



European Congress of Psychiatry – Press Release

New study shows fewer suicide attempts in women using hormonal contraceptives:

- ***Findings go against previous fears about attempted suicide and contraception***

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Type of Research: not peer reviewed/observational study/people

Hormonal contraceptives, such as the birth control pill, are amongst the most widely used pharmaceutical products. Recent studies had suggested that hormonal contraceptives were associated with a higher risk of attempted suicides, prompting concerns about safety. Now a new in-depth study shows that rates of attempted suicides in women using hormonal contraception are actually lower than in women who do not use hormonal contraception.

Presenting the research at the European Congress of Psychiatry, Lead Researcher, Dr Elena Toffol (University of Helsinki) said:

“We set out to verify previous data, so this is not what we expected, and it’s good news for contraceptive users”.

She continued:

“Women, especially younger women, have higher rates of depression and attempted suicide than men of similar ages. Many women using hormonal contraceptives, especially contraceptive pills, report mood changes as a side effect. Initial reports from 2018 and 2020 had indicated that use of hormonal contraceptives was associated with a higher number / risk of suicides and suicide attempts. We set out to confirm this data”.

The researchers, from the University of Helsinki, used several Finnish national databases to compare attempted suicide rates of hormonal contraceptive users and non-users using data from the 2017-2019 period. They took results from 587,823 women, which represents around 50% of the total number of women in the 15-49 age group in Finland. Half of these women had used hormonal contraceptives, including pills, implants, patches, and rings.

The research team found that attempted suicide rates between hormonal contraceptive users and non-users were similarly high in women between 15-19 (in general, suicide rates are higher in younger women and decrease with age), but suicide rates dropped in older age groups, with a greater drop in hormonal contraceptive users relative to non-users in the 20-24 and 25-29 age groups. In total the researchers saw 474* cases of attempted suicide in women who didn’t use hormonal contraceptives, with only 344 attempts in women who used hormonal contraceptives. Women not using contraceptives had a 37% greater odds of attempting suicide in comparison with those using hormonal contraceptives.

Dr Toffol continued



“The strength of this study is the large size, and that we broke the data down according to suicide attempts, psychiatric history, age and contraceptive use. We included a wider age range than the other studies, and importantly, we used a ‘nested’ study design, where we were able to pair each attempted suicide to 4 control subjects, which allows us see if contraceptive use in the previous six months was a factor in the attempt. After doing this we found that women with no psychiatric history and using hormonal contraceptives, specifically those containing ethinylestradiol had a significantly reduced risk of attempting suicide than women not using any hormonal contraception. The data indicates redeemed prescriptions, and of course it may be that some of these prescriptions were redeemed but not used. Overall though, we think we have been able to account for most confounding factors. Our next step is to use data from this same population to examine the risk of depression associated with hormonal contraception use”.

Commenting, Professor Andrea Fiorillo (University of Campania, Naples) said:
“This interesting study focused on the complex relationship between hormonal contraception exposure and suicidal behaviour. Previous studies found a relationship between hormonal contraceptives use and higher risk of attempted suicide. The study by Toffol disconfirms this finding, showing that the rates of suicide attempts are actually lower in women using hormonal contraception. Of course, this striking finding deserves a careful evaluation and needs to be replicated in different cohorts of women and controlled for the impact of several psychosocial stressors, such as economic upheavals, social insecurity and uncertainty due to the COVID pandemic. The clinical implications of the study are obvious and may help to destigmatize the use of hormonal contraceptives.”

This is an independent comment, Professor Fiorillo was not involved in this study. Professor Fiorillo is Treasurer of the European Psychiatric Association and Editor in Chief of the journal European Psychiatry.

*The researchers observed 474 cases of AS (IR 0.81 per 1000 person-years, 95% CI 0.74–0.88), while among HC users there were 344 AS cases (IR 0.59, 95% CI 0.53–0.65). The incidence rate ratio (IRR) of HC vs. no-HC users was 0.73 (0.63–0.83).

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Notes for Editors

The 30th European Congress of Psychiatry is organised by the European Psychiatric Association, the largest association of psychiatrists in Europe. It will take place virtually from 4-7 June. For more information see: <https://epa-congress.org/>

Conference Abstract: Use of Hormonal Contraception and Attempted Suicide: A Nested Case-Control Study



Authors: E. Toffol¹, T. Partonen², A. Latvala³, A. But¹, O. Heikinheimo⁴, J. Haukka¹; ¹University of Helsinki, Department of Public Health, Helsinki, Finland, ²Finnish Institute for Health and Welfare, Department of Public Health and Welfare, Helsinki, Finland, ³University of Helsinki, Institute of Criminology and Legal Policy, Helsinki, Finland, ⁴University of Helsinki and Helsinki University Hospital, Department of Obstetrics and Gynaecology, Helsinki, Finland

Introduction: In Finland more than 40% of fertile aged women used some type of hormonal contraception (HC) in the period 2010-2013. A proportion of women using HC complains of side effects, including mood symptoms. The relationship between the use of HC and the risk of attempted suicide (AS) is still a matter of debate.

Objectives: To assess the association of the use of HC with the risk of AS during 2017-2019.

Methods: Data were retrieved from the Prescription Centre, Care Register of Health Care, Register of Primary Health Care Visits and Statistics Finland. A total of 587 823 women, aged 15-49 years, using and not using HC in 2017 were analysed in the initial incidence study. All incident AS cases during 2018-2019, and their 4:1 age-matched controls (1 174 346 person-years) were analysed in a nested case-control setting via conditional logistic regression models.

Results: Altogether 818 AS cases occurred during the follow-up (incidence rate: 0.70/1000 person-years, 95% CI 0.65–0.75), with an IRR of HC vs. no-HC use of 0.73 (0.63–0.83). Current use (in the 180 days before the event) of estradiol- or ethinylestradiol-containing HC was associated with a lower risk of AS (0.53, 0.33–0.87; 0.49, 0.37–0.64, respectively) compared to non-use of HC. After controlling for covariates (marital and socioeconomic status, education level, use of psychotropic medications), only current use of HC containing ethinylestradiol remained significant (0.39, 0.23–0.65).

Conclusions: A lower risk of AS is associated with the use of HC, and specifically of ethinylestradiol-containing HC.

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