Self-reported pregnancy rate among clinically subfertile women using a wearable fertility tracker

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INTRODUCTION

- 1 in 8 women seek infertility services1
- Fertility treatments can be expensive and are not always covered by insurance.2
- Almost 75% of women do not know the best time in their cycle to have conception intercourse.3
- Wearable sensor technology, together with artificial intelligence (AI), has previously been shown to predict a 5-day fertile window in regularly menstruating women with 90% accuracy,4 thereby enabling women to better time conception sex.
- To date, little research has focused on how wearable devices can help subfertile women conceive.

AIM

To determine the efficacy of wearable sensor technology and AI in helping clinically subfertile women conceive in a real-world setting

METHOD

Study 1:

- Emailed purchasers of a wearable device (Ava Fertility Tracker, see Figure 1) to complete an online survey.
- The wristworn medical device tracks changes in heart rate, breathing rate, skin temperature, heart rate variability & perfusion while the user sleeps.
- Survey consisted of 30 questions, with conditional flow (see Figure 2) asking about Fertility Service Usage, Insurance Coverage & Employer Benefits

Study 2:

- Analyzed data from 26,686 real-world users of the Ava Fertility Tracker to identify women who met clinical definition of subfertility (i.e., ≥235 years old & trying to conceive [TTC] for ≥6 months, or <35 years old & TTC for ≥12 months)
- Calculated 1-year pregnancy rate and mean time to pregnancy for subfertile users. Our findings demonstrate how women may be relying on these devices in addition to their fertility treatments, with some self-reported success.

RESULTS

Study 1:

- N=3758, mean age = 32.51 years (SD=4.01)
- Most respondents (n=947) had been using the wearable fertility tracker for ≤6 months
- 61% of women were currently TTC (n=1083); 35% currently pregnant or postpartum (n=622)
- 33% of respondents met clinical definition of subfertility

Study 2:

- 31% users (mean age = 33.98, SD=4.72) met clinical definition of subfertility when they began using the wearable fertility tracker (n=8175)
- 35.82 women ≥35 years who had been TTC ≥ 6 months
- 45.93 women <35 years who had been TTC ≥ 12 months
- Within 1 year, 28% of the subfertile cohort reported a pregnancy in-app (n=2251; average time to pregnancy = 150 days, SD = 1.9 days)
- Subfertile users accounted for a fifth of all pregnancies reported in-app using the Ava Fertility Tracker

CONCLUSIONS

Despite clinical validation among healthy, eumenorrheic women only, wearable fertility trackers nevertheless attract subfertile users. Our findings demonstrate how women may be relying on these devices in addition to their fertility treatments, with some self-reported success.

REFERENCES


Figure 1. The wearable device includes a temperature sensor, accelerometer and photoplethysmograph sensor and pairs with a complementary AI-driven mobile app

Figure 2. Study 1 survey flow based on participants’ responses

Figure 3. Duration TTC at time of survey in Study 1 (n=935)