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Trichotillometry: the reliability and practicality of hair pluckability as a method of nutritional assessment

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Abstract

Background

A nutritional assessment method that is quick and easy to conduct would be extremely useful in a complex emergency, where currently there is no agreed practical and acceptable method. Hair pluckability has been suggested to be a useful method of assessing protein nutritional status. The aim was to investigate the reliability of the trichotillometer and to explore the effects of patient characteristics on hair epilation force.

Methods

Three observers plucked hair from twelve participants to investigate the within- and between-observer reliability. To investigate the effect of patient characteristics on hair pluckability, 12 black African and 12 white volunteers were recruited. Participants completed a short questionnaire to provide basic information on their characteristics and hair.

Results

Mean hair pluckability measurements for the 12 participants obtained by the three observers (39.5 g, 41.2 g and 32.7 g) were significantly different ($p < 0.001$). Significant variation between patients was also found ($p < 0.001$). None of the patient characteristics significantly affected hair pluckability, with the exception of age, although this relationship was not consistent.

Conclusion

Due to significant variation in measurements, hair pluckability does not appear to be a reliable method for assessing adult nutritional status. Hair pluckability could be a useful method of nutritional assessment in complex humanitarian emergencies but only if the reliability was improved.



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