

Should doctors wear white coats?

J Douse, E Derrett-Smith, K Dheda, J P Dilworth

Postgrad Med J 2004;80:284–286. doi: 10.1136/pgmj.2003.017483

See end of article for authors' affiliations

Correspondence to:
Dr K Dheda, Department of Thoracic Medicine, Infection and Immunity, Royal Free Hospital, Royal Free and UCL Medical School, London NW3 2QG, UK; k.dheda@ucl.ac.uk

Received
22 November 2003
Accepted 18 January 2004

Objective: To compare the views of doctors and patients on whether doctors should wear white coats and to determine what shapes their views.

Methods: A questionnaire study of 400 patients and 86 doctors was performed.

Results: All 86 of the doctors' questionnaires were included in the analysis but only 276 of the patients were able to complete a questionnaire. Significantly more patients (56%) compared with their doctors (24%) felt that doctors should wear white coats ($p < 0.001$). Only age (> 70 years) ($p < 0.001$) and those patients whose doctors actually wore white coats ($p < 0.001$) were predictive of whether patients favoured white coats. The most common reason given by patients was for easy identification (54%). Less than 1% of patients believed that white coats spread infection.

Only 13% of doctors wore white coats as they were felt to be an infection risk (70%) or uncomfortable (60%). There was no significant difference between doctor subgroups when age, sex, grade, and speciality were analysed.

Conclusion: In contrast to doctors, who view white coats as an infection risk, most patients, and especially those older than 70 years, feel that doctors should wear them for easy identification. Further studies are needed to assess whether this affects patients' perceived quality of care and whether patient education will alter this view.

Despite attempts to increase the opportunities for doctors to be made aware of patients' views there may still be a discrepancy between patients' opinion and medical practice. In a hectic and demanding clinical environment it is often difficult to provide care of a high academic standard and at the same time provide patients with a service that meets all their needs and expectations. Nevertheless, such goals are within the remit of good medical practice, clinical governance, and the Patient's Charter. When doctors' and patients' views differ, it is important to determine the reasons for these differences as these may affect patients' perceived quality of care and their overall impression of the medical profession.

Our study investigated the views of inpatients and doctors at a north London teaching hospital on whether doctors should wear white coats. Previous studies have all looked at relatively small numbers of patients and have shown great variation in results.^{1–5} We therefore embarked upon a study in a large cohort of patients to clarify the viewpoints of our patients.

METHODS

Subjects

The study was undertaken at the Royal Free Hampstead NHS Trust. Patients in protective isolation and on the intensive care, surgical high dependency, obstetric, psychiatric, and paediatric wards were excluded from the study. Patients who had a suboptimal mini-mental test score were also excluded. Consent was obtained from all participating patients and doctors and approval for the study was obtained from the hospital ethics committee.

Questionnaire

Patients were asked to answer "yes" or "no" to the question "Do you think doctors should wear white coats?" but were given the opportunity to qualify their answers by agreeing or disagreeing to suggestions (from list A, table 1) or giving their own reasons. The patients' age, sex, and previous

hospital admissions were noted. Patients were also asked if their doctor(s) wore a white coat.

Doctors were also asked "Do you think doctors should wear white coats?" They were allowed to qualify their answers by agreeing or disagreeing with suggestions (from list B, table 1) or by giving their own reasons. The age, sex, grade, and speciality of the doctor were recorded.

Statistical analysis

Data were analysed using the χ^2 test and multifactorial analysis performed by SPSS version 10.1.3. SPSS Inc (Chicago, Illinois, USA).

RESULTS

Altogether 86 doctors and 400 patients were screened to enter the study. After exclusion of patients who were too ill (14%), confused (14%), did not speak English (2%) or declined consent (2%), there were 276 patients and 86 doctors whose views were included in the analysis; 56% of the patients and 45% of doctors were female. The mean age of patients was 63 (range 17–100); the mean age of doctors was 30 (range 23–48). Overall significantly fewer doctors (24%) than patients (56%) thought that doctors should wear white coats (χ^2 test, $p < 0.001$). No patients or doctors gave reasons other than those in lists A and B for their views.

