

# 763 - Exploring the Link Between Socioeconomic Deprivation and Obstetric Anal Sphincter Injury (OASIS) in a tertiary colorectal unit in England: A Retrospective Cohort Analysis

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## Hypothesis / aims of study

This study aims to analyse the incidence of OASIS among women and birthing people, correlating it with the socioeconomic status of their residence, as determined by the Index of Multiple Deprivation (IMD) score.

## Study design, materials and methods

- This retrospective analysis took place in a specialised tertiary colorectal pelvic floor unit, focusing on patients who were diagnosed with OASIS via endoanal ultrasound 12 weeks after delivery, spanning from 2008 to 2023.
- Patient postcodes were gathered to facilitate the assessment of each individual's health disability index and the level of multiple deprivation. These evaluations were conducted using the 2019 English Indices of Deprivation measure (Index of Multiple Deprivation 2019), which calculates scores based on the patient's postcode.

The deprivation score and health disability index were initially classified into deciles. To streamline the analysis, these deciles underwent pairing, leading to a decrease of five categories. Under this new classification, *the lowest quintile indicates the most deprived individuals, whereas the highest quintile denotes the least deprived*.

### VARIABLES:

- Age
- number of pregnancies (gravida)
- Number of deliveries (parity)
- history of episiotomy
- severity of tear
- Birthweight
- flatus incontinence
- passive and urge faecal incontinence
- St. Mark's incontinence score
- stress and urge urinary incontinence
- urinary frequency.

Binary categorical variables were analysed across categories employing the Chi-square test. For categorical variables encompassing three or more categories, all of which were ordinal, the Kruskal-Wallis test was utilised for group comparisons. Age, the sole continuous variable in the study, was assessed using analysis of variance (ANOVA).

### Index of Multiple Deprivation 2019



## Conclusions

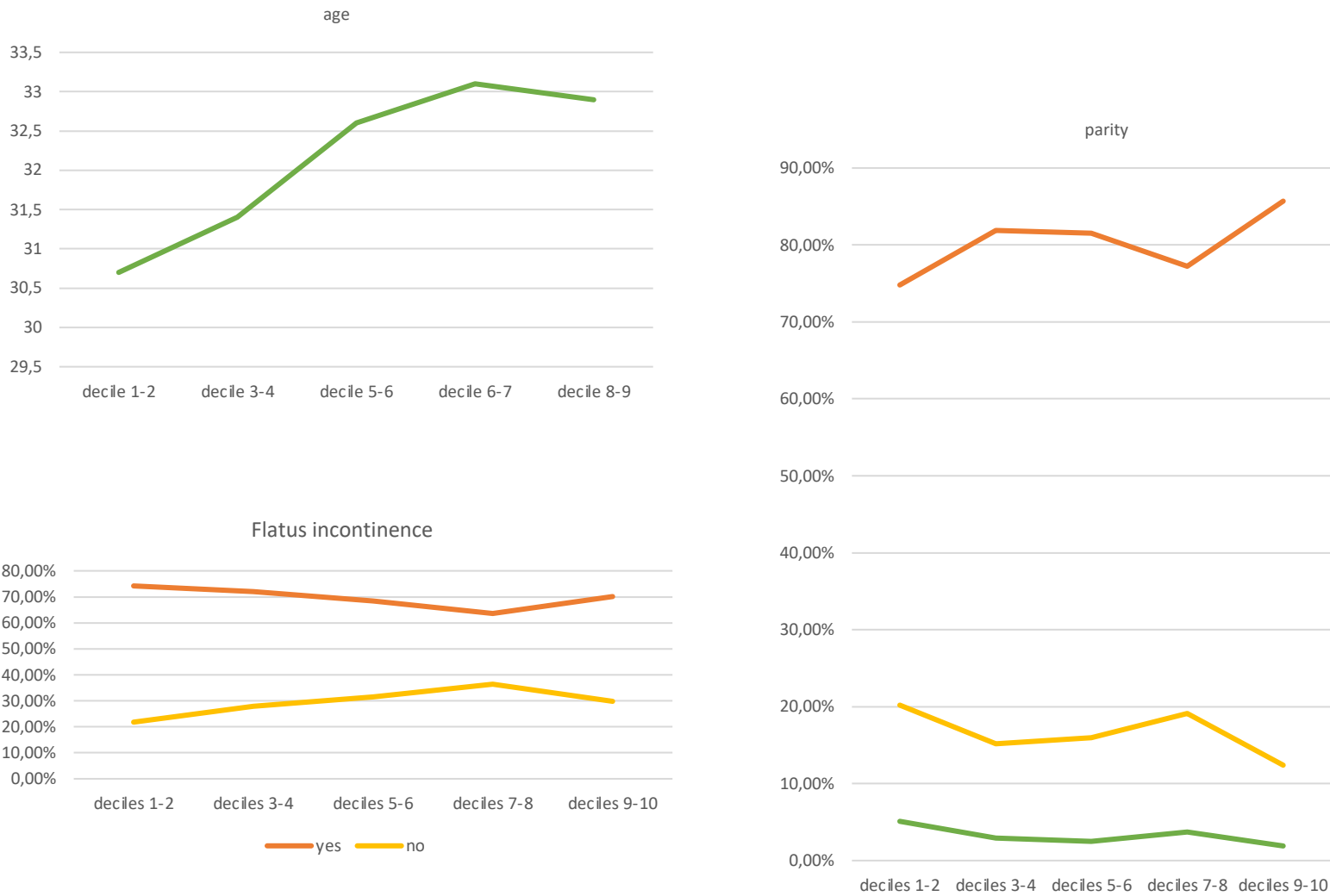
This study explored the potential correlation between residing in deprived areas in the UK and the risk of developing obstetric anal sphincter injury (OASIS). Despite analysing various variables, our findings did not reveal a clear statistically significant relationship between living in more deprived areas in the UK and the likelihood of OASIS.

