The role of managers in promoting good hand hygiene in a Finnish tertiary care hospital

Helena Ojanperä[a,d], Anne Korhonen[b], Merja Meriläinen[c], Hannu Syrjälä[d*], Outi Kanste[a*]

[a]Research Unit of Nursing Science and Health Management,

University of Oulu, Aapistie 5A, 2 krs 90220 Oulu, Finland.

Helena Ojanperä RN, MSc

Outi Kanste RN, PhD

[b]Nursing Research Foundation, Finland

Anne Korhonen RN, PhD

[c]Department of administration, Oulu University Hospital, Finland, Medical Research Center Oulu

Merja Meriläinen RN, PhD

[d]Department of infection control, Oulu University Hospital, Finland, Medical Research Center Oulu

Hannu Syrjälä MD, PhD

Correspondence to:

helena.ojanpera@ppshp.fi

Mailing Address: Research Unit of Nursing Science and Health Management,

University of Oulu, Aapistie 5A, 90220 Oulu, Finland.

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*Hannu Syrjälä and Outi Kanste contributed equally to this paper

ABSTRACT

Helena Ojanperä, Anne Korhonen, Merja Meriläinen, Hannu Syrjälä, Outi Kanste

Background: Hospital managers play an essential role in implementing strategies to promote good hand hygiene (HH) among healthcare workers (HCW). We investigated the managers' views on their roles, challenges and developmental ideas in promoting good HH practice.

Methods: A descriptive cross-sectional study with an online survey of both medical and nursing managers was conducted within a single tertiary care hospital in Finland. Three open-ended questions were analyzed using inductive content analysis.

Results: A total of 78 managers out of 168 responded to the survey (response rate 46%). Managers helped promote HH practices by enabling the proper environment for adherence to good HH, visible commitment, and using various means to instruct staff about HH. Challenges included the acute hospital setting and practical problems related to the managers' numerous responsibilities. Developmental ideas included information communication technology (ICT) applications for monitoring HH as an indicator of the quality of care, versatile responses to HH audits, and clarifying the roles of different management levels.

Conclusions: Managers are committed to and use various methods to promote HH. Managers would benefit from ICT applications to provide easy and targeted information regarding compliance with HH.

Keywords: inductive content analysis, hand hygiene, managerial role, quality of care and patient safety, tertiary care hospital, survey

INTRODUCTION

Good hand hygiene (HH) practice in healthcare facilities is key to patient safety and a cornerstone in reducing healthcare-associated infections (HCAI).[1, 2] However, HH compliance among healthcare workers (HCW), especially among physicians, often remains low.[3] The World Health Organization (WHO) has recommended a multimodal strategy to improve and sustain HH compliance. The components of the strategy are systemic change, training and education, observation and feedback, reminders in the workplace and a climate of institutional safety. The minimum criteria for implementing a safe institutional climate requires the chief executive, chief medical officer or medical superintendent and chief nursing officer to make a visible commitment to supporting HH improvement (e.g. announcements and/or formal letters to staff).[1]

The participation of hospital managers has been identified as essential in implementing strategies to promote good HH among HCWs.[4-8] However, managerial participation in quality improvement interventions is often assumed, rather than proven.[9] In a previous study, managers who successfully contributed to HH compliance had an active role: they were visionary developers, solution-oriented, inspiring and strategic.[10] Yet little is known in general about what hospital managers do within their practice to ensure and improve quality of care and patient safety,[11, 12] or their role in quality improvement related to, for example, HH.[10,12] The aim of this study was to describe managers' views on their role in HH practices in a tertiary care hospital, where specific new infection control activities had not been implemented. We were particularly interested in the challenges managers faced in promoting good HH practice, and what kind of developmental ideas they had for promoting HH practices.

METHODS

Design and study setting

A cross-sectional online survey (Webropol 3.0 survey and reporting tool) was conducted in a single tertiary care hospital in northern Finland. Our hospital is a tertiary level hospital representing all specialities excluding transplantation surgery, which is centralised in Finland. There are 2 646 nursing staff and 613 medical staff working at the hospital and it provided 773 beds, with 225 683 patient days, in 2019. The hospital's current infection control process incorporates the five components of WHO's multimodal HH improvement strategy:[1] systemic change; education for HCWs; evaluation (including regular, direct HH observations) and feedback; reminders in the workplace;

and an institutional climate of safety. Infection prevention and HH in particular have been components of the hospital's patient safety strategy since 2012.

