Background

An emerging body of research suggests that fertility patients desire more information about mental health and the psychosocial aspects of treatment (information on stress, coping, and relationships). Providing patients with this information may encourage counselling uptake, especially among those who want counselling, but have not sought it yet (unmet need). This study examines a fertility mobile health (mHealth) application (app) with psychosocial content. We investigated what factors related to engagement with the psychosocial content, and whether this engagement related to counselling uptake after accessing the app.

Research Questions

1. What sociodemographic, fertility treatment, and psychological characteristics were associated with greater engagement with the psychosocial app content?
2. Were sociodemographic, fertility treatment, and psychological characteristics, and engagement with the psychosocial app content associated with counselling uptake after accessing the app?
3. Among fertility patients with an unmet need for counselling pre-app use, what variables were associated with counselling uptake after accessing the app?

Methods

We recruited 169 participants from fertility clinics in Montreal and Toronto to use the app for 8 weeks. Participants completed surveys pre (T1) and post (T2) app use assessing their sociodemographic, fertility treatment, and psychological characteristics.

Measures & descriptive frequencies of the participant sample

- Gender (T1): 41% (25%) Men vs. 59% (75%) Women
- Immigration Status (T1): 58% (55%) Non-immigrant vs. 42% (45%) Immigrant
- Annual Income (T1): 64% (39%) Under $100,000/year vs. 36% (61%) Over $100,000/year
- Education (T1): 40% (24%) University educated vs. 60% (76%) Not university educated
- Time in Treatment (T1): 71% (43%) One or more years vs. 29% (57%) Less than one year
- Depressive symptomatology (T1): 125% (75%) Negative score vs. 75% (25%) Positive score
- Desire for Counselling - Unmet Need (T1): 71% (52%) Did not want counselling vs. 29% (48%) Wanted counselling
- Treatment Success (T2): 60% (70%) Achieved a pregnancy vs. 40% (30%) Did not get pregnant
- Receipt of mental health information from a HCP (T2): 136% (82%) Yes vs. 64% (38%) No
- Desire for mental health information from a HCP (T2): 67% (49%) Yes vs. 63% (50%) No

Outcome Variable: Engagement with the psychosocial content

This variable was operationalized from the app logs as the percentage of time spent on the app for 8 weeks. Participants completed surveys pre (T1) and post (T2) app use, and were asked about their desires for counselling at T1. The primary outcome was achieved when a participant had accessed the app once. The dependent variable, a score of time on the app, was correlated with counselling uptake at T2.

1. What variables were associated with greater engagement with the psychosocial app content?

Bivariate Analysis

Gender: Women were more engaged (mean = 0.08) with the psychosocial app content than men (mean = 0.26; t(164) = 1.74, p = 0.042).

Poly: Those with primary infertility were more engaged (mean = 0.08) than those with secondary infertility (mean = −0.33; t(163) = 2.15, p = 0.017).

Depression: Those with a positive screen on the PHQ-9 had higher engagement (mean = 0.41) vs. those with a negative screen (mean = 0.18; t(158) = 2.70, p = 0.003).

Desire for counselling: Those who wanted it at T1 had greater engagement (mean = 0.31) vs. those who did not want it at T1 (mean = 0.30; t(134) = 3.72, p = 0.003).

Stress: Greater perceived stress was associated with higher engagement (Pearson’s R = 0.17, p = 0.033).

Linear Regression Analysis

Outcome Variable: Engagement with the psychosocial content (T2) = B0 + B1 Gender + B2 Time in Treatment + B3 Desire for Counselling + B4 Depressive symptomatology + B5 Stress + Residuals

Outcome: Engagement with the psychosocial content was the only factor in the regression that was significantly associated with greater engagement with the psychosocial content.

4. Controlling for other variables, desire for counselling at T1 was the only factor in the regression that was significantly associated with greater engagement with the psychosocial content.

Results

3. In the sub-group of patients with an unmet need for counselling: What variables were associated with counselling uptake after accessing the app?

Bivariate Analysis

Receiving mental health information from a HCP: Those who received this information were significantly more likely to seek counselling (40% of this group compared to those who did not (7.27% of this group); X2(1) = 8.40, p = 0.016).

Income: Those earning over $100,000/year were significantly more likely to seek counselling (20% of this group) compared to those who earned less (0% of this group); X2(1) = 5.70, p = 0.019.

Engagement with the psychosocial app content: Greater engagement with the psychosocial app content was significantly associated with counselling uptake (mean engagement of those who sought counselling = 0.52, mean engagement of those who did not = 0.22, 95% 9.17, p = 0.044).

Discussion

Women and those with greater stress were more engaged with the psychosocial content, suggesting a need for these variables in future studies.

Among the total sample, receiving mental health information from a HCP and greater perceived stress were related to counselling uptake at T2. In the sub-sample of participants with an unmet need for mental health services, counselling uptake was significantly related to engagement with the psychosocial app content and receiving mental health information from a HCP.

Although limited by sample size, our results suggest that information provision is a key factor in encouraging counselling uptake, and that HCPs play an important role in disseminating this information. To address fertility patients’ informational and psychological needs, HCPs should make efforts to provide all fertility patients with psychological information. Exploratory findings also speak to the potential of using a mobile health app to provide fertility patients with psychological information and encourage counselling uptake for those who want it.