REVIEW ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

INSTRUMENTS FOR EVALUATING THE ADHERENCE OF HEALTH PROFESSIONALS TO HAND HYGINE: INTEGRATIVE REVIEW

INSTRUMENTOS PARA AVALIAÇÃO DA ADESÃO DE PROFISSIONAIS DE SAÚDE À HIGIENIZAÇÃO DAS MÃOS: REVISÃO INTEGRATIVA

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ABSTRACT

Objective: to identify, in the scientific literature, instruments for assessing health professionals' adherence to good hand hygiene practices. **Method:** integrative literature review, carried out in the information resources Latin American and Caribbean Literature in Health Sciences, International Literature in Health Sciences, Nursing Database, Cumulative Index to Nursing and Allied Health Literature and Scientific Electronic Library Online, in March 2021. **Results:** 30 articles were analyzed, of which 11 (36,6%) used validated instruments. There were 23 studies (74%) that used non-participant observation to assess adherence to good hygiene practices. **Conclusion:** the findings pointed to the existence of instruments to assess adherence to good hand hygiene practices. However, it is necessary to encourage the application of validated instruments, especially those that are configured in multimodal strategy.

Keywords: Hand Disinfection; Containment of Biohazards; Patient Safety; Health Personnel.

RESUMO

Objetivo: identificar na literatura científica instrumentos para avaliação da adesão de profissionais de saúde às boas práticas de higienização das mãos. **Método:** revisão integrativa da literatura, realizada nos recursos informacionais Literatura Latino-Americana e do Caribe em Ciências da Saúde, Literatura Internacional em Ciências da Saúde, Base de Dados de Enfermagem, *Cumulative Index to Nursing and Allied Health Literature* e *Scientific Eletronic Library Online*, no mês de março de 2021. **Resultados:** analisaram-se 30 artigos, dos quais 11 (36,6%) utilizaram instrumentos validados. Houve destaque para 23 estudos (74%) que utilizaram a observação não participante para avaliar a adesão às boas práticas de higienização. **Conclusão:** os achados apontaram a existência de instrumentos para avaliar a adesão às boas práticas de higienização das mãos. Porém, faz-se necessário o incentivo à aplicação de instrumentos validados, principalmente aqueles que se configurem em estratégia multimodal.

Palavras-chave: Desinfecção das Mãos; Contenção de Riscos Biológicos; Segurança do Paciente; Pessoal de Saúde.

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INTRODUCTION

Health Care-Associated Infections (HAIs) are recurrent complications in healthcare practice and show a real problem in the provision of care, affecting hospitalized patients and being transmitted mainly by the hands of health professionals. They are responsible for high rates of morbidity and mortality, prolongation of hospital stays, increased resistance to antimicrobials, generating disabilities, and increased institutional costs[1].

Hand hygiene (HH) is an indispensable procedure in the prevention of HAIs and, when properly performed, it is the simplest and most economical way to prevent the spread of pathogens. Although it is a primary measure for the safety of the professional and the patient, it has been a difficult task[2].

Hands are considered one of the main means of the action of professionals in health care. Therefore, there is a direct dependence between safe care and HH habitually and correctly[3]. The World Health Organization (WHO) encourages adherence to good HH practices involving multimodal actions that highlight the first global challenge for patient safety, entitled “Clean Care is Safer Care”. This strategy is composed of five components, which encompass several aspects related to the practice of HH, making it an effective tool for reducing HAIs[4].

Despite this incentive and the professionals' knowledge about the importance of HH and the times when the technique should be performed, there are discrepancies between theory and practice, as the adherence remains low in different scenarios[3,5]. Therefore, in addition to institutional factors, three other elements are essential for the practice of HH: topical agent with antimicrobial efficacy, appropriate procedure when using it (with appropriate technique and in the recommended time), and regular adherence in its use[6].

The use of validated instruments for the assessment of HH adherence is an interesting strategy concerning professional and patient safety, as they provide a situational diagnosis and support for decision-making to strengthen the organizational culture of prevention. Therefore, it becomes necessary to gather in a single study the best available evidence on the subject to generate visibility and favor the application in clinical practice and the research of the instruments already available in the scientific literature.

Thus, this study aimed to identify, in Brazilian and international literature, instruments for assessing health professionals' adherence to good hand hygiene practices.

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METHOD

This is an integrative literature review, which followed the steps of the method, with the formulation of the research question, search and collection of data in the literature, categorization and critical analysis of the studies included in the qualitative synthesis, interpretation of the results with discussion and, finally, synthesis of the knowledge and presentation of the review[7].

