



Blood Pressure Monitoring—Cuff Size Matters

Take Home Point: The use of an inaccurately sized automated blood pressure (BP) cuff resulted in significantly inaccurate BP readings.

Citation: Ishigami J, Charleston J, Miller E, et. al. Effects of Cuff Size on the Accuracy of Blood Pressure Readings: The Cuff(SZ) Randomized Crossover Trial. *JAMA Intern Med.* 2023 Oct 1;183(10):1061-1068. doi: 10.1001/jamainternmed.2023.3264.

Relevance: Chronic hypertension is a leading cause of cardiovascular and cerebrovascular morbidity and mortality, and accurate measurement of BP is central to the screening and monitoring of BP.

Study Summary: This was a randomized, crossover community trial based in Maryland. Participants were recruited via community screening events, targeted mailing to previous trial participants, patients from hypertension clinics and referrals from physicians providing hypertension care. Four cuff sizes were used: small, regular, large, and extra-large. All BP measurements were obtained by research staff members, and measurements were taken between 9AM and 6PM using an automated, validated, oscillometric device (ProBP 2000 Digital Blood Pressure Device [WelchAllyn]). Each participant completed 4 sets of triplicate BP measurements for a total of 12 BP measurements per study participant.

The authors randomized 195 participants with 35 participants measured for small cuff, 54 regular, 66 large, and 40 extra-large cuffs. They found measurements obtained when the regular sized BP cuff was too large or too small for the participant resulted in clinically and statistically significant lower and higher BP readings, respectively. The effect was similar across the other cuff sizes with the magnitude of difference greater when larger BP cuff sizes would have been appropriate.



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Editor's Comments: Body mass index of participants was self-reported and not considered within the analysis. However, the results are compelling and confirm the importance of accurate cuff sizing to ensure accurate BP measurement and monitoring. These findings also have important implications for patient education regarding cuff size selection as a large part of BP management relies on patients monitoring their pressures with a device in their homes. ■

Use of AI in Surgical Skills Training—Unintended Consequences

Take Home Point: In this study, an artificial intelligence (AI)-enhanced curriculum for bimanual surgical skills resulted in unintended changes that improved performance in safety but negatively affected some efficiency metrics.

Citation: Fazlollahi A, Yilmaz R, Winkler A, et. al. AI in Surgical Curriculum Design and Unintended Outcomes for Technical Competencies in Simulation Training. *JAMA Netw Open.* 2023 Sep 5;6(9): e2334658. doi: 10.1001/jamanetworkopen.2023.34658

Relevance: AI is increasingly pervasive technology, but the consequences of its use in most domains remains unknown. As AI begins to be used for medical education, it's important to understand the consequences of its integration into more traditional methods of education.

Study Summary: This was a secondary analysis of 2 previously conducted studies: a cohort study and a randomized trial. The cohort study involved 14 experts performing simulated neurosurgical procedures with no feedback to establish benchmarks and was conducted in 2015-2016. In the subsequent study, 46 undergraduate Canadian medical students were randomized into 2 groups and learned to perform the same task with or without instructions from an AI-enhanced curriculum. All participants performed 4 simulated neurosurgical tumor resection procedures within a fixed time after first receiving either an AI-enhanced tutorial with a virtual operative assistant (VOA) or standard training for the procedures (control and skilled groups) after the completion of each attempt. The intervention for the VOA group involved receiving post-hoc audiovisual in-

structions on 4 learning objectives based on the learners' lacking competency.

The authors found unintended surgical skill acquisition with both positive and negative consequences following an AI-enhanced curriculum. They noted that training the non-dominant hand was associated with movement changes of the dominant hand. VOA participants demonstrated safer approach with more focused and steady control of instruments that resulted in less healthy tissue damage. However, they became significantly slower in movements of their dominant hand and were less efficient in completing the task.

Editor's Comments: There may be limited generalizability as the study focused on neurosurgical procedures. Additionally, all training and task completion was virtual and it is uncertain how this might translate to real-world performance of surgical skills. However, the study does highlight that AI is already out there for applications within medical education and extensive research opportunities exist for the many unanswered questions we must keep in mind as we begin to see increasing integration of these innovative technologies. ■

Does This Child's Wrist Fracture Really Need a Cast?

