A SURGEON'S DRESS CODE: THE PATIENTS' PERSPECTIVE

MMed Surgery

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A Surgeon's Dress Code: The Patients' Perspective

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ABSTRACT

Background: The dress code for surgeons has evolved over time from formal suit-and-tie, to crisp white coat, and currently to various forms of smart-casual attire, but still, there is no stipulated or rigid uniform guideline. It must be of paramount significance to explore and discuss various attire in relation the patients 'ideals and perceptions if we are to accurately assess what a South African patient expects and, therefore, perceives of their surgeon.

Study Design: An observational study in the form of a paper-based questionnaire.
Setting: The survey was carried out at Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), Chris Hani Baragwanath Academic Hospital (CHBAH) and Wits Donald Gordan Medical Centre (WDGMC).
Objective: Descriptive analysis of the survey responses, and the determination of the association between survey responses and a) Hospital, b) Gender, c) Age group.
Participants: 387 questionnaires were filled out with a total sample size of 376 fully completed and eligible sample used (consenting participants of 18years and older).
Methodology: Fisher's exact test was used where the requirements for the X2 test could not be met. Attire groups with n<15 were not analysed. The strength of the associations was measured by Cramer's V and the phi coefficient respectively. Data analysis was carried out using SAS v9.4 for Windows. A 5% significance level was used. Seven Questions (Q1 – Q7) were posed with various dress categories to select from in each question, namely: 'Formal', 'Smart', 'Smart Casual', and 'Scrubs.
Results: In all 7 questions, 'Scrubs' were the preferred attire. Overall, For Q1-Q5 and Q7, after 'Scrubs', 'Smart' was the next most popular attire. For Q6, after 'Scrubs', 'Smart', 'Smart Casual' and 'Formal' were all popular, indicating some leeway on weekends/public holidays. There was a significant, moderate, association between the responses to the question and hospital ($p<0.0001$; Cramer's $V=0.47$): At CHBAH, patients preferred 'Scrubs' more and 'Smart' attire less, compared to CMJAH and WDGMC. At CMJAH, 'Formal' attire was more preferred compared to the other two hospitals.
Conclusion: As there is no stringent rule of dress code for surgeons, the patients 'opinions must, therefore, be considered and have some degree of influence as to how we present ourselves in our

working environments. Overall, patients preferred their surgeons to be dressed in scrubs – as this form of attire was found to be easily identifiable and evoked confidence in such attire.

Introduction

The perception of how a surgeon should present themselves dates back to the time of Hippocrates (460 BC – 370BC) who recommended that physicians be "clean in person, well-dressed…." (Hospitalist, 2014). The dress code of a surgeon has been one that has been contested recently (as evidenced by the updated guidelines on appropriate surgeon attire by the American College of Surgeons in 2016), and its progression through the centuries has evolved from formal suit-and-tie, to crisp white coat (Hochberg,MS, 2007), and currently to various forms of smart-casual attire. The importance of a surgeon's attire may be considered with regards to the patient-doctor relationship; the basis of a good patient-physician relationship depends on mutual trust, confidence and respect (Petrilli et al, 2014). It would be intuitive to consider this relevant because a patient's perception of their surgeon's aptitude determines various dynamics including the patient's ability to fully confide in the surgeon, compliance to overall management, and ensuring there is dual participation in this relationship. Therefore, to some degree, first impressions of appearance and/or professional attire have a bearing of the advancement of the patient-doctor relationship. The way in which a surgeon presents themselves should allow them to be recognized as a doctor, evoke a level of trust from the patient and, thus, emulate a degree of competency.

Literature Review

Bond et al, 2010, explored the 2007 published 'Uniforms and Workwear: an Evidence Base for Guiding Local Policy by the Department of Health (DoH) in the United Kingdom'with regards to no clothing below the elbow ('bare below the elbow'), removal of wrist watches and hand jewelry, and removal of neckties. This study showed an obvious preference for either the formal attire or scrubs as compared with 'bare below the elbow'; subgroups displayed that scrubs were selected as the most hygienic, whilst formal attire was the selected preference as being most professional and easiest to identify a doctor. 'Bare below the elbow 'was deliberated least acceptable in all subcategories and overall. The discussion, therefore, must be referred back to the DoH Uniform and Workwear document for the National Health Services in the United Kingdom which indicates that public confidence and infection control should reinforce a uniform policy but keeping in mind that these two facets are not interchangeable. As there is no clear or unbiased evidence (Bond et al, 2010) that associates doctors' attire to hospital-acquired infection transmission, the 'bare below the elbow'' becomes less relevant; adding to that, based on this study, it has been suggested that patients do not view this type of dress code in a favourable light in any category (Bond et al, 2010). This article furthermore suggested, a possible compromise of using the scrubs attire in clinical situations and then the formal attire being worn during non-clinical encounters (i.e.: an outpatient clinic) and in doing so, facilitates a patient perception of trust and competency whilst ensuring some level of patient safety with regards to hygiene.

In The Ochsner (Louisiana) Journal 2013, Landry M, Dornelles AC, and Deichmann RE, conducted an observational study to consider the patients 'preferences for clinical attire' (Landry, 2013). It was evident in this study that patients preferred coated attire as compared with non-coated and 'bare below the elbow 'attire. This finding is in keeping with results in three other studies, namely, Rehman et al, Douse et al, and Gherardi et al; though there are other studies that contradict this finding – Gooden et al, Cha et al, and Hueston and Carek. This, altogether, emphasizes the complexity of exploring this topic as there are multiple factors that influence the results. This particular study showed that white coats create some perceptible influence to a patient's comfort and confidence with a doctor. 'Bare below the elbow 'attire scored the lowest in all categories, including low patient comfort and an inability to inspire confidence in their doctor, and finally overall it was the least favoured attire. Unfortunately, the exact reasons for the disapproval of 'bare below the elbow 'attire were not explored specifically, but a few patients did point out that they would not be able to identify a person dressed like this as a doctor, and that this resembled a salesman. Others noted that this form of dress seemed 'unclean', 'sloppy', and 'unprofessional'. Possible reasons for a preference of white coats may be easy doctor identification, a clean and professional appearance, and contributing to the patient-doctor relationship by inspiring confidence and comfort (Landry, 2013). In this study, the majority of patients did not seem to be aware of the debate around transmission of pathogenic microbes via white coats, but after being given information on this topical issue, this did not alter their preference for white coats. There was a degree of selection bias and most of these patients were accustomed to seeing doctors in white coats as this was the 'standard 'attire in this region. The pitfalls of this study were in the survey not being externally validated; patients were selected from a private health facility and, thus, narrowing the demographic variety; and lastly, patients selected were not of different medical speciality departments, but rather, they were from a single medical speciality and its associated clinics and wards. Once again, current evidence does not definitively associate white coats with increased transmission of infection, therefore, whether white coats whould or should not be part of the dress code for a particular institution needs to be carefully considered prior to making further uniform-attire changes or recommendations.

As per an article published in AMA Journal of Ethics iscussing the history of medicine, in the 1800s doctors adopted the beige-coloured coat worn by scientists in an attempt to associate themselves with the science community in order to achieve trust from the general public (Hochberg MS, 2007). The beige colour was later replaced by the white colour with the intention of representing cleanliness and purity and in keeping with the Hippocratic Oath: "to do no harm". Because of the 2007 studies that emerged stating that twenty-three percent of white coats where found to be contaminated with Staphylococcus Aureus of which eighteen percent were MRSA, concern escalated which led to the United Kingdom (UK) discontinuing white coats as being part of the medical attire, and the American Medical Association (AMA) advocating for a dress code that would decrease any form of infection transmission (So et al, 2013). Thus, the 'bare below the elbow 'policy was put forward in the hopes that this would decrease clothing acting as a vector for spreading infections, even in the light of inconclusive data supporting this theory, as evidenced by the 2007 Guidelines issued by the Department of Health in the United Kingdom for the National Health Service. This study aimed to achieve four goals, namely: '1) Patients 'acceptance of physicians attire; 2) Their perceived values of the white coat; 3) Their preferred and perceived frequencies of white-coat cleaning; 4) Changes in patients 'acceptance after an educational intervention concerning the potential risk of microbial

contamination of doctors 'clothing (So et al, 2013)'. This study showed that most patients still prefer white coats, which is in keeping with other studies that have been conducted to date (Landry, 2013). In the So et al study, scrubs were viewed to be more hygienic, and the study population (patients) favoured how the white coat depicted the hygiene the attending doctor – these are similar findings to studies done in the UK and well as the United States of America (USA). In this study, an inherent perception of doctors' professionalism that is linked to the attire of a white coat may be considered when reasoning why the majority of patients still favour a white coat. Alternatively, So et al discussed that the white coat preference may also be because patients think that these white coats are being washed regularly, once every few days to once a week. Drawbacks to the study included a population size that was small and limited to one location, the context and manner in which the microbial contamination of white coats was detected or assessed – whether patients fully comprehended this statement, and this questionnaire was not validated (So et al, 2013). But, none-the-less, white coats continue to assume a role in the establishment of the patient-doctor relationship, and therefore, this must be meticulously and deliberately considered when making recommendations about whether white coats should be worn or not. As there is no link between white coat contamination and increased risk of hospital-acquired infections, all recommendations have to contemplate a balance between the actual risk of infection transmission and contamination of coats (Bond et al, 2010).

A study that was embarked upon to systematically review literature 'hypothesizing that patients will prefer formal attire in most settings 'and also 'postulated that context of care will influence patient perceptions on attire 'was by Petrilli CM et al in 2014. This review discovered that formal attire with or without white coats, or a white coat with other attire was favoured in most cases (approximately 60%). In keeping with this trend, it was evident that patients of roughly forty years or older) and Asian and European patients, preferred formal attire. The patient age and the context in which the care was being provided or received had some influence on the patients 'perceptions of their attending doctor's attire (Patrilli et al, 2014). Various cultures have a bearing on a patient's perception and expectations of their attending doctor, but it is still clear that more studies are needed to assess the complex issue of medical attire; its influence on the patient-doctor relationship; and subsequent interaction, (Patrilli et al, 2014). As there are many factors influencing the patients 'perceptions, these would need to be explored individually and in detail to accurately guide recommendations of appropriate medical attire. This review has suggested that blanket policies that are applied to all healthcare specialities and settings may not necessarily improve or benefit the patient-doctor rapport. Thus, before policies on dress code are implemented, it needs to be researched and discussed and studied rigorously in each context in an effort to ensure patients still have a sense of confidence, trust and satisfaction from their doctors based on ther attire.

As referenced by Hochberg in the history of medicine, the doctors 'attire has evolved slowly for a number of centuries. The appearance and presentation of a doctor described as far back as Hippocrates – approximately 400BC. It has been a 'uniform 'that has never been clearly defined yet has held a great deal of importance in defining how the profession is represented to and therefore regarded by the general public. The introduction of the white coat in the nineteenth century to symbolise the combination of science and art that constitutes the medical profession also allowed for doctors to be more easily identifiable. The symbolism derived from the association with the science community, from which the

coats were originally borrowed from, and the white colour symbolised cleanliness and purity.This meant that the white coat had a number of functions.

