PUBLICAÇÃO OFICIAL DO NÚCLEO HOSPITALAR DE EPIDEMIOLOGIA DO HOSPITAL SANTA CRUZ E PROGRAMA DE PÓS GRADUAÇÃO EM PROMOÇÃO DA SAÚDE - DEPARTAMENTO DE BIOLOGIA E FARMÁCIA DA UNISC

ISSN 2238-3360

Revista de Epidemiologia e Controle de Infecção

Original Article

Self-efficacy in hand hygiene and glove use among nurses during the Covid-19 pandemic

Autoeficácia da higienização das mãos e uso de luvas entre a enfermagem durante a pandemia do Covid-19
Autoeficacia en higiene de manos y uso de guantes entre enfermeras durante la pandemia de Covid-19

Site doi: https://doi.org/10.17058/reci.v15i1.19372

Submitted: 04/23/2024
Accepted: 12/11/2024
Available online: 03/25/2025

Corresponding author:
E-mail: daniellacorreacordeiro@gmail.com
Address: Prof. Hélio Lourenço Street, 3900 - Vila Monte Alegre, Ribeirão Preto, São Paulo, Brazil.

Daniella Corrêa Cordeiro[1]
Jéssica Fernanda Corrêa Cordeiro[1,2]
Ludmila Albano de Felice Gomes[1]
Tatiana Areas da Cruz[1]
Marilia Duarte Valim[3]
Denise de Andrade[1]
André Pereira dos Santos[1,2]

[1]Ribeirão Preto College of Nursing, University of Sao Paulo, Ribeirão Preto, São Paulo, Brazil.
[2]Faculty of Sports, University of Porto, Porto, Portugal.
[3]Federal University of Triângulo Mineiro, Uberlândia, Minas Gerais, Brazil.

ABSTRACT

Background and Objectives: The global spread of SARS-CoV-2 led to the Covid-19 pandemic, necessitating preventive measures, especially hand hygiene and the use of gloves. Given the high transmissibility of the virus, nursing, being at the frontline, faced enormous pressure. The objectives of the study were: a) to assess the frequency of nursing professionals with self-efficacy in hand hygiene and glove use during the pandemic across the five regions of Brazil; b) to compare self-efficacy scores among the regions; and c) to analyze the association between sociodemographic characteristics and the level of self-efficacy. **Methods:** This is a retrospective observational study conducted between November 2020 and December 2021, with a sample of 493 nursing professionals (assistants, technicians, and nurses) from the five regions of Brazil who responded to the questionnaire "Self-Efficacy of Health Professionals: Hand Hygiene and Glove Use." **Results:** Of the participants, 72.5% were nurses, 75.8% were female, 21.3% were aged between 18 and 24 years, and 50.4% had postgraduate degrees (master's and/or doctorate). Most professionals exhibited high self-efficacy in hand hygiene and glove use (≥ 60%). No significant differences were found in self-efficacy scores among the regions of Brazil, nor was there an association between self-efficacy and sociodemographic characteristics. **Conclusion:** The results obtained during the Covid-19 pandemic constitute an important health management tool useful for identifying gaps in knowledge, skills, and engagement in infection control management.

Keywords: *Health professionals. SARS-CoV-2. Infection control. Health knowledge. Nursing education.*

RESUMO

Justificativa e Objetivos: A propagação global do SARS-CoV-2 levou à pandemia de Covid-19, demandando medidas preventivas, especialmente a higienização das mãos e o uso de luvas. Diante da alta transmissibilidade do vírus, a enfermagem, atuando na linha de frente, enfrentou enorme pressão. Os objetivos do estudo foram: a) avaliar a frequência de profissionais de enfermagem com autoeficácia na higienização das mãos e uso de luvas durante a pandemia nas cinco regiões do Brasil; b) comparar os escores de autoeficácia entre as regiões; e c) analisar a associação entre características sociodemográficas e o nível de autoeficácia. **Métodos:** Estudo observacional retrospectivo realizado entre novembro de 2020 e dezembro de 2021, com uma amostra de 493 profissionais de enfermagem (auxiliares, técnicos e enfermeiros) das cinco regiões do Brasil, que responderam ao questionário "Autoeficácia dos Profissionais de Saúde: Higiene das Mãos e Uso de Luvas". **Resultado:** Dos participantes, 72,5% eram enfermeiros, 75,8% do sexo feminino, 21,3% tinham entre 18 e 24 anos, e 50,4% possuíam pós-graduação (mestrado e/ou doutorado). A maioria dos profissionais apresentou alto nível de autoeficácia na higienização das mãos e uso de luvas (≥ 60%). Não foram encontradas diferenças significativas nos escores de autoeficácia entre as regiões do Brasil, nem associação entre autoeficácia e características sociodemográficas. **Conclusão:** Os resultados obtidos durante a pandemia de Covid-19 constituem uma importante ferramenta de gestão em saúde, útil para identificar lacunas no conhecimento, habilidades e envolvimento na gestão do controle de infecções.

