Physician attire in the intensive care unit in Japan influences visitors' perception of care☆,☆☆

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ARTICLE INFO

ABSTRACT

Purpose: The objective of this study is to evaluate the impact of physician attire and behavior on perceptions of care by ICU visitors in Japan.

Materials and methods: Visitors were surveyed including 117 at a community hospital and 106 at a university hospital. Demographic data (age, gender, relationship to patient, length of stay) were collected. A seven-point Likert scale (1 = strongly agree, 4 = neutral, 7 = strongly disagree) was used to judge physician attire (name tag, white coat, scrubs, short sleeve shirts, blue jeans, sneakers, clogs), behavior (addressing a patient, carrying a snack) and overall effect on perception of care.

Results: There are no significant differences ($p > 0.05$) in demographics comparing the two ICUs, except for increased length of stay at the university ICU. Visitors scored the importance of a name tag (median 2, Interquartile Range 1–2), white coat [3,1–4], addressing the patient by last name [2,1–3], wearing scrubs [3,2–4], sneakers [4,3–5], clogs [4,4–5], short sleeves (4,3.5–5), blue jeans [5,4–6], and carrying a snack [6,5–7]. Visitors scored "attire affects perceptions of care" as [3,2–4].

Conclusions: Physician attire in the ICU affects perceptions of care. Implementation of attire guidelines which require clothing that does not meet visitor preferences should be accompanied by education programs.

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1. Introduction

The impact of physician attire on patient and family perceptions including trust, satisfaction and confidence has been studied [1]. A recent meta-analysis of 30 multi-national studies, including 11,533 patients, concluded that while many patients prefer formal attire, perceptions due to attire are affected by age, location, setting and context of care [2]. Based on a literature review, to our knowledge only one study has evaluated the impact of physician attire on perceptions of care in the intensive care unit (ICU) [3]. The ICU setting is different from most previous studies which are conducted in outpatient settings, as patients themselves cannot participate since many of them are sedated.

There are few previous studies of physician attire in Japan, all of which were conducted in outpatient settings. One study included 491 respondents in five pharmacies, and concluded that the white coat is important [4]. An earlier study from Japan in an outpatient clinic

found that patient satisfaction was not influenced by the presence of a white coat, although older patients tended to prefer the white coat [5]. Another study from Japan surveyed 2272 hospital outpatients [6]. The study reported that most outpatients prefer a white coat.

Issues regarding physician attire have recently come to the fore because of concern about infection control related to clothing. Investigators found that up to 60% of staff uniforms are colonized with potentially pathogenic bacteria, although the relationship of this to causality of infections has not been shown [7]. The United Kingdom Department of Health recommended that physicians not wear neckties [8]. They have also recommended that doctors wear short sleeve shirts and no wristwatches [9]. These regulations also ban the traditional white coat, which has led to acrimony among physicians, and must be considered in the context of patient perceptions [10]. In 2014, The Society for Healthcare Epidemiology of America (SHEA) writing group issued guidelines for healthcare personnel attire in non-operating room settings [11]. While patients were generally unaware of clothing as a potential vector for infection, they were willing to change their preferences after being educated.

To the best of our knowledge, there is only one study to date which evaluates the impact of physician appearance in the ICU [3]. There have

been no studies to date conducted in Japan to evaluate the impact of physician appearance in any inpatient setting. We undertook this study to evaluate the impact of physician attire and behavior on perceptions of care by visitors of patients in the ICU in Japan.

2. Materials and methods

This study was conducted from June 2014–August 2014 in two mixed medical-surgical ICUs in Japan, including a 14 bed ICU at Jichi Medical University Hospital (a 1000 bed University teaching hospital in a rural setting) and a 12 bed ICU at the Jichi Medical University Saitama Medical Center, (a 608-bed community hospital, urban setting) in suburban Tokyo. This study was approved by the Institutional Review Boards at both hospitals. The need for informed consent by respondents was waived by the Institutional Review Board because of voluntary participation and anonymity of the data collected.

Survey forms collected demographic data (age, gender, patient age, relationship to patient, patient length of stay, number of times they have met the physician), asked survey questions regarding the importance of specific attire (white coat, nametag, scrubs, sneakers, clogs, short sleeve shirts and blue jeans) and behavioral items (addressing a patient by last name and carrying a snack/coffee) and finally to assess the impact of attire on overall perception of care. All survey responses were scored on a seven-point Likert scale with 1 = Strongly Agree, 4 = Neutral, and 7 = Strongly disagree. Surveys were placed in ICU waiting rooms with a sign explaining the survey. Participation by visitors was voluntary. Respondents took a survey form, and then placed it in a box after completing it. The process was not monitored. Completed surveys were collected periodically from a box. The surveys had no identifying information. Collected survey forms were aggregated and responses analyzed.

