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The acceptability of a mobile application for contraception

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Objective: To estimate to what extent women with non-standard cycle characteristics are able and willing to use the mobile contraceptive application Natural Cycles, and to compare the contraceptive effectiveness during typical use in such cohorts to that among women with more standard cycle characteristics.
Design and methods: This is a prospective observational study based on real-life data from 22,875 users of the Fertility Awareness-Based digital contraceptive application Natural Cycles. This data set was previously examined by Berglund Scherwitzl et al. (Contraception 2017) who found a first-year typical-use Pearl Index of 6.8 pregnancies per 100 woman-years, confirming the results of a 2016 article in the European Journal of Contraception and Reproductive healthcare. In this study, the sample was divided into cohorts based on menstrual cycle data. When measuring first-year contraceptive effectiveness, we divided the users by self-reported cycle length and variance. To measure the effect of the length and variance of the cycles prospectively entered into the application on the contraceptive effectiveness, we compared second-year and second half-year exposure. For each cohort, the contraceptive effectiveness was calculated using Kaplan–Meier life-table analysis. The cohorts were compared using log-rank tests and Cox regression. All results were corrected for the confounding of age.
Results: We found no significant effect of cycle length on contraceptive effectiveness or on discontinuation rates. We found no significant effect of very irregular menstrual cycles on the contraceptive effectiveness, neither for the self-reported cycle variance nor for the in-app measured cycle variance. We found that discontinuation rates were significantly higher in groups with very irregular cycles ($p<.05$).
Conclusions: The presence of highly irregular menstrual cycle lengths has no significant impact on the contraceptive effectiveness of Natural Cycles, but does however have a significant effect on discontinuation rates. These facts are likely both related to the higher rate of fertile days attributed to the user by the application to cover the uncertainty in the prediction of the ovulation day. healthcare professionals as well as women choosing a contraceptive method should be aware of this when discussing the pros and cons of using a method like Natural Cycles. The fact that non-standard cycle lengths do not negatively impact the contraceptive effectiveness is also important for women with such cycle characteristics who consider using the Natural Cycles application.

Disclosure statement

OL is employed by Natural Cycles Nordic AB that also sponsor the research. EB and RS are founders of Natural Cycles Nordic AB with stock ownership. KGD serves on the medical advisory board of Natural Cycles.

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The effect of BMI on unintended pregnancy rates amongst users of combined oral contraceptives

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Background: Obesity rates around the world are increasing. The effect of BMI on the Pearl Index of COC is unknown.
Objectives: To determine if the Pearl Index of COC differs with BMI.
Design and methods: Meta-analysis of five prospective, observational cohort studies with primary endpoints of venous thromboembolism (VTE) in women using COCs. Studies were conducted between 2007 and 2017 using a similar methodology. More than 240,000 women contributing approximately 400,00 women-years, were included. Women were followed for 3–5 years. Inclusion criterion for all studies was the prescription of a new COC, with no specific exclusion criteria. Studies were conducted across Europe (EU) and the United States (US). All women were followed for 3–5 years. Results were analysed within four age cohorts <25 years, 25–29, 30–39, and >=40 years. BMI was defined dichotomously as <35 kg/m^2 and >=35 kg/m^2 (US) and <30 kg/m^2 and >=30 kg/m^2 (EU). The Pearl Index was calculated within each age and BMI category stratified by region. Significance of factors was tested in a stratified Cox regression model; age and BMI where included as continuous variables.
Results: In the US, the PI ranges from 0.15 (age 40+, BMI <35) to 4.12 (age <25, BMI>=35) with higher values observed in women with BMI >=35 kg/m^2 within each age-group. Significance was obtained for both factors when simultaneously included in a Cox regression model. In the European sample, PI ranges from 0.06 (age 40+, BMI <30) to 0.80 (age <25, BMI>=30). Cox regression show independent effects of age and BMI on the occurrence of an unintended pregnancy.
Conclusions: BMI has a significant effect on the Pearl index of COC. Increasing BMI decreases the efficacy of COC in EU and US.

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Understanding the correlates of knowledge, attitude and practice gap in family planning usage in Sub-Saharan African countries

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Objective: The present study is an attempt to understand and differentiate the correlates of knowledge and actual practices gap in the utilisation of modern contraceptive in 26 Sub-Saharan African Countries.
Design and methods: The data from various rounds of country-specific Demographic Health Surveys have been included in the study to understand the changes in the knowledge and practice gaps in the broader timeline from 1990 to 2016. A multilevel Heckman's sample selection model is applied to see the dynamics of the usability of the contraception conditioned upon the knowledge of the various mean of modern contraception.
Results: The conditional relation between the knowledge of family planning among the women of reproductive age groups