

Introduction

The assessment of burn depth and the prediction of spontaneous wound healing potential is one of the most important roles of any provider assessing burn wounds.

In an attempt to determine whether burn wound reading by physical exam to decide on best clinical treatment is a skill that can be measured, this article describes a method developed and employed at this large urban burn center (approximately 800 inpatient admissions and 3000 outpatients seen each year) for assessment of burn wounds.

Methods

This study was conducted from August 8, 2019 to September 19, 2019. Study participants were attending physicians, fellows, residents and physician assistants (Figure 1).

Cases were anonymized by the removal of personal identifiers, and participants were sent an SMS via mobile phone of a link to a Google Forms survey (Figure 2). After in person examination of the burn wounds, participants voted on each patient seen. Survey answer choices were 1 (healing without need for surgery), 2 (unsure), and 3 (need for surgical excision).



Figure 1: Wound rounds discussion after bedside physical examination of all patients

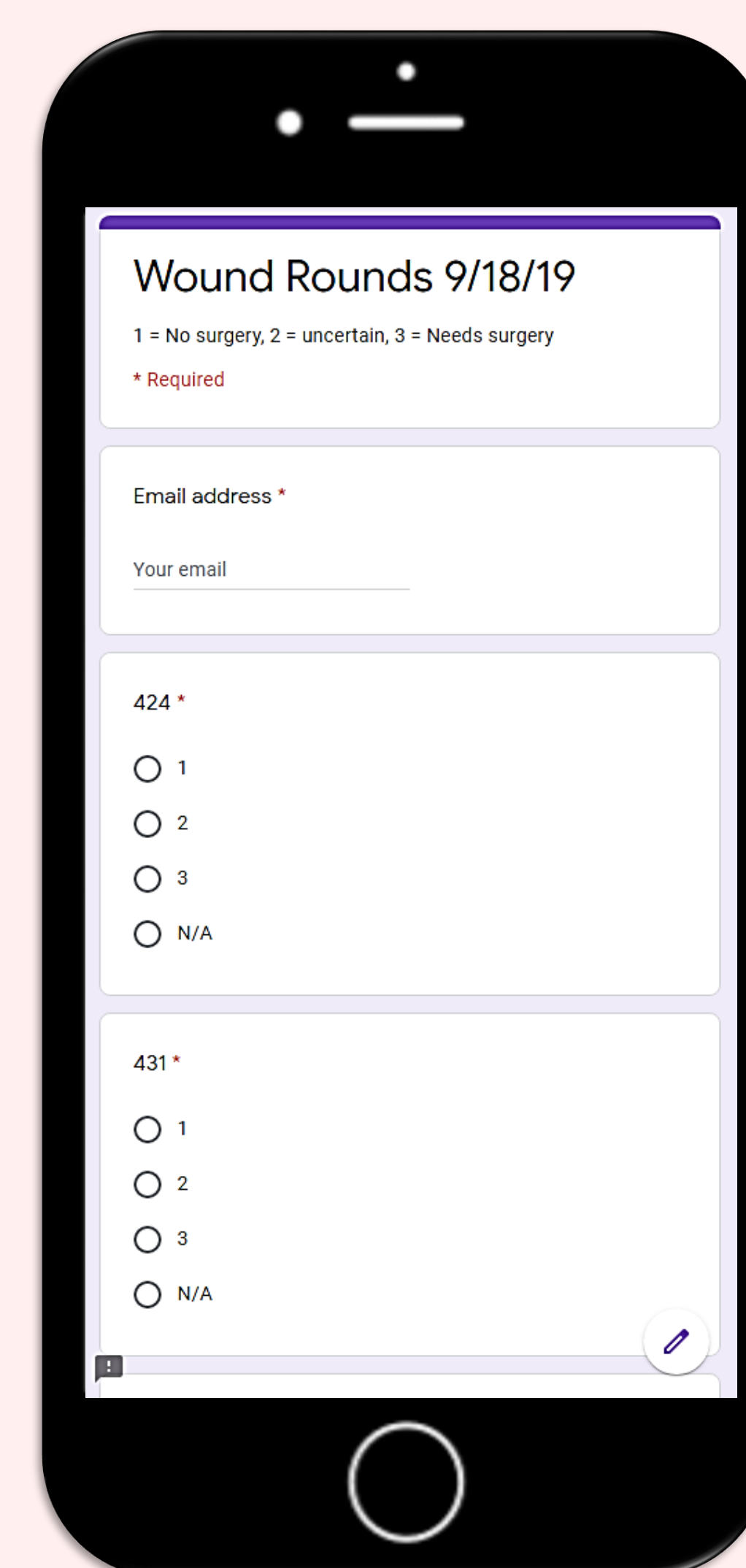


Figure 2: Example of voting survey

The participants were grouped by job title into expert, intermediate and novice groups (Figure 3), and the responses were classified as correct or incorrect based on the final outcome of the patient.

