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Abstract Title Clinical Testing of smartphone based fluorescence spectroscopic device for cervical cancer screening and it's comparison with established screening methods	Theme: Clinical Research
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Mode of Presentation: Oral	
Abstract text (max word limit 200, should consist of Background, Key Findings and Conclusions) Background and objective: Cervical cancer is the fourth most common cancer among females worldwide, as reported by the World Health Organization (WHO) in 2019, with an incidence rate of 7.9% and a mortality rate of 7.5%. Existing screening methods such as PAP smears and colposcopy are at a disadvantage of being skilled operator dependant, time consuming, prone to subjective errors , invasive and labor intensive, thus requiring better methods such as optical spectrometry, AI based screening tools etc. Key findings: The findings highlight the potential of fluorescence spectroscopy as a non- invasive, rapid, real time and cost effective diagnostic tool for cervical cancer screening with high accuracy. The results demonstrated that fluorescence spectroscopy exhibited high sensitivity (90.3%) and specificity (92.5%), which are comparable to those of Pap smear and histopathology. The ROC curve analysis confirmed its strong discriminatory ability, with an AUC value of 0.916, indicating its effectiveness as a screening tool. These findings align with previous research on optical techniques for cervical neoplasia detection, emphasizing the feasibility of fluorescence-based methods in clinical applications. Conclusion and future perspective: Given its portability, cost-effectiveness, and ability to deliver rapid results, fluorescence spectroscopy has immense potential for large-scale implementation, particularly in resource-constrained settings where access to cytology-based screening programs is inadequate.If implemented effectively, fluorescence spectroscopy has the potential to transform cervical cancer screening strategies, leading to earlier diagnosis, improved survival rates, and a significant reduction in global cervical cancer mortality.	



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