Descritores: *Profissionais de saúde. SARS-CoV-2. Controle de infecção. Conhecimento em saúde. Educação em enfermagem.*

RESUMEN

Justificación y Objetivos: La propagación global del SARS-CoV-2 condujo a la pandemia de Covid-19, lo que requirió medidas preventivas, especialmente la higiene de manos y el uso de guantes. Dada la alta transmisibilidad del virus, la enfermería, que se encuentra en la primera línea, enfrentó una enorme presión. Los objetivos del estudio fueron: a) evaluar la frecuencia de profesionales de enfermería con autoeficacia en la higiene de manos y el uso de guantes durante la pandemia en las cinco regiones de Brasil; b) comparar las puntuaciones de autoeficacia entre las regiones; y c) analizar la asociación entre las características sociodemográficas y el nivel de autoeficacia. **Métodos:** Se trata de un estudio observacional retrospectivo realizado entre noviembre de 2020 y diciembre de 2021, con una muestra de 493 profesionales de enfermería (auxiliares, técnicos y enfermeros) de las cinco regiones de Brasil, quienes respondieron al cuestionario "Autoeficacia de los Profesionales de Salud: Higiene de Manos y Uso de Guantes." **Resultados:** De los participantes, el 72,5% eran enfermeros, el 75,8% eran mujeres, el 21,3% tenían entre 18 y 24 años, y el 50,4% tenían estudios de posgrado (maestría y/o doctorado). La mayoría de los profesionales presentaron un alto nivel de autoeficacia en la higiene de manos y el uso de guantes (≥ 60%). No se encontraron diferencias significativas en las puntuaciones de autoeficacia entre las regiones de Brasil, ni asociación entre la autoeficacia y las características sociodemográficas. **Conclusión:** Los resultados obtenidos durante la pandemia de Covid-19 constituyen una herramienta importante de gestión en salud, útil para identificar lagunas en el conocimiento, las habilidades y el compromiso en la gestión del control de infecciones.

Palabras Clave: *Profesionales de la salud. SARS-CoV-2. Control de infección. Conocimiento en Salud. Educación en enfermería.*

INTRODUCTION

In December 2019, in the city of Wuhan, China, a new coronavirus was identified, later named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2),[1] which spread globally through the Coronavirus Disease 2019 and was responsible for the onset of the Covid-19 pandemic.[2] In the epidemiological scope, the virus has a high rate of transmissibility through direct contact, droplets, or aerosol. Virus survival time on environmental surfaces is variable, depending on the type of surface, temperature, air humidity, and virus strain. The virus can survive on innate objects and remain viable for 72 hours.[3] When considering these aspects, world governments, including Brazil, stipulated prevention measures for the entire population, with emphasis on hand sanitation. Self-efficacy is a proven determinant in carrying out prevention protocols, especially in relation to hand hygiene and the use of procedure gloves.[4] Due to the characteristics of the virus, it is essential to assess the quality of the preventive measures carried out by nursing professionals who provide care to patients confirmed and/or suspected of having Covid-19.

In addition to being standard precautionary measures for preventing the transmission of SARS-CoV-2,[3] hand hygiene, and the use of gloves enable a safe provision of care for patients and medical professionals.[5] According to Regulatory Standard 32 (NR 32), the use of gloves does not replace the hand hygiene process. Hand hygiene is a key factor in reducing the risk of other infections among healthcare professionals and patients.[6]

With the onset of the Covid-19 pandemic, infection rates became increasingly high. Consequently, there was a substantial increase in the use of health services by the population, especially in the hospital environment.[7] Around the world, nursing staff were under constant pressure, being on the front lines of care.[8] These professionals had to adapt suddenly, faced with scarce information about clinical aspects of the disease, new clinical protocols, routines, and norms, and the use of specific and insufficient personal protective equipment, compounded by insufficient nurses for the care demand.[9] In addition, the role of these workers requires professional experience and, above all, confidence to identify and treat patients with Covid-19[8] quickly.

