

Current Aspects of Patient and Nursing Professional Safety in the Face of Pandemic - COVID-19

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Abstract

Objective: To identify the performance of nursing professionals in relation to the essential aspects for the provision of safe care to patients infected by COVID-19 hospitalized in the emergency department.

Method: A simple literature review with data collected during the peak period of the disease in real time in available databases.

Discussion: COVID-19 spreads around the world and reaches almost every continent. Immediate, important measures and education of the population, training of health professionals becomes a priority. In addition to effective prevention and control measures.

Conclusion and final considerations: For a pandemic it is no easy task. However, in the case of COVID-19, it seems possible, since asymptomatic cases have not played an important role in transmission. Noticeable priority of protection to health professionals, isolate in quarantine the communicators and act quickly, given the lethality of the disease and that cases increase every day.

Keywords: COVID-19 • Coronavirus • Pandemic • Patient safety • Nursing

Introduction

At the beginning of the year 2020, the world was shaken by the pandemic called COVID-19 that spread across all continents, except Antarctica. It is the coronavirus agent SARS-CoV-2 discovered on December 31, 2019 after cases registered in Wuhan, in the province of Hubei, People's Republic of China [1-5]. The Pan American Health Organization (PAHO) (2020), declared the outbreak as a Public Health Emergency of International Importance (ESPII), characterized as a pandemic. On April 15, 2020, 2,056,055 cases of COVID-19 and 134,354 deaths were confirmed worldwide, of which about 28,320 cases and 1,736 deaths occurred in Brazil [6].

VOCs belong to the group of viruses that infect humans and also birds, pigs, felines, cattle and bats [7,8]. They are classified in the order Nidovirales, family Coronaviridae, divided into four genera and can cause respiratory, enteric, liver and neurological diseases, ranging from mild to severe: alphacoronavirus, betacoronavirus, gammacoronavirus and deltacoronavirus [9-14]. There are 6 types of human coronaviruses (HCoV) identified previously, namely [14-16]: a) Alphacoronavirus: HCoV-229E; HCoV-NL63; b) Betacoronavirus: HCoV-OC43; HCoV-HKU1; SARS-CoV (coronavirus that causes Severe Acute Respiratory Syndrome - SARS); MERS-CoV (coronavirus that causes Middle East Respiratory Syndrome - MERS).

According to the World Health Organization (WHO) (2020), about 80% of infected people are asymptomatic, 20% may need hospital care and 5% may progress to respiratory failure and need specialized care with mechanical ventilation [17-19]. The most common, however, non-specific symptoms related to infection with this virus are: fever (83.0% -99.0%), dry cough (59.4% -82.0%), dyspnoea (55.0%), fatigue (tiredness) (38.1%), sore throat (13.9%), headache (headache) (13.6%) and diarrhea (3.7%). These symptoms can

appear in line with the virus incubation time, on average, from 5 to 6 days after infection [20-24].

Risk groups are considered: elderly, children, pregnant women and patients with pre-existing diseases, such as diabetes, heart disease, etc. In this context, health professionals have also become a risk group, as they deal directly with the care of seriously infected inpatients. In order to protect these professionals, the Ministry of Health created several protocols and made it available on a specific portal dedicated to COVID-19 [20-24]. In addition, authorities in all countries disseminated strategies through the media to contain contagion, especially using the isolation of the quarantined population, closing companies, except those that work with basic needs services such as: gas stations, pharmacies, supermarkets, bakeries, among others.

Considering the importance of nursing in assisting the victims of COVID-19, the question is: How has nursing acted in the care of inpatients with confirmed serious cases of coronavirus? Therefore, it is intended from this study to identify the role of nursing professionals in face of the essential aspects for the provision of safe care to patients infected with COVID-19 admitted to the emergency service.

Research Methodology

Kind of study

A simple review of the literature was carried out with data collected during the peak period of the disease in real time, to build knowledge of the reality experienced by health professionals and infected people.

