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Major Article

Perceptions and attitudes of patients and health care workers toward patient empowerment in promoting hand hygiene

María Sande-Meijide PhD [a,*], María Lorenzo-González MD [a], Fátima Mori-Gamarra MD [a], Iria Cortés-Gago RN [b], Antía González-Vázquez MD [a], Lucía Moure-Rodríguez MD [c], María Herranz-Urbasos PhD [c]

[a] Department of Preventive Medicine and Public Health, Ourense University Hospital, Ourense, Spain
[b] University of Vigo, Vigo, Spain
[c] Research and Innovation Department, Ourense University Hospital, Ourense, Spain

Key Words:
Hand hygiene
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Background: Patient empowerment is a component of the World Health Organization's multimodal strategy to improve hand hygiene (HH). Its successful implementation requires knowledge of the perceptions and attitudes of patients and health care workers (HCWs) toward patient empowerment in HH.

Methods: A cross-sectional study, through a self-administered questionnaire of patients and their families and HCWs, was conducted in a 433-bed block of an 850-bed university hospital in Galicia, Spain.

Results: A total of 337 patients and their families and 196 HCWs completed the questionnaire. Among patients and their families, 49.9% were willing to remind HCWs about HH. However, only 31.6% of HCWs (41.8% of physicians and 24.8% of nurses) supported patient participation. The most common reason for patients and their families not being willing to ask caregivers to perform HH was fear of causing annoyance or receiving worse treatment as a consequence (76%). The main reasons that physicians disagreed with patient participation was patients' lack of knowledge (40%) and possible negative effects on the HCW/patient relationship (40%). Nurses considered this participation unnecessary (58%).

Conclusions: There were significant differences between patients and their families and HCWs regarding support for patient empowerment in promoting HH. In our setting, a cultural change is needed in the HCW/patient relationship to create a facilitating environment.

Hand hygiene (HH) is considered the most effective measure for preventing health care–associated infections (HAIs). Improved HH practice is associated with a reduction in the rates of HAIs and antimicrobial resistance; thus it is an important indicator of the safety and quality of the care provided in health care centers.[1]

The World Health Organization (WHO) recommends a multimodal strategy to achieve improved HH.[2] Despite ample scientific evidence proving the effectiveness of this multimodal strategy,[1,3] sustained success over time continues to be a challenge. Therefore it is necessary to analyze its different components. One of them is improving the institutional climate of safety, which includes patient empowerment among its tools.[2] Studies that assess compliance with the multimodal strategy for HH promotion in different countries identify patient empowerment as one of the elementsYMIC4903 with the lowest degree of implementation.[4,5]

Patient empowerment is defined by WHO as "a process in which patients understand their role, are given the knowledge and skills by their health-care provider to perform a task in an environment that recognizes community and cultural differences and encourages patient participation."[2] Active patient empowerment increases the compliance of health care workers (HCWs) with HH.[6,7] In addition, encouragement from HCWs appears to be the most effective strategy for increasing active patient participation.[8]

In Spain, HH compliance is low. Although we haven't found official data in our country, unpublished data from different regions place HH compliance at less than 50%. The institutional importance given to this issue is reflected in the promotion by the Ministry of Health of participation of all health care centers in the WHO program "Clean Care Is Safer Care." In fact, the Patient Safety Strategy of our National Health System for the period 2015-2020 includes among its objectives "the

* Address correspondence to María Sande-Meijide, Department of Preventive Medicine, C/ Ramon Puga, 54, Ourense University Hospital, 32005 Ourense, Spain.
E-mail address: maria.sande.meijide@sergas.es (M. Sande-Meijide).
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promotion of safe practices for the prevention and control of HAIs." It focuses on the need to maintain and expand our National Health System's Hand Hygiene Program, which includes among its strategic lines the participation of patients and citizens in their own safety.[9] Despite this, we are not aware of any study in our country that explores the willingness of patients and HCWs to participate in a program of patient empowerment on HH or even the existence of specific patient empowerment programs for HH promotion.

We believe that, to implement an effective patient participation strategy, it is essential to be aware of patients' and HCWs' perceptions and attitudes about this intervention, as well as which method they consider most appropriate. The aim of this study was therefore to examine the attitudes and perceptions of patients and HCWs and to establish which method they consider to be the most suitable for implementing an effective patient participation program to improve HH.

METHODS

Study design

Ourense University Hospital Complex (CHUO) is an 850-bed university hospital in Ourense, a large city in Galicia, northwest Spain, and divided into 2 blocks. A cross-sectional study, through a self-administered questionnaire of patients and their families and HCWs, was carried out in one of these blocks, with a total of 433 beds including medical and surgical services, between April and May 2016.