Wound evaluations with unanimous responses were felt not to demonstrate the skill of burn wound assessment, as some wounds were obviously in need of surgery or were going to heal to even the most inexperienced examiner. For these reasons, unanimous response votes were excluded from the data analysis. Mean percentage of correct responses were calculated for each group, and statistical analysis of the means was performed using a one-way weighted ANOVA test.

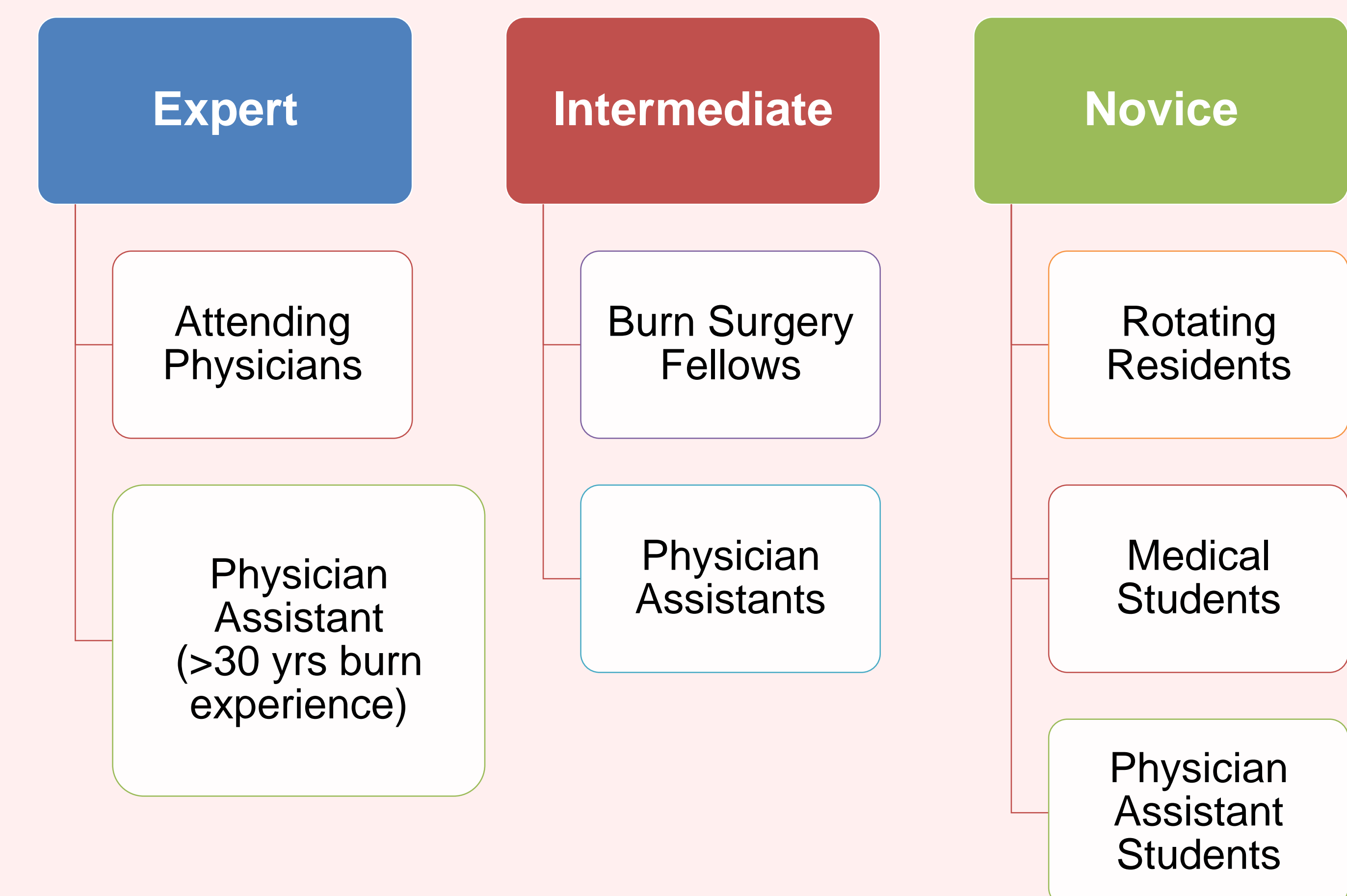


Figure 3: Participants were grouped by job title and level of burn experience into the above three groups

Results

During the study period a total of 56 voting events were recorded, 26 of which were excluded based on exclusion criteria. The percentage of correct responses was $58.5 \pm 8.2\%$ in the expert group ($n=94$), $50.8 \pm 11.7\%$ in the intermediate group ($n=65$), and $41.7 \pm 16.8\%$ in the novice group ($n=72$). Statistical analysis showed that these were statistically significant differences ($p < 0.01$). These differences are highlighted further when random chance (33.3%) is removed.

