of residencies intended for home isolation and the feasibility of care provision at home [10].

This article aimed to assess the suitability of the residential settings for home care as well as the ability of the patient to adhere to the required precautionary measures during home care. This is essential to guide the hospital's decision about the patient's discharge eligibility.

Methods

Home isolation care comprises key areas including eligibility, care procedures, medical monitoring, referral systems to health facilities (when necessary), and criteria for determining recovery [11]. The decision to take home care of positive cases is preceded by careful clinical judgment to assess eligibility and informed by an assessment of the suitability of residential.

Participants:

All COVID-19 positive cases reported in Lebanon over the period extending between February, 21 and June 30 2020 with mild or moderate symptoms, and who didn't require hospitalization were subject to this assessment.

Eligibility criteria for discharge:

Eligible cases should be laboratory-confirmed COVID-19, asymptomatic, or with mild symptoms of COVID-19 with an absence of comorbidities and having access to a suitable space for home-based isolation and care. Patients who meet all the criteria below are considered for home-based isolation and care.

Exclusion criteria: Patients suffering from immune-compromised status (Transplant recipients, Cancer therapy...) are not eligible for home isolation. Elderly patients aged more than 60 years and those with co-morbid conditions would be eligible for home isolation only after proper evaluation by the treating medical officer.

Tool: A questionnaire assessing the suitability of the residential setting for home care was developed based on the Centers of Diseases Control and Prevention (CDC) guidelines for home care. The original draft of the questionnaire was developed

in English and then translated and adapted to the Arabic language based on standard translation guidelines. It consists of closed-ended questions and it comprises seven domains:

1. **Socio-demographic characteristics** included gender, age, nationality, occupation, marital status, and educational level.
2. **Household members at home isolation:** Patients were also asked about household members, number of children, number of elderly people, number of family members with comorbidities present at the intended place of isolation.
3. **Housing conditions and infrastructure** included the location of residence, type of residence, number of entrances, availability of elevator, number of rooms, and number of toilets.
4. **Availability of basic services** such as heating, drinking water, tank water, electricity, safe trash elimination, hygiene amenities, personal items, protective equipment (masks, gloves...), and communication tools.
5. **Isolation room characteristics** included availability of individual: room, toilet, balcony, and windows.
6. **Geographical accessibility** including reachability by the red cross and delivery service and nearby to the hospital
7. **Individual skills** including awareness of the preventive measures, ability to commit to self-isolation and ability to self-service, availability of somebody to assist with material needs, and presence of psychological support

Procedure:

After carefully assessing the health stability of the COVID-19 patients and their readiness to receive home care by the treating physician at the health facility, all COVID-19 positive cases reported in Lebanon over the period extending between 21 February and 30 June 2020 with mild or moderate symptoms, were contacted via phone-calls by a healthcare professional from the ministry of public health (MOPH) to assess the suitability of their intended isolation setting using the customized questionnaire. If the patient was a kid or presented a disability to communicate, the person in charge was contacted. Patient ability to safely self-isolate and to access support services were determined. For negative answers about the availability of resources and services, we refer to local protocols to determine whether resources are available to provide such support services. To provide isolation settings for individuals suffering from COVID-19 and having limited resources, and to decongest hospitals, the Ministry of Interior and Municipalities in a proactive step issued a Circular (No.8/2020) which requested from governors and municipalities, to identify and provide appropriate places suitable for quarantining or to isolate suspect and virus-infected persons who do not require critical medical attention.

As for inpatient cases, they received prior to their discharge, instructions regarding the appropriate procedures for home-based care including information on self-monitoring, cleaning, disinfection, and precautions measures. Brochures were distributed in hospital settings. MOPH teams communicate similar information with outpatients through phone calls.

Based on the findings of this assessment, inpatient cases having suitable home isolation were discharged from hospitals after signing a consent that elucidates the required precautionary measures to be followed during their period of isolation. In addition, patients were requested to monitor their health status daily and to complete the symptoms monitoring form for the 14 days of isolation. Also, patients under home isolation were actively monitored by the MOPH staff who guided them on the best practices concerning infection, prevention, and control. In case of violation, a mechanism has been established with other stakeholders, particularly with municipalities that took charge of the responsibility of close monitoring of the adherence of COVID-19 cases to home isolation. For home isolated cases that required medical assistance due to worsening health status, patients are advised to call immediately the COVID-19 hotline to notify the MOPH team, who will assess the patient status and assist the hospital referral if needed. For asymptomatic patients, the home isolation end after 14 days following the date of testing while symptomatic cases were released from isolation after at least 14 days have passed since their symptoms first appeared with no fever for at least 72 hours with an improvement of other symptoms. If testing is available, the isolation can stop after 2 consecutive COVID-19 negative tests. Of note, these recommendations were updated to reflect new guidance for home isolation.