CHUO is registered with WHO's "Save Lives: Clean Your Hands" campaign, and its multimodal strategy has been implemented. However, patient empowerment programs are not yet established. The CHUO Institutional Research and Ethics Committee approved the study protocol.

Study population

We targeted all hospitalized patients (or their families) and HCWs as potential respondents, and participation was voluntary. A trained interviewer visited and asked patients to complete the anonymous questionnaire. Patients were asked first; if they refused, were absent at the moment of the visit, could not answer due to issues related to cultural aspects, absence of or low level of consciousness, or psychiatric impairment, among other reasons, then family members or companions were asked to take part instead. Patients in intensive care and emergency units were excluded. All included participants were drawn from medical and surgical services.

All registered nurses and physicians working in the hospital block where the study was carried out were invited to participate. The questionnaires were distributed to nurses by the head nurse in each ward, and physicians were invited to participate by the interviewer on a one-on-one basis.

Survey questionnaires

Two different questionnaires were developed, based on previous literature,[10-13] for patients or their families and for HCWs. Questionnaires were reviewed by a multidisciplinary group composed of 15 people (infection control professionals and hospital communication officers). A pilot test was subsequently performed on 15 patients and families and 10 HCWs. The questionnaires guaranteed anonymity and were self-administered. Trained interviewers took part only in answering queries.

The questionnaire for patients and families had 2 sections. The first part elicited sociodemographic characteristics and general data (date of admission, hospital area, hospitalizations in the past year, and history of HAIs) in 8 questions. The second part consisted of 10 questions about perceptions and attitudes toward infections and HH, the intention to request HCWs to wash their hands before administering care, the reasons for being unwilling to ask, and methods to improve patient participation.

The questionnaire for HCWs consisted of 5 questions on sociodemographic issues (sex, age, years worked, profession, and work area) and 6 questions addressing knowledge of and attitudes about HAIs and the importance of HH and patient participation in their own care. HCWs were asked whether they would agree to having patients remind them about HH before treatment, the reasons for which they would not accept it, and suggested methods for improving patient empowerment. Most items were 1-choice answers, but questions about reasons for not supporting patient participation and choice of empowerment methods were asked via multiple choice.

Statistical analysis

In the patient questionnaire, the dependent variable "Would you be able to ask staff whether they have cleaned their hands?" was a dichotomous variable. In the HCW questionnaire the dependent variable originated from recategorization of the 5-scale question "Would you agree to having patients and/or family members remind you about HH before providing care?" In this case, the response values "Agree" and "Strongly agree" were considered a positive attitude. The remaining values ("Strongly disagree," "Disagree," and "Neutral") were classified as displaying a negative attitude.

First, a descriptive analysis was carried out presenting questionnaire data as number of respondents and percentages (categorical variables) and mean ± standard deviation (quantitative variables). Categorical variables were compared by use of the Pearson χ^2 or Fisher exact test. The differences in means of continuous variables were tested using the Student t test or Mann-Whitney-Wilcoxon test**.** Then we performed multivariate logistic regression analyses. All analyses were 2-tailed, and $P < .05$ was considered significant. Results are expressed as odds ratios (ORs) with their 95% confidence intervals (CIs). All data were analyzed using IBM SPSS v.22 (IBM, Armonk, NY).

RESULTS

Responding patients and their families and HCWs

The daily mean number of hospitalized patients in this hospital block at the time of the survey was 407. A total of 337 respondents, including 232 patients (68.8%) and 105 family members (31.2%), completed the questionnaire, for a response rate of 78%. The total number of eligible HCWs was 393. Of these, 79 physicians and 117 nurses completed the survey, for a response rate of 51.6% for physicians and 49.8% for nursing staff. Respondent characteristics are summarized in Table 1.

Nearly all patient respondents (>95%) were either hospitalized the previous year or were a family member of someone who was. However, only 16% of patients and 10% of families report having had any previous experience of HAIs. Sixty percent of HCWs were nursing staff, and within this group 90% were women.

Patients' attitudes and perceptions regarding patient empowerment

Most patients and their families reported having heard about HAIs (96%) and considered it a major problem. In fact, all respondents stated that HH is important in their daily life (Table 2).