Patients

Variation of patients' views according to age is shown in fig 1. Significantly more of those aged over 70 thought their doctors should wear white coats in comparison with those under 70 (χ^2 test, $p < 0.001$). Patients aged 30–39 were least likely to want their doctor to wear a white coat. Multifactorial analysis showed those aged over 80 had a 9.18-fold increase in odds of preferring white coats. Most had previously been admitted to hospital (87%), however, previous admissions did not make a difference to patients' views.

Fifty six percent said that their doctors wear white coats. A significant difference in views was seen between those who said their doctor wore a white coat and those who said their

Table 1 List of questions answered by patients (list A) and doctors (list B) to determine their views about the wearing of white coats

<p>List A</p> <p>Doctors should wear white coats because:</p> <ul style="list-style-type: none"> Of tradition Ease of identification of doctor They prevent infection It looks more professional <p>Doctors should not wear white coats because:</p> <ul style="list-style-type: none"> Of the infection risk They interfere in the doctor-patient relationship <p>List B</p> <p>I wear a white coat because of:</p> <ul style="list-style-type: none"> Peer pressure Tradition The pockets for books/equipment Identification as doctor They look professional They prevent infection They keep clothes clean <p>I do not wear a white coat because of:</p> <ul style="list-style-type: none"> The infection risk They are hot/uncomfortable Difficulty in obtaining one They interfere in the doctor-patient relationship Peer pressure

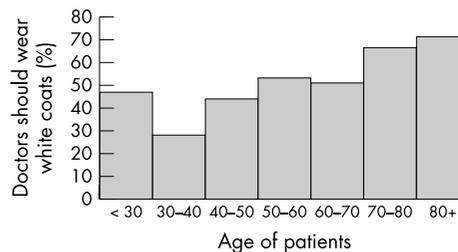


Figure 1 Variation in patients' views, according to age, on whether doctors should wear white coats.

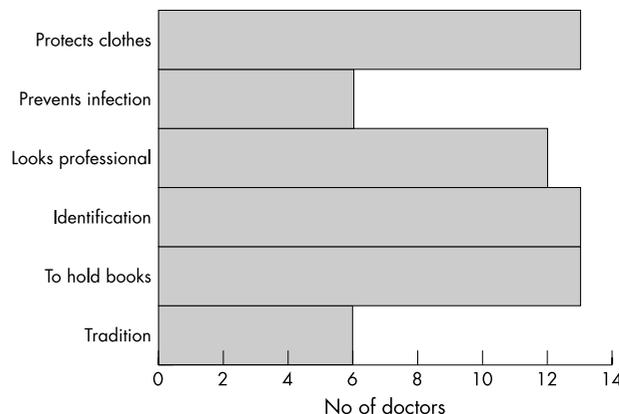


Figure 2 Reasons for doctors to wear white coats in hospital.

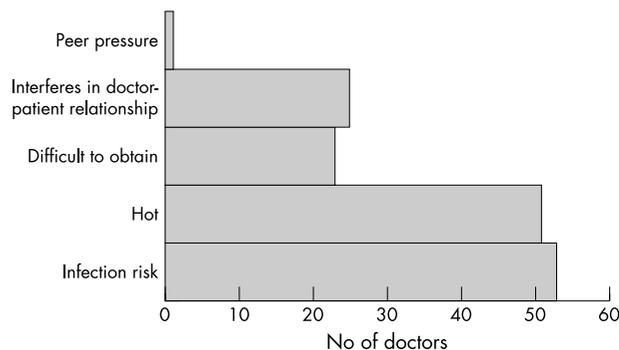


Figure 3 Reasons for doctors not to wear white coats in hospital.

doctor did not (χ^2 test, $p < 0.001$). Those whose doctor wore a white coat had a 3.37-fold increase in the odds of preferring white coats. Logistical regression analysis demonstrated that the effects of age and own doctor's use of white coats were independently related to the preference for doctors to wear white coats.

