

### O-194 Insights from smartphone app based emotional tracking data on the impact of the Covid-19 pandemic on IVF patients.

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**Study question:** Is the emotional experience of patients during IVF different since the start of the global Covid-19 pandemic?

**Summary answer:** Tracking data since re-opening demonstrated patients lower positive challenge emotions but no significant change in harm, threat, or stress.

**What is known already:** Covid-19 caused widespread shutdown of fertility centres, including in the UK, when the HFEA mandated closure from March until May 2020. Research shows clinic closure and an uncertain future were a significant psychological burden for patients anticipating treatment. However, emotional experiences before, during and after closure have not yet been compared, which is the aim of the study.

**Study design, size, duration:** Retrospective single-centre analysis of anonymised emotional tracking data entered by 707 patients using the MediEmo smartphone app alongside their IVF cycle, from May 2017-September 2020.

MediEmo includes medication timeline/ notifications, coping tools and emotional tracking. Patients rate 2 questions daily in each emotion domain (challenge, threat, harm, e.g. 'I am feeling tense') on a 0-3 scale and indicate coping ability ('I am unable to cope with the stress I am experiencing') on a binary scale.

**Participants/materials, setting, methods:** Egg donor, recipient and fertility preservation cycles were excluded. First, mood scores were analysed by 2020 month of entry to capture the emotional impact of closure. Second, "Pre-Covid" (May 2017-Feb 2020) and "After Re-opening" (May 2020-Sept 2020) emotional experiences were compared, using student t-tests. Mean and standard deviation of scores in each mood domain entered on each cycle day were calculated, centred on luteal day 0/ egg collection, from cycle day -14 to +14.

**Main results and the role of chance:** Graphical presentation of emotional data by month clearly demonstrates the significant increase in threat, harm and stress emotions and reduced positive emotions experienced immediately prior to and during mandatory clinic closure. Of patients entering emotional data during closure in March/April 2020, 40% (14/35) stated they felt unable to cope with the stress they were currently experiencing.

From May 2020 after the clinic reopened, analysis of in-cycle emotional tracking data showed there are no significant differences in harm or threat emotion levels or numbers reporting intolerable stress during IVF, compared to cycles pre-pandemic (May 17-Feb 2020). Patients undertaking IVF cycles since closure are logging lower challenge scores (confident, encouraged, positive, hopeful), demonstrating less optimism, particularly in the 'two-week wait' phase of the

cycle. The mean (s.d) of challenge scores pre-Covid was 1.50 (1.07), compared to 1.38 (1.04) after re-opening,  $p=0.00085$ .

The women who had treatment cycles post re-opening from May 2020 onwards were older (33.4(5.2) vs 32.6(4.4)), which may reflect clinical treatment prioritisation decisions. There was no significant differences in number of eggs collected (mean(s.d) Pre-Covid 12.08 (8.0) vs After re-opening 11.83 (9.4),  $p=0.84$ ) or live birth/ ongoing pregnancy rates for undelivered pregnancies ( $p=0.69$ ) between the groups.

**Limitations, reasons for caution:** Emotional data was only available for those who chose to use MediEmo, entered emotional tracking data and who gave consent for use of their clinical data in research. As such, this analysis may not fully reflect all patients' experiences. Most of the available data were entered prior to the pandemic.

**Wider implications of the findings:** For Covid-19 safety reasons, patients currently have less in-person staff contact when undertaking IVF. The findings reassuringly suggest emotional wellbeing was not markedly different in most domains. However, daily ratings did show the emotional fall-out of clinic closures which for most threatened attainability of parenthood goals (e.g., less hope).

**Trial registration number:** Not applicable