## PEER REVIEW HISTORY

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## ARTICLE DETAILS

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| **TITLE (PROVISIONAL)** | UNDERSTANDING THE ROLE OF PHYSICIAN ATTIRE ON PATIENT PERCEPTIONS: A SYSTEMATIC REVIEW OF THE LITERATURE |
| **AUTHORS** | Petrilli, Christopher; Mack, Megan; Petrilli, Jennifer; Hickner, Andy; Saint, Sanjay; Chopra, Vineet |

## VERSION 1 - REVIEW

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| **REVIEWER** | Maria Pina Dore<br>Dipartimento di Medicina Clinica e Sperimentale - University of Sassari - Italy |
| **REVIEW RETURNED** | 21-Sep-2014 |

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| **GENERAL COMMENTS** | Communication skills are an important component of patient care.<br>There is strong evidence that patient-doctor communication affects patient adherence and compliance with the management plan.<br>Non-verbal communication is an essential part in a doctor-patients relationship and the physician appearance is part of non verbal-communication.<br>This study elucidate the several appearance's components that negatively perceived by patients interacting for the first time with a physicians.<br>The manuscript by Petrilli et al is nicely presented, well structured, and could be of interest for clinicians, students and educators. |

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| **REVIEWER** | Ryan Greysen<br>University of California, San Francisco (UCSF) |
| **REVIEW RETURNED** | 23-Oct-2014 |

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| **GENERAL COMMENTS** | This is a systematic review of physician attire – the methods are rigorous and the writing is very clear as well – my biggest concern/comment is on the framing. What exactly is the knowledge gap, how important is it to address this gap, and what is the likelihood of significant change in policy, practice, or further research as a result of addressing this gap successfully?<br><br>One example of where the knowledge gap could be sharpened is in the background section of the abstract. To me, it seems an over-simplication to say "preferences regarding physician are unknown" in light of the fact this article is based on synthesis of over 2 dozen articles on this topic. Need to state the knowledge gap crisply/concisely here.<br><br>The problem persists in the introduction section of the manuscript as |

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| | well – in the 3rd/last paragraph, the authors state that while studies on this topic are “abundant” (again, runs counter to abstract statement of “unknown”), the effects of specialty, context, locale, etc. are poorly understood…might this also be restated as a hypothesis that these factors are more important than attire in influencing patient satisfaction? From my perspective, the big “so what” buried underneath the focus on attire is “what the heck influences patient satisfaction?” We are all a bit in the dark here – many conflicting ideas with relatively sparse data and increasing urgency to figure it out. So I think building on this larger uncertainty could be key to piquing the interest of readers and improving the framing (and potential impact?) of this paper.<br><br>Further, the authors also suggest in this last paragraph of the introduction that the existing reviews on this topic stand in conflict – this could also be a window to a more crisp knowledge gap that is a bit different (perhaps complimentary) to above: prior studies are in conflict so there is genuine equipoise here. Again, I think a stronger hypothesis statement might help here. Did the authors hypothesize that Bianchi was closer to the truth (patients don’t care as much as providers do) or that Bearman had it right (patients do care…then again, the effect was limited)?<br><br>Abstract conclusion – in contrast to the background/introduction, to me it seems like an over-complication to say “For attire to positively influence patients, approaches tailored to myriad factors appear necessary.” Why not just plainly state that there is no clear evidence (or very weak evidence) that attire drives satisfaction when age, setting, locale, and context of care are considered? As with above comments on the background/intro, I think you need better framing/context to amplify the “so what” from your findings.<br><br>In summary, the discipline and effort applied to this topic/literature is admirable – I don’t doubt that this is could be the definitive paper on the topic to date – but I just need more convincing that attire really does (or does not) matter. Should hospitals/clinics/systems really invest more heavily in this as part of their effort to improve the patient experience – or does the data suggest the most bang for the buck lies elsewhere? Leaving the question unanswered seems anticlimactic for such a rigorous paper!<br><br>Thanks for the opportunity to review this manuscript – I admire the authors’ scholarship and hope they can craft the message to improve it’s impact. |

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**VERSION 1 – AUTHOR RESPONSE**

REVIEWER #1:
Communication skills are an important component of patient care. There is strong evidence that patient-doctor communication affects patient adherence and compliance with the management plan. Non-verbal communication is an essential part in a doctor-patients relationship and the physician appearance is part of non verbal-communication. This study elucidates the several appearance's components that negatively perceived by patients interacting for the first time with a physicians. The manuscript by Petrilli et al is nicely presented, well structured, and could be of interest for clinicians, students and educators.

