A qualitative study to explore current challenges and future opportunities relating to the prehospital triage of patients with traumatic brain injury

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Background

- Evidence suggests that patients with traumatic brain injury (TBI) benefit from treatment at specialised neurotrauma centres, emphasising the importance of accurate identification in prehospital care.

- A practical need exists to evaluate prehospital providers' perspectives in order to introduce new measures to enhance triage decisions, such as brain biomarkers, near-infrared spectroscopy and decision aids.

- This study explored the current challenges ambulance personnel face when triaging patients with suspected TBI and their perceptions of the facilitators and barriers to adopting new decision aids to enhance TBI diagnosis in the prehospital environment.
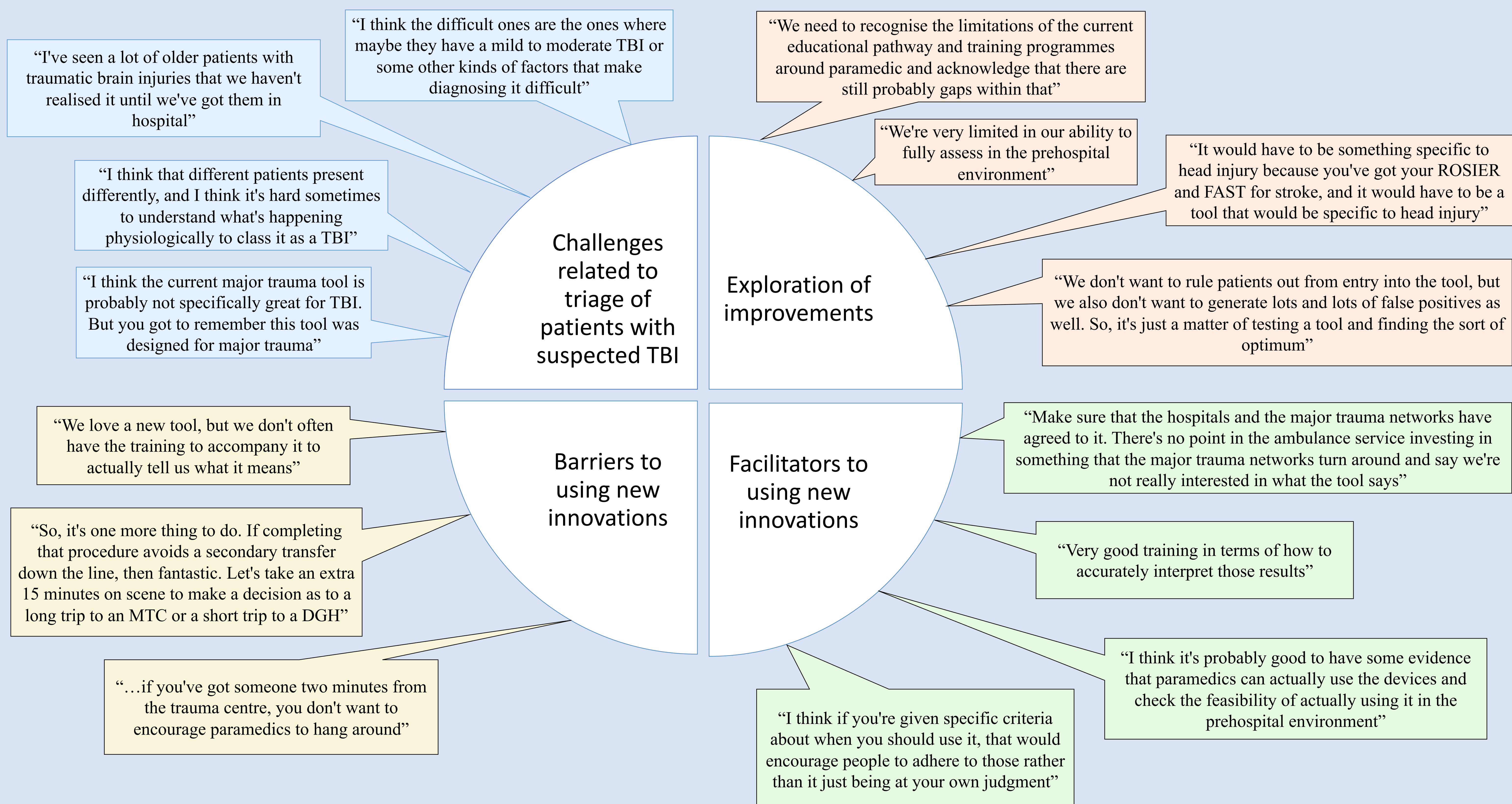
Methods

