Auscultation Skills: Gown vs Skin?

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Background
Physical assessment is typically part of graduate and undergraduate nursing courses. Practice sessions include manikins, sounders, recorders, and five patients. Traditionally students are taught to place the stethoscope directly against the skin. Yet many practitioners are observed listening to heart and lung sounds through patient gowns or clothing. The concern from this practice is a potential for missing significant heart and breath sounds. Few studies have been conducted to determine if this is a good standard of practice.

Research Questions
1. Is there a difference between heart sound and lung sound interpretation when auscultated with the stethoscope against the manikin’s skin and auscultated through a gown?
2. Does auscultation directly against the skin improve accuracy of heart sound and lung sound auscultation when compared to auscultation through a gown?

Methods
• Convenience sample of 30 last-semester Nurse Practitioner students (25 female/5 male; average years of experience: 10.2 years)
• Independent variable = skin vs gown auscultation; Dependent variable= correct identification of 0, 1, 2, 3, or 4 sounds)
• Repeated measures design + questionnaire with demographics and 4 questions about auscultation practices
• Participants were scheduled individually to listen to heart and breath sounds on the cardiopulmonary sounds simulator, Harvey®
• Each person was oriented to all 4 heart sounds (pericardial friction rub, S3, S4, murmur)
• Participants identified & recorded 4 heart sounds with stethoscope directly on skin
• Sounds were scrambled, gown was placed on manikin, and participants listened to same 4 heart sounds through gown & recorded
• Procedure was repeated with 4 breath sounds (normal vesicular, wheeze, pleural rub, crackles)

Analysis and Results
-Descriptive statistics demonstrated number of correctly identified sounds for heart and lungs through gown and directly against skin.
- Generalized Estimating Equation model (similar to logistic regression) indicated that none of the demographic variables (years of practice, gender, age, first RN degree type), affected the student ability to identify sounds correctly.
-There was no significant effect of listening directly on skin vs listening through gown (although students listening directly through skin were slightly more accurate than through gown) (p = 0.0682).
-There was a significant effect in students’ ability to correctly identify breath sounds vs heart sounds: There is a significantly higher probability that a student would identify all breath sounds correctly than they would heart sounds. (p =0.0073*).

Conclusions
• In practice, many practitioners auscultate through hospital gowns, possibly related to dignity and privacy issues in patient care.
• Further research is needed to determine the impact of the practice to determine if sounds are being overlooked or misidentified.
• Further efforts in nursing education of nurse practitioner students should focus on repeated practice of cardiac sounds, normal and abnormal, to further hone their capabilities and expertise in diagnostics.
• The importance of auscultatory skills should not be underestimated in favor of higher technology readily available. While such diagnostics tools are necessary, they cannot replace skillful assessment techniques that may provide early detection of slight changes in a patient’s condition.

References

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