AU: We thank the reviewer for their kind words and appreciate their perception of what the study adds.

REVIEWER #2:
This is a systematic review of physician attire – the methods are rigorous and the writing is very clear as well – my biggest concern/comment is on the framing. What exactly is the knowledge gap, how important is it to address this gap, and what is the likelihood of significant change in policy, practice, or further research as a result of addressing this gap successfully?

AU: We thank Reviewer #2 for their comments and agree in that the framing of our paper and the knowledge gap we are trying to address could be better defined. It is our belief that attire does influence patient perception. However, there is potentially a knowledge gap with respect to how physician dress impacts perception and specifically in what clinical contexts these influences are exerted. We have made multiple revisions to the manuscript to clarify the importance of addressing these specific knowledge gaps. Through this, we hope that the framing of the paper has been improved.

Specific changes made include the following:
Page 6, Lines 17-19: "However, targeting physician attire to improve the patient experience has recently become a topic of considerable interest driven in part by efforts to improve patient satisfaction and experience."

Additionally, we have revised the conclusion of the introduction section as follows:

Page 6, Line 20 to Page 7, Line 12: "For physician attire to positively influence patients, an understanding of when, why and how attire may influence such perceptions is necessary. While several studies have examined the influence of physician attire on patients, few have considered whether or how physician specialty, context of care, and geographic locale and patient factors such as age, education or gender may influence findings. This knowledge gap is important because such elements are likely to impact patient perceptions of physicians. Furthermore, the existing literature stands conflicted on the importance of physician attire. For instance, in a seminal review, Bianchi and colleagues suggest 'patients are more flexible about what they consider 'professional dress' than the professionals who are setting standards.' However, a more recent review reported that patients prefer formal attire and a white coat, noting that 'these partialities had a limited overall impact on patient satisfaction and confidence in practitioners.' This dissonance remains unexplained and represents a second important knowledge gap in this area of research."

Additionally, we also amended the final paragraph of the discussion section as follows:

Page 21, Line 17 to Page 22, Line 2: "In summary, the influence of physician attire on patient perceptions is complex and multifactorial. It is likely that patients harbor a number of beliefs regarding physician dress that are context and setting-specific. Studies targeting the influence of such elements

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represent the next logical step in improving patient satisfaction. Hospitals and healthcare facilities must begin the hard work of examining these preferences using standardized approaches in order to improve patient satisfaction, trust and clinical outcomes."

Finally, we amended the conclusions section of our abstract to read:

Page 4, Lines 10-11: "Policy-based interventions that target such factors appear necessary."

One example of where the knowledge gap could be sharpened is in the background section of the abstract. To me, it seems an over-simplification to say "preferences regarding physician are unknown" in light of the fact this article is based on synthesis of over 2 dozen articles on this topic. Need to state the knowledge gap crisply/concisely here.

AU: Thank you for your precise comment and feedback. We have rewritten according to these recommendations. Please see the changes made to the background and discussion sections of the manuscript (as noted above) as well as the objectives and conclusion sections of the abstract in response to the Editor's shared concern.

The problem persists in the introduction section of the manuscript as well – in the 3rd/last paragraph, the authors state that while studies on this topic are "abundant" (again, runs counter to abstract statement of "unknown"), the effects of specialty, context, locale, etc. are poorly understood…might this also be restated as a hypothesis that these factors are more important than attire in influencing patient satisfaction? From my perspective, the big "so what" buried underneath the focus on attire is "what the heck influences patient satisfaction?" We are all a bit in the dark here – many conflicting ideas with relatively sparse data and increasing urgency to figure it out. So I think building on this larger uncertainty could be key to piquing the interest of readers and improving the framing (and potential impact?) of this paper.

AU: Thank you for pointing out this ambiguity as well as the apparently conflicting nature of the language between the abstract and introduction. This was not our intent. The abstract has been revised extensively as follows:

Page 3, Lines 2-5: "Despite a growing body of literature, uncertainty regarding the influence of physician dress on patients' perceptions exists. Therefore, we performed a systematic review to examine the influence of physician attire on patient perceptions including trust, satisfaction, and confidence."

Additionally, we have revised the following sentences:

Page 6, Line 20 to Page 7, Line 12: "For physician attire to positively influence patients, an understanding of when, why and how attire may influence such perceptions is necessary. While several studies have examined the influence of physician attire on patients, few have considered whether or how physician specialty, context of care, and geographic locale and patient factors such as age, education or gender may influence findings. This knowledge gap is important because such elements are likely to impact patient perceptions of physicians. […] This dissonance remains unexplained and represents a second important knowledge gap in this area of research."