Data collection

Development of the questionnaire used for the survey was undertaken by an expert group and four authors of this study (AK, HO, HS, MM), utilizing previous literature.[1] The questionnaire was pre-tested with six deputy nurses who did not participate in the research, and who did not suggest any changes.

Participants were gathered through purposive sampling.[13] In order to provide a diverse multiprofessional perspective, the sample included both medical (chief medical officer, administrative medical chief officer, deputy chief medical officer) and nursing (administrative chief nursing officer, chief nursing officer, ward manager) managers from different management levels (upper and middle/frontline). The number of subordinates varied from none to less than ten among upper managers to about 40-50 among frontline managers. The online survey was emailed to every medical and nursing manager in a single tertiary care hospital on 1 October 2016 (N=168). The response time requested was four weeks. The survey was sent twice more to those who did not respond by the deadline.

The survey explored three open-ended questions. 1) How was the promotion of and ensuring good HH perceived to be part of the manager's job? 2) What challenges faced the manager in achieving good HH among staff? 3) How, in addition to the tools already in place (HH observations, monitoring of alcohol-based hand rub (ABHR) consumption), would the manager promote good HH? In addition, the age, gender, work position and work experience of each responding manager was recorded.

Data analysis

Inductive content analysis was used to analyze the data.[14] Answers to the research questions were sought by thematizing the data under three main themes: the managers' roles in promoting good HH practice; challenges within the managers' roles of achieving good HH practice; and any developmental ideas regarding HH practice offered by the managers. The units of analysis were words, pairs of words or statements that related to the same central meaning. In the first stage of the analysis, the data was read from beginning to end several times to ensure that the analyst had a clear grasp of the overall contents. The contents were then reduced by converting the managers' original expressions into simplified expressions. Expressions with similar meanings or that dealt with related themes were grouped into subcategories, each of which was assigned a descriptive name. Subcategories with similar meanings were then grouped into categories that were named using content-characteristic words. The data was analyzed independently by two researchers (HO and AK)

and a consensus was reached after discussion if necessary. The original expressions are indicated in the results by the use of italics. They also have been translated from Finnish into English. Simplified expressions, subcategories and categories are described in the tables. Background variables are described as medians, ranges and percentages.

Ethical considerations

Approval for the survey was obtained from Oulu University Hospital (245/2016). In Finland, in accordance with the Medical Research Act (488/1999), approval of the local ethics committee is not required for a survey that does not process identifiable information. In the cover letter, managers were informed of the current occupational HH compliance rate and the target level of HH compliance according to recent studies.[6,8] Participation was anonymous and voluntary.

RESULTS

After two reminders, the survey was completed by 78/168 (46%) respondents. The response rate among medical managers was 43% (32/75) and 47% (44/93) among nursing managers and by gender: male 39% (19/49), and female 47% (56/119). Most of respondents were female 74% (56/78). The median age of the respondents was 54 years (range 38–63). Of the respondents, 41 (53%) were in upper management and 35 (45%) in middle or frontline management (information for two of the respondents was missing). There were 32 (41%) medical managers and 44 (56%) nursing managers (information for two of the respondents was missing). Of the nursing managers, 14% (13/93) were in upper management. The median experience of health care in a managerial position was 10 years (range 2–34).

The managers' role in promoting HH practices

The managers' role in promoting good HH practice could be grouped into three categories: enabling a suitable environment for adherence to good HH; visible commitment by the manager; and instructing staff in the proper HH practice (Table 1). Managers participated in HH practices by ensuring conditions were conducive to HH compliance. When they needed training or guidelines regarding good HH practice, they took advantage of infection control experts. By working with infection control liaison nurses (ICLN), managers enabled the ICLNs to carry out HH observations, process and report on the results, and train staff. Managers also organized necessary resources such as staff, hand rub and dispensers. By ensuring the availability of ABHR, the managers contributed to the adherence to good HH. Monitoring progress included both HH compliance and consumption of ABHRs.

" I monitor observation results and volumes (liters) of alcohol-based hand rub. I provide resources for persons in charge to have an opportunity to make observations and instruct other staff members. I, for my part, make sure there are enough material resources."

Visible commitment of managers in promoting good HH practice meant that managers acted as role models, and they saw promoting HH as part of their duty. Acting as role models, the managers took responsibility for their own HH and did not wear jewelry to work.

"I believe in the power of the role model for good hand hygiene. I do not wear rings, other bracelets, or a wristwatch in my job as a unit nurse manager." "Managers' duties include supervision and ensuring the quality of care. Good hand hygiene is part of health-care associated infection monitoring and is discussed together with other activity indicators."

