**Telemedicine: Remote evaluation of a physical examination using a novel device is as safe and effective as the conventional examination.**

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**Introduction**

TytoCare is a novel device designed for conducting a physical examination of ears, throat, heart and lungs and wirelessly transmitting the results for a clinician’s review from a distance. The aim of our study was to evaluate the safety and efficiency of the Tyto device.

**Methods**

The study was a prospective study of children aged of 2-18 years presenting to an emergency department (ED) of a tertiary facility. Participants were examined by a physician using the Tyto device and following this exam were evaluated by an ED senior physician using conventional physical examination tools. The Tyto assisted (TA) examination of right ear, left ear, heart, right lung, left lung and the throat was subsequently remotely evaluated by an independent senior physician. The TA and the conventional examinations were compared and analyzed using the Chi-square and Kappa tests for agreement. The quality of the data retrieved, user experience and safety were evaluated using a 5 point scale.

**Results**

Of 138 children studied, 59% were boys. The average age was 8.1 ± 5 years.

The agreement (kappa) for right ear, left ear, heart, right lung, left lung and throat examinations resulted in 0.467, 0.781, 0.674(1), 0.905, 1, 0.796, respectively, where 1 is perfect agreement, >.75 is excellent agreement, .40 to .75 is average to good agreement, <.4 is weak agreement, 0 is agreement by chance and <0 is no chance agreement. The average quality score was 3.93, 4, 4.94, 4.35, 4.31, 4.9 respectively and average user experience score was 4.64, 4.76, 4.95, 3.92, 4.1, 4.76, respectively. No adverse events were recorded during the course of the study.

**Conclusions**

The remote physical examination findings of organs studied using the Tyto device were as safe and effective as the conventional physical examination.