- Twenty semi-structured interviews were conducted remotely between June 2022 and December 2022 with prehospital clinicians of varying levels of experience.

- Participants were recruited in collaboration with the research lead of each UK NHS ambulance trust. The interview topic guide was developed a priori and piloted. Interviews were audio recorded, transcribed verbatim, and analysed using a hybrid process of deductive and inductive thematic analysis.

Participants

➤ (N: 20) – 15 Male & 5 Female

➤ Average interview time = 40.18 minutes

➤ Participants' ambulance service experience ranged from 4 to 24 years

Results

- Four themes and fifteen subthemes emerged, as follows.

- The first theme related to specific triage challenges: elderly patients; differentiating TBI from other conditions; identifying mild to moderate TBI; and using the current triage tools.

- The second theme related to potential areas for improvement: education and training; specific TBI triage criteria; elderly triage criteria and new diagnostic tools.

- Third, there were barriers to using new innovations: training and financial aspects; on-scene time; and application and distribution concerns.

- The fourth theme was facilitators: effective implementation strategies; in-depth and practical training to instil confidence in paramedics; evidence of accuracy, cost-effectiveness and feasibility of implementation; and guidelines for selecting patients for testing and guiding care.

"I think the difficult ones are the ones where maybe they have a mild to moderate TBI or some other kinds of factors that make diagnosing it difficult"

"I've seen a lot of older patients with traumatic brain injuries that we haven't realised it until we've got them in hospital"

"I think that different patients present differently, and I think it's hard sometimes to understand what's happening physiologically to class it as a TBI"

"I think the current major trauma tool is probably not specifically great for TBI. But you got to remember this tool was designed for major trauma"

"We need to recognise the limitations of the current educational pathway and training programmes around paramedic and acknowledge that there are still probably gaps within that"

"We're very limited in our ability to fully assess in the prehospital environment"

"It would have to be something specific to head injury because you've got your ROSIER and FAST for stroke, and it would have to be a tool that would be specific to head injury"

"We don't want to rule patients out from entry into the tool, but we also don't want to generate lots and lots of false positives as well. So, it's just a matter of testing a tool and finding the sort of optimum"

"We love a new tool, but we don't often have the training to accompany it to actually tell us what it means"

"So, it's one more thing to do. If completing that procedure avoids a secondary transfer down the line, then fantastic. Let's take an extra 15 minutes on scene to make a decision as to a long trip to an MTC or a short trip to a DGH"

"…if you've got someone two minutes from the trauma centre, you don't want to encourage paramedics to hang around"

"Make sure that the hospitals and the major trauma networks have agreed to it. There's no point in the ambulance service investing in something that the major trauma networks turn around and say we're not really interested in what the tool says"

"Very good training in terms of how to accurately interpret those results"

"I think it's probably good to have some evidence that paramedics can actually use the devices and check the feasibility of actually using it in the prehospital environment"

"I think if you're given specific criteria about when you should use it, that would encourage people to adhere to those rather than it just being at your own judgment"

Challenges related to triage of patients with suspected TBI

Exploration of improvements

Barriers to using new innovations

Facilitators to using new innovations

Conclusion

❖ Enhancing personal training and education, assessing the feasibility of introducing new diagnostic tools, and developing evidence-based triage tools may improve prehospital triage for patients with suspected TBI.

Acknowledgement

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