Statistical analysis

The collected data were checked for completeness and consistency before analysis. The data were analyzed using the statistical software SPSS (Statistical Package for Social Sciences), version 22.0. Descriptive statistics were reported using frequency and percentages for categorical variables. Finally, the analyzed data were organized and presented in tabular, graphical, and narrative forms as necessary.

Results

1. Baseline characteristics:

Table 1 summarized the baseline information of COVID-19 home isolated cases. Out of all assessed COVID-19 cases, 52.3% were male. The majority of patients (89.5%) were Lebanese and 30% of them were aged more than 50 years. Only 2.3% of them were aged less than 5 years. Around half of the cases were married, had work, and have a secondary educational level or less.

Table 1
Baseline information of home isolated cases

	n	%
Gender		
Male	314	52.30%
Female	286	47.70%
Age(years)		
< 5y	14	2.30%
5 to 18 y	79	13.20%
19–29 y	137	22.80%
30-49y	190	31.70%
50-65y	112	18.70%
> 65y	68	11.30%
Nationality		
Lebanese	537	89.50%
Syrian	40	6.70%
Other	23	3.80%
Status (profession)		
Student	100	16.70%
Working	268	44.70%
Retired	22	3.70%
Not working	64	10.70%
Not applicable	146	24.30%
Social status		
Single	271	45.20%
Married	303	50.50%
Other	26	3.50%
Education level		
Illiterate	52	8.60%
Secondary level or less	319	53.20%
University level or more	229	38.20%
N: Frequency, %: Percentage		

2) Information about Household members at home isolation:

Table 2 summarized the characteristics of household members present in the intended residential isolation setting. Only 5.3% of COVID-19 cases were living alone. However, 72.5% of them were isolated with 2 to 5 family members in the household and 51.3% of them have children (less than 18) living with them during home isolation. Around one-quarter of them have a child less than 5 years old. In addition, 25% of patients have a family member aged more than 65 years old at home isolation and 43.67% of patients have a household member suffering from comorbidities. Lastly, 4.3% of them had a family member with disabilities in isolation setting.

Table 2
Characteristics of household members at home isolation

	n	%
Number of family members at the home of isolation		
Alone	32	5.30%
2 to 5	435	72.50%
More than 6	133	22.10%
Number of kids at the place of isolation		
None	234	39.00%
1 to 4	308	51.30%
More than 4	58	9.70%
Kids less than 5 years old		
No	460	76.70%
Yes	140	23.30%
People > 65years at the home of isolation		
No	447	74.50%
Yes	153	25.50%
People with comorbidities at the home of isolation		
No	338	56.34%
Yes	262	43.67%
People with disabilities at home isolation		
No	574	95.70%
Yes	26	4.30%
N: Frequency, %: Percentage		

3) Housing conditions and infrastructure:

Out of the total, 67.2% of the patients were isolated in an apartment in a living building. The majority of residences (85.5%) had one entrance and 71% were composed of 4 rooms or more. Only 44% of homes intended for isolation were equipped with an elevator. One single room was available in 96.2% of these residences (Table 3).

Table 3
Information about isolation residence

	n	%
Type of residence		
Apartment in a living building	403	67.20%
Individual home	197	32.80%
Housing permanency		
Temporary	32	5.30%
Permanent	568	94.7%
Number of entrances		
1	513	85.50%
2 or more	87	14.50%
Presence of elevator		
No	336	56%
Yes	264	44%
Number of rooms		
Less than 3 rooms	174	29.00%
4 rooms or more	426	71.00%
Number of toilets		
1	181	30.17%
2 or more	419	69.83%
Availability of individual room		
No	23	3.80%
Yes	577	96.20%
N: Frequency, %: Percentage		

4) Isolation room settings

Figure 1 showed the isolation room settings. More than 80% of isolation rooms presented an individual toilet (80.17%), individual window (82.8%), and individual bed (90.5%). Besides, around two-thirds of isolation rooms showed availability of individual balconies (72%), amenities (61.17%), and entertainment tools (78.5%).