Contact with HCWs was identified as one of the most important routes of infection transmission, and virtually all participants considered HH to be an effective measure to prevent HAIs. More than half of surveyed patients and their family members (58%) answered that they normally observe whether HCWs or their caregivers at home wash their hands. Most of them would feel

Table 1
Demographic characteristics of 232 patients, 105 families, 79 doctors, and 117 nurses who responded to the survey on HH and patient participation

Characteristic	Patients who responded (%)	Families who responded (%)	Physicians who responded (%)	Nurses who responded (%)
Sex				
Male	120/227 (53)	50/104 (48)	47/79 (59)	12/117 (10)
Female	107/227 (47)	54/104 (52)	32/79 (41)	105/117 (90)
Age	53 ± 17	55 ± 14	45 ± 12	43 ± 9
Admitted or working department				
Medical	111/232 (48)	45/105 (43)	25/79 (32)	25/117 (21)
Surgical	121/232 (52)	60/105 (57)	54/79 (68)	92/117 (79)
Education level				
Middle school or below	62/232 (27)	15/101 (15)	—	—
High school	130/232 (56)	75/101 (74)	—	—
University degree or higher	40/232 (17)	11/101 (11)	—	—
Years worked	—	—	18 (16-21)	18 (16-19)
Were you or your family members hospitalized last year?				
Yes	221/232 (95)	104/105 (99)	—	—
No	11/232 (5)	1/105 (1)	—	—
Have you or your family members had any previous experience with HAI?				
Yes	36/232 (16)	10/105 (10)	—	—
No	196/232 (84)	95/105 (90)	—	—

NOTE. The denominator was different according to each item because only respondents who answered the question were included. Values are presented as proportions (%) or mean ± standard deviation.
HAI, health care–associated infection; *HH*, hand hygiene.

Table 2
Perceptions and attitudes of patients and families regarding HH and patient participation

Questions	Patients who responded affirmatively (%)	Families who responded affirmatively (%)
Have you heard about HAI?	218/229 (95)	100/102 (98)
Do you think HAI is an important problem?	216/225 (96)	103/105 (98)
Do you think it is easy to contract a HAI?	120/232 (52)	57/105 (54)
Do you think HH is important in your daily life (eg, before meals)?	232/232 (100)	105/105 (100)
Do you think these are the most common ways to contract a HAI?		
Air	122/230 (53)	70/105 (67)
Objects (eg, catheter, needles)	134/230 (58)	68/105 (65)
Contact with HCWs	104/230 (45)	45/105 (43)
Contact with other patients	67/230 (29)	36/105 (34)
Other reasons	3/230 (1)	0/105 (0)
Do you think HH is effective in preventing HAI?	229/230 (99)	105/105 (100)
Have you usually observed whether HCWs or people who treat you at home perform HH?	136/232 (59)	58/105 (55)
Would you feel more comfortable if you knew HCWs had performed HH?	230/232 (99)	99/105 (94)
Are you willing to ask HCWs if they have washed their hands?	112/232 (48)	56/105 (53)

NOTE. The denominator was different according to each item because only respondents who answered the question were included. Values are presented as proportions (%).
HAI, health care–associated infection; *HH*, hand hygiene; *HCWs*, health care workers.

better if they knew that HCWs had performed HH. Finally, 49.9% (48% of patients and 53% of family members) would be willing to ask HCWs if they had cleaned their hands before administering care ($P = .390$).

In multivariate analysis, being a woman (OR, 1.73; 95% CI, 1.04-2.88), being younger than 55 years of age (OR, 2.16; 95% CI, 1.26-3.68), having a high level of education (OR, 8.55; 95% CI, 3.15-23.2), and noticing whether caregivers wash their hands (OR, 3.43; 95% CI, 2.04-5.77) were associated with an intention to ask HCWs about HH.

The most important reason why patients and family members would be unwilling to ask HCWs whether they had performed HH was fear of causing annoyance or being treated differently (76%). Other reasons included feeling ashamed and believing it showed a lack of respect for HCWs (Fig 1).

Attitudes and perceptions of physicians and nurses regarding patient empowerment

Most respondents (96%) supported patient participation programs with regard to some general aspects of patient care (decision-making process, self-management). However, only 31.6% (41.8% physicians and 24.8% nursing staff) would clearly support patients reminding them to wash their hands ($P = .01$) (Table 3).

For HCWs, multivariate logistic regression analysis showed a statistically significant association for supporting active patient empowerment among men (OR, 2.28; 95% CI, 1.07-4.83). No other variables achieved statistical significance.

As shown in Figure 2, almost half (47%) of HCWs answered that this participation is unnecessary because it is a usual practice inherent to their work. This reason is the most commonly cited among nurses (58%), but it is only mentioned by 26% of surveyed physicians ($P = .00$). For medical staff, the most important reasons not to support patient empowerment were lack of patient knowledge and negative effects on the doctor/patient relationship (40% in both cases).