Self-efficacy refers to the idea that a subject has about their capacity to perform a task and depends on their confidence level.[12] Note that a high sense of efficacy in a specific domain does not mean high self-efficacy in others. In this sense, the most apparent reasons for self-efficacy (direct experience, vicarious experience, social or verbal persuasions, and physical and emotional states) are estimated basic information in data communication that increase or decrease people's confidence about their own skills.[10]

The concept of self-efficacy is considered beneficial for exploring this subject, as it pertains to an individual's belief in their ability to perform specific tasks successfully. While this ability is subjective, it can be assessed using a measurement tool. Previously, there was no evidence in the scientific literature of a validated instrument that simultaneously measured the self-efficacy of health professionals in practicing hand hygiene and using gloves.[10] Checking the critical points and failures performed by health professionals in the scope of patient care is paramount for improving and developing preventive measures. The existing literature emphasizes that the procedure for hand hygiene and the use of gloves is strongly related to clinical practice, determining the commitment of the health system and professionals to improve the current situation, together with behavioral changes regarding the use of gloves.[11] There is a wide literature on hand hygiene. Still, there is a lack of scientific evidence regarding the use of validated instruments to verify the self-efficacy of health professionals for assistance and performance.[10]

Self-efficacy is an important mediator between knowledge and behavior, and low self-efficacy can present difficulties in complying with recommendations.[12] It is essential to be evaluated, which becomes even more important in critical moments, like a pandemic. Self-efficacy may imply the behavior of the nursing professionals, as well as the quality of hand hygiene and use of gloves. Therefore, the present study considers the work conditions during the Covid-19 pandemic and the importance of self-efficacy in safety protocols. In view of the above, the objectives of the study were: a) to evaluate the frequency of nursing professionals who have self-efficacy in hand hygiene and use of gloves during the Covid-19 pandemic in the five regions of Brazil; b) to compare the self-efficacy total score among the regions; and c) to assess the association of sociodemographic characteristics of the participants with the level of self-efficacy.

METHODS

This is a retrospective observational study,[13] which used the Reporting of Observational Studies in Epidemiology (STROBE) and Checklist for Reporting Results of Internet E-Surveys (CHERRIES) checklist for its development.

The sample consisted of 493 nursing professionals (assistants, nursing technicians, and nurses) working in nursing care in five different regions of Brazil (South, Southeast, Midwest, North, and Northeast). Recruitment of participants took place online between November 2020 and December 2021 and was carried out voluntarily through social networks such as Facebook®, Instagram®, Linkedin®, and WhatsApp®. The researcher identified himself and presented details of the research, making a brief report of the objectives, risks,

and contributions to the performance of nursing practice. The invitation was posted weekly and had access to the five regions of Brazil.

The sample size was defined by convenience, being the maximum number of participants accepted to participate in the research in the thirteen months of recruitment. The sociodemographic characteristics of the participants are sex (male or female), age grouping (18 to 24; 25 to 29; 30 to 39; 40 to 49; 50 to 59 years old), education level (Elementary School, 3rd Cycle of Basic Education (9th year); High School or Secondary School; Graduate - Bachelor's; Postgraduate, Master's or Doctorate Degree), professional category (Nurse; Nursing technician; Nursing assistant), how many nursing work places (1 to 3), institution (General; University; District; Emergency Room; Long Stay Institution; Basic Health Unit; Home Care; Obstetrics; Paediatrics; Surgical Clinic; Outpatient), nature of institution (Public; Private; Public and Private), length of nursing experience (less than 1 year; between 1 to 2; between 3 to 4; between 5 to 6; between 7 to 8; between 9 to 10; between 11 to 15; between 16 to 20; between 21 to 30; over 31 years), and region of Brazil (South, Southeast, Midwest, North and Northeast).

The inclusion criteria were nursing professionals aged ≥ 18 years old who worked in care during the Covid-19 pandemic at the time of data collection. To create the structured form and the participant's responses, the free Google forms® tool was used. It should be noted that to avoid duplicate responses, it was necessary to record the e-mail address. The instrument used for data collection, entitled "Questionnaire of self-efficacy of health professionals for hand hygiene and use of gloves," was developed and validated by Pereira et al. (2022). It was used to measure health professionals' self-efficacy for hand hygiene and use of gloves. The self-efficacy questionnaire consists of 19 items, with a continuous response scale ranging from 0 to 100 points. The final score varies between 0 and 1900 points, with the highest score corresponding to greater self-efficacy.[15]

Two independent researchers double-checked and coded the results to reduce possible coding errors. In the descriptive stage, the categorical data were submitted to absolute (n) and relative (%) frequency analysis. The data normal distribution of the variable final score of the questionnaire was obtained using the Kolmogorov-Smirnov (total sample and for each region, except South, Midwest, and North) and Shapiro-Wilk (South, Midwest, and North regions) tests. The Kruskal-Wallis test was used to compare the final score among the regions. Arbitrarily, we set the cutoff points for having self-efficacy and not having self-efficacy at ≥ 1800 and ≤ 1790 points, respectively. We used the Chi-square or Fisher's exact test to assess the association between nurse professionals who have self-efficacy and those who do not have sociodemographic characteristics for the total sample and in each region. The data were analyzed using the Statistical Package for Social Sciences (SPSS), version 23, with the significance level set at $\alpha = 5\%$.