Directing staff to proper HH practice included motivating and supporting staff, direct intervention by the managers in cases of poor HH and ensuring competence. Motivating staff included both encouragement for better results and praise for the results already achieved. Intervening in the case of non-compliance with good HH meant giving personal or collective feedback on either the use of rings or bracelets or the non-use of ABHR. As advocates of good HH, the respondents reminded and talked about HH in various situations, such as unit meetings. Facilitating competence in HH meant ensuring that employees (including new staff members) had access to training and providing staff training within their own units.

Challenges to the managers' role in HH practices

Managerial challenges to implementing good HH could be grouped into three categories: the special characteristics of the acute hospital setting; practical problems related to the mangers' workloads; and individual differences in following guidelines (Table 2). The relevant characteristics of the acute hospital setting included an overload of work and time, insufficient resources and challenges to information flow within a large work community with a three-shift work pattern. Practical problems relating to the promotion of good HH were limited resources and other managerial priorities. HH remained an extraneous aspect of a manager's day-to-day duties. Additionally, the mangers' had concerns about the difficulty of controlling all the factors mentioned. Managers described personal difficulties in intervening regarding adherence to good HH. e.g. the difficulty of interfering with the practices of other groups of professionals.

"Because implementation and compliance with hand hygiene feels self-evident, one finds them a difficult topic to address without feeling a bit weird." "It is rather difficult to monitor from manager's perspective, i.e. what is going on in a single treatment room."

Different attitudes between individuals in following guidelines included non-compliance with good HH even if they knew about the process, and staff taking offence if reminded about good HH. Adherence to good HH depended on the responsibility of each individual employee.

> *"Good instructions, commands and reminding is not enough if the staff does not see the need for changing their practices." "Some members of the staff do not respect the observation protocol and are offended if asked to pay attention to compliance with good hand hygiene."*

The managers' developmental ideas for good HH practices

Managers described various methods they could use in addition to those already available to promote good HH. Their responses could also be grouped into three categories: developing information communication technology (ICT) applications to monitor HH as an indicator of the quality of care; versatile ways of responding to HH audit results; and clarifying the roles of different management levels in improving HH (Table 3). Using technology in HH monitoring included both the development of methods for observing five moments of HH, and introducing more personalized monitoring of each HCW. The suggested development of HCAI reporting focused on including the prevention of hospital-acquired infections in all planning processes and obtaining infection reports for comparison between hospitals.

> *"Some kind of personal sensor that shows the actual use of the hand rub when in contact with the patient." "We could make comparisons between, for instance, university hospitals (benchmarking) and compile reports regarding this matter, too."*

Suggested ways of responding to HH audit results included rewards for good compliance and interventions for poor HH compliance, for example by implementing sanctions. The need to clarify the roles at different management levels meant that HH should be on the agenda at a senior management level, as well as all managers remembering their collective and individual responsibilities.

> *"In my opinion, reports on alcohol-based hand rub consumption and compliance with hand hygiene should be engaged with by the management team, managers should also be interested or aware of the issue and consider together what could be done better."*

DISCUSSION

As far as we know, this is the first study to explore managers' views on the challenges within their role in promoting good HH in an acute care hospital. Our research shows that HH remains a extraneous aspect of the numerous roles carried out by busy managers, and the compliance of HH is often difficult to control from the managers' perspective. Although the hospital studied provides data on staff adherence to good HH (i.e. annual consumption of ABHRs and regular HH observations), the reports are either too general or difficult to access by managers. Managers would benefit from ICT applications that provide easy and targeted information on compliance with good HH practice.

In this study, the managers stated that improving HH requires the development of methods to observe and monitor five moments of HH, and the use of technology for more personalized monitoring of each HCW. In earlier interviews, managers stated that it is difficult for them to use HH audit reports as valid indicators of practice[15] or as a lever to change HH practices.[16] Our study corroborates these findings and demonstrates that managers would welcome the development of audit reporting that could be utilized better to promote good HH.