In the1800s doctors (predominantly male) dressed in formal suit and necktie or bowtie attire with a doctor's medical briefcase accompanying this dress code. Over time the briefcase was no longer used as commonly and the formal suit, combined with the white coat, were the main from of attire. Notably as time went on when more females moved into the medical field, their attire too was formal, consisting initially of a blouse and a suit skirt – which later became acceptable to be interchanged with suit pants. But still, in general there was no stipulated or rigid uniform guideline (Hospitalist, 2014).

Scrubs (attire used in theatre/operating rooms) allowed doctors in a surgical setting to carry out their duties efficiently, and particularly when they were used in theatre only, represented sterility and to some degree a medley of artistic combined with scientific skill of the operating surgeon (Petrilli CM et al, 2014). Acute settings, such as emergency departments, and then many other sub-specialities (surgical, orthopaedic, Ear-Nose-Throat) , followed suit and adopted this form of dress code. Once again, doctors were easy to identify as they were less likely to be confused with businessmen or any other profession. On the reverse of this, other healthcare professionals (nursing sisters, health and rehabilitation team, radiography) began to don scrubs at work, which introduced some confusion within the healthcare setting.

With the debate ongoing as to whether doctors should or should not wear white coats, be 'bare below the elbow', or if scrubs are suitably professional for working attire, it has become quite a conundrum for surgeons to know what to wear to work. And while one may feel that the type of dress in the healthcare setting is not too important, it would be a mistake to make this assumption, seeing as the patient perception of the doctor treating them is vital from the inception of the patient-doctor interaction(Petrilli CM et al, 2014). Over many years this has become of utmost relevance because the medical profession has moved away from a didactic, paternalistic patient-doctor relationship, to a more patient-centred relationship. Hence, it clearly is of some importance that surgeons 'appearances and attire do to some extent meet the expectations of patients. The initial perception forms the basis of the level of trust, confidence, and satisfaction they will afford to their surgeon; which is essential as it plays a role in determining the level of comfort the patient has during interactions. If this is secure, patients will be more likely to freely divulge their medical, family and psychosocial history during consultations.

Motivation for the study

The dress code for surgeons has evolved over time from formal suit-and-tie, to crisp white coat, and currently to various forms of smart-casual attire, but still, there is no stipulated general uniform/attire guideline. There is relevance in exploring and discussing various attire in relation to the patient's ideals and perceptions if we are to begin to accurately assess what a South African patient expects and, therefore, perceives of their surgeon.

Purpose

An observational study in the form of a questionnaire that explores the patients' perception of their attending surgeon's attire based on assessing professionalism, ability to identify a surgeon, perception of confidence, and overall preference of dress code.

Objectives

Descriptive analysis of the survey responses, and the determination of the association between survey responses and a) Hospital, b) Gender, c) Age group.

Study Design and Methods

Observational Study using a paper-based questionnaire. Patients in the surgical inpatient wards and outpatient clinics of CMJAH, CHBAH, and DGMC, and participants to be eighteen years or older. Patients selected at random on various days of surgical outpatient clinics and current surgical ward admissions.

Sample size

Sample size estimation is based on the key research question to be answered, in this case the estimation of proportions (e.g. the proportion of respondents who chose a particular attire). Based on worst-case (for sample size) estimates of 50%, 5% precision and the 95% confidence level, a sample size of 385 would be required. The actual sample size of 376 corresponds to a precision of 5.1% rather than 5.0%, which is adequate.

Sample size for prevalence was determined using the formula:

$$n = \frac{Z^2 P(1-P)}{d^2}$$

where n = sample size,

Z = Z-statistic for the chosen level of confidence,

P = expected prevalence or proportion

d = precision

Reference: Daniel WW (2013). Biostatistics: A Foundation for Analysis in the Health Sciences. 10th edition. New York: John Wiley & Sons, Chapter 6, p191

Ethics

Ethics approval was obtained from Human Research Ethics Committee (Medical) of the University of the Witwatersrand (M180405).

Methodology

A survey consisting of 7 questions with a selection of pictures (three males and two females of different races per picture) depicting various types of attire (with and without a white coat), was distributed to surgical outpatient and surgical inpatient wards over a nine month period. This was carried out in the above mentioned hospitals, namely CHBAH, CMJAH, WDGMC.

Respondents who answered fewer than 4 of the 7 attitudinal questions were removed from the data set.

The X^2 test was used to assess the relationship between question responses and hospital, gender and age group. Fisher's exact test was used where the requirements for the X^2 test could not be met. Attire groups with n<15 were not analysed. The strength of the associations was measured by Cramer's V and the phi coefficient respectively. The following scale of interpretation was used:

0.50 and above	high/strong association
0.30 to 0.49	moderate association
0.10 to 0.29	weak association
below 0.10	little if any association

Data analysis was carried out using SAS v9.4 for Windows. A 5% significance level was used.

Results

A total of 387 questionnaires were conducted in CHBAH, CMJAH, and WDGMC over a period of 6months:

89 completed questionnaires from WDGMC: 46 Females and 43 males.

142 completed questionnaires from CMJAH: 68 Females and 74 males

154 completed questionnaires from CHBAH: 81 Females and 75 males

However, the actual sample size of 376 of eligible and fully completed questionnaires was used.

A total of seven questions made up the questionnaire with eight picture options available to choose from for each question, namely:

A: Formal attire

B: Formal attire with white coat

C: Smart attire

D: Smart attire with white coat

E: Smart Casual attire

F: Smart Casual attire with white coat

G: Scrubs

H: Scrubs with white coat

Comparing the male-to-female choices of the three hospitals against age groups, the following overall results have been found:

Descriptive statistics

The three hospitals, as well as the genders and age groups, were all fairly well represented in the sample.

The figures below (Figures 1-8) show the responses of the patients and their preference of dress code. In all 7 questions, 'Scrubs' was the preferred attire.
The descriptive statistics for the question responses are tabulated (Table 1-8) below the associated figures.

Figure 1: Determination of the association between survey responses and hospital, gender and age group

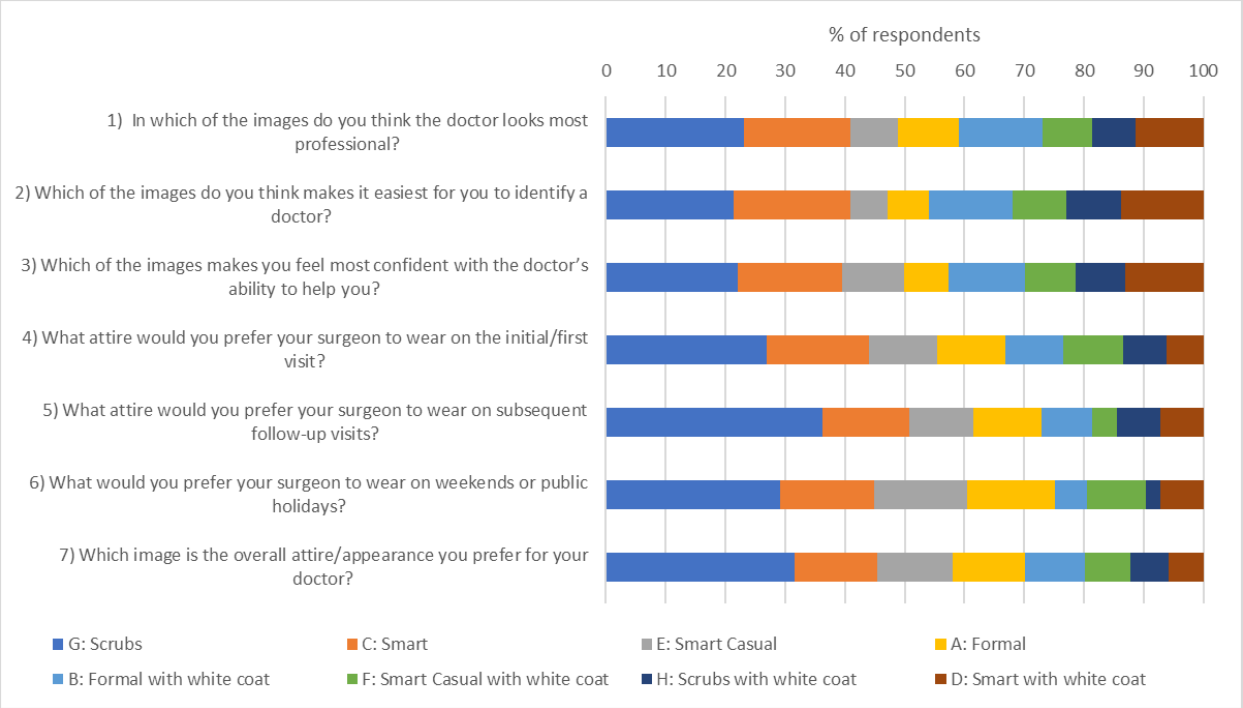


Table 1: Tabulated overall participants of the survey according to hospital, gender, and age

		Overall		Hospital							Gender					Age (y)										
				CHBAH		CMJAH		WDGMC		p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
n		376		146		141		89			190		158			36		97		80		80		63		

		Overall	
Characteristic	**Category**	**n**	**%**
n		**376**	
Hospital	CHBAH	146	38,8
	CMJAH	141	37,5
	WDGMC	89	23,7
Gender	Female	190	54,6
	Male	158	45,4
	Unknown	28	
Age (y)	18-30	36	10,1
	31-40	97	27,2
	41-50	80	22,5
	51-65	80	22,5
	>65	63	17,7
	Unknown	20	

Figure 2: Q1 In which of the images do you think the doctor looks most professional?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.44): At CHBAH, patients preferred Scrubs more, and Smart attire less, compared to CMJAH. There was no significant association between the responses to this question and patient gender (p=0.61) or age (p=0.82).