The guiding question was based on the PICO strategy[8] [P (population): health care professionals; I (intervention): adherence to the practice of hand hygiene; C (comparison): instruments used for evaluation; O (results): use of validated instruments]. Therefore, the following question was asked: "Are there validated instruments for assessing the adherence of health professionals to good hand hygiene practices?"

The search for scientific production was carried out in March 2021, through the systematic search in the following information resources: Latin American and Caribbean Literature in Health Sciences (LILACS), International Literature in Health Sciences (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL) and Nursing Database (BDENF) and also in the Scientific Electronic Library Online (SciELO).

We used descriptors selected from the Health Sciences Descriptors (DeCS / BIREME) and Medical Subject Headings (MeSH): "Desinfecção das Mãos", "Contenção de Riscos Biológicos", "Segurança do Paciente" and "Pessoal de Saúde", in Portuguese, and *"Hand Disinfection*", "*Containment of Biohazards*", "*Patient Safety*" e "*Health Personnel*", in English. The searches were performed with the descriptors associated with each other, with all possible combinations, using the operator by typing "AND". The selection of publications took place by critically reading the abstracts and applying the following inclusion criteria: publications in the form of scientific articles, found in full; in Portuguese, English, and Spanish; and, with the use of an instrument to assess adherence to good HH practices. The exclusion criteria were duplicate publications in the databases, articles for reflection and editorials, literature reviews, and studies not related to the topic.

To prepare the study selection flowchart (Figure 1), we used the Preferred Reporting Items for Systematic Review and Meta-Analyzes (PRISMA)[9] strategy, freely translated into Portuguese.

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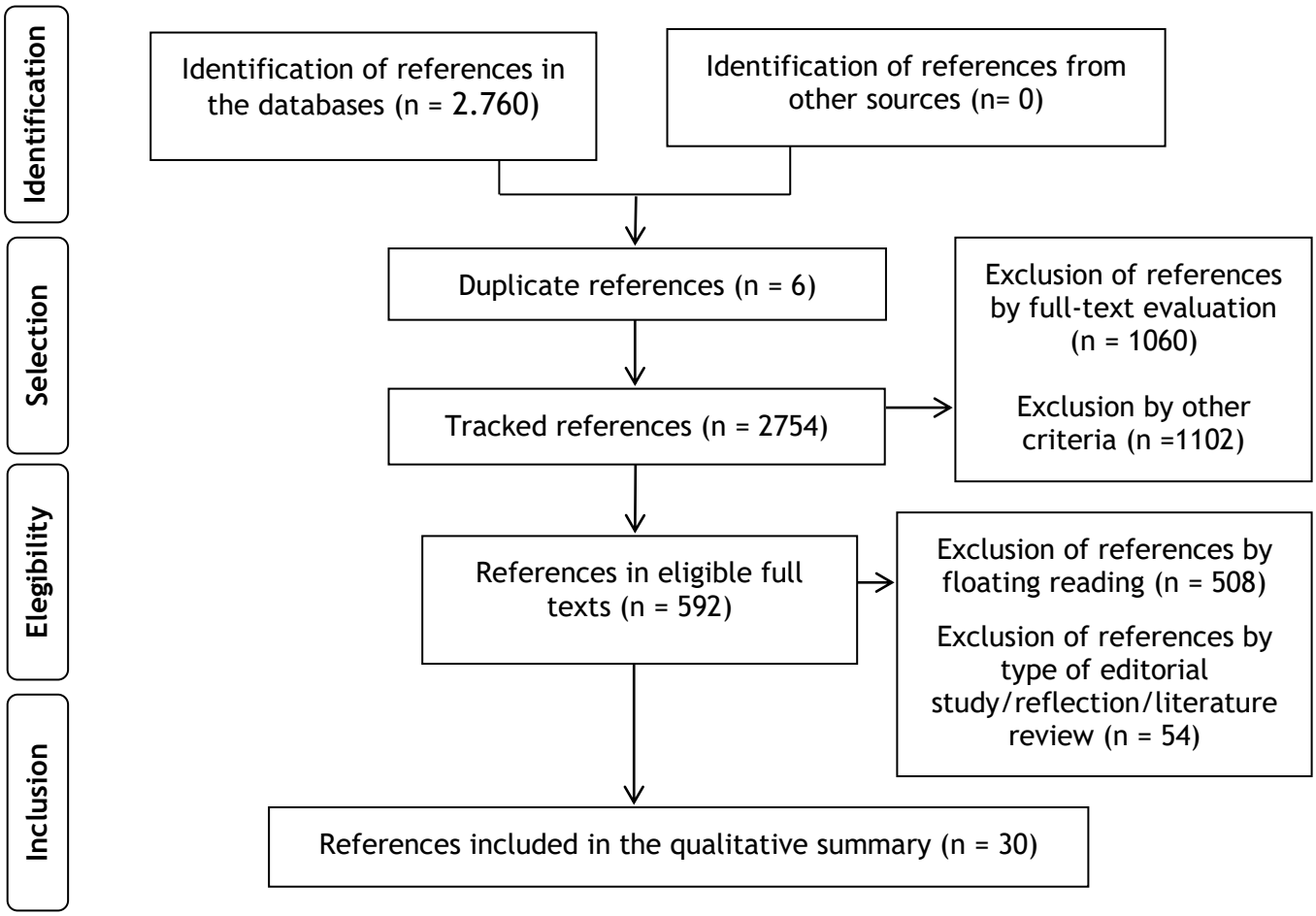
Figure 1 - Flowchart of the search and selection of literature in the databases. Rio da Ostras, RJ, Brazil, 2021



