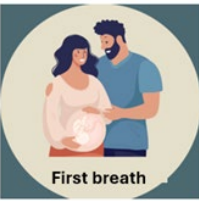


Feasibility and Preliminary Effectiveness of the “First Breath” Digital Intervention to Reduce Second-Hand Smoke Home Exposure among Israeli Pregnant Women: A Pilot Randomized Control Trial.



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Background

“First Breath”- a digital behavioral intervention to reduce second-hand smoke exposure (SHS) during pregnancy. **Aim:** Assess the feasibility and preliminary effectiveness of "First Breath" among pregnant, non-smoking, Israeli women.

Methods

A pilot randomized controlled trial. **Inclusion criteria:** ≤24 gestational weeks; age ≥18; not currently using tobacco or nicotine; living with a partner who smokes ≥1 cigarette/day. **Exclusion criteria:** high-risk pregnancy, partner enrolled in a smoking cessation program. Participants completed a questionnaire and provided a urine cotinine sample at recruitment, 4 and 12 week follow up. The **intervention group** received access to *First Breath*, text reminders, and biochemical feedback (cotinine). The **control group** received access to an informational webpage.

Descriptive analysis was conducted for feasibility measures. A mixed effects, repeated measures, regression was conducted for the preliminary effectiveness outcomes.

Results

Of the 78 women approached for recruitment, 28 were ineligible, 23 declined, with 27 (34.6%) recruited and randomized (**Figure 1**). **Recruitment rate:** 3.7 days per participant enrolled. **Overall compliance:** 26 out of 27 participants completed all questionnaires. All completed a baseline urinary cotinine, with 76.9% completing at least one additional sample. Baseline characteristics of the participants are presented in **Table 1**. **Figure 2-3** present results for the preliminary effectiveness outcomes. No significant interaction between time and group was found.

Table 1: Participant Characteristics at Baseline (n=27)

Variable	Intervention (n=14)	Control (n=13)
Age (mean [SD])	26.9 [3.5]	28.5 [5.1]
Academic education	8 (57.1%)	8 (61.5%)
Pregnancy Week		
1- 13	8 (57.1%)	5 (38.5%)
14-27	8 (57.1%)	6 (46.1%)
Past-30 day drugs use	3 (21.4%)	0 (0.0%)
Partners’ number of cigarettes per day (mean [SD])	19.8 [32.5]	10.8 [7.8]
Partner smokes in her presence	12 (85.7%)	12 (92.3%)
Digital health literacy – low	9 (64.3%)	7 (53.8%)
Home smoking rules - smoking is allowed in the house	3 (21.4%)	1 (7.7%)
Car smoking rules – smoking is allowed in the car	6 (42.8%)	8 (61.5%)

