The accurate diagnosis of periodontal disease is vital in dentistry. Though assessment measures of disease, as stated in wider literature, are thought to be relatively subjective, ultimately combining these factors to formal diagnosis can have differing success. To overcome this clinicians have aimed to modernise and streamline these processes to minimise this subjectivity as much as possible. With the growing population of smartphone applications geared towards Dentistry, we now have an aid to diagnosis that always sits in our pocket. The aim of this paper is to assess the diagnostic accuracy of junior clinicians when using conventional diagnostic means (in the form of a flow diagram) compared to using a smartphone application. Our methodology was to include a group of twenty Dental Core Trainees (DCTs), which were asked to diagnose ten periodontal cases for which both accuracy of diagnosis and time taken were measured. Prior to participants completing this task, they recorded their confidence in periodontal diagnosis. The participants were randomly allocated via coin toss to the experimental group or the control group. The experimental group undertook the exercise with the aid of a smartphone application (SHO.me) that allows the parameters of the case to be recorded in the app to form a diagnosis. The control group used a diagnostic flow diagram published by the British Society of Periodontology. The results of this were then assessed for statistical significance.

Results showed that 75% of participants responded (n=15), of which 60% (n=9) were allocated to the experimental group and 40% (n=6) to the control group. On assessment of responses, the arithmetic mean of correct responses was found to be 85% (n=8.5) in the control group and 90% (n=9) in the experimental group. Time to complete was 15.5 minutes in the experimental group and 20 minutes for the control, these have provisional P-values that show statistical significance (<0.05) calculated using Z scores.

We can conclude that the use of the mobile application increased the accuracy and decreased the time taken to complete the diagnostic exercise. This indicates that the application can decrease the subjectivity of periodontal diagnosis and expedite this process.