Journal of Hospital Infection 91 (2015) 358–361

Available online at www.sciencedirect.com

Journal of Hospital Infection

journal homepage: www.elsevierhealth.com/journals/jhin

Short report

Written versus verbal information for patients' education on healthcare-associated infections: a cross-sectional study

M. Bo [a], V. Amprino [a], P. Dalmasso [a], P.A. Argentero [b], C.M. Zotti [a,*]

[a] Department of Public Health and Pediatrics, University of Turin, Turin, Italy
[b] Infection Control Unit, TO3 Healthcare Trust, Rivoli, Italy

ARTICLE INFO

Article history:
Received 15 April 2015
Accepted 6 August 2015
Available online 28 September 2015

Keywords:
Cross-infection
Disclosure
Patient education handout

SUMMARY

In 2008, Piedmont region, Italy, recommended delivering written information on healthcare-associated infection (HCAI) to every patient admitted to hospitals. We interviewed 363 patients admitted to five hospitals to evaluate whether patients who received written information were more informed about HCAI than the other patients. We found no statistically significant difference between the two groups. We did observe that knowledge of HCAI was significantly lower among women and significantly higher among patients with higher education and those admitted to a surgical ward.

Introduction

Recent studies conducted in France and Italy showed that most patients have little knowledge of healthcare-associated infection (HCAI) and do not recall receiving any information on HCAI during recovery.[1–3] The data may be explained in different ways. Merle *et al.* found that healthcare workers had limited inclination to give information on HCAI to patients.[4] Concurrently, two studies conducted among patients isolated because of meticillin-resistant *Staphylococcus aureus* (MRSA) infection and among surgical patients showed that patients who received written information on infection risk retained a limited amount of that information.[5,6]

In 2009, the Council of Europe recommended the dissemination of objective and understandable information about HCAI risk, the preventive measures implemented by the healthcare institution and how patients can help prevent HCAI.[7]

During that same period, there was a recommendation to deliver written information on HCAI to every patient admitted to the regional hospitals in Piedmont, Italy.[8] A standardized format for the educational leaflet was provided, and the availability of written material on HCAI was also added to the list of regional indicators for the prevention and control of HCAI.

Every regional healthcare trust has developed a policy to inform patients about HCAI. In some of the healthcare trusts, educational leaflets have been distributed to every patient at

* Corresponding author. Address: Department of Public Health and Pediatrics, University of Turin, via Santena 5 bis, 10126 Turin, Italy. Tel.: +39 011 670 5840; fax: +39 011 670 5881.
E-mail address: carla.zotti@unito.it (C.M. Zotti).

http://dx.doi.org/10.1016/j.jhin.2015.08.019
0195-6701/

hospital admission. In others, information about HCAI is included in special admission guidebooks, which describe the rules and the services offered to patients during their hospital stay. Finally, some of the trusts have not produced written documents on HCAI and prefer that nurses provide information about HCAI verbally.

This cross-sectional study was conducted three years after the launch of the regional policy, to describe whether any differences exist in the knowledge of HCAI between patients who received information in a written or verbal format.

Methods

The survey was conducted in five hospitals (two acute hospitals with 138–251 beds and three major acute hospitals with 286–923 beds) in Piedmont from October 2011 to October 2012. Nurses delivered information on HCAI through an educational leaflet at two of the hospitals and through a recovery guidebook in one. Even though there were some differences between documents, the main content of each was consistent with the standardized regional format. At the remaining two hospitals, nurses only provided verbal information about HCAI. Four to six wards were identified at every hospital, selected from internal medicine, specialized medicine (cardiology, oncology, haematology, respiratory disease and gastroenterology) and surgery units. All inpatients present in every ward during the study period were included and interviewed by two resident doctors. The exclusion criteria were: (i) mental illnesses that impaired a patient's ability to answer questions; (ii) insufficient knowledge of the Italian language for answering questions; (iii) discomfort due to immediate post-intervention in surgical patients; and (iv) inability to read or understand written material due to visual impairment, clinical conditions, or drug consumption.