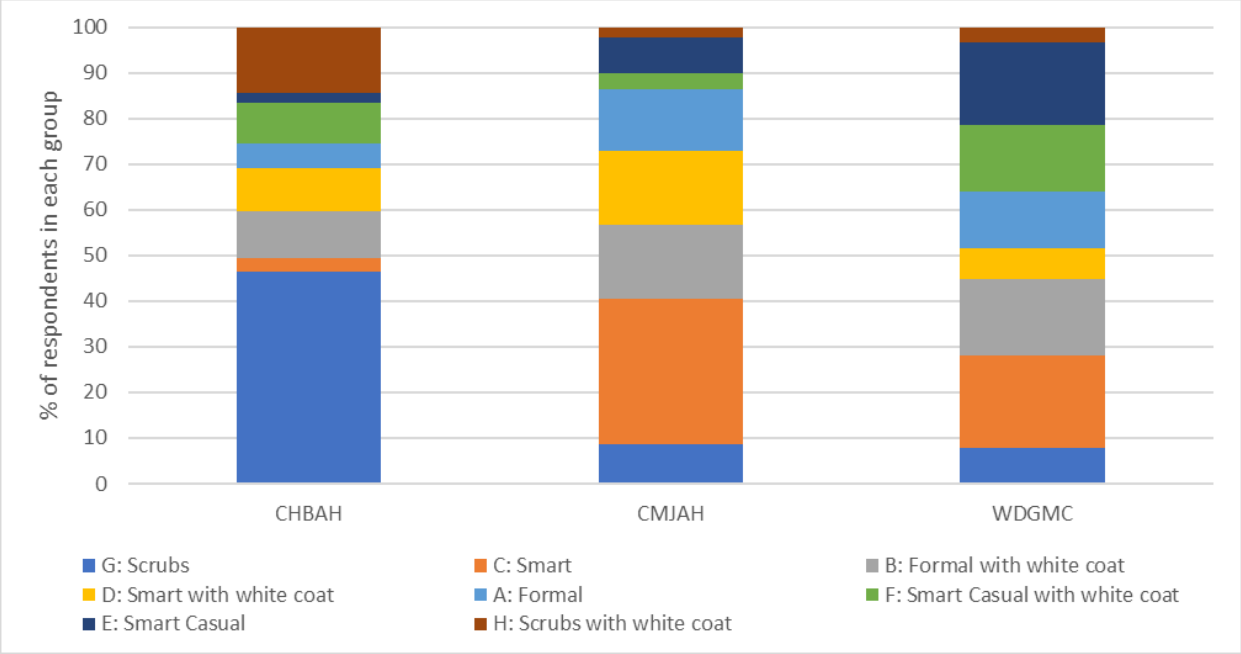
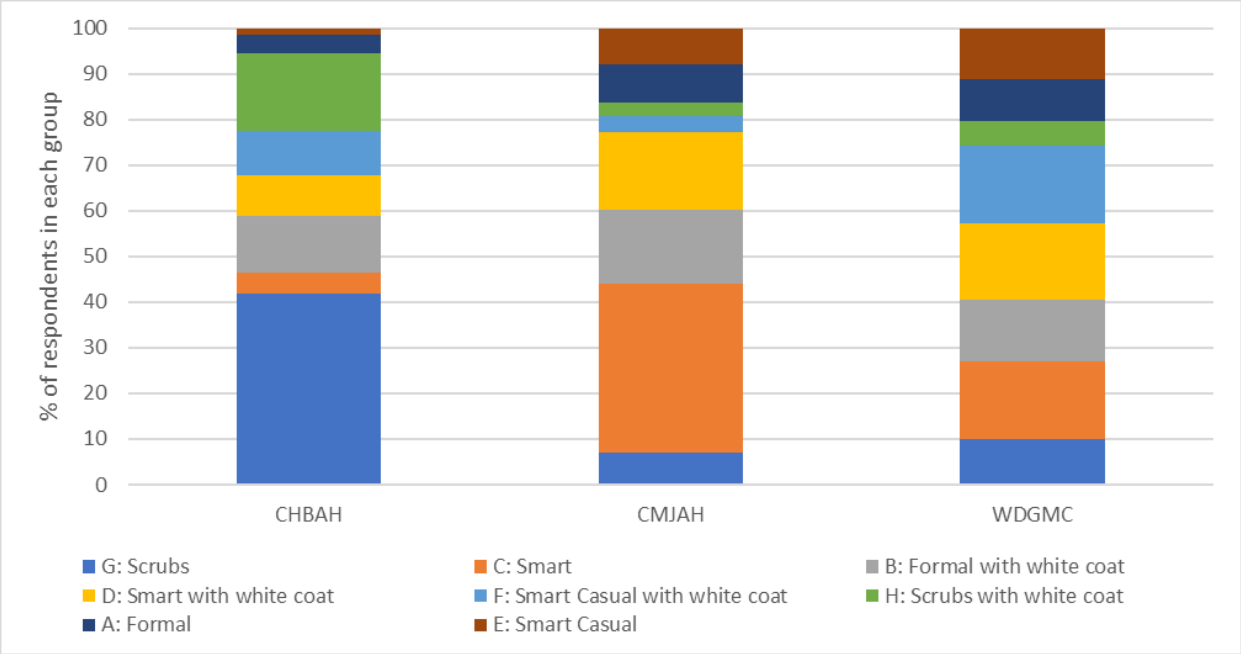


Table 2: Tabulated responses for Q1 according to hospital, gender, and age

		Overall		Hospital						Gender					Age (y)										
				CHBAH		CMJAH		WDGMC	p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q1 In which of the images do you think the doctor looks most professional?	G: Scrubs	87	23,1	68	46,6	12	8,5	7	7,9	<0.0001 (V=0.44)	46	24,2	33	20,9	0,61	11	30,6	26	26,8	17	21,3	14	17,5	12	19,0	0,82
	C: Smart	67	17,8	4	2,7	45	31,9	18	20,2		34	17,9	32	20,3		7	19,4	15	15,5	16	20,0	16	20,0	12	19,0	
	B: Formal with white coat	53	14,1	15	10,3	23	16,3	15	16,9		30	15,8	18	11,4		5	13,9	13	13,4	10	12,5	9	11,3	14	22,2	
	D: Smart with white coat	43	11,4	14	9,6	23	16,3	6	6,7		17	8,9	21	13,3		2	5,6	12	12,4	7	8,8	11	13,8	7	11,1	
	A: Formal	38	10,1	8	5,5	19	13,5	11	12,4		19	10,0	13	8,2		4	11,1	11	11,3	4	5,0	9	11,3	7	11,1	
	F: Smart Casual with white coat	31	8,2	13	8,9	5	3,5	13	14,6		13	6,8	17	10,8		3	8,3	7	7,2	10	12,5	8	10,0	2	3,2	
	E: Smart Casual	30	8,0	3	2,1	11	7,8	16	18,0		17	8,9	12	7,6		1	2,8	5	5,2	9	11,3	9	11,3	5	7,9	
	H: Scrubs with white coat	27	7,2	21	14,4	3	2,1	3	3,4		14	7,4	12	7,6		3	8,3	8	8,2	7	8,8	4	5,0	4	6,3	

Figure 3: Q2 Which of the images do you think makes it easiest for you to identify a doctor?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.42): At CHBAH, patients preferred Scrubs more, and Smart attire less, compared to CMJAH.



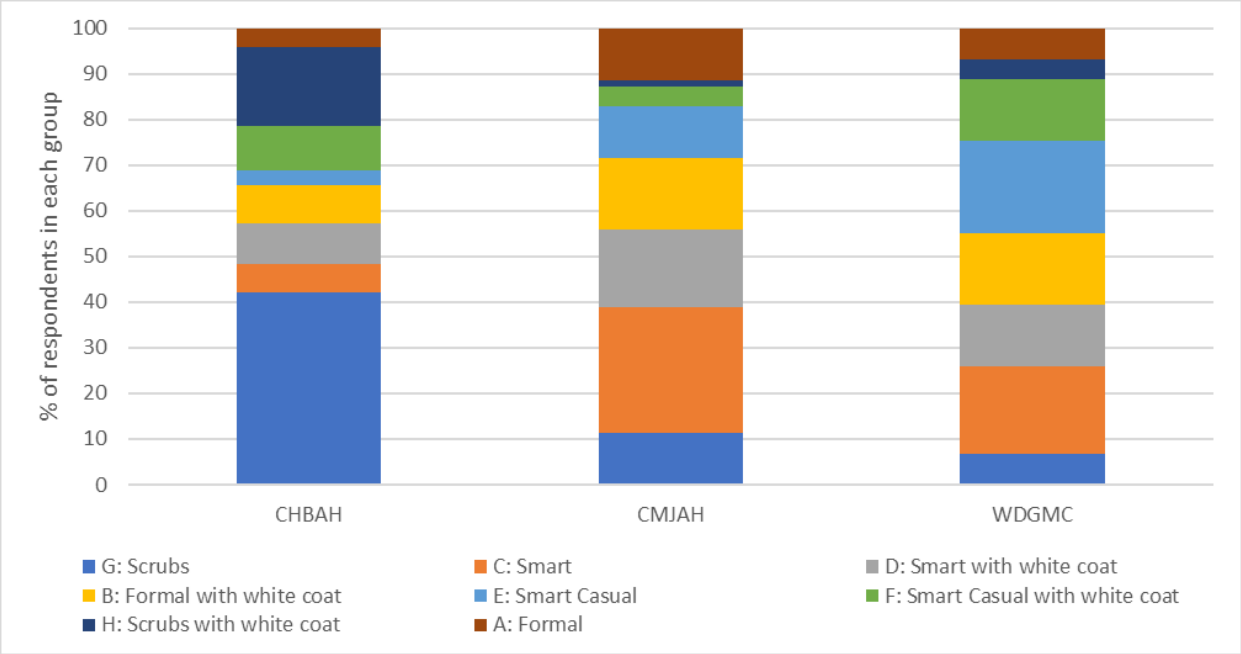
There was no significant association between the responses to this question and patient gender (p=0.66).There was a significant, weak, association between the responses to this question and patient age group (p=0.0040; Cramer's V=0.19): Older patients were more likely to prefer Formal with white coat, and less likely to prefer Smart and Scrubs, compared to younger patients.

Table 3: Tabulated responses for Q2 according to hospital, gender, and age

		Overall		Hospital						Gender					Age (y)										
				CHBAH		CMJAH		WDGMC	p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q2 Which of the images do you think makes it easiest for you to identify a doctor?	G: Scrubs	80	21,3	61	41,8	10	7,1	9	10,1	<0.0001 (V=0.42)	42	22,1	32	20,3	0,66	14	38,9	25	25,8	16	20,0	10	12,5	11	17,5	0.0040 (V=0.19)
	C: Smart	74	19,7	7	4,8	52	36,9	15	16,9		35	18,4	36	22,8		8	22,2	21	21,6	18	22,5	19	23,8	6	9,5	
	B: Formal with white coat	53	14,1	18	12,3	23	16,3	12	13,5		31	16,3	15	9,5		3	8,3	10	10,3	11	13,8	10	12,5	15	23,8	
	D: Smart with white coat	52	13,8	13	8,9	24	17,0	15	16,9		27	14,2	23	14,6		2	5,6	18	18,6	5	6,3	11	13,8	13	20,6	
	F: Smart Casual with white coat	34	9,0	14	9,6	5	3,5	15	16,9		15	7,9	17	10,8		3	8,3	6	6,2	8	10,0	10	12,5	5	7,9	
	H: Scrubs with white coat	34	9,0	25	17,1	4	2,8	5	5,6		16	8,4	15	9,5		2	5,6	9	9,3	9	11,3	6	7,5	5	7,9	
	A: Formal	26	6,9	6	4,1	12	8,5	8	9,0		12	6,3	11	7,0		3	8,3	2	2,1	3	3,8	9	11,3	8	12,7	
	E: Smart Casual	23	6,1	2	1,4	11	7,8	10	11,2		12	6,3	9	5,7		1	2,8	6	6,2	10	12,5	5	6,3	0	0,0	

Figure 4: Q3 Which of the images makes you feel most confident with the doctor's ability to help you?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.40): At CHBAH, patients preferred Scrubs more, and Smart attire less, compared to CMJAH.