Figure 2: Home Smoking Rules (%) by Group Across Time

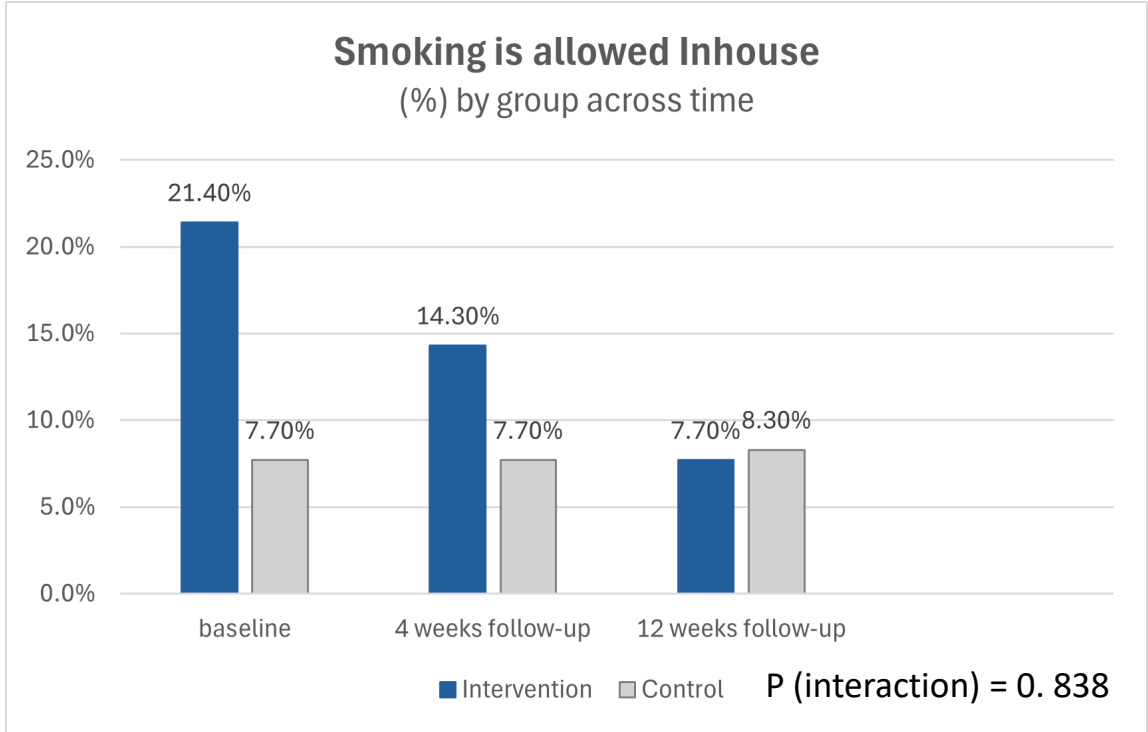


Figure 3: Urinary Cotinine Over Time by Group

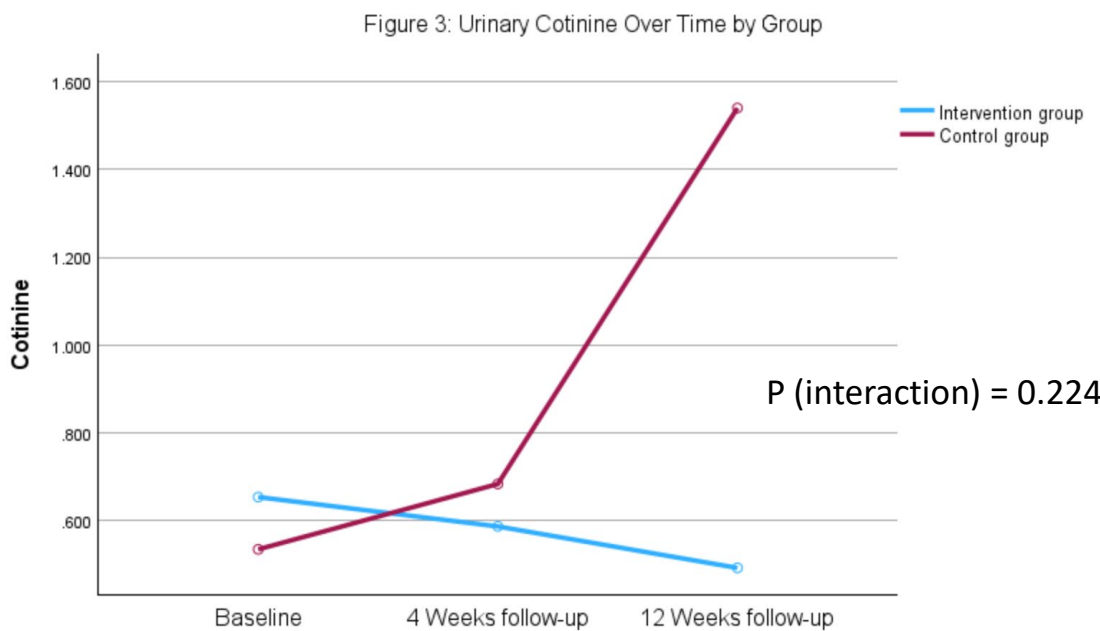


Figure 1: Recruitment and Eligibility Funnel



Conclusions

Despite recruitment challenges, participant enrollment and adherence were satisfactory. Preliminary outcomes showed favorable descriptive patterns, though no statistically significant effects were detected. A large effectiveness trial is warranted.