Source: Search data

After selecting the articles to read in full, we prepared an analysis matrix, providing a synthesis of the scientific evidence. The matrix contained the following data: order, title, journal, year of publication, webqualis, level of evidence, objectives, study design, country, scenario, participants, and applied instruments.

To assess the level of evidence, we adopted the following classification: level I – systematic review or meta-analysis; level II - well-designed randomized controlled clinical trial; level III - well-designed clinical trials without randomization; level IV - cohort and case-control studies; level V - systematic review of descriptive and qualitative studies; level VI - a single descriptive or qualitative study; level VII - opinion of authorities and/or report of expert committees[10].

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RESULTS AND DISCUSSION

Thirty (100%) articles were analyzed for full reading and analysis, six in LILACS, 12 in MEDLINE, seven in BDENF, five in CINAHL. No publications on SciELO were selected. We highlight that 1 (3.3%) was published in 2021, two (6.6%) in 2020, three (10%) in 2019 and five (16.6%) in 2018 and 19 (63, 3%) were in English.

Of the total articles, 20 (66.6%)[11-17,19,22,24,25,28-31,33,35,36,38,40] were published in multidisciplinary journals and 10 (33,3%)[18,20,21,23,24,26,27,32,37,39] in scientific nursing journals. Regarding the Qualis of the journals in which the articles were published, two (6.6%)[14,22] were in Qualis A1 journals and nine (30%)[16,19,25,28, 31,33,39,40] in Qualis A2.

The type of approach in the research had 25 (83.3%) quantitative publications, 21 (70%)[11-13,15,17,18,20-24,26-28,30,32-35,38,40] observational articles and 28 (93.3%)[11,12,14-21,23-37-40] with level of evidence IV (Figure 2).

Figure 2 - Characterization of the articles selected for analysis, according to order, journal, webqualis, year, and level of evidence. Rio da Ostras, RJ, Brazil, 2021

N.	Journal/WebQualis	Year	Level of evidence
A1[11]	Am J Infect Control./B1	2009	IV
A2[12]	Rev paul pediatr. /B2	2009	IV
A3[13]	Am J Infect Control./B1	2010	III
A4[14]	Appl Nurs Res./A1	2010	IV
A5[15]	Am J Infect Control./B1	2011	IV
A6[16]	BMC Public Health/A2	2011	IV
A7[17]	Rev Calid Asist/B1	2011	IV
A8[18]	Rev Gaúcha Enferm/B1	2011	IV
A9[19]	J Hosp Infect/A2	2012	IV
A10[20]	Cienc. Enferm./B1	2013	IV
A11[21]	Esc Anna Nery/B1	2013	IV
A12[22]	Lancet Infect Dis/A1	2013	III
A13[23]	Rev Gaúcha Enferm/B1	2013	IV
A14[24]	Braz J Infect Dis/B3	2014	IV
A15[25]	Cad Saúde Pública/A2	2015	IV
A16[26]	Rev Gaúcha Enferm /B1	2015	IV
A17[27]	Rev iberoam Educ. investi. Enferm /B1	2016	IV
A18[28]	J Hosp Infect /A2	2017	IV
A19[29]	Rev Fund Care Online /B2	2017	IV
A20[30]	Ann Ig/B3	2018	IV
A21[31]	BMC Infect Dis /A2	2018	IV
A22[32]	J Nurs UFPE on line/B2	2018	IV
A23[33]	J Saúde Pública (Oxf)/A2	2018	IV
A24[34]	Rev enferm UFPE on line/B2	2018	IV

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A25[35]	Infec Control Hosp Epidemiol/A2	2019	IV
A26[36]	Journal of Microbiology, Immunology and infection/A4	2019	IV
A27[37]	Rev enferm UFPE on line/B2	2019	IV
A28[38]	East Mediterr Health J / s/qualis	2020	IV
A29[39]	Rev. Bras. Enferm /A2	2020	IV
A30[40]	BMC Infect Dis /A2	2021	IV

Source: The authors

HH is essential in the practice of health professionals, contributing to the prevention of HAIs. However, guidance and training on the subject are relevant[38], encouraging their adherence.