This research was approved by the Ethics and Research Committee of the University of São Paulo at Ribeirão Preto School of Nursing (CEP-EERP/USP), under CAAE n° 38623520.6.0000.5393, and followed the guidelines that regulate research involving Human Beings, according to Resolution CNS 466/12 of the National Health Council.[14]

RESULTS

The total sample consisted of 493 nursing professionals, of which 358 were nurses (72.5%), 374 (75.8%) were female, 105 (21.3%) aged between 18 and 24 years, and 249 (50.4%) had a postgraduate degree (master's and/or doctoral level). Notably, the majority worked in private hospitals, 245 (49.6%), while only 44 (8.9%) worked in general hospitals. As for the time of performance as a nursing professional, 118 (23.9%) had been performing nursing services for less than a year. About the country's five regions, our sample enrolled a greater number of participants in the Southeast region (82%) and a smaller number in the South region (5%). Still, the demographic results of all regions followed a similar pattern of frequency (Table 1).

Table 1. Distribution of participants (total and by region) according to sociodemographic characteristics. Brazil, 2022.

Variables	Total N (%)	South N (%)	Southeast N (%)	Midwest N (%)	North N (%)	Northeast N (%)
Sex						
Female	374 (75.8)	20 (80)	297 (74.6)	22 (78.6)	3 (60)	32 (86.5)
Male	119 (24.2)	5 (20)	101 (25.4)	6 (21.4)	2 (40)	5 (13.5)
Age Grouping						
18 to 24	105 (21.3)	7 (28)	89 (22.4)	3 (10.7)	1 (20)	5 (13,5)
25 to 29	109 (22.2)	5 (20)	82 (20.6)	10 (35.7)	0	12 (32.4)
30 to 39	157 (31.8)	7 (28)	127 (31.9)	11 (39.3)	1 (20)	11 (29.7)
40 to 49	100 (20.2)	5 (20)	85 (21.4)	3 (10.7)	2 (40)	5 (13.5)
50 to 59	22 (4.5)	1 (4)	15 (3.8)	1 (3.6)	1 (20)	4 (10.8)
Education Level						
Elementary School, 3rd Cycle of Basic Education (9th year)	2 (0.4)	0	2 (0.5)	0	0	0
High School or Secondary School	94 (19)	12 (48)	71 (17.8)	3 (10.7)	2 (40)	6 (1.2)
Higher Education, Bachelor's	148 (30)	3 (12)	128 (32.2)	7 (25)	1 (20)	9 (24.3)
Postgraduate, Master's or Doctorate Degree	249 (50.4)	10 (40)	197 (49.5)	18 (64.3)	2 (40)	22 (59.5)
Profession						
Nurse	358 (72.5)	10 (40)	291 (73.1)	24 (85.7)	2 (40)	31 (83.8)
Nursing technician	110 (22.3)	15 (60)	82 (20.6)	4 (14.3)	3 (60)	6 (16.2)
Nursing Assistant	25 (5.4)	0	25 (6.3)	0	0	0
In how many nursing workplaces						
1	392 (79.4)	20 (80)	318 (79.9)	22 (78.6)	5 (100)	27 (73)
2	81 (16.4)	4 (16)	66 (16.6)	5 (17.9)	0	6 (16.2)
3	20 (4)	1 (4)	14 (3.5)	1 (3.6)	0	4 (10.8)
Institution						
General	219 (44.3)	7 (28)	180 (45.2)	10 (35.7)	3 (60)	19 (51.4)
University	44 (8,9)	2 (8)	38 (9.5)	0	0	4 (10.8)
District	3 (0,6)	0	2 (0.5)	1(3,6)	0	0
Emergency Room	45 (9,1)	1 (4)	40 (10.1)	2 (7.1)	0	2 (5.4)
Long Stay Institution	24 (4,9)	2 (8)	18 (4.5)	2 (7.1)	0	2 (5.4)
Basic health Unit	29 (5.9)	4 (16)	16(4)	2 (7.1)	1 (20)	6 (16.2)
Home care	47 (9.5)	49 (16)	34 (8.5)	6 (21.4)	1 (20)	2 (5.4)
Obstetrics	11 (2.2)	3	6 (1.5)	1 (3.6)	0	1 (2.7)
Paediatrics	14 (2.8)	2	9 (2.3)	2 (7.1)	0	1 (2.7)
Surgical Clinic	25 (5.1)	0	24 (6)	1 (3.6)	0	0
Outpatient	32 (6.5)	0	31 (7.8)	1 (3.6)	0	0
Nature of the institution						
Public	195 (39.5)	9 (36)	156 (39.2)	8 (28.6)	3 (60)	19 (51.4)
Private	245 (49.6)	9 (36)	204 (51.3)	17 (60.7)	2 (40)	13 (35.1)
Public, private	53 (10.7)	7 (28)	38 (9.5)	3 (10.7)	0	5 (13.5)
How long have you been performing nursing services?						
Less than 1 year	118 (23.9)	1 (4)	95 (23.9)	9 (32.1)	1 (20)	12 (32.4)
Between 1 to 2 years	75 (15.2)	4 (16)	61 (15.3)	4 (14.3)	0	6 (16.2)
Between 3 to 4 years	60 (12.1)	6 (24)	44 (11.1)	7 (25)	0	3 (8.1)
Between 5 to 6 years	34 (6.9)	2 (8)	29 (7.3)	0	0	3 (8.1)
Between 7 to 8 years	34 (6.9)	2 (8)	27 (6.8)	3 (10.7)	0	2 (5.4)
Between 9 to 10 years	43 (8.7)	1 (4)	38 (9.5)	2 (7.1)	0	1 (2.7)
Between 11 to 15 years	45 (9.1)	5 (20)	35 (8.8)	1 (3.6)	1 (20)	3 (8.1)
Between 16 to 20 years	42 (8.5)	3 (12)	36 (9)	0	2 (40)	1 (2.7)
Between 21 to 30 years	40 (8.1)	1 (4)	31 (7.8)	2 (7.1)	0	6 (16.2)
Over 31 years	2 (0.4)	0	2 (0.4)	0	0	0