5) Availability of basic services

Table 4 presented the availability of basic services at home intended for isolation. The top majority of patients declared that they have available drinking and tank water. Besides, more than 90% have access to electricity and heating facilities. Concerning waste management, most of them acknowledged the presence of safe trash elimination (87.7%), waste bins (91.67%), and plastic bags for waste (86.66%). The availability of personal items (96.2%), private eating items (96.2%), bedding (97%), and sufficient food (96.3%) was declared. In respect of hygiene facilities, hand washing material (soaps)

(97.5%) and cleaning supplies and detergents (78.3%) were available in the majority of homes of isolation. For the health equipment, more than 90% of patients declared the availability of thermometer, masks, and masks but only 20% have access to an ox meter.

Table 4
Availability of basic services at intended home of isolation

	No	Yes
	n(%)	n(%)
Availability of basic services and needed items		
Availability of water		
Water for use	22(3.7%)	578(96.3%)
Drinking water	3(0.5%)	597(99.5%)
Heating facilities	8(1.4%)	592(98.6%)
Electricity	30(5%)	570(90%)
Waste management		
Safe Trash elimination	74(12.3%)	526(87.7%)
Containers and waste bins for waste management	50(8.33%)	550(91.67%)
Plastic bags for waste	80(13.34%)	520(86.66%)
Personal items(towel....)	23(3.8%)	577(96.2%)
Private eating items	24(3.8%)	576(96.2%)
Bedding (mattress, blankets, pillow...)	18(3%)	582(97%)
Sufficient food	22(3.7%)	578(96.3%)
Hygiene facilities		
Cleaning supplies and detergents	130(21.7%)	470(78.3%)
Hand washing material (soaps)	15(2.5%)	485(97.5%)
Health equipment's		
Thermometer (personal or digital)	60(10%)	540(90%)
Ox meter	480(80%)	120(20%)
Gloves and masks	38(6.3%)	562(93.7%)
Disinfectants	41(6.8%)	559(93.2%)

6) Availability of communication and entertainment tools:

Figure 2 displayed the availability of entertainment tools in the homes intended for isolation. The main listed entertainment tools available listed by patients were: television (76.2%), internet (79.8%), and phone line (64.3%).

7) Geographical accessibility and reachability

As shown in Fig. 3, the majority of isolation home was easy to reach (90%), accessible by Red Cross (99%), and food delivery (94%). In addition, 90% of these residential settings were closed to hospitals.

8) Individual skills of home isolated cases:

Out of all, 94.5% of the assessed patients were aware of preventive measures including physical distancing, wearing masks, cleaning and disinfecting, and were able to serve themselves. Almost all of them declared their ability to commit to isolation requirements and the availability of somebody to provide them with their needs (95.7%). However, only 51.8% had access to psychological support (Fig. 4).

Based on the findings of this assessment, more than 90% of cases seem eligible for home isolation ba.

Discussion

Since the early phase of the pandemic, Lebanon has taken proactive measures to prevent, control the spread of COVID-19, and effectively respond through a holistic approach involving all stakeholders. As Lebanon experiences an upsurge in the number of persons with COVID 19 infection, it is becoming less rational to isolate all patients in hospital-based care treatment facilities. Hence, home isolation could be a reasonable choice for decongestion of health facilities Based on the above, it is crucial to assess the suitability of residencies intended for home care isolation and the feasibility of care provision at home.

Based on the findings of this assessment, more than 90% of cases were eligible for home isolation. This result reflects only the suitability of the intended isolation location according to the current health status of cases but not the efficiency of home isolation. Preventing the spread of infection among household members is crucial. However, this could not be achievable without a sense of responsibility among cases. In addition, close monitoring of the compliance of cases to the recommended infection prevention and control measures must be performed by health authorities and municipalities. In regards to patients who were unable to isolate themselves within their own homes according to the assessment; they would be isolated at community isolation Centers that meet the specifications and the requirements set by the Order of Nurses and the Lebanese Army [9].

