

## EVALUATING WOMEN'S PREFERENCES AROUND COLOUR, FRAGRANCE AND SIZE OF DRUG-RELEASING VAGINAL RINGS

Xinyu Zhao<sup>1</sup>, Peter Boyd<sup>1</sup>, R. Karl Malcolm<sup>1</sup>, Jenni Smit<sup>2</sup>, Cecilia Milford<sup>2</sup>, Bongwiwe Zulu<sup>2</sup>, Mags Beksinska<sup>2</sup>

<sup>1</sup> School of Pharmacy, Queen's University Belfast, Belfast BT9 7BL, UK

<sup>2</sup> MRU (MatCH Research Unit), Faculty of Health Sciences, University of the Witwatersrand, Durban, South Africa

**Background:** To date, seven vaginal ring products for contraception and hormonal therapy have reached the market and other a large number of new experimental vaginal rings are currently in clinical/preclinical development. The outer diameter of marketed vaginal rings ranges from 54 mm to 56 mm, while cross-sectional diameter varies between 4 and 9 mm, although historically a much more extensive range of dimensions have been evaluated. Marketed vaginal rings are either opaque white or transparent. Here, we assess women's preferences around three key design characteristics of vaginal ring products – colour, fragrance and size – with a view to developing products with increased user acceptability, adherence and efficacy.

**Methods:** Drug-free silicone elastomer vaginal rings (i) of different dimensions (external diameters and cross-sectional diameters: 57.7 × 5.6 mm; 57.6 × 6.2 mm; 57.6 × 7.9 mm; 55.0 × 9.0 mm), (ii) including different fragrances (lemon, grapefruit, spearmint, camphor and lavender) and (iii) having different colours (white, pastel orange, light pink, pastel green, mellow yellow and mauve) were manufactured via injection molding using medical grade elastomers and colour masterbatches. Women's preferences and opinions were collected and assessed through three focus group discussions (FGDs) conducted in eThekweni District, South Africa in March 2021. Vaginal products of varying colours, sizes and fragrances were distributed to women to visualize, handle and smell. Basic demographic data were collected from participants. Focus group discussions were audio recorded, transcribed and translated. The qualitative data were thematically analyzed based on inductive and deductive coding.

**Results:** 16 women aged 20–34 years participated in the FGDs. Opinions on ring colour were varied, with some women clearly preferring coloured products while for others this was not an important attribute. Participants also had varied preferences for the different types and intensities of fragrances. Concerns about colour and fragrance were linked to perceptions of vaginal health and safety related to chemical composition. There was more agreement on preferred vaginal ring size; flexibility and width were considered important factors for insertion and comfort with use.

**Conclusions:** Choice and options in sexual and reproductive health products facilitates increased choice and overall uptake.