We observed the frequency of nursing professionals who have self-efficacy. For the total sample, 60.4% of nursing professionals have self-efficacy. In all regions, the frequency was higher than 50% (Figure 1).

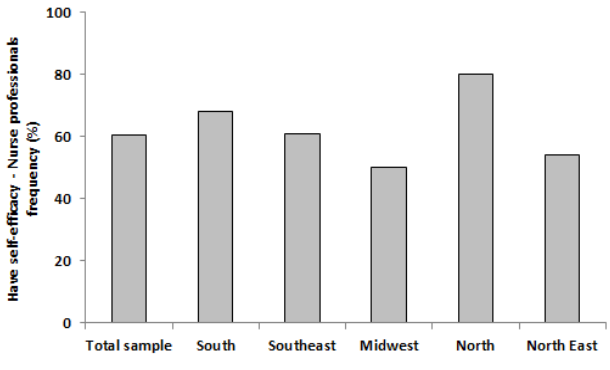

Figure 1. Frequency of nurse professionals who have self-efficacy in the total sample and from the five regions of Brazil. Brazil, 2022.

The comparison of the total self-efficacy score (median values, p 25th and p 75th) among nursing professionals from the five regions of Brazil. As our data (specifically self-efficacy) did not show a normal distribution, and after the Kruskal-Wallis test, we did not observe a statistically significant difference in the total self-efficacy score among nursing professionals from the five regions (H = 2.626; p = 0.622) (Figure 2).

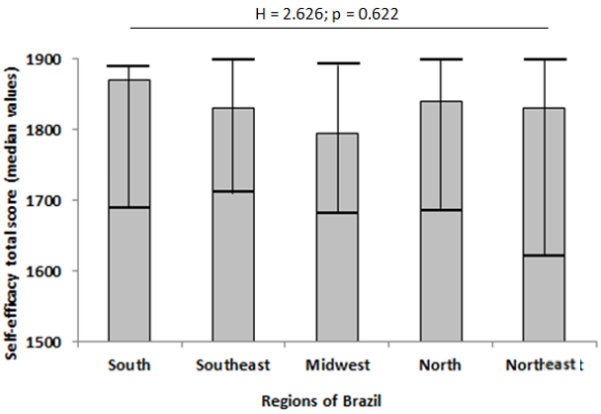

Figure 2. Comparison of self-efficacy total score among nurse professionals from the five regions of Brazil. Brazil, 2022.

In the appendix, the table describes the frequency of responses for each question to the Self-Efficacy Questionnaire of nursing professionals about hand hygiene and the use of gloves in the total sample and the five regions of the country. We observed that the frequency of answers for the scale/score "10 – very confident" was higher in all questions.