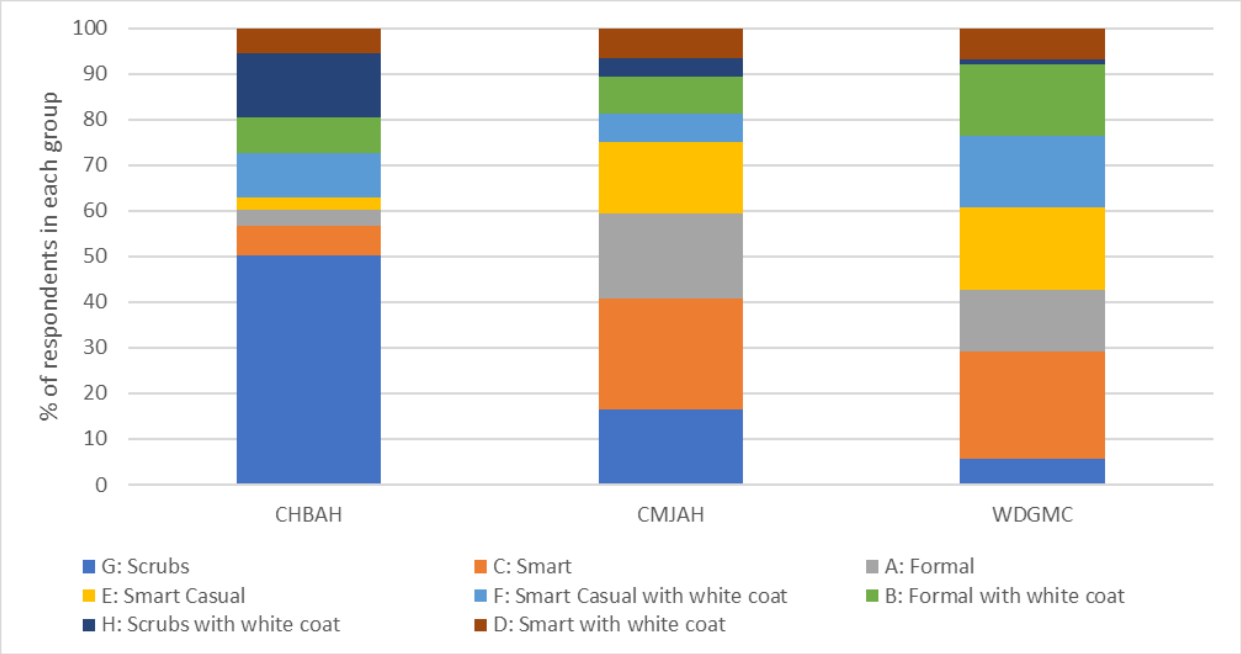
There was no significant association between the responses to this question and patient gender (p=0.99) or age (p=0.13).

Table 4: Tabulated responses for Q3 according to hospital, gender, and age

		Overall		Hospital							Gender					Age (y)										
				CHBAH		CMJAH		WDGMC		p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q3 Which of the images makes you feel most confident with the doctor's ability to help you?	G: Scrubs	83	22,1	61	42,1	16	11,3	6	6,7	<0.0001 (V=0.40)	40	21,2	35	22,2	0,99	10	27,8	24	24,7	15	19,0	18	22,5	10	15,9	0,13
	C: Smart	65	17,3	9	6,2	39	27,7	17	19,1		35	18,5	26	16,5		8	22,2	15	15,5	14	17,7	16	20,0	10	15,9	
	D: Smart with white coat	49	13,1	13	9,0	24	17,0	12	13,5		24	12,7	21	13,3		2	5,6	9	9,3	12	15,2	11	13,8	10	15,9	
	B: Formal with white coat	48	12,8	12	8,3	22	15,6	14	15,7		24	12,7	18	11,4		3	8,3	11	11,3	7	8,9	7	8,8	17	27,0	
	E: Smart Casual	39	10,4	5	3,4	16	11,3	18	20,2		20	10,6	17	10,8		1	2,8	13	13,4	10	12,7	11	13,8	3	4,8	
	F: Smart Casual with white coat	32	8,5	14	9,7	6	4,3	12	13,5		16	8,5	16	10,1		5	13,9	8	8,2	10	12,7	4	5,0	5	7,9	
	H: Scrubs with white coat	31	8,3	25	17,2	2	1,4	4	4,5		17	9,0	12	7,6		3	8,3	12	12,4	7	8,9	4	5,0	3	4,8	
	A: Formal	28	7,5	6	4,1	16	11,3	6	6,7		13	6,9	13	8,2		4	11,1	5	5,2	4	5,1	9	11,3	5	7,9	
	Not answered	1																								

Figure 5: Q4 What attire would you prefer your surgeon to wear on the initial/first visit?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.40): At CHBAH, patients preferred Scrubs more and Smart attire less, compared to CMJAH and WDGMC.



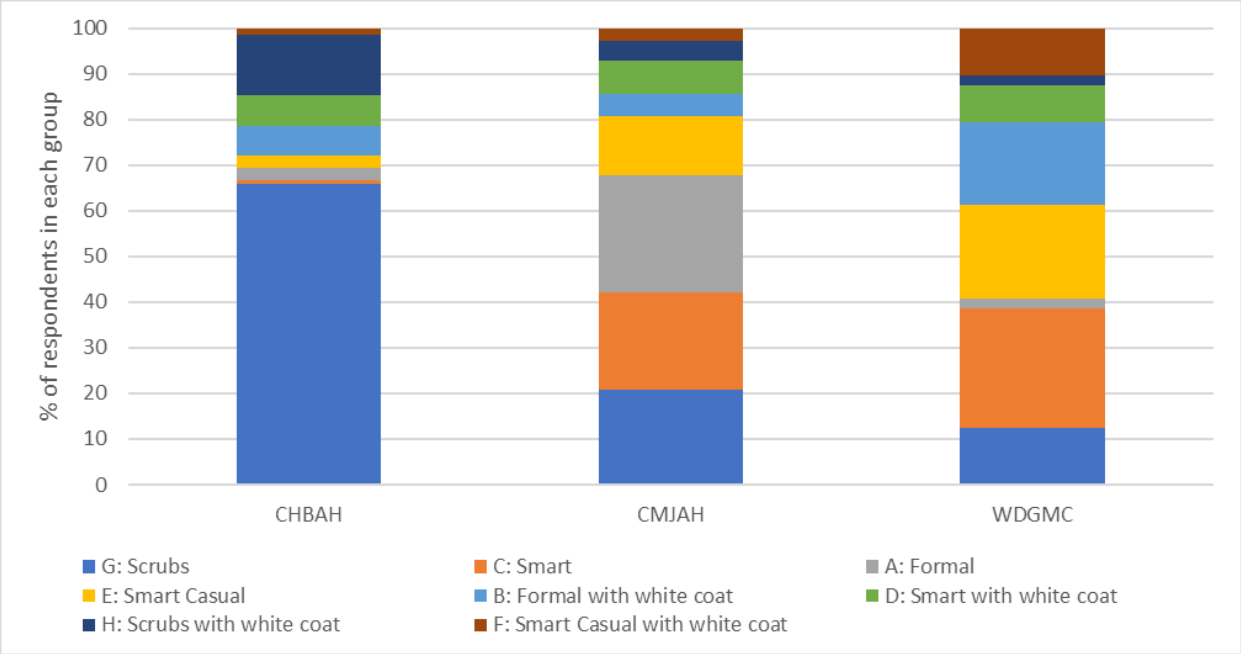
There was no significant association between the responses to this question and patient gender (p=0.12) or age (p=0.26).

Table 5: Tabulated responses for Q5 according to hospital, gender, and age

		Overall		Hospital						Gender					Age (y)										
				CHBAH		CMJAH		WDGMC	p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q4 What attire would you prefer your surgeon to wear on the initial/first visit?	G: Scrubs	100	26,9	72	50,3	23	16,4	5	5,6	<0.0001 (V=0.40)	52	27,7	39	24,7	0,12	12	35,3	26	26,8	19	24,4	25	31,3	11	17,5	0,26
	C: Smart	64	17,2	9	6,3	34	24,3	21	23,6		41	21,8	21	13,3		2	5,9	13	13,4	12	15,4	21	26,3	14	22,2	
	A: Formal	43	11,6	5	3,5	26	18,6	12	13,5		23	12,2	18	11,4		6	17,6	12	12,4	6	7,7	9	11,3	10	15,9	
	E: Smart Casual	42	11,3	4	2,8	22	15,7	16	18,0		18	9,6	21	13,3		7	20,6	13	13,4	9	11,5	7	8,8	4	6,3	
	F: Smart Casual with white coat	37	9,9	14	9,8	9	6,4	14	15,7		15	8,0	20	12,7		3	8,8	9	9,3	13	16,7	4	5,0	6	9,5	
	B: Formal with white coat	36	9,7	11	7,7	11	7,9	14	15,7		15	8,0	18	11,4		1	2,9	10	10,3	7	9,0	6	7,5	10	15,9	
	H: Scrubs with white coat	27	7,3	20	14,0	6	4,3	1	1,1		16	8,5	8	5,1		2	5,9	8	8,2	6	7,7	3	3,8	5	7,9	
	D: Smart with white coat	23	6,2	8	5,6	9	6,4	6	6,7		8	4,3	13	8,2		1	2,9	6	6,2	6	7,7	5	6,3	3	4,8	
	Not answered	4																								

Figure 6: Q5 What attire would you prefer your surgeon to wear on subsequent follow-up visits?

There was a significant, strong, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.50): At CHBAH, patients preferred Scrubs more and Smart attire less, compared to CMJAH and WDGMC. At CMJAH, Formal attire was more preferred compared to the other two hospitals.



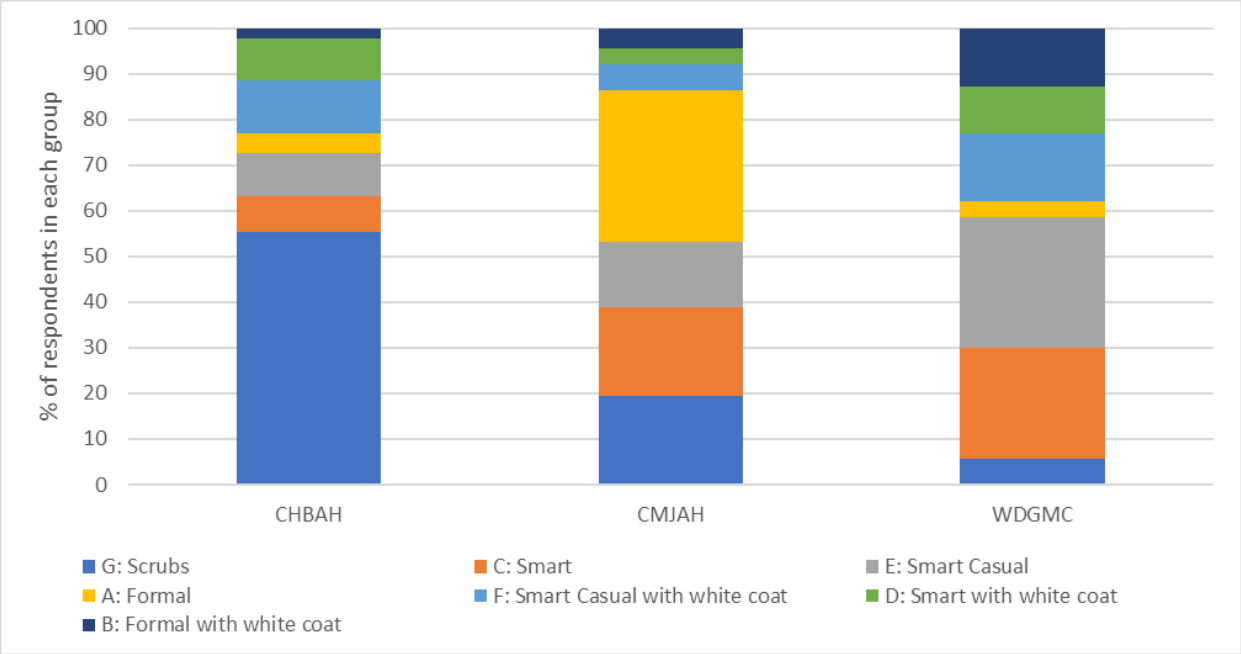
There was no significant association between the responses to this question and patient gender (p=0.27) or age (p=0.70).