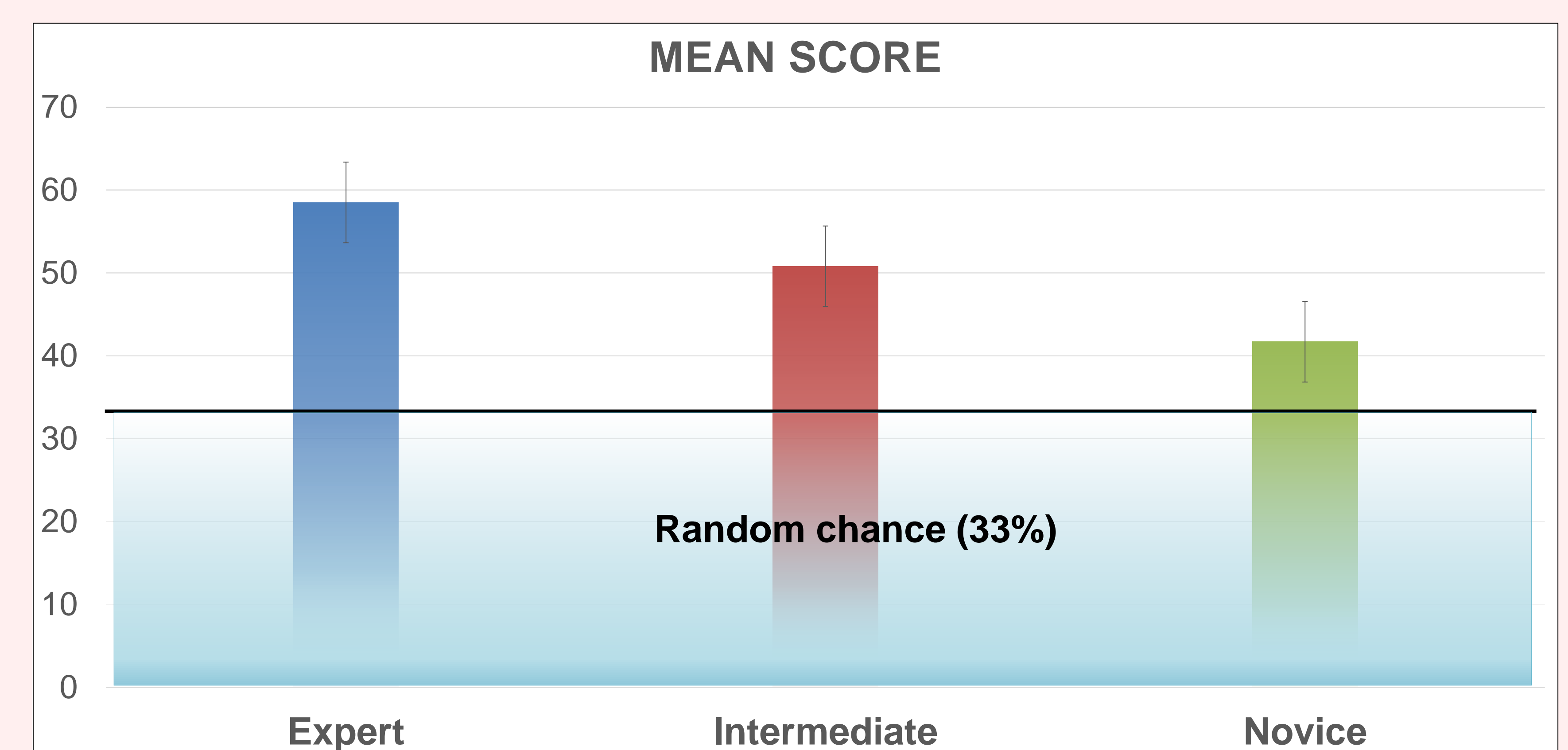


Figure 4: Mean Scores

Conclusion

This pilot study shows that the current survey method of assessing burn wounds resulted in higher scores in experts when compared to intermediate and novice level practitioners, suggesting that burn wound reading is a skill that can be measured. Further development of a formative assessment could aid in the development of an educational module to improve wound reading skills.

References, Funding and Disclosure

1. Tevlin R, Dillon L, Clover AJP, *Education in burns: Lessons from the past and objectives for the future*. Burns. 2017 Sep;43(6):1141-1148.
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