Study selection

To extract the information for the construction of the study, data were collected from electronic scientific bases that dealt with the theme of coronavirus and influenza and official websites of government agencies: Ministry of Health, World Health Organization, Brazilian Institute for Patient Safety, Center for Systems Science and Engineering at Johns Hopkins University, Chinese Journal of Epidemiology, among others. Notified cases, mortality rate, main spatio-temporal characteristics of disease and pandemic transmission, epidemiological features and protocols used for containment, care and prevention of real-time contagion of events were computed, that is, in April 2020.

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Results

In real time, the Center for Systems Science and Engineering (CSSE) 7 at Johns Hopkins University until April 15, 2020 reported approximately 2,056,055 cases of COVI-19, in 185 locations around the world, of which 134,354 led to deaths. Table 1 shows in decreasing order the confirmed cases, the registered deaths and the notified places:

As shown in Table 1, the lethality rate for COVID-19 is very high (0.5 to 4% approx.). It resembles Spanish flu (2 to 3%), is higher than Influenza H1N1 (0.02%) and seasonal flu (0.1%). Despite not being absolute data, since, until now, there has been no control of the pandemic and the number of cases is increasing daily. To date, approximately 80.9% of the cases are mild and asymptomatic [25].

Table 1. Epidemiological distribution of COVID-19 in April 2020.

Order	Local	Number of confirmed cases by notification	Number of registered deaths
1	U.S	634.975	27.940
2	Spain	177.644	18.579
3	Italy	165.155	21.645
4	Germany	134.753	3.804
5	France	131.365	17.188
6	UK	99.483	12.894
7	China	83.356	3.346
8	Iran	76.389	4.777
9	Turkey	69.392	1.518
10	Belgium	33.573	4.440
11	Brazil	28.320	1.736
12	The Netherlands	28.316	3.145
13	Canada	28.205	1.006
14	Switzerland	26.336	1.239
15	Russia	24.490	198
16	Portugal	18.091	599
17	Áustria	14.336	393
18	Ireland	12.547	444
19	Israel	12.501	130
20	Índia	12.322	405
21	Sweden	11.927	1.203
22	Peru	11.475	254
23	South Korea	10.591	225
24	Chile	8.273	94
25	Japan	8.100	146
26	Equador	7.858	388
27	Poland	7.582	286
28	Romania	7.216	372
29	Denmark	6.876	309
30	Norway	6.740	150
31	Australia	6.440	63
32	Pakistan	6.383	111
33	Czechia	6.216	166
34	Saudi Arabia	5.862	79
35	Philippines	5.453	349
36	Mexico	5.399	406
37	United Arab Emirates	5.365	33
38	Indonesia	5.136	469
39	Malasyia	5.072	83
40	Serbia	4.873	99
41	Ukraine	3.764	108
42	Belarus	3.728	36
43	Qatar	3.711	7
44	Singapore	3.699	10
45	Dominican Republic	3.614	189
46	Panama	3.574	95
47	Luxembourg	3.373	69
48	Finland	3.237	72
49	Colombia	2.979	127
50	Thailand	2.643	43
51	South Africa	2.506	34
52	Egypt	2.505	183

53	Argentina	2.443	111
54	Greece	2.192	102
55	Algeria	2.192	336
56	Moldova	2.049	46
57	Morocco	2.024	127
58	Croatia	1.741	33
59	Iceland	1.727	8
60	Bahrain	1.671	7
61	Hungary	1.579	134
62	Iraq	1.415	79
63	Kuwait	1.405	3
64	Estonia	1.400	35
65	New Zealand	1.386	9
66	Pakistan	1.302	4
67	Kazakhstan	1.295	16
68	Azerbaijan	1.253	13
69	Slovenia	1.248	61
70	Bangladesh	1.231	50
71	Armenia	1.111	17
72	Bosnia	1.110	41
73	Lithuania	1.091	30
74	Northern Macedonia	974	45
75	Oman	910	4
76	Slovaquia	863	6
77	Cameroon	848	17
78	Cuba	814	24
79	Afghanistan	784	25
80	Tunisia	780	35
81	Bulgaria	747	36
82	Cyprus	715	12
83	Diamond Princess	712	12
84	Andorra	673	33
85	Latvia	666	5
86	Lebanon	658	21
87	Costa do Marfim	638	6
88	Ghana	636	8
89	Costa Rica	626	4
90	Nigeria	584	14
91	Burkina Faso	542	32
92	Albania	494	25
93	Uruguay	492	8
94	Kyrgyzstan	449	5
95	Djibouti	435	2
96	Honduras	419	31
97	Guinea	404	1
98	Jordan	401	7
99	Malta	399	3
100	Bolivia	397	28
101	Taiwan	395	6
102	Kosovo	387	8
103	Nigeria	407	12
104	San Marino	372	36
105	Mauritius	324	9
106	Senegal	314	2
107	West Bank and Gaza	374	2
108	Georgia	306	3
109	Montenegro	288	4
110	Vietnam	267	0
111	Congo (Kinshasa)	254	21
112	Sri Lanka	238	7
113	Kenya	225	10
114	Venezuela	197	9