Preferred methods of patient empowerment

The preferred method for patient participation in HH promotion was to place posters on wards (86% of patients and their

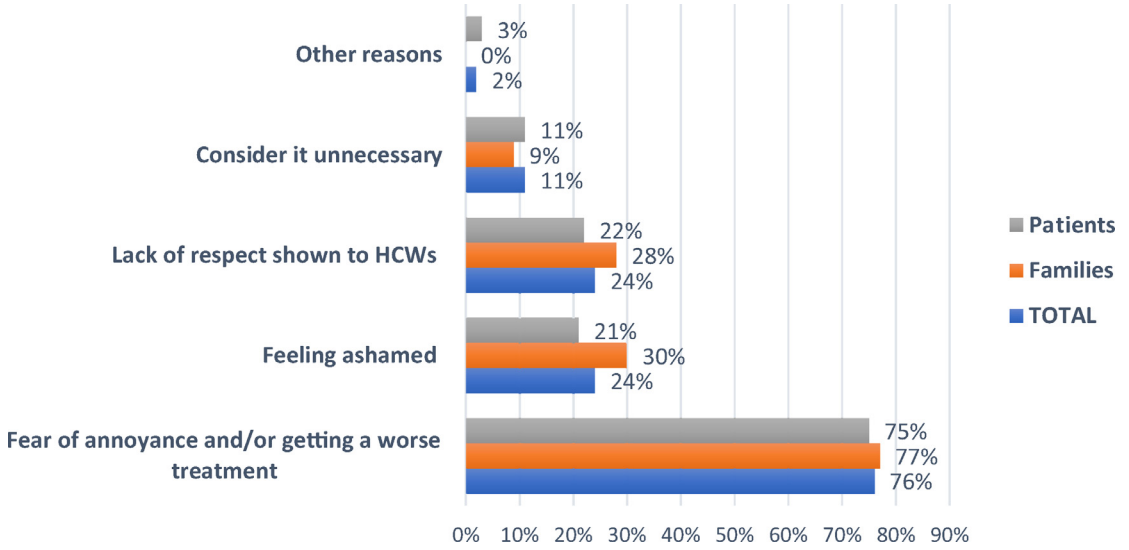

Fig 1. Reasons patients and families are not willing to ask health care workers (HCWs) if they previously washed their hands.

Table 3
Perceptions and attitudes of physicians and nurses regarding HH, HAI, and patient participation

Questions	Physicians who responded affirmatively (%)	Nurses who responded affirmatively (%)
Do you think HH is effective in preventing HAI?	79/79 (100)	116/117 (99)
Which is the main route of cross-transmission of microorganisms among patients in health care centers?		
HCWs' hands when not clean	64/78 (82)	106/117 (91)
Air	7/78 (9)	5/117 (4)
Contact with surfaces colonized by germs (eg, beds, floors, tables)	5/78 (6)	3/117 (3)
Sharing noninvasive objects between patients (eg, stethoscopes)	2/78 (3)	3/117 (3)
Do you support patient participation programs in the care that they provide?	75/78 (96)	112/117 (96)
Would you agree to patients reminding you to perform HH before being seen?	33/79 (42)	29/117 (25)

NOTE. The denominator was different according to each item because only respondents who answered the question were included. Values are presented as proportions (%)
HAI, health care–associated infection; *HH*, hand hygiene; *HCWs*, health care workers.

family members and 74% of HCWs). The least-chosen method among HCWs was direct patient participation by asking about HH.

DISCUSSION

To our knowledge, this is the first study to simultaneously analyze attitudes of HCWs and patients toward patient empowerment in HH in Spain. The results are significantly different between groups. Half of patient and family members (49.9%) support patient participation compared with only one-third of HCWs (31.6%). We also found a difference in attitudes between physicians and nurses, with higher positive attitudes among physicians (41.8%) than nurses (24.8%). These peculiarities should be taken into account in the design of future improvement programs.

Patients and their family members consider HAI a relevant problem, recognize the importance of HH in its prevention, and would feel better knowing that attending HCWs washed their hands. However, just half of them showed willingness to actively promote this activity in HCWs, which is within the range of the findings obtained by other studies on the subject (30%-79%).[10,14-17] This could be related to cultural issues and also to the limited number of current empowerment programs in Spain.[18]

Moreover, patient involvement in error prevention can make a difference. Along this line, different surveys reveal greater difficulties when asking HCWs questions regarding safety compared with more general issues.[19]

Older patients expressed a lower positive attitude toward empowerment, perhaps because they take less of an interest in decision-making processes related to their health.[20] We also found a link between patients' positive attitude regarding participation and higher levels of education, as have other studies.[11,17,19,21] Regarding sex, women's attitudes toward empowerment are significantly more positive than men's. Women's active support for patient participation is also found in relation to safety in health care.[19] This can be partially explained by the cultural role of caregivers traditionally assumed by women.