Table 6: Tabulated responses for Q5 according to hospital, gender, and age

		Overall		Hospital						Gender					Age (y)									
				CHBAH		CMJAH		WDGMC	p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q5 What attire would you prefer your surgeon to wear on subsequent follow-up visits?	G: Scrubs	135	36,3	95	66,0	29	20,7	11	12,5	<0.0001 (V=0.50)	79	41,6	51	32,7	0,27	17	48,6	37	38,1	31	39,7	28	35,0	17	27,4	0,70
	C: Smart	54	14,5	1	0,7	30	21,4	23	26,1		34	17,9	19	12,2		2	5,7	15	15,5	12	15,4	14	17,5	10	16,1	
	A: Formal	42	11,3	4	2,8	36	25,7	2	2,3		18	9,5	18	11,5		4	11,4	8	8,2	9	11,5	9	11,3	10	16,1	
	E: Smart Casual	40	10,8	4	2,8	18	12,9	18	20,5		16	8,4	21	13,5		5	14,3	12	12,4	7	9,0	10	12,5	3	4,8	
	B: Formal with white coat	32	8,6	9	6,3	7	5,0	16	18,2		15	7,9	14	9,0		2	5,7	8	8,2	6	7,7	5	6,3	10	16,1	
	D: Smart with white coat	27	7,3	10	6,9	10	7,1	7	8,0		11	5,8	14	9,0		1	2,9	8	8,2	4	5,1	5	6,3	6	9,7	
	H: Scrubs with white coat	27	7,3	19	13,2	6	4,3	2	2,3		11	5,8	10	6,4		2	5,7	7	7,2	3	3,8	5	6,3	5	8,1	
	F: Smart Casual with white coat	15	4,0	2	1,4	4	2,9	9	10,2		6	3,2	9	5,8		2	5,7	2	2,1	6	7,7	4	5,0	1	1,6	
	Not answered	4																								

Figure 7: Q6 What would you prefer your surgeon to wear on weekends or public holidays?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.44): At CHBAH, patients preferred Scrubs more and Smart attire less, compared to CMJAH and WDGMC. At CMJAH, Formal attire was more preferred compared to the other two hospitals.



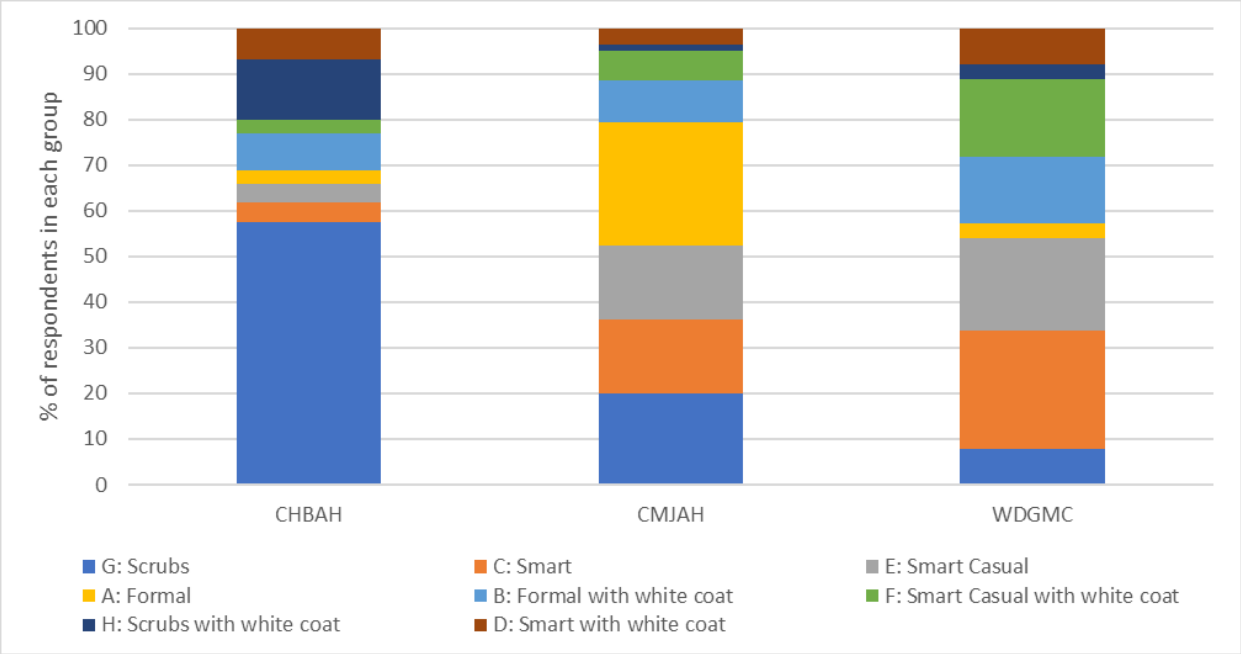
There was a significant, weak, association between the responses to this question and patient gender (p=0.0076; Cramer's V=0.23): Male patients preferred Formal attire and Smart Casual with white coat more, compared to female patients. Female patients preferred Smart Casual attire more than male patients. There was no significant association between the responses to this question and patient age (p=0.25).

Table 7: Tabulated responses for Q6 according to hospital, gender, and age

		Overall		Hospital						Gender					Age (y)										
				CHBAH		CMJAH		WDGMC	p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q6 What would you prefer your surgeon to wear on weekends or public holidays?	G: Scrubs	109	29,1	77	55,4	27	19,4	5	5,7	<0.0001 (V=0.44)	61	32,4	45	29,2	0.0076 (V=0.23)	14	41,2	32	33,3	25	32,1	20	25,6	16	25,4	0,25
	C: Smart	59	15,8	11	7,9	27	19,4	21	24,1		33	17,6	22	14,3		3	8,8	16	16,7	12	15,4	14	17,9	11	17,5	
	E: Smart Casual	58	15,5	13	9,4	20	14,4	25	28,7		35	18,6	20	13,0		4	11,8	16	16,7	7	9,0	17	21,8	11	17,5	
	A: Formal	55	14,7	6	4,3	46	33,1	3	3,4		23	12,2	28	18,2		7	20,6	14	14,6	10	12,8	11	14,1	10	15,9	
	F: Smart Casual with white coat	37	9,9	16	11,5	8	5,8	13	14,9		10	5,3	24	15,6		3	8,8	12	12,5	11	14,1	8	10,3	1	1,6	
	D: Smart with white coat	27	7,2	13	9,4	5	3,6	9	10,3		16	8,5	5	3,2		2	5,9	5	5,2	7	9,0	4	5,1	6	9,5	
	B: Formal with white coat	20	5,3	3	2,2	6	4,3	11	12,6		10	5,3	10	6,5		1	2,9	1	1,0	6	7,7	4	5,1	8	12,7	
	H: Scrubs with white coat	9	2,4																							
	Not answered	2																								

Figure 8: Q7 Which image is the overall attire/appearance you prefer for your doctor?

There was a significant, moderate, association between the responses to this question and hospital (p<0.0001; Cramer's V=0.47): At CHBAH, patients preferred Scrubs more and Smart attire less, compared to CMJAH and WDGMC. At CMJAH, Formal attire was more preferred compared to the other two hospitals.



There was a significant, weak, association between the responses to this question and patient gender (p=0.0076; Cramer's V=0.23): Male patients preferred Formal attire and Smart Casual attire more, compared to female patients. Female patients preferred Smart attire and Scrubs with white coat more than male patients. There was no significant association between the responses to this question and patient age (p=0.14).

Table 8: Tabulated responses for Q7 according to hospital, gender, and age

		Overall		Hospital							Gender					Age (y)										
				CHBAH		CMJAH		WDGMC		p-value	Female		Male		p-value	18-30		31-40		41-50		51-65		>65		p-value
Characteristic	Category	n	%	n	%	n	%	n	%		n	%	n	%		n	%	n	%	n	%	n	%	n	%	
Q7 Which image is the overall attire/appearance you prefer for your doctor?	G: Scrubs	118	31,6	83	57,6	28	19,9	7	7,9	<0.0001 (V=0.47)	60	31,6	51	32,5	0.023 (V=0.22)	12	33,3	35	36,1	26	32,9	25	31,3	16	25,4	0,14
	C: Smart	52	13,9	6	4,2	23	16,3	23	25,8		33	17,4	17	10,8		4	11,1	12	12,4	9	11,4	15	18,8	10	15,9	
	E: Smart Casual	47	12,6	6	4,2	23	16,3	18	20,2		19	10,0	25	15,9		5	13,9	14	14,4	9	11,4	14	17,5	2	3,2	
	A: Formal	45	12,0	4	2,8	38	27,0	3	3,4		20	10,5	24	15,3		6	16,7	11	11,3	11	13,9	9	11,3	8	12,7	
	B: Formal with white coat	38	10,2	12	8,3	13	9,2	13	14,6		19	10,0	14	8,9		3	8,3	10	10,3	9	11,4	6	7,5	9	14,3	
	F: Smart Casual with white coat	28	7,5	4	2,8	9	6,4	15	16,9		16	8,4	10	6,4		1	2,8	5	5,2	5	6,3	5	6,3	10	15,9	
	H: Scrubs with white coat	24	6,4	19	13,2	2	1,4	3	3,4		17	8,9	4	2,5		5	13,9	7	7,2	6	7,6	2	2,5	1	1,6	
	D: Smart with white coat	22	5,9	10	6,9	5	3,5	7	7,9		6	3,2	12	7,6		0	0,0	3	3,1	4	5,1	4	5,0	7	11,1	
	Not answered	2																								

Discussion

As evidenced by the results above:

1) CHBAH overall preferred their surgeons dressed in 'scrubs '– found them to be easily identifiable and evoked confidence in such attire. Male patients preferred 'Formal' attire and 'Smart Casual' attire more, compared to female patients. Female patients preferred 'Smart' attire and 'Scrubs' with white coat more than male patients.

2) CMJAH patients preferred their surgeons to don 'formal' and 'smart' attire, with the males selecting formal attire more often than the females, who selected 'smart'.

3) WDGMC patients were more comfortable with their surgeons dressed in 'smart' attire closely followed by 'smart casual' attire.