We did not find an association between nurse professionals who have or do not have self-efficacy (≥ 1800 and ≤ 1790 points, respectively) and sociodemographic characteristics in the total sample and for each region (p > 0.05).

DISCUSSION

In the study, we noted that the developmental element of self-efficacy can play an important role in adherence to hand hygiene; that is, the experience of high self-efficacy determines adherence. Most (60%) of the nurse professionals in our study demonstrated a high level of self-efficacy; no differences were found for the self-efficacy total score among the regions, and no association was found between this result and the sociodemographic characteristics. Among the nursing professionals included in the study, nurses between 30 and 39 years old with a postgraduate degree were predominant. This result aligns with the literature, as nurses found high self-efficacy levels. At the same time, other professionals on the team, nursing technicians and assistants, and midwives showed lower levels, showing that studies increase adherence to hand hygiene and the use of gloves.[15]

The study demonstrates that health professionals understand different levels of self-efficacy corresponding to their own conclusions about their capacities. The adherence of health professionals to hand hygiene practices can be low, even in the face of quality infrastructure and supplies. Self-efficacy needs both abilities and individual and institutional attempts to increase the potentiality to exercise specific conduct, which is an important facilitator between understanding and comportment.[10]

The experience of persons has a positive effect on self-efficacy. In addition, health professionals' knowledge is one of the main factors in individual security and containment of Covid-19. A study supports the positive mediating effect of Covid-19 associated with health professionals' knowledge related to self-efficacy.[16] This study reveals that health professionals who contributed to instruction on managing Covid-19 had much greater self-efficacy than their inexperienced colleagues.

A study conducted before the pandemic showed low adherence by health professionals to recommendations for hand hygiene, the use of gloves and aprons, engagement in activities with a higher risk of transmitting infection, and a high workload.[17,18,19,21] During the pandemic, hand hygiene was emphasized, which may have resulted in higher compliance rates. However, 11 (2.2%) nursing professionals showed a disincentive to perform hand hygiene due to the time this practice requires. It is possible that when feeling discouraged, these nurses omit or improperly perform hand hygiene, which implies low self-efficacy.[10]

Nurses provide direct assistance to patients for the duration of their illness, are involved in improving the quality of care and patient safety, and are positively at the van of interventions related to hand hygiene. As much as the practice of hand hygiene is an easy behavior, the defiance of routine application lies in the complication involved in this procedure. In this context, using multimodal strategies to improve adherence is not sufficient. Approaches should be part of the practice of health professionals, with continuous supervising and assessment. In addition, the challenges that health organizations face about the convenience of inputs and staff dimensioning are highlighted. Self-efficacy of health professionals represents a health management tool useful to identifying gaps in knowledge, skills and engagement in carrying out good health practices. Hand hygiene is crucial in the management of infection control. This study showed hand hygiene as one of the best means to contain contamination during the Covid-19 pandemic.[10] It is important to emphasize that the concern with infectious diseases must be constant. During post-pandemic periods, health professionals and the entire community must be encouraged to practice good hand hygiene. It is worth noting that the hygiene

measures due to Covid-19 have decreased the frequency of infections.[20]

There is a stringent need for future investigations established by constructing and validating instruments for measuring self-efficacy in various communities of health professionals despite the difficulty of measuring such constructs.[8] Thus, it will be likely to design interventions with intellectual, behavioural, educational and institutional resources. Some limitations were due to the cross-sectional study design, which does not allow monitoring of the subjects. Additionally, data was self-reported through an online survey instrument, which may have affected the heterogeneity in the recognition of the regions. Highlighting that, although the sample is not representative, it offers an initial insight into how these aspects may be reflected in different regions and states. This suggests the need to conduct similar studies with more comprehensive and representative samples in this context. The results of this study encourage the evaluation of behaviours, attitudes and responsibilities of health professionals in the management of infectious disease transmission. Completely even though hand hygiene is an easy attitude, the challenge to enhancing adherence levels lies in the difficulty of creating this procedure procedure. In this context, using certain multimodal strategies to improve adherence is insufficient. Strategies to enhance adherence to hand hygiene and the use of gloves should be components of the practice of health professionals, with constant checking and evaluation.

We concluded that most nursing professionals have high self-efficacy and use of gloves. No differences were observed about self-efficacy total score among the regions of Brazil. Additionally, no association was found between self-efficacy and sociodemographic characteristics. This insight acquired during the Covid-19 pandemic represents a health management tool, useful to identify gaps in knowledge, ability and engagement in managing infection control.

REFERENCES

1. Huang C, Wang Y, Li X, et al. Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The Lancet. 2020 Jan 24;395(10223):497–506. http://dx.doi.org/10.1016/s0140-6736(20)30183-5.