Most of the studies analyzed were carried out in a hospital environment (26/86.6%)[11-17.19-28.31.32-34.36.37-40], one (3.3%)[18] in a basic health unit, one (3.3%)[29] in an emergency care unit, one (3.3%)[30] in a nursing home and one (3.3%)[35] in an orthopedic institute. Out of the total research carried out in hospitals, 13 (43.3%)[13.15-17.19.21.22.24,25,27,33,36,37] had data collection in all sectors of the institution, two (6.6%)[14.34] in oncology, five (16.6%) [23,26,32,39,40] in intensive care units (ICU), one (3.3%)[12] in neonatal intensive care unit (NICU), one (3.3%)[20] in a pediatric inpatient unit, one (3.3%)[11] in an ophthalmology, cardiology unit, geriatrics, infectious diseases and emergency department, one (3.3%)[38] in a hospital emergency department, one (3.3%)[28] in an infectious disease ward and only one (3.3%)[31] in the NICU, together with a nursery, delivery suite and surgical ward.

However, no specific hospital sectors were identified as a frequent object of investigation. Given the characteristics of the sector and the number of invasive procedures performed, a study based on the ICU of a university hospital obtained a low rate of adherence to HH, below 50%, and a tendency to high levels of infection[39].

The multidisciplinary health team was predominant in 23 articles (76.6%)[13-15.17-19.22-28.30-36.38-40], three (10%)[11.21.29] relied exclusively on the medical and nursing staff, one (3.3%)[20] only with nursing, two (6.6%)[12,16] directed to the HH of parents/caregivers and health professionals and only one (3.3%)[37] included health professionals, along with cleaning staff, receptionists and telemarketers. The low adherence of health professionals to the good practices of HH was pointed out in 15 (50%)[13,14,17,18,20,21,23-27,29,32-34] of the studies analyzed.

However, doctors and nursing assistants[23] and teams of nurses[39], physicians, and physiotherapists[18,27,29,34] were appointed as those who demonstrated

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better execution and a certain adherence to the correct technique than other health professionals. Two articles showed less adherence to the indications "before contact with the patient" and "before aseptic procedure", showing to be the point of greatest fragility of HH in care[32,37] and the existence of knowledge gaps related to the theme, resulting in low adherence[26]. In one[39] article, the nursing team was more associated with HH, in which the moment "after contact with the patient" was the most present action.

Although one of the articles[27] analyzed pointed out that medical teams and nurses have greater adherence to the correct HH technique, compared to other professionals, other studies mentioned that they are physiotherapists and nurses[6,32,33,39]. Corroborating for the low adherence data, the standard of the technique performed by health professionals is still ineffective, compromising the health of patients and teams[6,43-45].

The application of assessment instruments can contribute to the establishment of managerial and educational goals and strategies appropriate to the local reality. Several instruments were used to assess the adherence of professionals to HH. However, in the analyzed articles, 11 (36.6%)[12,13,20,21,24,25,27,30,34,38,39]) used validated instruments: six (20%)[21,24,25,30,38,39] previously validated by WHO, two (6.6)[27,34] validated by specialists, one (3.3%)[20] validated by pilot test and two (6.6%)[12,13] reported having previously validated and tested the instrument, without further details.

Most validated and adapted instruments were authored by WHO, highlighting: *"Guidelines on hand hygiene in health care"*[23], "Guide to Implementation - A Guide to the implementation of the WHO Multimodal Hand Hygiene Improvement Strategy"[20-22,39], "My Five Moments For Hand Hygiene"[25,26,28,33,38] "Hand Hygiene Knowledge Questionnaire for Health-Care Workers"[25], "Perception Survey for Health-Care Workers of the WHO Clean your hands Campaign" [16], "Hand Hygiene Observation Form"[24]. A single article had its instruments based on and adapted from the rules and guidelines of the National Health Surveillance Agency (ANVISA)[32].