115	Guatemala	180	5
116	Paraguay	161	8
117	El Salvador	159	6
118	Mali	148	13
119	Brunei	136	1
120	Rwanda	136	0
121	Jamaica	125	5
122	Cambodia	122	0
123	Congo (Brazzaville)	117	5
124	Trinidad and Tobago	114	8
125	Madagascar	110	0
126	Monaco	93	3
127	Tanzania	88	4
128	Ethiopia	85	3
129	Togo	81	3
130	Gabon	80	1
131	Somalia	80	5
132	Liechtenstein	79	1
133	Burma	74	4
134	Barbados	73	5
135	Liberia	59	6
136	Cabo Verde	56	1
137	Uganda	55	0
138	Equatorial Guinea	51	0
139	Bahamas	49	8
140	Guyana	55	6
141	Zambia	48	2
142	Guinea-Bissau	43	0
143	Haiti	41	3
144	Benin	35	1
145	Eritrea	35	0
146	Lybia	48	1
147	Syria	33	2
148	Sudan	32	5
149	Mongolia	30	0
150	Mozambique	29	0
151	Antigua and Barbuda	23	2
152	Chad	23	0
153	Zimbabwe	23	3
154	Maldives	22	0
155	Angola	19	2
156	Laos	19	0
157	Belize	18	2
158	Dominica	16	0
159	Fiji	16	0
160	Malawi	16	2
161	Namibia	16	0
162	Nepal	16	0
163	Swaziland	15	0
164	Saint Lucia	15	0
165	Grenada	14	0
166	Saint Kitts and Nevis	14	0
167	Botswana	13	1
168	Sierra Leone	13	0
169	Central Republic of Africa	12	0
170	Saint Vincent and the Grenadines	12	0
171	Seychelles	11	0
172	Suriname	10	1
173	Gambia	9	1
174	Ms Zaandam	9	2
175	Nicaragua	9	1
176	Holy See	8	0

177	Timor-Leste	8	0
178	Mauritania	7	1
179	Western Sahara	6	0
180	Bhutan	5	0
181	Burundi	5	1
182	Sao Tome and Principe	4	0
183	South Sudan	4	0
184	Papua New Guinea	2	0
185	Yemen	2	0

Font: JHU CSSE Online, 2020.

In February 2020, China published a report in which it was reported that infected people who do not have the main symptoms of COVID-19 were not dangerous, but all reported cases should be reported immediately through the infectious disease information system, and people remain in isolation avoiding the spread of the virus [26].

In Brazil, for the performance of nursing in a hospital environment, the measures for prevention, protection and combating the proliferation of COVID-19, included: a) use of personal protective equipment (PPE's) for direct care to suspected or confirmed patients: Surgical mask ; Capote / Apron; Procedure gloves; Eye protection (glasses or face shield); b) equipment for care in the Intensive Care Unit: Mask N95, FFP2, FFP3 or equivalent; Capote / Apron; Procedure gloves; Eye protection (glasses or face shield); Hat / cap, and both must perform hand hygiene. It is also recommended for all employees and the general population to keep a minimum distance of 1 meter between people, use of a surgical mask for circulation in other environments and on the streets, in addition to personal hygiene and packaging, accessories, etc., that have contact [27-29].