A 10-item questionnaire was developed to evaluate patient knowledge of HCAI and its prevention strategies. Five of the questions were adapted from questions used in a previous survey; the others were tailored to investigate whether patients retained some of the information conveyed by educational leaflets and guidebooks.[6]

Every questionnaire was scored from 0 to 6 depending on the sum of the scores obtained by every interviewed patient on key questions regarding knowledge of HCAI risk and control. One point was given for every correct answer and zero points were given for every incorrect answer. A dichotomous variable was created to identify patients with an 'acceptable' level of information (patients who correctly answered almost four of the key questions included in the questionnaire).

The study was approved by the Ethical Committee of the University of Torino. An information leaflet explaining the objective and the characteristics of the study was given to every participant. All participants gave their written consent to participate in the study.

Statistical analysis

Data were expressed as counts and percentages for categorical variables and as means ($\pm$ standard deviation) for continuous variables.

Univariate analysis was performed using chi-square test or Fisher's exact test, as appropriate, to verify the existence of significant differences by gender, nationality, and education levels among patients exposed to different types of information (verbal versus written information) and among the patients admitted at different hospitals and wards. Student's *t*-test was used to verify the existence of significant differences in age distribution between the two groups.

A Mann–Whitney *U*-test was performed to verify the presence of significant differences in the scores obtained by patients exposed to different types of information (verbal versus written information).

Simple and multivariate logistic regressions were performed to evaluate the probability of achieving an 'acceptable' level of information on HCAI (score $\geq$4) according to gender, age, level of education, admitting ward and hospital, and having received written information.

All tests were two-tailed and $P < 0.05$ was considered statistically significant. All the analyses were performed using Stata SE 13 (StataCorp, College Station, TX, USA).

Results

We interviewed 363 patients admitted to 24 wards of five hospitals in Piedmont. One hundred and eighty-two (50.1%) patients were males, 173 (47.7%) admitted to a surgery ward, 101 (27.8%) to a specialized medicine ward and 89 (24.5%) to an internal medicine ward. The mean $\pm$ SD age was 63.4 $\pm$ 16.7: higher for those admitted to internal medicine wards (70.7 $\pm$ 16.6) than for those admitted to specialized medicine (60.7 $\pm$ 15.9) or surgical (61.5 $\pm$ 16.2) wards ($P < 0.001$). One hundred and twenty-three (33.9%) patients had high school or university education and the proportion of people with a higher education level was lower in patients aged >50 years ($P = 0.0001$).

Two hundred and twenty-three patients admitted to three of the hospitals received written information on HCAI, whereas 140 received verbal information. Univariate analysis showed statistically significant differences in educational level and in the distribution of patients per type of ward among patients who received written and verbal information (Table I). The mean scores obtained by the questionnaires were 4.1 $\pm$ 1.09, comparably high in the patients who had received written or verbal information (4.0 $\pm$ 1.1 and 4.2 $\pm$ 1.1, respectively). The scores did not vary significantly at univariate analysis ($P = 0.18$).

Univariate analysis also showed that the probability of retaining most of the information given about HCAI was 24% higher in patients who received written information, but the difference was not statistically significant (OR: 1.24; 95% CI: 0.80–1.92; $P = 0.33$). The probability of retaining most of the information was also higher in patients admitted to a surgery ward (2.28; 1.29–4.01; $P = 0.003$) or to a specialized medicine ward (2.13; 1.14–3.97; $P = 0.02$) and in patients with at least a secondary education (1.94; 1.24–3.03; $P = 0.003$), while this probability decreased with increased age (Table II).

In multivariate analysis, the probability of retaining most of the information given about HCAI was 37% lower in females ($P = 0.04$), 67% higher in patients with at least a secondary education ($P = 0.04$), and 2.5 times higher in patients admitted to surgical wards ($P = 0.004$). Although the probability of retaining most of the information given about HCAI also decreased with increasing age in multivariate analysis, these results were not statistically significant (Table II).