Take Home Point: In this study, the Robert-Jones (RJ) bandage was non-inferior to traditional cast for treatment of selected distal radius fractures in children.

Citation: Doski J, Shaikhan R. Robert Jones bandage versus cast in the treatment of distal radius fracture in children: A randomized controlled trial. *Chinese Journal of Traumatology*. 26 (2023) 217e222

Relevance: Remodeling and healing of fractures in children is significantly more robust than in adults. Present evidence suggests that specific wrist fractures, such as torus fractures, can be successfully treated without rigid immobilization in children. This study looks at the possibility of bandaging as an alternative treatment modality to rigid immobilization for certain fracture types.

Study Summary: This was a randomized controlled, non-inferiority clinical trial based in Iraq. Children aged 2-12 years with torus, greenstick, non-displaced distal radial physis fractures (Salter-Harris classification type 1 and 2 only), or non-displaced/minimally displaced metaphyseal fractures were recruited. They were randomized in a 1:1 fash-

ion to receive a short arm cast or RJ bandage (a bulky bandage comprising alternating layers of cotton and elasticated bandaging material). Follow-ups (at the end of the 2nd, 4th, 6th, and 12th week) of both groups were conducted with final assessment at the end of 26th week by a specialist orthopedic doctor in collaboration with a radiologist.

The authors recruited 150 pediatric patients and found that most patients had satisfactory outcomes from both treatment modalities. There were 5 complications noted: 3 pressure sores (all in the cast group) and 2 fractures, which were ultimately displaced (all in the RJ group). There was better parental satisfaction in the cast group, although not statistically significant.

Editor's Comments: This was an Iraqi study and practice may not be generalizable to more diverse populations. The participants and investigators of the study were not blinded to the treatment modality applied. The authors discounted the natural variation of stability of the differing fractures by including all types of fractures in the study. No greenstick fractures were included in either group. There were few complications in either group. This study is noteworthy as it highlights the continuously changing nature of recommendations surrounding pediatric fracture immobilization.

It is important to ensure initial treatment is discussed with the orthopedic specialist with whom the child will be following up, as there's considerable nuance in splint selection based on age of patient, fracture characteristics, etc. In the absence of clear guidance from an orthopedist, it remains prudent to err on the side of more conservative/traditional rigid splinting. ■

Considering the Language We Use

Take Home Point: This editorial article suggests that clinicians should be conscientious about communications surrounding serious illness when speaking to patients and their families to promote appropriate care that aligns with patients' wishes and values.

Citation: Kruser J, Clapp J, Arnold R. Reconsidering the Language of Serious Illness. *JAMA*. 2023 Aug 15;330(7):587-588. doi: 10.1001/jama.2023.11409

Relevance: Communication about illness is central to every patient encounter. Reflecting on the language we use is important for identifying improvements in the way we convey information about patients' conditions and treatment options.

Study Summary: This was an editorial looking at the way language is used in communication with patients and their families with serious illness. The authors focused on the word “need” specifically and how it is used to express clinicians’ viewpoints when speaking to patients and families regarding serious illnesses. The authors propose a shift in how clinicians think and communicate about serious illnesses to promote transparent deliberation and ensure that care is concordant with patients wishes.

The authors suggest using the phrase “what this means” as an alternative to “need” in most contexts. In using this phrase, a pause for reflection is created without implying or presuming the appropriate course of action. For example, in a UC setting, this phrase might be used when influenza is diagnosed in an otherwise healthy adult. The clinician might say, “What this means is that there’s a decision to be made about taking antivirals,” rather than saying, “We need to start oseltamivir.” Pausing to acknowledge the change creates space to attend to patients’ and families’ experience of receiving news about a diagnosis before jumping to solutions. The phrase “what to do next” then can be used subsequently to offer an opportunity for further deliberation, collaboration, and informed and shared decision making.

Editor’s Comments: The authors’ intention is to offer an opinion on how we might reframe the language used in more acute hospital settings. However, as UC clinicians, these messages are also relevant, as there are situations where reframing the phrases and language we use can help negotiate tricky and difficult patient interactions. ■

Anchoring Bias and Its Effects on Arriving at a Diagnosis

Take Home Point: In this study, anchoring bias was observed when physicians noted the reason for patient’s visit documented prior to the seeing the patient.