In 23 studies (74%)[11-13,15,17,18,20-24,26-28,30,32-35,37-40] non-participant observation was used to assess adherence to good hygiene practices (technique and/or moment in which hygiene occurred). In 15 of them[11-13,18,20,24,26,28,32-35,38-40] only the instrument for observation was used. The other instruments applied were four questionnaires (14.8%)[16,27,29,36], an interview (3.7%)[19] and 10 articles (37.0%)[14,15,17,21-23,27,30,31,37] used

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the combination of two or more instruments. Incidentally, direct observation is a common approach to other adherence studies, as it is considered the gold standard for monitoring this practice[44]. It is the only method that provides the assessment regarding the situational diagnosis, the need for training, and the deficiency of the technique at all times of care, even with the possibility of changing the behavior of the professionals for being observed[45].

Questionnaires were the second most used instrument in the analyzed articles, allowing more reliable responses as they do not cause intimidation to participants, as in cases of face-to-face interviews. However, it is evident as fragility, the overestimation of the adherence to HH, creating a bias in the results[45].

The publications that used the combination of different types of instruments aimed to analyze, in addition to the practice of HH (correct technique and appropriate moments), the physical structure, the material available to perform the technique, and the level of knowledge of the professionals. Of the total number of publications analyzed, only three (11.1%)[20,21,23] also evaluated the institutions' infrastructure, attributing low adherence to institutional factors. An adequate infrastructure is essential to have a satisfactory HH practice and with the necessary inputs, however, this reality is far from expected[46].

The main inadequacies related to infrastructure were the absence of a washbasin in the wards and the lack of antiseptic dispensers. Thus, managers must point out the main weaknesses to create strategies that improve the work environment to contemplate the different aspects that directly imply low adherence to good HH practices[47].

We found that 12 articles (44.4%)[15-17,19-23,25,27,29,36] use questionnaires or interviews to assess the professional's knowledge and adherence to the theme. The most relevant and most frequent findings point to the existence of knowledge gaps. Regarding the previous training, seven of the articles that assessed knowledge (25.9%)[15.21,25,29,31,33,36] indicated its accomplishment.

Compliance with HH standards was analyzed, mainly, through direct observation[11-13,15,17,18,20-24,26-28,30,32-35,37-40], containing the handwashing steps, time spent, situations in which hands were washed, assessment of the removal of adornments, and size of nails. Unsatisfactory adherence was considered the neglect or failure to perform one of the steps of the recommended technique, as well as the non-observance of the factors that configure the good practices

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of HH. The adherence to the HH technique was measured qualitatively.

The professionals, participating in some analyzed articles[12,17-20,26,27], in addition to performing the technique incorrectly, performed it more frequently after contact with the patient[14,24,26,32,39], failing to correctly comply with the five moments of HH. In a study carried out with health professionals in a hospital environment, we found that most professionals tend to wash their hands more frequently before performing an aseptic procedure and after situations of risk of contact with body fluids[48]. This aspect reinforces the need to assess adherence to the technique in the five moments recommended by WHO, following the instruments used by some analyzed articles.

Also, there are several aspects for the professional's non-adherence to such practice such as material, behavioral or institutional aspects[49]. The multimodal strategy, used as an instrument in some analyzed articles, encompasses all these dimensions, favoring behavior change, the security climate, changes in infrastructure, incentive in the training of professionals, in addition to periodic evaluations and the feedback of the strategies used[4].

The reliability of the collected data depends both on the validation of the instrument and on the quality of the implementation of the data collection process. Regarding the results obtained by this study, the minority of the instruments are validated. However, using more than one instrument can facilitate obtaining more reliable data that show the reality experienced by professionals[50].

There is an imperative need for interventions appropriate to each institutional reality, aiming at behavioral changes and the performance of more effective procedures, avoiding damage, and ensuring patient safety[42]. It is essential to use appropriate and validated instruments for the evaluation of HH, ensuring periodic replication of evaluations with the same degree of reliability.

CONCLUSION

The findings pointed to the existence of validated instruments to assess adherence to good HH practices. The non-participant observation was the most used method and, in some surveys, questionnaires or interviews were used in association with the observation. Mostly, the perception of adherence to the practice of HH was qualitative, by following the step-by-step of the recommended technique.

The lack of methodological standardization stands out as a limitation of

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the study, hindering the comparison between most studies.

It is necessary to encourage the application of validated instruments by the institutions/researchers, especially those that are configured in a multimodal strategy that evaluates beyond the technique, other factors that may reduce the bias in the data related to adherence to good HH practices.

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