2.1. Statistical analysis

Demographic data were coded as categorical information and compared using a two-sided Chi squared test or Fisher's exact test, as appropriate. Data were analyzed for median and interquartile range of the scores on the seven point Likert scale with SAS (version 9.4, SAS Institute, Cary NC) using the Mann-Whitney U test for analysis by gender and the Kruskal-Wallis test for analysis by age, because the variables were not normally distributed. Survey results for the two sites were compared using the Mann-Whitney U test. A p-value of <0.05 was considered statistically significant.

3. Results

3.1. Respondent demographics

There were 117 surveys collected from the community (urban) hospital ICU and 106 from the university (rural) hospital ICU, for a total of 223 respondents. A difference in responses was anticipated for the two ICUs based on the populations served (urban vs. rural). Demographic data are shown in Table 1. Of the factors evaluated (respondent age, respondent gender, patient age, length of stay, relationship to patient, and number of times they have met the physician), there was no significant difference in responses from the two ICUs ($p > 0.05$, χ^2 analysis), except for patient length of stay ($p < 0.001$, significantly longer stay in the university ICU). The data is combined and presented in aggregate for the two ICUs.

3.2. Responses to the survey

For each of the ten items in the survey, respondents used a seven point Likert scale (see Supplemental Files 1 (original Japanese) and 2 (English translation) for survey forms used), and grouped as "agree" [1,2 or 3], "neutral" [4], or "disagree" [5,6,or 7]. Responses to each of

Table 1
Demographics of survey respondents.

Item	Total sample ($N = 223$)
Respondent age	
<25 y	10 (5%)
25–50 y	97 (44%)
>50 y	116 (51%)
Respondent gender	
Male	83 (37%)
Female	140 (63%)
Patient age	
<25 y	7 (3%)
25–50 y	20 (9%)
>50 y	194 (89%)
Relationship	
Friend	1 (0.5%)
First-degree	117 (54%)
Distant	102 (46.5%)
Time in ICU	
<2 d	89 (42%)
2–7d	99 (48%)
>7 d	20 (10%)
Meet physician	
Never	78 (40%)
Once	63 (33%)
2–5 times	43 (22%)
Frequently	9 (5%)

Values shown are the number of respondents (%) (y: years).

the ten survey items are shown in Table 2, as combined data for the two ICUs with median scores and interquartile ranges. Table 2 also shows the responses for each item stratified by age. The number of missing values is shown in Supplemental Table 3. Of the ten survey items, there was a statistically significant difference in responses between the two ICUs (Supplemental Table 4) only for the question regarding short sleeve shirts, with more visitors at the university ICU scoring short-sleeve shorts as "disagree" ($p = 0.00$).

3.2.1. The doctor should wear a name tag

Responses to this question are shown in Fig. 1. A total of 91% of respondents agreed with this, and 5% were neutral, with no respondent disagreeing and 4% not answering this question. There were no statistically significant differences by age ($p = 0.10$, Kruskal-Wallis) or gender ($p = 0.88$, Mann-Whitney).

3.2.2. Patients should be addressed by their last (family) name

Responses to this question are shown in Fig. 2. A total of 73% of respondents agreed with this, 22% were neutral, with 1% of respondents disagreeing, and 4% not answering this question. There were no statistically significant differences by age ($p = 0.14$, Kruskal-Wallis) or gender ($p = 0.53$, Mann-Whitney).

3.2.3. The doctor should wear a white coat

Responses to this question are shown in Fig. 3. A total of 59% of respondents agreed with this, 35% were neutral, with 1% of respondents disagreeing, and 4% not answering this question. There were no statistically significant differences by gender ($p = 0.12$, Mann-Whitney). However, statistically significantly more respondents under age 25 selected "agree" than respondents older than age 25 ($p = 0.03$, Kruskal-Wallis).

3.2.4. Scrub clothing is acceptable for a doctor to wear in the ICU

Responses to this question are shown in Fig. 4. A total of 51% of respondents agreed with this, 41% were neutral, with 4% of respondents disagreeing, and 4% not answering this question. There were no statistically significant differences by age ($p = 0.09$, Kruskal-Wallis) or gender ($p = 0.50$, Mann-Whitney).