These choices indicate how patients at the various facilities consider a surgeon to look most professional, easily identifiable, evoke a sense of confidence, and demonstrate a sense of the doctor being able to help the patients. However, These findings are similar to the results of Bond et al where patients preferred 'formal' and 'scrubs' attire. In an attempt to gain a broad patient selection, hospitals in different locations were selected and the survey response of each facility was noted, as well as conducting this study in both private (WDGMC) and public (CMJAH and CHBAH) healthcare facilities. Ensuring that we gained the opinions of patients in the surgical wards as well as the outpatients surgical wards.

It was evident in this study that white coats were generally not preferred except occasionally for the 50-and-older age groups. Studies such as those by Landrey, Rehman et al, Douse et al, and Gherardi et al, showed the patients' preference of white coats over no white coats. However, Gooden et al, Cha et al, and Hueston and Carek showed the converse of this – that patients preferred doctors to no wear white coats. That said, these studies focused more on the preference or lack-thereof of the white coat and 'bare below the elbow' rather than the type of dress or attire.

Reflecting on the differing choices between the hospitals , it may due to the various demographics of the patient profiles: CHBAH is located in Soweto, and WDGMC and CMJAH are located in Parktown. The few patients that did select a particular dress code along with a white coat were the 50-and-older age groups and this may be influenced by the long-standing tradition of attending physicians wearing white coats. Various healthcare institutions may have a general, even if unwritten/unofficial, dress code. Patients may be accustomed to a particular attire within that facility and this may also have ultimately influenced their preference.

The pictures of the models within each type of attire attempts to rule out various forms of bias according to race and gender, as well as including different images of the selected type of dress code. This allowing for the patient selection of answers to each of the seven questions to be based more on the type of dress rather than the looks of the model.

Considering how important the patient-doctor relationship is with regards to ability of the patient being able to confide wholly and honestly in their surgeon, as dress code is one of the factors that influence first impressions, it may be valuable to consider how patients perceive their attending surgeon's attire. This

may be one of the elements that set the tone for the path the relationship will take and may play a role the ongoing development of the relationship between the two. As there are limited studies within Southern Africa exploring this topic, the findings in this study may be helpful in initiating discussions around hospital attire for doctors.

Limitations

The survey had a limited number of questions that may not have fully explored the patients ' perception of their surgeon's attire, but rather focused more on their preference of what they would like to see their attending surgeon wear.

Sampling bias may be considered as patients were selected in surgical outpatient clinics and in-patient surgical wards on various days and times throughout a 9 month period.

The results are subject to a selection bias in view of patients being already accustomed to surgeons dressing a particular way prior to this study taking place.

Those not comfortable in conversing or reading English may have had difficulty in accurately interpreting the questionnaire, and, therefore, completing it in its entirety.

Those unable to read would not have been able to partake in the study.

Recommendations

This study has indicated a preference for dress code, and briefly assessed the patients' perception of their attending surgeon with regards to being able to identify the doctor, ilicit confidence, and appear professional based on their attire. This may pave the way for conversations to be initiated to discuss if general guidelines of dress code may be considered, taking into consideration the patients perception/pereference, as well as practically and professionalism according to the surgeons themselves.

Further studies with larger sample sizes that span larger locations would be of value to evaluate further what patients perceive of a surgeon's dress code.

Conclusion

This study has shown significant findings of patients' preference and perception of a surgeon's attire at the three hospital sites. As there is no regulated rule of dress code for surgeons, the patients' opinions must, therefore, be considered and have some degree of influence as to how we present ourselves in our working environments. From this study it is evident that patients prefer a dress code of 'Scrubs' of their attending surgeon. This dress is closely followed by 'smart' and 'formal' attire. However, what has been evident is that, largely, patients do prefer white coats being worn across the various forms of dress. This may be considered in discussing general forms of surgical wear in various healthcare facilities.

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Patients' Preferences for a Doctor's Appearance (PIS)

Good day.

My name is Dr Rudo Pswarayi. I am a surgeon at Chris Hani Baragwanath Hospital. I am studying at Wits University for a postgraduate (M Med) degree. As part of my studies, I am required to conduct a research project. My chosen project is to find out whether patients have any expectation of how a surgeon should dress and whether their confidence in the surgeon is influenced by how he or she is dressed. I will explore this issue by asking willing patients to complete a very simple questionnaire, which would take 10-15 minutes of your time. This questionnaire consists of seven simple questions, which ask you to look at a series of pictures to provide answers.

As you may have noticed, the doctor-patient relationship is a vital and delicate interaction that needs to be built on confidence and trust from both sides. The first impression is crucial in determining how this relationship will progress and, therefore, how both parties can contribute to the management and prognosis of the patient's condition positively. Because of this, it is necessary for doctors to be aware of patients' perceptions of their doctors.

This questionnaire is completely anonymous – you will not be asked for your name. The results will be stored in password-protected computer file and will only be accessible to me and my supervisor, so there will be complete confidentiality. The answers will be used for statistical comparisons. Your participation is of utmost value.

You have the right to refuse to participate in this study, or to subsequently withdraw at any time. Participating or not participating in this study will not benefit or harm your medical management in any way.

There is neither cost nor payment involved in taking part in the study. If you are interested in the outcomes of my study, please tell me and I will send the information on in due course.

If you have questions on the study at any time, you may contact me on 073 274 4348, or rupooh@gmail.com, or my supervisor, Professor Jerome Loveland, on 011 717 1000, or Jerome.Loveland @wits.ac.za

This study has been approved by the Human Research Ethics Committee (Medical) of the University of the Witwatersrand, Johannesburg ("Committee"). A principal function of this Committee is to safeguard the rights and dignity of all human subjects who agree to participate in a research project and the integrity of the research.

If you have any concern over the way the study is being conducted, please contact the Chairperson of this Committee who is Professor Clement Penny, who may be contacted on telephone number 011 717 2301, or by e-mail on Clement.Penny@wits.ac.za. The telephone numbers for the Committee secretariat are 011 717 2700/1234 and the e-mail addresses are Zanele.Ndlovu@wits.ac.za and Rhulani.Mukansi@wits.ac.za

Having read the above and asked any questions you might have, if you are kindly willing to participate in this study, please sign attached Consent Form.

Thank you for reading this Study Information Sheet.

January 2019

Patients' Preferences for a Doctor's Appearance

Age (circle): 18-30 31-40 41-50 51-65 >65

Gender: Highest level of education:

Occupation:

1) Which of the images do you think the doctor looks most professional?

A. B. C. D. E. F. G. H.

2) Which of the images do you think makes it easiest for you to identify a doctor?

A. B. C. D. E. F. G. H.

3) Which of the images makes you feel most confident with the doctor's ability to help you?

A. B. C. D. E. F. G. H.

4) What attire would you prefer your surgeon to wear on the initial/first visit?

A. B. C. D. E. F. G. H.

5) What attire would you prefer your surgeon to wear on subsequent follow-up visits?

A. B. C. D. E. F. G. H.

6) What would you prefer your surgeon to wear on weekends or public holidays?

A. B. C. D. E. F. G. H.

7) Which image is the overall attire/appearance you prefer for your doctor?

A. B. C. D. E. F. G. H.

Image A: Formal attire

Image B: Formal attire with a white coat

Image C: Smart

D: Smart with a white coat

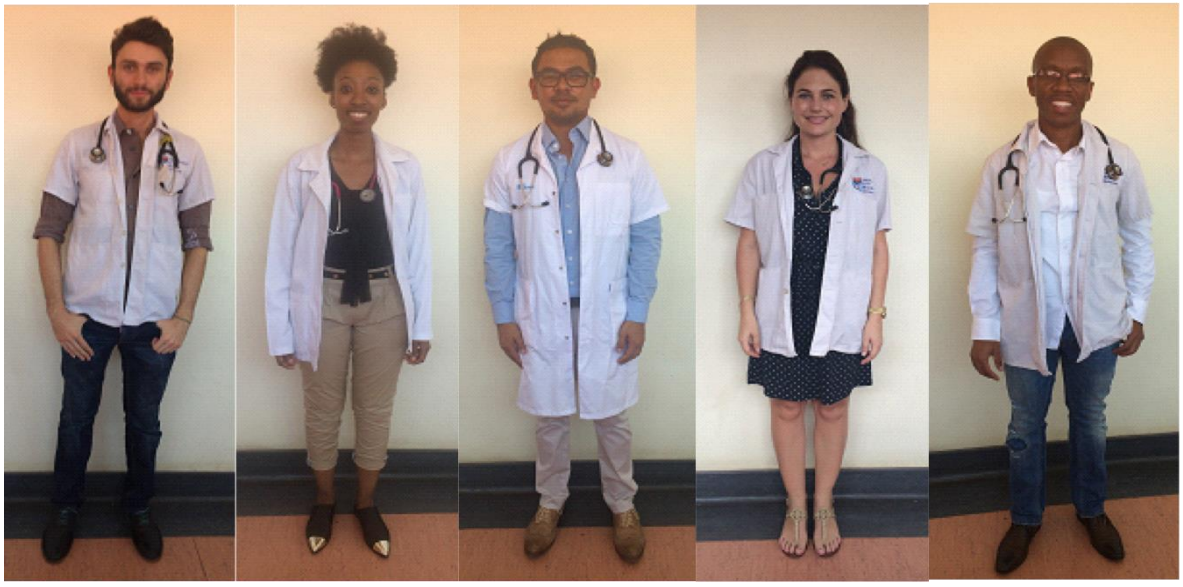

Image E: Smart Casual

Image F: Smart Casual with a white coat

Image G: Scrubs

Image H: Scrubs with a white coat

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CANDIDATE'S SURNAME: Pswarayi [Please print]		FIRST NAME/S: Rudo	STUDENT NUMBER: 0704926R
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DEGREE FOR WHICH PROTOCOL IS BEING SUBMITTED: Masters (Surgery MMed)			
PART-TIME OR FULL-TIME: Full time			
FIRST REGISTERED FOR THIS DEGREE:	TERM : January		YEAR:2016
DEPARTMENT: Surgery			
TITLE OF PROPOSED RESEARCH: A Surgeon's Dress Code: The Patients' Perspective			
CANDIDATE'S SIGNATURE: 			DATE: December 2016
SPERVISOR 1 (NAME& SURNAME): Dr Ben Jugmohan			90% Supervision
SUPERVISOR'S QUALIFICATIONS General Surgery Consultant			
SUPERVISOR'S DEPARTMENT Surgery			

SUPERVISOR'S ADDRESS / TEL / E-MAIL: benjugmohan@gmail.com	
SUPERVISOR 2 (NAME& SURMANE): Prof Jerome Loveland	5% Supervision
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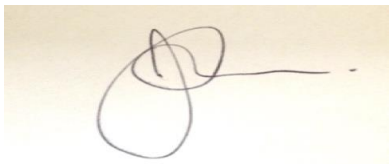
SYNOPSIS OF RESEARCH:

The dress code for surgeons has evolved over time from formal suit-and-tie, to crisp white coat, and currently to various forms of smart-casual attire, but still, there is no stipulated or rigid uniform guideline. It must be of paramount significance to explore and discuss various attire in relation the patients' ideals and perceptions if we are to accurately assess what a South African patient expects and, therefore, perceives of their surgeon. An observational study in the form of a questionnaire that deliberates the patients' perception of their attending surgeon's attire based on assessing professionalism, ability to identify a surgeon, perception of confidence, and any influence on the patients' comfort, trust and satisfaction. To determine the patients perception of a surgeons attire according to professionalism, ability to identify a surgeon, and the level of confidence. To assess a patient's ideals with regards to general appearance and presentation of a surgeon. Whether a surgeon's dress code influences the degree of a patient's comfort, trust and satisfaction. If patients prefer formal attire, smart casual, casual, or scrubs, all with and without white coats.