Of 154 who said doctors should wear white coats the following reasons were given: tradition ($n = 18$), ease of identification ($n = 83$), looks more professional ($n = 33$), and prevents infection ($n = 18$).

Only 13 of the 122 who didn't want their doctors to wear white coats clarified their view: two said they were an infection risk and 11 felt they interfered in the doctor-patient relationship.

There was no difference between the views of male or female doctors or patients.

Doctors

As with patients, older doctors were more likely to think that doctors should wear white coats (χ^2 test, $p = 0.006$ under or over 30.)

There were no significant differences between specialty groups but there were some notable trends. Twelve of the 52 from the medical specialties thought doctors should wear white coats. Psychiatrists (0/5) and paediatricians (1/8) were least likely to wear white coats. Surgeons (5/16) and gynaecologists (1/2) were most likely to wear white coats.

The reasons justifying doctor's decisions on whether or not to wear white coats is shown in figs 2 and 3.

Of those who felt that doctors should wear white coats, 52% never did. However, only one doctor admitted to peer pressure as a factor in their choice.

DISCUSSION

Our study showed that 56% of patients ($n = 400$) favoured doctors wearing white coats. These findings are similar to those of Harnett,⁴ Tiwari *et al*,⁵ and Dunn *et al*² who found that 59% of oncology patients ($n = 180$), 62% of inpatients at Harlow hospital ($n = 160$), and 65% of inpatients ($n = 200$) respectively, favoured white coats. This differs from the more recent findings of Dover¹ and Gooden *et al*³ who found that

48% of patients ($n = 300$) and 36% of inpatients ($n = 154$), respectively, favoured white coats. The variation in these results reflects the differing opinions of patients in different countries and time periods. The relative similarity of our results to those of Tiwari *et al*, which was conducted within a year of our own and in the same region of the UK, supports our results.

In comparison to a similar sized London teaching hospital our study has shown that there has been a considerable decline in the use of white coats since 1991, mainly among the more junior staff. A study in St Mary's Hospital, London in 1991 found that 72% of all hospital doctors and medical students wore white coats and most wore them for greater than 75% of the time (compared with 13% in our study).⁶ Although medical opinion in London is changing away from the white coat, others feel they still have a positive role. In the USA robing ceremonies are common,⁷ and Van Der Weyden from Australia suggests the time might be right to

rediscover the white coat as a symbol of our purpose and pride as a profession.⁸

Seventy percent of the doctors sampled said they thought white coats transmit hospital acquired infections. In contrast less than 1% of patients expressed the view that white coats could be a health hazard, while 6.5% said they help prevent infections. These differences may be related to awareness about the risk factors for transmitting hospital acquired infections. We were unable to find studies that demonstrated that wearing white coats increased the risk of hospital acquired infection. However, several studies have documented bacterial contamination of both white coats and nurses' uniforms, suggesting a potential risk.⁹⁻¹² One survey of 100 doctors at the East Birmingham Hospital isolated *Staphylococcus aureus* from 25% of coats.¹² Further studies are required to determine if suits, shirts, or ties worn by doctors are similarly colonised and to examine if not wearing white coats reduces hospital acquired infections.

The fact that 70% of over 80 year olds in our sample would like their doctors to wear white coats is a strong argument for these patients either to be educated about the disadvantages of doctors wearing white coats, or for doctors to change their behaviour and wear them. In view of the evidence showing white coats as a potential source of infection we favour the former policy. Only 45% of patients aged less than 70 think doctors should wear white coats, suggesting the move away from the white coat by doctors is justified.

Gooden *et al* noted in their study that patients appeared more likely to want a white coat to be worn if the investigator wore a white coat, however this effect was not statistically significant.³ Neither of the investigating doctors wore a white coat while speaking to patients in our study and so we cannot verify this finding. However, we have shown that patients' views are significantly influenced by the behaviour of their own doctors.