The assessment showed that around half of COVID-19 cases were male. While data showed that men and women had approximately the same susceptibility, men were more prone to dying. A study conducted in China showed that men were 2.4 times more than women in the deceased patients [12]. This underlines the importance of regular health monitoring.

Our results showed that COVID-19 was diagnosed at all ages. Around a third of the assessed patients were aged more than 50 years. However, older age and the presence of comorbidities were associated with higher severity and mortality in COVID-19 patients. This underscores the importance of monitoring older cases. A study about the impact of home care on older adults during the COVID-19 pandemic showed that Home-based isolation among older adults must be tailored to meet individual needs and must meet evidence-based specifications [13].

Besides, around 18% of cases were aged 18 years old or less and only 2.3% of them were aged less than 5 years old. It is important to ensure continuity of care of children during the whole isolation period and to keep children less than 18 years old with their families during isolation unless a critical health condition exists with a special focus on children's interests.

Our results showed that around half of cases intended to receive home care were married. Despite that, the presence of a partner is important for psychological and physical support, a study conducted by Liu et al., showed that spousal relationships increased the risk for transmission among COVID-19-positive persons and household members [14]. However, home care is associated with a reduced risk of stigmatization for COVID-19 and a higher likelihood of recovery.

Since the majority of cases were active and practicing work before being infected, their work arrest that can be not covered by their work and home caring fees could place additional financial constraints on both COVID-19-positive persons and caregivers alike. Additionally, the majority have a secondary educational level or less. Given that a higher educational level is usually associated with good knowledge about the disease and the preventive measures which are in turn associated with good practices, there is a need to raise awareness among cases and their contacts about the infection prevention measures to mitigate the risk of family transmission of COVID-19 [15].

Only 5.3% of COVID-19 cases were isolated alone at home. However, 72.5% of them were isolated with 2 to 5 family members living with them in the home of isolation. A conducted review about home-based care for COVID-19 showed a higher likelihood of familial transmission of COVID-19 associated with home isolation of COVID-19 positives and that the household is a primary site enhancing the spread of COVID-19. This could be challenging to the adoption of home-based care (HBC). Additionally, households with a large number of members are also more likely to experience higher COVID-19 transmission rates than others. Findings from studies revealed that an average number of 5 persons live in every Chinese household, and this is comparable to the range of assessed household members in Lebanon [14, 16].

More than half of the participants have children (less than 18) in isolation homes and around one-quarter of them have a child less than 5 years old. Despite the importance of keeping children with their families as they need special care, particularly in absence of another caregiver, preventive measures such as physical distancing and secure means of communication should be adopted.

Notably, one-quarter of patients have a family member aged more than 65 years old at home isolation, and around half of them have a household member suffering from comorbidities. Any breach in adherence to preventive measures could lead to household transmission associated with poor outcomes among this elder population.

The presence of family members with disabilities was reported by some individuals at the home of isolation. Given the vital role of information for people to make life-saving decisions about how to protect themselves and to get necessities and services during quarantine and self-isolation, this information may not be accessible and understood by people with disabilities. This stressed the importance of sharp compliance to recommended preventive measures.

It should be noted that despite the risk of household transmission of infection, home isolation for COVID-19 would create an opportunity for emotional care and support needed for the recovery of cases, especially in hot-spot communities. Active engagement of infected persons and relatives or caregivers would be enhanced following the adoption of home isolation of COVID-19 patients.

Our results showed that the majority of assessed residences ensure the availability of an isolation room well equipped, ventilated, and close to an individual toilet dedicated for the patient, and balcony. Entertainment tools were also available. Based on the guidelines, the majority of isolation rooms were considered suitable for isolation. Availability of basic infrastructures such as water, electricity, heating, and waste management was also satisfactory. Besides, hygiene facilities, hand washing material (soaps), cleaning supplies, and detergents were available. However, the shortage of these necessities would prevent the preservation of hygienic conditions in homes where COVID-19 patients are to be managed. A study conducted in Beijing, China showed that infection prevention and control (IPC) measures could prevent household COVID-19 transmission even in crowded or small households [17]. However, the provision of the ongoing support of needs and monitoring throughout the entire period of home care management of COVID19 cases is recommended.