ETHICS APPROVED: U (circle appropriate symbol)	IF U SUPPLY ETHICS CLEARANCE No: M180405

SIGNATURE OF SUPERVISOR/S:	……  ……	Dr Ben Jugmohan

SIGNATURE PG OFFICE STAFF ……..	REGISTERED YES…..	STAMP

A Surgeon's Dress Code: The Patients' Perspective

Candidate: Dr Rudo Pswarayi

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c) Prof Jerome Loveland, Academic Head, Dept of Paediatric Surgery, University of Witwatersrand

1. Introduction

1. Literature Review

The perception of how a surgeon should present themselves dates back to the time of Hippocrates (460 BC – 370BC) who recommended that physicians be "clean in person, well-dressed…." (Hospitalist, , 2014). The dress code of a surgeon has been one that has been contested recently, and its progression through the centuries has evolved from formal suit-and-tie, to crisp white coat, and currently to various forms of smart-casual attire. But why is it of any concern what a surgeon's appearance is? Simple – the patient-doctor relationship; eloquently 'the foundation of a positive patient-physician relationship rests on mutual trust, confidence and respect' (Petrilli et al, 2014). It is of utmost importance because a patient's perception of their surgeon's aptitude is determines various dynamics including the patient's ability to fully confide in the surgeon, compliance to overall management, and ensuring there is dual participation in this relationship. Therefore, to some degree, first impressions of appearance and/or professional attire have a bearing of the advancement of the patient-doctor relationship. The way in which a surgeon presents themselves should allow them to be recognized as a doctor, evoke a level of trust from the patient and, thus, emulate a degree of competency.

Bond et al, 2010, explored the 2007 published 'Uniforms and Workwear: an Evidence Base for Guiding Local Policy by the Department of Health (DoH)' with regards to no clothing below the elbow, removal of wrist watches and hand jewellery, and removal of neckties. This study showed an obvious preference for either the formal attire or scrubs as compared with bare below the elbow; subgroups displayed that scrubs were selected as the most hygienic, whilst formal attire was the selected preference as being most professional and easiest to identify a doctor. 'Bare below the elbow' was deliberated least acceptable in all subcategories and overall. The discussion, therefore, must be referred back to the DoH Uniform and Workwear document which indicates that public confidence and infection control should reinforce a uniform policy but keeping in mind that these two facets are not interchangeable. As there is no

unblemished evidence that associates doctors' attire to hospital-acquired infection transmission, the 'bare below the elbow' becomes less adept; adding to that, based on this study, it has been suggested that patients do not view this type of dress code in a favourable light in any category (Bond et al, 2010). And in conclusion, a possible compromise of using the scrubs attire in clinical situations and then the formal attire being worn during non-clinical encounters (i.e.: an outpatient clinic) and in doing so, facilitates a patient perception of trust and competency whist ensuring some level of patient safety with regards to hygiene.

In The Ochsner (Louisiana) Journal 2013, Landry M, Dornelles AC, and Deichmann RE, conducted an observational study to consider the patients' preferences for clinical attire

(Landry, 2013). It was evident in this study that patients preferred coated attire as compared with non-coated and 'bare below the elbow' attire. This finding is in keeping with results in three other studies; though there are other studies that contradict this finding. This, altogether, emphasizes the intricacy of exploring this topic as there are plenty of factors that influence the results. This particular study showed that white coats create some perceptible influence to a patient's comfort and confidence with a doctor. 'Bare below the elbow' attire scored the lowest in all categories, including low patient comfort and an inability to inspire confidence in their doctor, and finally overall it was the least favoured attire. Unfortunately, the exact reasons for the disapproval of 'bare below the elbow' attire were not explored specifically, but a few patients did point out that they would not be able to identify a person dressed like this as a doctor, and that this resembled a salesman. Others noted that this form of dress seemed 'unclean', 'sloppy', and 'unprofessional'. Possible reasons for a preference of white coats may be easy doctor identification, a clean and professional appearance, and contributing to the patient-doctor relationship by inspiring confidence and comfort (Landry, 2013). Majority of patients do not seem to be aware of the debate around transmission of pathogenic microbes via white coats, but after being given information on this topical issue, this did not alter their preference for white coats. There was a degree of selection bias and most of these patients were accustomed to seeing doctors in white coats as this was the 'standard' attire in this region. The pitfalls of this study were in the survey not being externally validated; patients were selected from a private health facility and, thus, narrowing the demographic variety; and lastly, patients selected were not of different medical departments, but rather, they were from medical clinics and wards. Once again, current evidence does not definitively associate white coats with increased transmission of infection, therefore, the relevance of white coats within the medical field must be weighted thoroughly prior to making further uniform-attire changes or recommendations.

It is well known that in the 1800s doctors adopted the beige-coloured coat worn by scientists in an attempt to associate themselves with the science community in order to achieve trust from the general public. The beige colour was later replaced by the white colour with the intention of representing cleanliness and purity and in keeping with the Hippocratic Oath: "to do no harm". Because of the 2007 studies that emerged stating that twenty-three percent of white coats where found to be contaminated with Staphylococcus Aureus of which eighteen percent were MRSA, concern escalated which led to the United Kingdom (UK) discontinuing white coats as being part of the medical attire, and the American Medical Association (AMA) advocating for a dress code that would decrease any form of infection transmission (Enoch et al, 2013). Thus, the 'bare below the elbow' policy was put forward in the hopes that this would decrease clothing acting as a vector for spreading infections, even in the light of inconclusive data

supporting this theory. This study aimed to achieve four goals, namely: '1) Patients' acceptance of physicians attire; 2) Their perceived values of the white coat; 3) Their preferred and perceived frequencies of white-coat cleaning; 4) Changes in patients' acceptance after an educational intervention concerning the potential risk of microbial contamination of doctors' clothing (Enoch et al, 2013)'. This study showed that most people still prefer white coats, which is in keeping with other studies that have been conducted to date. In this study too, scrubs were viewed to be more hygienic, and the study population favoured hygiene of a professional image – these are similar findings to studies done in the UK and well as the United States of America (USA). An inherent perception of doctor professionalism that is linked to the attire of a white coat may be considered when reasoning why the majority of patients still favour a white coat. Alternatively, it may also be because patients think that these white coats are being washed regularly, once every few days to once a week. Drawbacks to the study included a population size that was small and limited to one location, the content and manner in which the microbial contamination of white coats was delivered – whether patients fully comprehended this statement, and this questionnaire was not validated (Enoch et al, 2013). But, none-the-less, white coats continue to assume a role in the establishment of the patient-doctor relationship, and therefore, this must be meticulously and deliberately considered when making recommendations about whether white coats should be worn or not. As there is no link between white coat contamination and increased risk of hospital-acquired infections, all recommendations have to contemplate a balance between the actual risk of infection transmission and contamination of coats.

A study that embarked to systematically review literature 'hypothesizing that patients will prefer formal attire in most settings' and also 'postulated that context of care will influence patient perceptions on attire' was by Petrilli CM et al in 2014. This review discovered that formal attire with or without white coats, or a white coat with other attire was favoured in most cases (approximately 60%). In keeping with this trend, it was evident that older patients (roughly forty years or older) and Asian and European patients preferred formal attire. The patient age and the context in which the care was being provided or received had some influence on the patients' perceptions of their attending doctor's attire (Patrilli et al, 2014). Various cultures have a bearing on a patient's perception and expectations of their attending doctor. But it is still clear that more studies are needed to assess the complex issue of medical attire and its influences on the patient-doctor relationship and subsequent interaction, thereof (Patrilli et al, 2014). As there are many facets influencing the patients' perceptions, these would need to be explored individually and in detail to accurately ascertain true recommendations of appropriate medical attire. This review has suggested that blanket policies that are applied to all healthcare specialities and settings may not necessarily improve or benefit the patient-doctor rapport. Thus, this multifactorial topic needs to be discussed and studied rigorously in each context before any changes may be implemented in an effort to ensure patients still have a sense of confidence, trust and satisfaction from their doctors.

As referenced throughout these reviews of literature, the doctors' attire has evolved slowly for a number of centuries. The appearance and presentation of a doctor is dated as far back as Hippocrates – approximately 400BC. It has been a 'uniform' that has never been clearly stipulated yet has held a great deal of importance in how the profession is represented and, therefore, regarded by the general public. The introduction of the white coat in the nineteenth century to symbolize the combination of science and art that constitutes the medical profession allowed for doctors to be more easily identifiable. Added to this was the association with the science community, from which the coats were originally borrowed from, and

the white colour that symbolized cleanliness and purity. Cumulatively this enables for the white coat to have a number of functions and uphold various constituents within the Hippocratic Oath.

In the past doctors, predominantly male, dressed in formal suit and necktie or bowtie attire; a doctor's medical briefcase accompanied this getup. Over time the briefcase faded out and the formal suit, combined with the white coat, were the main from of attire. Notably as time progressed, females moved into the medical field too, their attire too was formal, consisting initially of a blouse and a suit skirt – which later became acceptable to be interchanged with suit pants. But still, there was no stipulated or rigid uniform guideline.

Scrubs allowed doctors in a surgical setting to carry out their duties efficiently, and particularly when they were used in theatre only, represented sterility and to some degree a medley of artistic combined with scientific skill of the operating surgeon. Acute settings, such as emergency departments, and then many other sub-specialities, followed suite and adopted this from of dress code. Once again, doctors were easy to identify as they were less confused with businessmen or any other profession. On the reverse of this, other healthcare professionals (nursing sisters, health and rehabilitation team, radiography) then, too, began to don on scrubs, which introduced some confusion within the healthcare setting itself.

With the debate of whether doctors should or should not wear white coats, be 'bare below the elbow', or if scrubs are professional enough, it has become quite a conundrum for surgeons to know what to wear to work. And while one may say dress is not too important, this would be quite the mistake to make, seeing as the patient perception is vital in the inception of the patient-doctor interaction. This, over many years has become of utmost relevance because the medical profession has moved away from a didactic paternalistic patient-doctor relationship, to a more patient-centred patient-doctor relationship. Hence, it clearly is of some importance that surgeons' appearances and attire do, to some extent, meet the expectations of patients. The initial perception allows the patient to assess the level of trust, confidence, and satisfaction they will appraise their surgeon with, as well as determining the level of comfort the patient will be able to divulge their medical, family and psychosocial history during consultations.

