

IMPACT OF A COMPUTER-BASED DIFFERENTIAL DIAGNOSIS TOOL ON PATIENT SATISFACTION AND ON THE DIAGNOSTIC ACCURACY OF SKIN CONDITIONS

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Introduction: The visual clinical decision support system (CDSS) used is a computer-based differential diagnosis tool with over 40,000 images, mostly related to dermatology. Several studies have shown that this CDSS has the potential to improve the diagnostic accuracy of skin conditions. In addition to the diagnostic accuracy, patient satisfaction is another important indicator of health care quality. However, to date there is no data showing how this tool affects patient satisfaction. Therefore, the objectives of our study were to assess (i) patient satisfaction, (ii) the diagnostic accuracy of skin diseases, and (iii) the consultation lengths by comparing CDSS consultations with standard consultations.

Material/methods: In total, 37 general practitioners (GPs) were randomized to conduct either standard consultations (SDR, n=21) or CDSS consultations (n=16). GPs in the CDSS arm participated in a training webinar and were given two weeks to familiarize themselves with the tool. Patients (n=31) with a dermatologist-confirmed skin diagnosis were first examined by GPs in the SDR arm. The following week the same cohort of patients was examined by GPs carrying out CDSS consultations. All patients were examined by multiple GPs (n=3-8) in both the SDR and CDSS study arms. Patient satisfaction was assessed after each examination with a validated patient questionnaire; for the statistical analysis the Wilcoxon signed-rank test was used. For each patient GPs documented the diagnosis and the consultation length using electronic case report forms. The diagnostic accuracy was determined by comparing the diagnoses stated by the GPs with the dermatologist-confirmed skin diagnoses; the statistical analysis was performed with the Mann Whitney U test and χ^2 .

Results: A total of n=334 consultations were carried out (SDR: n=175, CDSS: n=158). Using the CDSS, more patients felt involved in the decision making (P=0.05), and more were exposed to images during the consultations (P=6.8e-27). Overall, 83% of the patients that were shown images felt better supported by this. The patient cohort represented 21 different skin diseases consisting of common (e.g. eczema) and uncommon (e.g. morphea) skin conditions. Importantly, the use of CDSS significantly improved the diagnostic accuracy by 34% (P=0.007), while the mean consultation length was slightly longer in the CDSS arm compared with the SDR arm (11.1 min \pm 3.6 vs 10.3 min \pm 4.3; P=0.01). Diagnostic accuracy was not affected by the GPs' age, years of practice, level of practice with CDSS or the length of consultation.

Conclusions: This study shows for the first time that the use of this CDSS by GPs during consultations improves patient satisfaction, and it confirms previous studies that CDSS increases the diagnostic accuracy of skin diseases. If CDSS is implemented in the clinical routine of a GP's office, it has the potential to increase the overall quality of consultations at the point-of care.