2. Chang L, Yan Y, Wang L. Coronavirus Disease 2019: Coronaviruses and Blood Safety. Transfusion Medicine Reviews. 2020 Feb;34(2). http://dx.doi.org/10.1016/j.tmrv.2020.02.003.

3. World Health Organization. Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. 2020.https://www.who.int/publications/i/item/9789241549929.

4. Brazil. Ministry of Health. Clinical Management Protocol for the Novel Coronavirus (2019-nCOV). 1st edition, electronic publication. Brasília: Ministry of Health. 2020.https://portalarquivos2.saude.gov.br/images/pdf/2020/fevereiro/11/protocolo-manejo-coronavirus.pdf

5. National Health Surveillance Agency (ANVISA). Safe assistance: a theoretical reflection applied to practice. Brasília: Anvisa. 2020.https://aapsopen.springeropen.com/articles/10.1186/s41120-018-0029-x

6. Brazil. Ministry of Labor and Employment. Ordinance No. 485, of November 11, 2005. Approves Regulatory Norm No. 32 (Safety and health at work in health establishments). Official Gazette of the Union, Brasilia, DF, 11 Nov. 2005.https://www.scirp.org/reference/referencespapers?referenceid=3693159https://www.scirp.org/reference/referencespapers?referenceid=3693159

7. Finger, A.B., Rodruiges, C.F.D.S., & Sena, E.M.A.B.D. Challenges and strategies for PPE management in a Brazilian federal university hospital during the new coronavirus pandemic: a case study from HUPAA-UFAL/EBSERH. 2021.https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60461-5/abstracthttps://www.thelancet.com/journals/lancet/article/PIIS0140-6736(15)60461-5/abstract

8. Najjuka SM, Ngabirano TD, Balizzakiwa T, et al. Health Care Workers' Perceived Self-Efficacy to Manage Covid-19 Patients in Central Uganda: A Cross-Sectional Study. Risk Management and Healthcare Policy. 2022 Jun;Volume 15:1253–70.http://dx.doi.org/10.2147/rmhp.s356410.

9. Viana, RAPP. Saber ser, agir e fazer: a tríade para o cuidado seguro ao paciente com Covid-19. Acesso e cuidAdos especiAlizAdos, 164. 2021.https://www.resbr.net.br/wp-content/uploads/2021/01/covid19-volume5.pdf#page=165https://www.resbr.net.br/wp-content/uploads/2021/01/covid19-volume5.pdf#page=165

10. Pereira EBS, Sousa ÁFL de, Cunha CM, Craveiro I, Andrade D de. Self-efficacy of health professionals in hand hygiene practice: is it possible to measure? Revista Brasileira de Enfermagem. 2020;73(suppl 5).https://doi.org/10.1590/0034-7167-2019-0873.

11. Neri MF de S, Silva RA, Nascimento JC do, et al. Hand hygiene determinants of informal caregivers in hospitals under Pender's perspective. Revista Brasileira de Enfermagem. 2022;75(1). http://dx.doi.org/10.1590/0034-7167-2021-0012.

12. Bandura A. Self-efficacy: Toward a Unifying Theory of Behavioral Change. Psychological Review. 1977;84(2):191–215.http://dx.doi.org/10.1037/0033-295x.84.2.191.

13. Thomas, JR., Nelson, JK, & Silverman, SJ. Research methods in physical activity. Artmed Publisher. 2019.https://www.cabidigitallibrary.org/doi/full/10.5555/19911896233https://www.cabidigitallibrary.org/doi/full/10.5555/19911896233

14. Vanessa, de A, Nadirlene Pereira Gomes, Telmara Menezes Couto, do P. Abortamento induzido: vivência de mulheres baianas. Saúde e Sociedade. 2012 Dec 1;21(4):1056–62. https://doi.org/10.1590/S0104-12902012000400022

15. Pereira EBS, de Andrade D, Haas VJ, Watanabe E, Cunha CM, Lopes de Sousa AF. Measuring the Self-Efficacy of Health Professionals for Practicing Hand Hygiene and Using Gloves: Development and Validation of an Instrument. Sustainability. 2022 Aug 2;14(15):9486.http://dx.doi.org/10.3390/su14159486.