2. Motivation for the study

The dress code for surgeons has evolved over time from formal suit-and-tie, to crisp white coat, and currently to various forms of smart-casual attire, but still, there is no stipulated or rigid uniform guideline. It must be of paramount significance to explore and discuss various attire in relation the patients' ideals and perceptions if we are to accurately assess what a South African patient expects and, therefore, perceives of their surgeon

3. Purpose

An observational study in the form of a questionnaire that deliberates the patients' perception of their attending surgeon's attire based on assessing professionalism, ability to identify a surgeon, perception of confidence, and any influence on the patients' comfort, trust and satisfaction.

4. Specific Objectives

- To determine the patients perception of a surgeons attire according to professionalism, ability to identify a surgeon, and the level of confidence
- To assess a patient's ideals with regards to general appearance and presentation of a surgeon
- Whether a surgeon's dress code influences the degree of a patient's comfort, trust and satisfaction
- If patients prefer formal attire, smart casual, casual, or scrubs, all with and without white coats

5. Implementation objectives

Patients in the inpatient wards and outpatient clinics of Charlotte Maxeke Johannesburg Academic Hospital (CMJAH), Chris Hani Baragwanath Academic Hospital (CHBAH), and Donald Gordon Medical Centre (DGMC) are to voluntarily partake in a questionnaire with the aid of healthcare professionals.

2. Methods

2.1. Definition of terms

- Formal attire: collared shirt or blouse, necktie/bowtie, suit pants
- Smart casual: Chino pants, collared shirt
- Casual: jeans and T-shirt
- Scrubs

2.2. Study design

Observational Study using a questionnaire and conducted in an interview format

2.3. Study Population and sampling

- Patients in the inpatient wards and outpatient clinics of CMJAH, CHBAH, and DGMC
- Participants to be eighteen years or older
- Participants need to be able to communicate in one of the eleven official South African languages

2.4. Measurements

- Expert statistical analysis will be used to evaluate the questionnaire results.

3. Logistics

3.1. Time schedule

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept
Literature review													
Preparing protocol													
Protocol assessment													
Ethics application													
Collecting Data													
Data Analysis													

Writing-up paper													
Publishing													

3.2.

4. Data Management and Analysis

The data collection in an interview and questionnaire format over a time frame of six months followed by analysis, with the aid of an expert statistician, and completion of study in six months

5. Resources

5.1. Available resources

- Published articles and journals relating to professional medical attire.
- Literature reviews on patients and their ideals of medical professional attire.

6. Ethical and legal considerations

Informed consent to be attained from each participant after the purpose and procedure of the questionnaire has been thoroughly explained. The option to opt-out once the questionnaire purpose and procedure has been explained is permissible.

7. Reporting of results

- Once all data has been collected from the three study sites, it will be analysed with the help of an expert statistician.
- Each question will be evaluated and analysed to produce qualitative, and where applicable, quantitative, results.

8. References

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9. Appendices

Consent Form: Use of Clinical Information for Research

Dear Patient,

You are currently admitted to CHBAH/CMJAH/DGMC for treatment of problems you are currently experiencing. The Surgical Department of CHBAH/CMJAH/DGMC not only renders treatment but is also actively involved in conducting research aimed at improving the quality of care that we deliver. From time to time such research involves the use of patient records from which information is extracted. The use of such information is subject to the following:

1. Approval from the Human Research Ethics Committee (Medical) of the University of the Witwatersrand.
2. Identity of a patient from whose file information is extracted is never revealed to anyone but the researcher unless specific consent is obtained to do so. The information gathered does not contain the name of the patient but only a coded number so as to maintain anonymity.

Whilst we are not currently involved in research that requires us to use any information now, this may change in the future when you may have already been discharged. We would like to obtain your consent to use information from your file for the purpose of research, subject to the aforementioned conditions. If you choose not to give consent, this will not compromise your treatment in any way. If at any time you choose to withdraw consent you are free to do so and will not be prejudiced in any way.

Should you wish to contact us at any stage regarding consent, contact Dr Pswarayi at (011)930 8000

A. Consent Given

I_____ hereby give consent for my records to be used as per the above mentioned conditions for the purposes of research:

PATIENT: _____ DATE: _____

B. Consent Not Given

I _____ do not give consent for my records to be used:

PATIENT: _____DATE: _____

29.08.2014 Version 1.0 Anisa Keshav

Age:

Gender:

Race:

Highest level of education

Occupation:

1) Which of the images do you think the doctor looks most professional?

A. B. C. D. E. F. G. H.

2) Which of the images do you think makes it easiest for you to identify a doctor?

A. B. C. D. E. F. G. H.

3) Which of the images makes you feel most confident with the doctor's ability to help you?

A. B. C. D. E. F. G. H.

4) What attire would you prefer your surgeon to wear on the initial/first visit?

A. B. C. D. E. F. G. H.

5) What attire would you prefer your surgeon to wear on subsequent follow-up visits?

A. B. C. D. E. F. G. H.

6) What would you prefer your surgeon to wear on weekends or public holidays?

A. B. C. D. E. F. G. H.

7) Which image is the overall attire/appearance you prefer for your doctor?

A. B. C. D. E. F. G. H.

Thank you for completing the questionnaire!

Image A: Formal attire

Doctors of varying races and of both sexes

- Male: Suit and necktie/bowtie
- Female: Formal skirt/pants with a collared shirt

Image B: Formal attire with a white coat

As above in Image A but with a white coat over

Image C: Smart

Doctors of varying races and of both sexes

- Male: Suit pants and with collared shirt but no necktie/bowtie
- Female: Formal skirt/pants with a blouse

Image D: Smart with a white coat

As above in Image C but with a white coat over

Image E: Smart Casual

Doctors of varying races and of both sexes

- Male: Chinos with a golf/unbuttoned-collared shirt
- Female: Pants/skirt with a shirt/blouse

Image F: Smart Casual with a white coat

As above in Image E but with a white coat over

Image G: Scrubs

Doctors of varying races and of both sexes

- Male: scrubs
- Female: scrubs

Image H: Scrubs with a white coat

As above in Image G but with a white coat over

CERTIFICATE OF SUBMISSION FOR EXAMINATION OF MASTERS RESEARCH REPORT / DISSERTATION OR PHD THESIS SIGNED BY HIGHER DEGREES CANDIDATES

Full name	Rudo Mutsa Vanessa Pswarayi		
Student number	0704926R		
Title of submitted Research Project: A Surgeon's Dress Code: The Patients' Perspective _____ _____ *NB: If this title is different to your previously approved title, no further action can be taken by the Faculty Office until a change of title has been approved.*			
Contact no	0732744348	E-mail	rupooh@gmail.com

1. If you are likely to move in the next 6-12 months, please give the anticipated date of move: _____N/A_____

I hereby submit my Masters (research report) for examination (Select whichever is applicable)

2. I have checked all copies of my research report / dissertation / thesis and declare that no pages are missing or poorly reproduced.
3. I have submitted _____2_____ bound copies and _____1_____ copies on CD

4. I confirm that I have:
   a) A signed declaration indicating my understanding of the concept of plagiarism and a denial of plagiarism in my research document.
   b) A report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document included as an appendix.

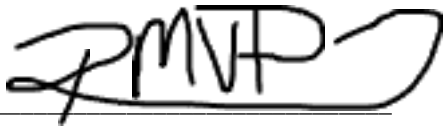
5. I confirm that I have:
   a) Not used either human or animal tissue or records **Yes**
   b) If yes: I have included the ethics waiver letter pertinent to my research as an appendix **Yes**
   c) Done research using animals **No**
      If yes: I have included a copy of the animal ethics committee clearance certificate as an appendix in this document **N/A**
   d) Done research using human subjects, human tissue or patient records **Yes**
      If yes: I have included a copy of the human ethics clearance certificate as an appendix to the research document **Yes**

6. I understand that I may not graduate unless my University fees have been paid in full.
7. My Supervisor(s) names, departments, telephone numbers and email addresses are as follows:

Name	Dr Ben Jugmohan		
Department	Surgery		
Telephone	0763715120	E-mail	benjugmohan@gmail.com
Name	Prof Jerome Loveland		
Department	Paediatric Surgery		
Telephone	0836760004	E-mail	loveland@wol.co.za
Name	Dr John Devar		
Department	Surgery		
Telephone	0827705178	E-mail	devarjohn@yahoo.com

List all publications, which you have published in peer-reviewed journals from your postgraduate research report/dissertation/thesis during the course of your studies in the Faculty of Health Sciences (Include authors, year, title of paper, name of journal, volume number and page numbers). This information is mandatory.

None_____

Signature of candidate:  Date: ___19/04/2021_____

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG	HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

Office of the Deputy Vice-Chancellor (Research & Post Graduate Affairs)

TO: Dr R Pswarayi
School of Clinical Medicine
Department of Surgery
Chris Hani Baragwanath Academic Hospital

E-mail: rupooh@gmail.com

CC: Supervisor: Drs B Jugmohan & J Dewar; Prof J Loveland
<Jerome.Loveland@wits.ac.za>
and <HREC-Medical.ResearchOffice@wits.ac.za>

FROM: Iain Burns
Human Research Ethics Committee (Medical)
Tel: 011 717 1252

E-mail: Iain.Burns@wits.ac.za

DATE: 14/01/2019

REF: *R14/49*

PROTOCOL NO: **M180405** *(This is your ethics application study reference number. Please quote this reference number in all correspondence relating to this study)*

PROJECT TITLE: *A surgeon's dress code: the patients' perspective*

Please find attached the Clearance Certificate for the above project. I hope it goes well and that an article in a recognized publication comes out of it. This will reflect well on your professional standing and contribute to the Government funding of the University.

MSWorks2000/Iain0007/Clearscan.wps

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (MEDICAL)

DECLARATION:

Adherence to HREC (Medical) Ethics Application Terms and Conditions

I, the undersigned, hereby declare that I have not collected data/ done secondary data analysis or any other form of research, prior to obtaining clearance certificate from the HREC (Medical) for study no: M180405.

I have read and understood the terms and conditions on page 8-9 of the HREC (Medical) application form. I confirm that it is my responsibility to ensure that I have received final HREC (Medical) Clearance before commencing any research.

Rudo M. V. Pswarayi

Name, Surname and Signature

Student/Staff no if applicable: 0704926R

Date: 13/06/2018

Ben Jugmohan

Name, Surname and Signature

Supervisor (if applicable)

Date: 13 June 2018

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

FACULTY OF HEALTH SCIENCES

PLAGIARISM DECLARATION TO BE SIGNED BY ALL HIGHER DEGREE STUDENTS

SENATE PLAGIARISM POLICY: APPENDIX ONE

I Rudo Mutsa Vanessa Pswarayi (Student number: 0704926R) am a student registered for the degree of Masters in Medicine: MMed in the academic year 5.

I hereby declare the following:

- I am aware that plagiarism (the use of someone else's work without their permission and/or without acknowledging the original source) is wrong.
- I confirm that the work submitted for assessment for the above degree is my own unaided work except where I have explicitly indicated otherwise.
- I have followed the required conventions in referencing the thoughts and ideas of others.
- I understand that the University of the Witwatersrand may take disciplinary action against me if there is a belief that this is not my own unaided work or that I have failed to acknowledge the source of the ideas or words in my writing.
- I have included as an appendix a report from "Turnitin" (or other approved plagiarism detection) software indicating the level of plagiarism in my research document.

Signature: RMVP Date: 19/04/2021