A limited number of cases have an ox meter at home. This could impede their daily symptoms monitoring especially that COVID-19 infection was associated with silent hypoxemia. Hence, the role of local authorities, in particular, municipalities to provide such equipment in case needed. This highlights the supportive role of municipalities and local authorities in following the adherence of cases to home isolation in addition to providing them with the needed items (food, detergents, masks...).

Our results showed that the majority of assessed isolation homes were reachable close to hospitals and accessible by ambulance and food delivery services. Geographic accessibility is crucial, especially in case the isolated COVID-19 case requires hospitalization.

The bulk of assessed patients were aware of preventive measures including physical distancing, wearing masks, cleaning and disinfecting as well as its importance in limiting the spread of the disease. They were also able to serve themselves and adhere to isolation requirements and the availability of someone to provide them with their needs. Strict adherence of patients, household members, and caregivers should be ensured. Compliance with IPC measures created an opportunity for the prevention of household transmission of COVID-19 in all household types. Besides, IPC education sessions should be provided to family members of infected persons to raise awareness. Owing to the dearth of HCWs, prearranged field visitations to the household where COVID-19-infected persons are being isolated by well-trained health staff are recommended.

Challenges:

Given that COVID-19 is mainly transmitted by droplets, home isolation could present a risk of familial transmission in a residence with households with many members and could place caregivers and other family members at risk of COVID-19 infection. Lack of knowledge and difficulty in adherence to the isolation guidelines and IPC recommendations could impede the adoption of home-based management of COVID-19 patients. Financial implications required for home isolation should be also acknowledged. Compared to isolation centers where costs are borne by the government, the responsibility for home isolation is mainly to be carried by COVID-19-positive persons and their families. In addition, COVID-19 cases were unable to maintain physical relationships right within their own homes. This could affect their mental health and create a sense of “imprisonment”.

Home isolation is a reasonable opportunity for the management of COVID-19 in Lebanon. Although faced with challenges of increased transmission rates and financial constraints, home care could afford many opportunities for COVID-19 management. To improve COVID-19 management in a home-based setting, there is a need for tailoring caring practices to individual needs to provide patient-centered based on individual peculiarities, housing patterns, age, and other sociodemographic characteristics. In addition, fostering sufficient awareness and knowledge regarding practices IPC and IPC measures such as hand hygiene, wearing of face masks, social distancing, disinfection, and household ventilation which curtail transmission is needed. This could not be achieved without multi-sectoral collaboration and a close follow up of the adherence of cases:

Conclusion

Proper assessment of the residential setting for home care of COVID-19 cases combined with close monitoring of the adherence of patients to the required precautions measures are highly needed for preventing and limiting the spread of infection within the household. This cannot be achieved without a holistic approach based on cooperation and joint effort between different stakeholders.

Abbreviations

COVID-19

Coronavirus Disease 2019

MOPH

Ministry of Public Health

IPC

infection prevention and control

WHO

World Health Organization
IHR
International Health Regulations
CDC
Centers for Disease Control and Prevention
HBC
Home-based care
SPSS
Statistical Package for Social Sciences

Declarations

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Authors' contributions

Conception and design: D.Y

Analysis and interpretation of the data: D.Y

Drafting of the article: D.Y, A.B, L.A.A

Critical revision of the article for important intellectual content: D.Y, A.B, L.A.A

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Availability of data and materials

Data are available from the corresponding authors upon reasonable request.

Ethical approval and consent to participate

Such assessment is part of the national preparedness plan and the response of the country against the COVID-19 and it is a requirement for the discharge of COVID-19 cases for home isolation. Therefore, it was exempted from ethical approval by the Ministry of Public Health since it falls under the public health surveillance and response system for emergencies underlined in the communicable disease law dated 1957 (18). All participants provided informed consent after a detailed explanation about the procedure of the study. In addition, participants were also required to sign a written informed commitment to adhere literally to the requirements of home isolation. All information were gathered and handled confidentially and the participation of respondents was voluntary. As individual participants cannot be identified based on

the presented material, this study caused no plausible harm or stigma to participants. The study design assured adequate protection of study participants, and neither includes clinical data about patients nor configures itself as a clinical trial. All methods were carried out in accordance with relevant guidelines and regulations.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Figures

Figure 1

Isolation room settings

Figure 2

Availability of communication and entertainment tools

Figure 3

Accessibility and reachability of the home intended for isolation

Figure 4

Individual skills of COVID-19 in-home isolated cases