Our research highlighted a source of conflict within the role of managers in addressing poor HH. Addressing poor HH was considered to be important, but in practice was perceived to be an uncomfortable confrontation. Managers also felt it was difficult to interfere in the practices of other groups of professionals, for example nursing managers interfering with doctors' implementation of HH. Previous studies have already shown that, although the importance of good HH for patient safety is recognized, it is difficult to interfere in an observed failure of HH.[17,18] Our study also shows that managers find it difficult to interfere in HH failures. Additionally, to improve the climate for good HH it is important to support frontline managers [19] and, as a part of an improvement strategy, to facilitate co-operation between different occupational groups.[7,19]

In our study, managers participated in good HH practice indirectly by ensuring the availability of ABHRs and monitoring adherence to good HH. In addition, they acted as role models, reminding others of the importance of HH, ensuring HH competence, motivating staff, and, in spite of the difficulties, intervening in the case of non-compliance with good HH. They also collaborated with the hospital infection control unit. Taken together, the hospital managers participated in good HH practice by promoting and confirming that WHO's multimodal strategy[1] was being followed. Additionally, they enabled ICLNs to carry out HH observations and provide feedback to staff in their units (e.g., by allocating work time for the process). At this hospital, the duties of ICLNs include regular HH observations and feedback.[2] Our results concur with previous research, that the role of managers in promoting quality of care and patient

safety includes resource provision, staff motivation and support, visible manager commitment and monitoring progress.[10, 12, 16]

The role of upper line managers is to ensure hospital patient safety, and provide adequate resources to implement the safety procedures, while middle and frontline managers act as supervisors for the HCWs working with the patients. The role of senior/top level managers and infection preventionists is important for successful interventions that promote good HH.[11,20] In other studies, the role of frontline managers has not been afforded much attention, although frontline nurse managers often oversee the implementation of quality improvement, and they provide a critical link between frontline staff and higher administrative leaders.[19,20] McInnes and co-workers identified the following themes in senior hospital managers' views about improving HH: culture change starts with leaders; refresh and renew the message; consider the patient journey as a whole; actionable audit results; empower patients; re-conceptualize non-compliance; and being very strict.[16]

Although during the last few years, the participation of patients and their next of kin has also been considered essential to the improvement of patient safety strategies,[21, 22] our managers did not spontaneously mention the importance of patients in HH strategies. However, when the hospital managers were asked about new innovations to improve HH, they did suggest that patients should be included in the programs.[16] We possibly missed an opportunity to explore this further, because we did not directly asked about patients' participation in HH. However, for a long period (years) before the survey, the hospital entrances have displayed posters promoting good HH practice. These posters encourage patients to report HCWs who do not use handwash.[2]

There is little information available to managers on day-to-day leadership behaviors and management practices that can either encourage or hinder HH compliance. We used open-ended questions and inductive content analysis[14] to provide insights into the managers' roles in HH practices that may not be revealed by means of structured questions. The analysis methodology has been carefully described to increase the transparency of the study, and direct quotations from respondents have been used to confirm the authenticity of the study.[14]

However, our study does have a few limitations. The survey was carried out at a single tertiary-level hospital and our target groups were medical and nursing managers, while the opinions of other managers, such as chief quality managers, were not obtained. In addition, the roles and job responsibilities of managers regarding infection control practices may vary in different hospitals in different parts of the world. Furthermore, the response rate after two remainders was only 46%. This low response may have biased the results, because a large number of managers' views were missing. This figure is, however, much higher than the response rate of 5.3% in a recent German study of 3877 hospital managers.[23] The lower response rate of male managers (39%) than female managers (47%) may also have

biased the results.[24] It is possible that in our study the responders had more a positive attitude to HH than nonresponding managers. In addition, the cover letter sent to all potential participants may have had an impact on the answers: it included the good HH compliance rates of the doctors and nurses in the hospital, and described the target level of HH compliance according to two recent studies publications.[5,7] Moreover, the responders described HH and infection control practices at a general level without more detailed, individual views. This created a challenge for the inductive content analyses. The use of passive comments posed another challenge, even though the purpose of the survey was to obtain managers' personal views. Overall, our results must be applied to other hospitals with care, but it must also be borne in mind that the purpose of qualitative research is not to achieve generalizable results but to gain a deeper understanding of a specific phenomenon.

CONCLUSIONS

Managers are committed and involved in many ways to promote good HH. However, the information currently available on adherence to good HH practice is not available to managers in this acute care hospital to help improve HH. There is also a conflict within the role of managers in intervening in non-compliance with good HH. Intervening in poor HH is considered to be important, but in practice it is perceived as an uncomfortable situation. The managers highlighted the potential of making information on the adherence to good HH more readily available, and in more detail than at present, using modern ICT technology.

Future research is needed to confirm these findings and to explore, for example, interventionist research and the benefits of ICT applications from a management perspective. It would be also necessary to do a follow-up study of HH compliance in the hospital after the developmental changes suggested by the respondents are implemented.