16. Wang D, Hu B, Hu C, Zhu F, Liu X, Zhang J, et al. Clinical Characteristics of 138 Hospitalized Patients with 2019 Novel Coronavirus–Infected Pneumonia in Wuhan, China. JAMA. 2020 Feb 7;323(11):1061–9. doi:10.1001/jama.2020.1585

17. Lopes, IV. Practices associated with information on the prevention of Covid-19 by the population enrolled in the family health team of Araçagi-PB.2022.doi: 10.3389/fpubh.2022.894958

18. Gomes LA de F, Cordeiro JFC, Cordeiro DC, Cruz TA da, Andrade D de, Santos AP dos. Paramentação e desparamentação de profissionais de enfermagem durante a pandemia por Covid-19:

estudo transversal : Enfermería Global [Internet]. 2023 Jul 1; 22(3):221–76. Available from: https://revistas.um.es/eglobal/article/view/551501.

19. Cordeiro DC, Corrêa F, Areas T, Schneider G, Denise de Andrade, Santos. Adherence by nursing professionals to standard precautions in the Covid-19 pandemic. 2023 Jun 28;45:e61853–3. doi: https://doi.org/10.4025/actascihealthsci.v45i1.61853

20. Yildiz E, Dİnçer Z, Narsat MA, Çiğri E, Çatan İnan F. Effects of masks, social distancing and general hygiene recommendations on rotavirus gastroenteritis in children during the Covid-19 pandemic. Turkish Journal of Family Medicine and Primary Care. 2021 Sep 20. doi: 10.21763/tjfmpc.933726

21. Furlan MCR, Ferreira AM, da Silva Barcelos L, et al. Evaluation of disinfection of surfaces at an outpatient unit before and after an intervention program. BMC Infectious Diseases. 2019 Apr 29;19(1). http://dx.doi.org/10.1186/s12879-019-3977-4.

22. Ayu NMS, Novieastari E, Gayatri D, Handiyani H, Arruum D. Personal protective equipment and nurse self-efficacy due to Coronavirus disease-19 pandemic: A systematic review. Open Access Macedonian Journal of Medical Sciences [Internet]. 2021 May 11; 9:195–202. Available from: https://scholar.ui.ac.id/en/publications/personal-protective-equipment-and-nurse-self-efficacy-due-to-coro.

23. Hammerschmidt J, Manser T. Nurses' knowledge, behaviour and compliance concerning hand hygiene in nursing homes: a cross-sectional mixed-methods study. BMC Health Services Research [Internet]. 2019 Aug 5;19(1):1–13. Available from: https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-019-4347-z. http://dx.doi.org/10.1186/s12913-019-4347-z.

24. Ivonizete Pires Ribeiro, Patricia, Cecília F, de S, Félix E. ADHESION TO HAND HYGIENE BY THE NURSING TEAM. Revista Prevenção de Infecção e Saúde. 2019 Jul 21;5.http://dx.doi.org/10.26694/repis.v5i0.8822.

25. Xiong H, Yi S, Lin Y. The Psychological Status and Self-Efficacy of Nurses During Covid-19 Outbreak: A Cross-Sectional Survey. INQUIRY: The Journal of Health Care Organization, Provision, and Financing. 2020 Jan; 57:004695802095711. https://doi.org/10.1177/0046958020957114

AUTHORS' CONTRIBUTIONS

Daniella Corrêa Cordeiro contributed to project administration, literature search, abstract writing, introduction, methodology, discussion, interpretation and description of results, preparation of tables, conclusions, review, statistics, and final approval of the version to be published. **Jéssica Fernanda Corrêa Cordeiro** contributed to project administration, literature search, abstract writing, introduction, methodology, discussion, interpretation and description of results, preparation of tables, conclusions, review, statistics and final approval of the version to be published. **Ludmila Albano de Felice Gomes** contributed to the literature search, abstract writing, discussion, interpretation and description of results, conclusions, review, and final approval of the version to be published. **Tatiana Areas da Cruz** contributed to project administration, review, and final approval of the version to be published. **Marilia Duarte Valim** contributed to project administration, review and final approval of the version to be published. Denise de Andrade contributed to project administration and supervision, interpretation of results, review, and final approval of the version to be published. **André Pereira dos Santos** contributed to the project administration, bibliographic research, writing of the abstract, introduction, methodology, discussion, interpretation and description of results, preparation of tables, conclusions, review, statistics, and final approval of the version to be published.

All authors approved the final version to be published and are responsible for all aspects of the work, including ensuring its accuracy and integrity.

Please cite this article as: Cordeiro DC, Cordeiro JFC, Gomes LAF, da Cruz TA, Valim MD, de Andrade D, dos Santos AP. Self-efficacy in hand hygiene and glove use among nurses during the COVID-19 pandemic. Rev Epidemiol Control Infect [Internet]. 2025 Mar.4; 15(1). Available from: https://online.unisc.br/seer/index.php/epidemiologia/article/view/19372