However, a significant association emerged from our cohort study: younger women with obstetric anal injury tend to reside in more deprived areas in the UK compared to their older counterparts. Future research should aim to explore further into understanding the underlying causes and additional factors associated with living in deprived areas that may contribute to an increased risk of obstetric anal sphincter injury.

## Results and interpretation

Initially, the study evaluated a total of 1,497 women for inclusion; however 20 women were excluded due to incomplete data. The initial phase of analysis categorised the patients into five distinct groups according to their Index of Multiple Deprivation (IMD) scores, followed by a comparative analysis between these groups. The findings indicated a statistically significant disparity among the five groups concerning age, number of pregnancies carried to a viable gestational age (parity), and the incidence of flatus incontinence. While differences in the number of times a woman has been pregnant (gravida) were observed, they did not achieve statistical significance. For the rest of the assessed parameters, there were no significant differences identified across the deprivation groups.

In the subsequent analysis, the characteristics of women with varying health disability indices were compared. These women were stratified into five groups based on their score deciles. The results revealed statistically significant variations only in terms of age among the different groups. Additionally, there was slight indication of differentiation between the groups regarding the number of pregnancies (gravida), though this distinction did not attain statistical significance. However, the other factors examined did not demonstrate significant differences across the five health and disability groups.



- The **age** of women exhibited an upward trend with increasing IMD decile. Notably, patients in IMD deciles 1 and 2 (more deprived) tended to be younger, with a mean age of 30, in contrast to an average age of approximately 33 for those in the upper two deciles.
- Parity** demonstrated a converse relationship with deprivation levels, with higher parity observed in the lower deciles. Specifically, 75% of women in the most deprived group had a parity of 1, compared to 86% in the upper two deciles (least deprived).
- Regarding **flatus incontinence**, a distinct pattern emerged concerning the level of deprivation. The lowest incidence of flatus incontinence was noted in deciles 1 and 2, affecting 22% of women in these groups.

The findings from the second analysis indicated a consistent trend of older age among the higher deciles compared to the lower ones. Deciles 1 and 2 emerged as the youngest cohorts, with a mean age of 30.3 years, contrasting notably with a mean age of 32.9 years observed in deciles 9 and 10.

## References

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