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Tables

Table 1: Managers' roles in promoting and ensuring good hand hygiene practices

Simplified expressions	Subcategories*	Categories**
Cooperation with the infection control unit (including instructions, training, procedures during epidemics and similar situations)	Utilization of experts (the infection control unit)	Enables a proper environment for adherence to good HH
I arranged with an infection control liaison nurse at the unit for a designated observation day once a month I allow time by planning for the liaison nurse to attend to these responsibilities	Organizing/enabling liaison nurse activities	
Provision for the best possible HH: automatic dispensers Organizing necessary resources	Staff and equipment resources (including availability of ABHR)	
Monitoring development issues regarding this matter I monitor the results of HH observations in the units	Monitoring progress	
Superior's example probably makes a difference Setting an example	The manager as a role model	Visible commitment of the manager
It is my duty to increase the implementation of HH compliance As a senior nursing professional this is also part of my duties	As part of a manager's duty	
I motivate staff to use hand sanitizers I encourage observation	Motivation and encouragement	Directing staff to good HH practice
Warning if non-compliance with practices observed Firmer approach if not (implemented)	Response to non-compliance	
I plan staff participation in training sessions regarding the issue I organize training once a year	Ensuring competence	

HH (hand hygiene), ABHR (alcohol-based hand rub)

Simplified expressions with similar meanings were grouped into subcategories*, each of which was assigned a descriptive name. Subcategories with similar meanings were grouped into categories**, which were named using content-characteristic words. Original expressions have been translated from Finnish into English.

Table 2: Challenges for managerial roles regarding hand hygiene practices

Simplified expressions	Subcategories*	Categories**
Lack of resources – it is not always a question of valuation		
Too busy on the ward	Time and staff resources	
		Special characteristics of acute hospital settings
Information flow challenging within a three-shift work pattern		
The challenge is to create a large work community	Flow of information	
Many different work tasks		
Outside the daily work of a manager	Limited resources for the manager	
It is rather difficult to monitor from manager's perspective, i.e. what is going on in a single treatment room		Practical problems related to the manager's workload
Because implementation and compliance with HH seems self-evident, it is a difficult topic to address without feeling awkward	Other requirements of the manager	
If someone has the wrong attitude and e.g. feels rushed, hand disinfection may not be carried out in full		
Good instructions, orders and reminders are not enough if the staff do not see any need for change in their practices	Behaviors and attitudes	Differences between individuals in following guidelines
It (HH) falls on the shoulders of individual doctors	The responsibility lies with the individual healthcare worker	
It is a decision by an individual professional		

HH (hand hygiene)

Simplified expressions with similar meanings were grouped into subcategories*, each of which was assigned a descriptive name. Subcategories with similar meanings were grouped into categories**, which were named using content-characteristic words. Original expressions have been translated from Finnish into English.

Table 3: Managers' developmental ideas regarding good hand hygiene practices

Simplified expressions	Subcategories*	Categories**
Observation complemented by video recordings of practices?	Using technology to monitor HH practice	Developing ICT applications to monitor HH as an indicator of the quality of care
Implementation of technology for more personalized monitoring		
Monitoring consumption of hand rub does not give a true picture		
Determining the target level		
Focusing on the prevention of hospital-acquired infections in all planning procedures	Development of HCAI reporting	
We could make comparisons between, for instance, university hospitals (benchmarking) and compile reports regarding this matter		
Clear feedback regarding monitoring and non-compliance with good HH practice reported to superiors	Intervene/reacting to non-compliance	Versatile ways of reacting to HH audit results
HH is such an important issue that we, superiors (nurse and doctor), must make it clear that there is no alternative to compliance with good HH		
Introduction of sanctions	Sanctions	
A worker who needs to be constantly reminded of insufficient compliance with HH should be demoted to a lower salary		
Maybe reward good results and observations	Rewards	
Some kind of a reward if the monitored performance indicators give cause for such an action		
Including monitoring of HH compliance at a management level could improve the matter	HH reported to the senior management level	Clarify the roles at different management levels
Management should also be interested		
The manager must be persistent and consistent	Responsibility of the manager	
Managers must remember their responsibilities		

HH (hand hygiene), HCAI (healthcare-associated infection), ICT (information communication technology)

Simplified expressions with similar meanings were grouped into subcategories*, each of which was assigned a descriptive name. Subcategories with similar meanings were grouped into categories**, which were named using content-characteristic words. Original expressions have been translated from Finnish into English.