We also made revisions to the last paragraph of the introduction as follows:

Page 7, Lines 13-15: "Therefore, to shed light on these issues, we conducted a systematic review of the literature hypothesizing that patients will prefer formal attire in most settings."

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Further, the authors also suggest in this last paragraph of the introduction that the existing reviews on this topic stand in conflict – this could also be a window to a more crisp knowledge gap that is a bit different (perhaps complimentary) to above: prior studies are in conflict so there is genuine equipoise here. Again, I think a stronger hypothesis statement might help here. Did the authors hypothesize that Bianchi was closer to the truth (patients don't care as much as providers do) or that Bearman had it right (patients do care…then again, the effect was limited)?

AU: Thank you for making this important point. As stated earlier, while the finding that patients prefer formal attire and a white coat is aligned with Bianchi, their systematic review did not parse out the influence of demographics, geographic location, or clinical context on patient preferences regarding attire. It was our goal to illuminate the nuances, which may have accounted for the apparent equipoise between the previous literature reviews. To that end, we revised the concluding paragraphs of our introduction as above.

Abstract conclusion – in contrast to the background/introduction, to me it seems like an over-complication to say, "For attire to positively influence patients, approaches tailored to myriad factors appear necessary." Why not just plainly state that there is no clear evidence (or very weak evidence) that attire drives satisfaction when age, setting, locale, and context of care are considered? As with above comments on the background/intro, I think you need better framing/context to amplify the "so what" from your findings.

AU: We appreciate Review #2's viewpoint. However, we feel that there is evidence to support the assertion that attire does indeed influence patient perceptions. A number of studies included in this review make this point. However, we agree that we may not have framed this appropriately. Through guidance from the reviewer, we have rewritten the manuscript such that these evidentiary aspects become clearer. Thanks to the reviewers feedback, we believe the message of the paper is substantially improved. Specific changes include the following:

Page 4, Lines 9-11: "Although patients often prefer formal physician attire, perceptions of attire are influenced by age, locale, setting and context of care. Policy-based interventions that target such factors appear necessary."

Additionally, we have made the following changes to further improve upon the messaging of the paper:

Page 19, Line 19 to Page 20, Line 2: "Third, only 7 of the included studies were rated as being at low risk-of-bias using the Downs and Black scale. This finding reflects in general the limited quality of this literature and suggests that while physician attire may be important, more methodologically rigorous studies are needed to better understand and truly harness this aspect to improve patient satisfaction. Fourth[…]"

Page 20, Line 21 to Page 21, Line 1: "Our review suggests that formal attire is almost always preferred with respect to physician attire may be unwise given the heterogeneous evidence-base and methodological quality of available data."

Page 21, Lines 7-16: "Rather, interventions that test the impact of when and how care is delivered, types of patients encountered, and approaches used to measure patient preferences are needed. In order to better tailor physician attire to patient preferences and improve available evidence, we would recommend that healthcare systems capture the 'voice of the customer' in individual care locations (e.g., intensive care units, emergency departments) during clinical care episodes. The use of a standardized tool that incorporates variables such as patient age, educational level, ethnicity and background will help contextualize these data in order to derive individualized policies not only for

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each area of the hospital, but also for similar health systems in the world."

ADDITIONAL REVISIONS TO THE MANUSCRIPT

AU: On the basis of reviewer feedback and refocusing the message of the paper, we also made several changes to the manuscript to ensure clarity, framing and readability. These are enumerated as follows with bold denoting changes.

In the introduction section, we changed the following sentences as follows:

Page 6, Lines 12-13: "Therefore, strategies that help in gaining patient trust and confidence are highly desirable."

Page 7, Lines 8-10: "However, a more recent review reported that patients prefer formal attire and a white coat, noting that "these partialities had a limited overall impact on patient satisfaction and confidence in practitioners."

In the discussion section, we changed the wording of the following:

Page 17, Line 18 to Page 18, Line 7: "Importantly, we found that elements such as patient age and context of care in addition to geography and population appear to influence perceptions regarding attire. For example, patients who received clinical care were less likely to voice preference for any type attire than patients that did not, perhaps exemplifying the importance of interaction over appearance. Similarly, older patients and those in European or Asian nations were more likely to prefer formal attire than those from the U.S. Collectively, these findings shed new light on this topic and suggest that although professional attire may be an important modifiable aspect of the physician-patient relationship, finding a "one-size-fits-all" approach to optimal physician dress code is improbable."

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