Apple Watch's Breathing Application for Stress Management

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Stress can trigger a number of psychological, physiological, and behavioral responses. Yoga and meditation are popular in alleviating stress. A modified version of Durga Pranayama or three-part yogic breath seems to alter physiological responses. More recently, technological advancements provide opportunities to affect health and wellbeing. One such application is Apple Watch's *Breathe* app that guides users through a timed deep breathing session using onscreen graphics and vibrational cues. **PURPOSE:** The purpose for this study was to assess the effectiveness of stress relief applications that assist in deep breathing and compare with that of in-person three-part yogic breath, Durga Pranayama, on altering heart rate (HR) and blood pressure (BP). **METHODS:** Ten (7M/3F) seemingly healthy students were recruited from the Penn State Berks campus. Each participant completed six deep breathing sessions (3 in-person sessions/week and 3 Apple Watch based sessions/per week) over a two-week period. HR and BP were measured before and after each session. **RESULTS:** Participants' average HR: 74.25±11.98bpm, systolic BP 112.93±14.34mmHg, diastolic BP: 73.55±13.28mmHg were assessed. A paired-samples t-test was conducted to compare the absolute differences (pre - post) in HR, systolic BP, diastolic BP measured during in-person and during the Apple Watch deep breathing sessions. Although HR & BP noticeably decreased from Apple Watch breathing sessions when compared with in-person sessions, there was no significant absolute differences in HR (2.3±4.9 vs. 1.6±3.4) bpm, SBP (5.1±4.7 vs. 2.4±5.8) mmHg and DBP (1.8±5.3 vs. -0.7±4.6)mmHg; $p > 0.05$. **CONCLUSION**: Even though HR & BP were evidently decreased during the Apple Watch deep breathing sessions; they were not statistically significant which could be due to relatively small sample size. Technology assisted meaningful reductions in HR & BP might be congruous for stress reductions and perhaps could impact heath.