Citation: Ly D, Shekelle P, Song Z. Evidence for Anchoring Bias During Physician Decision-Making. *JAMA Intern Med.* 2023;183(8): 818-823. doi:10.1001/jamainternmed.2023.2366

Relevance: Anchoring bias is a common form of cognitive bias clinicians encounter when assessing an undifferentiated patient complaint. Awareness of this bias and its potential consequences is critical to avoid premature closure and, consequently, missing serious diagnoses.

“There are situations where reframing the phrases and language we use can help negotiate tricky and difficult patient interactions.”

Study Summary: This was a cross-sectional study of Veterans Affairs (VA) data of patients with congestive heart failure (CHF) presenting with dyspnea to VA emergency departments (ED). The authors examined data from patients presenting with chief complaint of shortness of breath and focused on the clinician’s consideration of pulmonary embolism (PE) as a possible diagnosis based on a work-up which included either d-dimer, CT angiogram of scan, ventilation/perfusion scan, or lower extremity ultrasonography in patients with and without mention of CHF in their triage note.

The authors examined data of 108,019 patient visits across 104 VA facilities. They found 4.1% had a visit reason that specifically mentioned CHF, and 13.2% were tested for PE. A documented visit reason mentioning CHF was associated with less PE testing, a longer time to PE testing, and more BNP testing. There was no significant difference in the rates of ultimately diagnosed acute PE within 30-days of the ED visit between groups. However, mention of CHF in the initial ED reason for visit was associated with a 15% lower likelihood of testing for PE.

Editor’s Comments: This study was conducted in the VA system which is a predominantly older, male population, which may limit generalizability. Nevertheless, this study highlights the insidious effects of cognitive biases and how they may affect how clinicians approach patient assessment. ■

Validating the Emoqol-100 Single Question for Low Mood in Primary Care

Take Home Point: The single question Emoqol-100 tool appears to have high validity when low scores are recorded (≤ 60) and allows for rapid screening for low mood.

Citation: Dahle N, Matthew C, Roskvist R, et. al. Emoqol-100: Development and validation of a single question for low mood in primary care - A retrospective audit. *BJGP Open*. 2023 Sep 19;7(3): BJGPO.2023.0011. doi: 10.3399/BJGPO.2023.0011

Relevance: Depression is among the leading causes of disability worldwide. Patients with depression commonly present to UC for mood complaints as well as for unrelated issues. Rapid assessment and screening for the state of patient’s mood is highly desirable in the fast-paced clinical environment of UC.

Study Summary: This was a retrospective audit of consecutive patients seen in a single general practice (ie, primary care clinic) in Auckland, New Zealand, over 20 months. The authors reviewed 160 patients in whom low mood was suspected and who were coming for wellness visits. Patients had an Emoqol-100 score and a Patient Health Questionnaire (PHQ-9) score or Burns Depression Scale Today (BDST) questionnaire administered at the same visit. The Emoqol-100 was developed to allow more accurate self-assessment of mood at that time. The specific

Emoqol-100 question is: “How is your emotional quality of life now, with 100 being perfect and zero being the worst imaginable?”

The authors found that an Emoqol-100 score in the 0-20 (out of 100) range had a positive likelihood ratio (LHR+) of 25 and was associated with a high PHQ-9 and a high BDST score, indicative of poor mood/depression. Emoqol-100 scores of <60 were indicative of low mood when compared to both PHQ-9 and BDST. Emoqol-100 scores of 81–100 had a very low LHRs (0.09), suggesting that it may have high utility for ruling out significant mood disorders, especially if patients report a very high number.

Editor’s Comments: This was a retrospective study of primary care patients. This tool may not perform similarly in other settings, and prospective study is important to determine if its use affects patient outcomes. However, this is very similar to how we assess pain, and therefore patients will likely have familiarity with the tool. It also can be done much more quickly than other depression assessments. It’s likely we will see wider adoption of this tool if it continues to prove that it correlates well with previously validated depression assessment questionnaires. ■



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