For nursing professionals working at the Material and Sterilization Center (CME), in addition to the standard precautions (PP) mentioned, in this environment, people over the age of 60, pregnant women or people with diseases with a predisposition to immune system. All Health Products (PPS) received must be disinfected, the packaging discarded, and also any surface with 70% sodium hypochlorite alcohol, quaternary ammonium or other disinfectant indicated for this purpose. The materials must be inserted in vats and immersed in detergent, wait, then rinse under running water, dry, if necessary use brushes, according to RDC Anvisa no 15/2012 art. 68 [27].

For semi-critical articles: gastrointestinal endoscopes, endotracheal tubes, anesthesia breathing circuits and respiratory therapy equipment that come into contact with membranes, mucous membranes or non-intact skin, peracetic acid, hydrogen peroxide, among others, or as described by the manufacturer in the packaging. Materials for personal use of inpatients, such as bedpans, parrots, etc., must be sanitized outside the CME [27-29].

These measures are mandatory for the safety of the patient and professionals who work in a hospital environment or who are at risk of contamination.

Discussion

The pandemic spread across the planet reaching several locations, the delay in protection measures, detection of suspected cases and against the spread of COVID-19 caused countless deaths, as shown in Table 1. The most effective measure for the population was the quarantined isolation. Closed commercial establishments, except those indispensable to the population, such as pharmacies, bakeries, supermarkets, gas stations, among others, but under protection regime and following the protocols oriented by WHO, since it is believed that the form of transmission is droplets when the infected person coughs or sniffs.

All were instructed on the extreme importance of skin, mucosa and hand hygiene with soap and water or alcohol gel when it is not possible to wash, to avoid contact of the virus that has variable resistance surviving on surfaces

such as plastic, metal, wood, these must be disinfected or washed. In addition, keep the distance between people, avoid crowds and any kind of contact (hug, kiss, handshake), with control of entry and exit of people in establishments, and the requirement to use disposable protective masks or fabric washable.

The potential rate of transmission, coupled with the lack of a specific antiviral medication for the treatment [2-4,7] totaled on April 29, 2020, about 73,235 infected people and 5,083 deaths in Brazil. In April 2020, the federal government allocated 14.3 billion for actions to fight the coronavirus. Among them, acquisition of diagnostic tests, medications (oseltamivir) and equipment for the hospital network, such as vital signs monitors and lung ventilators, used in severe cases with breathing difficulties. In addition, they expanded resources for the maintenance of ICU and nursing beds, as well as the construction of the Hospital Center for Attention and Support for Clinical Research for Serious Patients, of Fiocruz, in Rio de Janeiro (RJ) [27-29].

The pandemic continued at a rapid pace across the planet, reaching 9,154,232 confirmed people in June 2020, of which 473,650 died. In Brazil, 1,106,470 were contaminated and 71,271 deaths until June 23, 2020 [7].

All the events being reported on social media and television networks generate fear and discomfort in people. Death-threatening pandemics, in addition to the typical suffering of the disease, cause lack of control of contamination, isolation in quarantine, people losing jobs, loved ones, friends and acquaintances, and everyone affected is having to deal with the stigmatization of their generated communities. For fear of contracting the disease. The mandatory use of personal protective equipment, the necessary distance between people, creates a feeling of oppression, sadness and fear. Psychological stress can cause physical symptoms, such as headaches, back pain, stomach discomfort, and others, which requires special care, good communication, welcoming, to minimize the psychological effects of COVID-19 [28-30].

Despite all the efforts of the official bodies and the solidarity of many people, COVID-19 has become a serious public health problem, especially for patient safety, since protection measures, training, isolation have not been able to save many lives, and, until the moment of the construction of this study, that is, June 2020, there is no precise diagnosis, a vaccine, a really effective protection measure, an approved vaccine released, effective measures for the prevention and control of the disease [31,32].

Conclusion

Stopping a pandemic is no easy task. However, in the case of COVID-19, it seems possible, since asymptomatic cases have not played an important role in transmission. Noticeable is the priority of protection of health professionals, isolating quarantine communicants (at least 80%), acting quickly, given the lethality of the disease and that the cases increase every day. Health facilities and professionals must be equipped and ready to handle cases. The general population must be aware of the seriousness of this moment, of its role in preventing and reducing the spread, without panic, without fanfare, just act in accordance with the protection and prevention measures to avoid economic and life losses.

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