Encouragement of HCWs is key predictor of patients' attitudes toward participation.[8,22] In this study, the patients' expressed willingness to address HCWs would probably have been greater if their explicit authorization had been included among the survey items. This idea is reinforced by the fact that the most common reasons not to ask HCWs whether they have cleaned their hands are fear of annoyance and of receiving a lower quality of care. Shame and fear that asking might be perceived as showing a lack of respect for HCWs are other reasons related to a vertical doctor/patient relationship, which was also mentioned in other studies.[11]

Despite the importance given to HH in HAI prevention, only 31.6% of HCWs showed agreement with being reminded about HH before providing treatment. The finding is in contrast with the clear support

Fig 2. Reasons health care workers (HCWs) did not support patient empowerment.

(96% of cases) HCWs offer programs of patient participation in other aspects of patient care (eg, decision-making, participation in self-care). Overall, the positive attitude toward patient empowerment shown in our survey is clearly lower than the data obtained by other researchers, which ranged from 63%-81%.[17,23,24] This could be the result of the aforementioned lack of empowerment programs in our country, especially when they imply a change in the HCW/patient relationship.[18]

The support among HCWs for patient empowerment is significantly lower ($P = .000$) than that among patients. This discrepancy is also present in 2 studies performed on both patients and HCWs in Asian countries.[12,17] The Asian and Spanish cultures are clearly different in many respects but share the existence of a vertical doctor/patient relationship.

We also noted a remarkable difference in attitude toward HH between physicians and nurses; medical staff expressed a positive attitude toward patient empowerment (41.8%), higher than that of nursing staff (24.8%). This could be related to the usually closer relationship between nurses and patients.

In addition, the multivariate analysis shows that male HCWs support patient empowerment, whereas it is the opposite for patients. These results must be interpreted with caution because the distribution of sex in professional categories is not homogeneous: 60% of physicians are men, and 90% of nurses are women. Although these findings reveal the true distribution of sex in our population, these proportions are far from being equivalent between these 2 categories.

The analysis of the obstacles expressed toward patient participation will allow us to understand the reasons for this limited support for it. Considering the entire HCW group, the most common reason was considering it unnecessary (47% of cases) because this is a usual practice for HCWs inherent to their work. This could imply an erroneous belief of high compliance with HH recommendations, even though real HH compliance in our hospital is far from 100%.

The barriers mentioned by physicians against promoting patient empowerment have to do with the fear of having a negative effect on the doctor/patient relationship as found in other studies[12,23] and the belief of the patients' likely lack of knowledge. These reasons may reflect fear of a change in the current vertical and paternalistic relationship between doctor and patient in our culture. These barriers are in line with the most suggested reasons for patients not to remind staff about HH.

Using posters in wards was considered the best method for improving patient empowerment in HH compliance by patients, family members, and HCWs. The choice of this indirect method is in agreement with the limited support for direct participation obtained. In the specific case of promoting HH in our hospital, "talking walls" have been used for more than 10 years; therefore all actors are familiar with them.

This study has some limitations. First, it should be noted that because of the patients' lack of experience with taking part in issues related to safety in our environment, we decided not to approach the subject in a completely direct way, a strategy that could generate some inaccuracy in measurements, which could be the case here but that has enabled us to obtain a good level of patient and family participation. Second, the distribution of sex in HCW categories is not homogeneous; it would be interesting to take this into account in future studies when sampling staff, trying to achieve a more homogeneous sex distribution to confirm gender roles. Finally, this research was performed in a hospital that has not yet incorporated active patient empowerment programs in promoting HH; consequently, attitudes may change once the intervention begins.

CONCLUSIONS

For a program of patient empowerment in the promotion of HH to be successful, it is necessary to overcome the existing barriers in both patients and HCWs. The intervention should focus on educating and encouraging patients to feel more comfortable asking HCWs about HH adherence, thus becoming active patients. For this, a change in the role of HCWs is also essential. HCWs must invite all suitable patients to participate and be receptive to their input. Therefore a cultural change in the doctor/patient relationship is necessary to create a facilitating environment. These results suggest the convenience of

starting an intervention strategy with indirect methods because they are the most readily accepted by all the participants.

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