Reviewer's report

Title: Development and evaluation of a novel, real time mobile Telesonography System in management of Patients with Abdominal trauma: Study Protocol

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Reviewer: Sang Do D Shin

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General comments and overall decision
This study aims to evaluate the performance characteristics and capability of a novel Telesonography system (TS) to transmit images to the ED from moving ambulance. The study has a plan to measure the image quality using a validated image quality scale and to survey using the Questionnaire for User Interaction Satisfaction (QUIS).

Abstract

Background
Could you shorten the paragraph of the background? The paragraph can be focused on the study question and hypothesis with less than two sentences.

Method
Could you add more information on the study participants’ characteristics: how many patients volunteered, how many physicians
Could you add more information on study protocol: how many times running and performing the ultrasound examination?
Could you explain the method for measuring quality scale and the QUIS?

Result
Please summarize expected results of the study?

Discussion
Could you add any expected effect on the clinical practice or outcomes?

Text

Background

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Authors described as “The goal of this study is to develop and evaluate the effectiveness of a telesonography (TS) system in improving the efficiency, and quality of care of patients with abdominal trauma.” However, the study just will develop the TS system and measure the image quality which, that is the
feasibility, not effectiveness nor quality of care, of the TS. Could you clarify the study objectives?

There is no data on effectiveness or quality care in this study. The effectiveness means saving cost for unit care. Quality of care also means appropriate process for care.

Page 6-7
The next paragraph is not proper in the background section. Move it to Method section.

“During phase 1, we will develop and test the TS system by interfacing a portable ultrasound and a broadcast unit. During phase 2, we will evaluate the usability of the novel TS system with two-way voice and one-way video communications capability and then compare the quality of the real time ultrasound images obtained from healthy volunteers in a moving ambulance via the developed TS system to those obtained in the ED. Specifically we will develop and test a “commercially ready” telesonography system that will provide ED physicians and Trauma surgeons ultrasound images of patients with acute trauma transmitted real time from a remote or pre-hospital setting.”

Methods
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Could cite the following sentence you described?

“In its current version, QUIS 7.0, contains a demographic questionnaire, a measure of overall system satisfaction along six domains, and hierarchically organized items of nine specific interface factors (screen factors, terminology and system feedback, learning factors, system capabilities, multimedia, for example). Each domain evaluates the users' overall satisfaction with that facet of the interface, as well as the factors that make up that facet, on a 9-point scale.”

The above sentences might be from the following web page: http://lap.umd.edu/quis/.

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Could you explain more characteristics of the TS you are going to invent. What’s the device for video compression? What’s the frame rate to transmit the image? What kinds of cellular system will be used among CDMA or FDMA or TDMA or WCDMA? Ultrasound image data needs a great capacity to compress and transmit it within the appropriate time interval. What’s the method to speed up the transmission of the huge burden of video clip?

Results
Could you listing the expected results?

Discussion
Could you review previous similar studies? What’s the weak point or limitation in
the studies?
Could you describe the expected effect of this study result in clinical practice or outcomes?

Thanks

Level of interest: An article of insufficient interest to warrant publication in a scientific/medical journal

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
'I declare that I have no competing interests'