The selection of doctors in this study introduces a potential bias. Consultants were under-represented and no doctors over 48 were included but otherwise a good mix of grades and specialties was obtained. The paucity of older doctors means that the mean age of the doctors is much lower than that of the patients. However it is the younger doctors who are more visible on a daily basis to patients. Thus, the behaviour of younger doctors is more relevant to patients and this study.

We found psychiatrists and paediatricians to be least likely to wear white coats. A number of psychiatrists and paediatricians said that they did not wear white coats because their patients found them threatening and hence they interfered in the doctor-patient relationship. The views of our paediatricians may reflect the findings of a study by Barrett and Booth who found children regard formally dressed doctors as competent but not friendly, and those casually dressed as friendly but not competent.¹³ Further studies are needed to see if adult patients hold similar views.

A possible bias of this study is that psychiatric patients and children where excluded while their doctors were included.

Of the reasons given by patients for doctors to wear white coats the most common reasons in our study, as in Harnett's,⁴ were for easy identification and because white coats made doctors look more professional. Only seven (12.3%) of the doctors sampled wore a white coat on every working day. However, 56% of patients said that their doctors wear white coats. This discrepancy is of concern because it suggests other groups who wear white coats (phlebotomists, porters, and electricians) may be mistaken for doctors. In a hospital where other health care workers wear white coats, perhaps a stethoscope and name badge would be a better form of identification.

Doctors and patients (especially those over 70) have significantly different views on whether doctors should wear white coats. Patients want to be able to identify their doctors and see the white coat as a means of achieving this. Further studies are needed to assess whether this affects patients' perceived quality of care, and whether patient education about infection risk, and the fact that other staff also wear white coats, will alter their view.

ACKNOWLEDGEMENTS

We would like to thank Dr R Morris from the Department of Primary Care and Population Studies of the Royal Free and University College London Medical School for his help in analysing the data.

Authors' affiliations

J Douse, E Derrett-Smith, K Dheda, J P Dilworth, Department of Thoracic Medicine, Royal Free Hospital NHS Trust, Royal Free and UCL Medical School, London, UK

REFERENCES

- 1 Dover S. Glasgow patients' attitude to doctors' dress and appearance. *Health Bull (Edinb)*, 1991;**49**:293-6.
- 2 Dunn JJ, Lee TH, Percelay JM, *et al*. Patient and house officer attitudes on physician attire and etiquette. *JAMA* 1987;**257**:65-8.
- 3 Gooden BR, Smith MS, Tattersall JN, *et al*. Hospitalised patients' views on doctors and white coats. *Med J Aust* 2001;**175**:219-21.
- 4 Harnett PR. Should doctors wear white coats? *Med J Aust* 2001;**174**:343-4.
- 5 Tiwari A, Abeyasinghe N, Hall A, *et al*. Should doctors wear white coats? The patients' perspective. *J Eval Clin Pract* 2001;**7**:343-5.
- 6 Farraj R, Baron JH. Why do hospital doctors wear white coats? *J R Soc Med* 1991;**84**:43.
- 7 Wear D. On white coats and professional development: the formal and the hidden curricula. *Ann Intern Med* 1998;**129**:734-7.
- 8 Van Der Weyden MB. White coats and the medical profession. *Med J Aust* 2001;**174**:324-5.
- 9 Babb JR, Davies JG, Ayliffe GA. Contamination of protective clothing and nurses' uniforms in an isolation ward. *J Hosp Infect* 1983;**4**:149-57.
- 10 Grys E, Pawlaczyk M. Does a physician's apron protect against nosocomial infection? *Ginekol Pol* 1996;**67**:309-12.
- 11 Loh W, Ng W, Holton J. Bacterial flora on the white coats of medical students. *J Hosp Infect* 2000;**45**:65-8.
- 12 Wong D, Nye K, Hollis P. Microbial flora on doctors' white coats. *BMJ* 1991;**303**:1602-4.
- 13 Barrett TG, Booth IW. Sartorial eloquence: does it exist in the paediatrician-patient relationship? *BMJ* 1994;**309**:1710-2.