

Testing a Neuropathic Foot Wound Debridement Model

Christina Jensen¹, Michael Malowinski², Theodore MacKinney¹

Departments of Medicine¹ and Surgery², Medical College of Wisconsin, Milwaukee WI

BACKGROUND

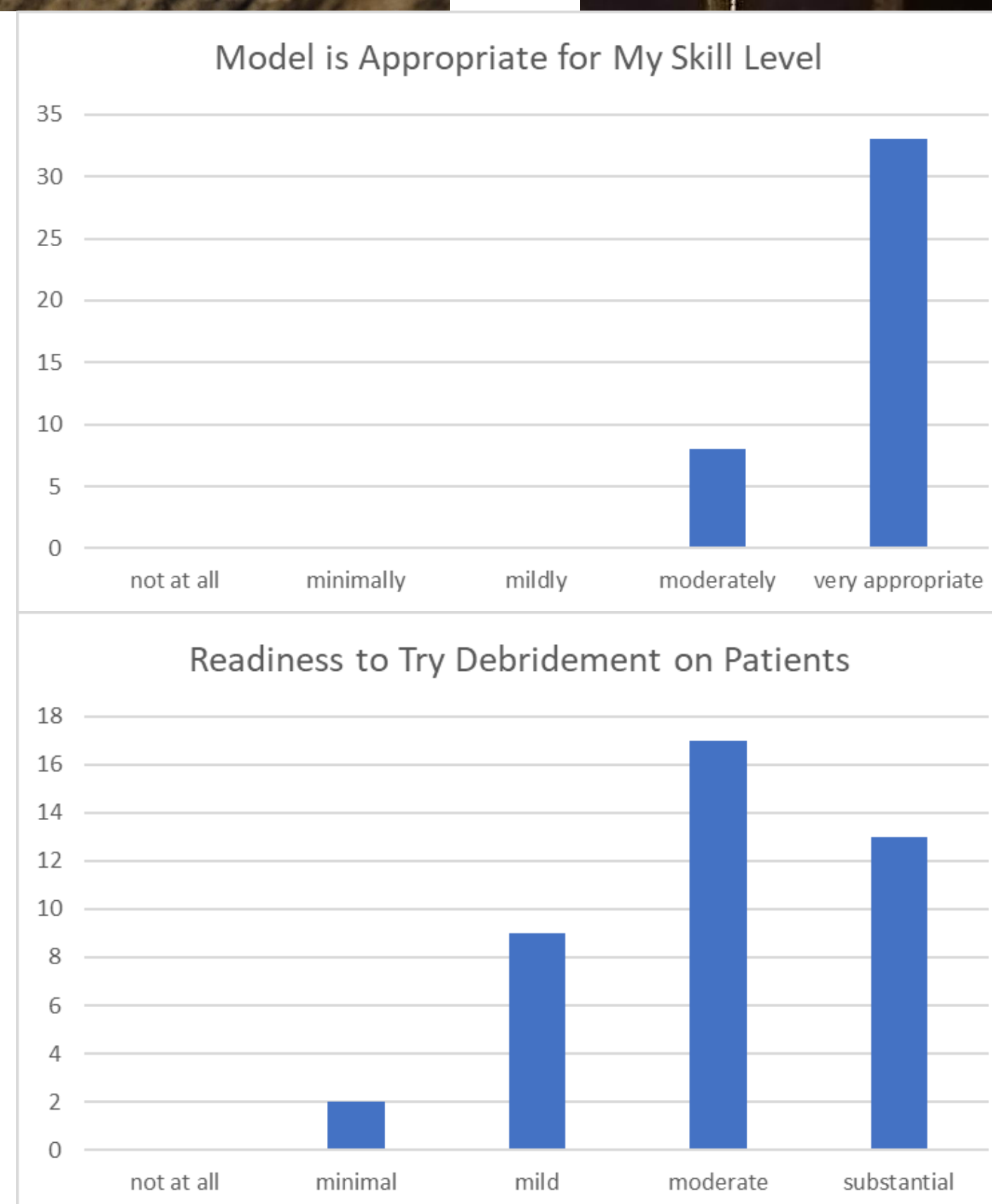
- Diabetic and neuropathic foot ulcers are common, serious, lead to amputations if not properly managed¹.
- Debridement is critical for wound healing. Learning debridement techniques is challenging², but appropriate in primary care, podiatry, and physical therapy.
- Commercial models that can simulate the neuropathic foot ulcer **not** readily available-- citrus fruit is commonly used.³
- To our knowledge no models have been tested for efficacy with learners. We developed and tested a novel simulation model for teaching new learners how to debride neuropathic pressure ulcers on the foot.

METHODS

The model: a basic plantar surface was made from 1cm thick polyurethane polymer. Each foot model holds a round debriding cartridge containing a two-layer silicone filling, with a hole in the middle simulating the ulcer. The hardness of the top layer is consistent with callous density and is colored like callous tissue. A deeper layer of red silicon indicates viable non-necrotic tissue and signifies adequate depth of debridement.

Testing was done at the national meeting of the American College of Physicians at the Clinical Skills Workshop on chronic wound care. Forty-one consecutive physicians underwent the training and later gave their anonymous feedback.

RESULTS



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- 76% of providers had minimal or no prior wound debridement experience.
- 95% felt their understanding was moderately or substantially improved.
- 76% felt the two-color model helped substantially in understanding the extent of debridement needed.
- 80% felt strongly that the model was appropriate for their skill level.
- 72% felt moderately or very ready to proceed with patients.

CONCLUSION

- A novel neuropathic foot ulcer debridement model is well received by learners who are new to this skill and raises their confidence and skill for future debridement.
- The simplicity of the model makes it likely to be inexpensive.

REFERENCES

1. Armstrong, D. G., Boulton, A. J., & Bus, S. A. (2017). Diabetic foot ulcers and their recurrence. *New England Journal of Medicine*, 376(24), 2367-2375.
2. Sinha, S. N. (2007). Wound debridement: doing and teaching. *Primary Intention: The Australian Journal of Wound Management*, 15(4), 162-164.
3. Jackson, A., & Rajbhandari, S. (2014). Developing a grapefruit model for assessment and training of diabetic foot ulcer debridement. *Simulation in Healthcare*, 9(5), 331-336.