

# Diabetic Retinopathy in Pregnancy: Screening Attendance Rates and Development of Disease

Miss Leanne Bird<sup>1,2</sup>, Miss Helen Wharton<sup>1,2</sup>, Prof. Sarita Jacob<sup>1,2,3</sup>

<sup>1</sup>Birmingham, Black Country and Solihull Diabetic Eye Screening Programme, <sup>2</sup>University Hospitals Birmingham, <sup>3</sup>Aston University, Birmingham

## Purpose

A study to assess diabetic eye screening attendance rates of patients throughout their pregnancy and to identify the development and progression of diabetic retinopathy (DR) pre, during and post pregnancy.

## Methods

97 patients from the Birmingham, Black Country and Solihull Diabetic Eye Screening Programme capture area, who had a pre-pregnancy diagnosis of diabetes, went full term and had an expected delivery date of between June 2018 and May 2019 were included in the study. From the available data, we recorded patient demographics, screening dates, retinopathy grades and outcomes, from the last screen pre-pregnancy, screenings during their pregnancy, and the first screen post partum.

## Results

14 only ever attended screening during their pregnancy with 35 attending all screens pre, during and post pregnancy. At first pregnancy screen, 11 attended at 27 weeks + gestation and were therefore placed on annual recall (AR) as per NICE recommendations, 6 were referred to the hospital eye service (HES) and 80 were called back for follow up screening during pregnancy. At second screening 54 were put on AR, 1 referred to HES and 14 did not attend (DNA), 11 were called back for a third screen of which 2 DNA and the others were discharged back to AR. Post pregnancy, 2 patients were under HES care and 1 had moved out of the area, a remaining 47 DNA follow up screening.

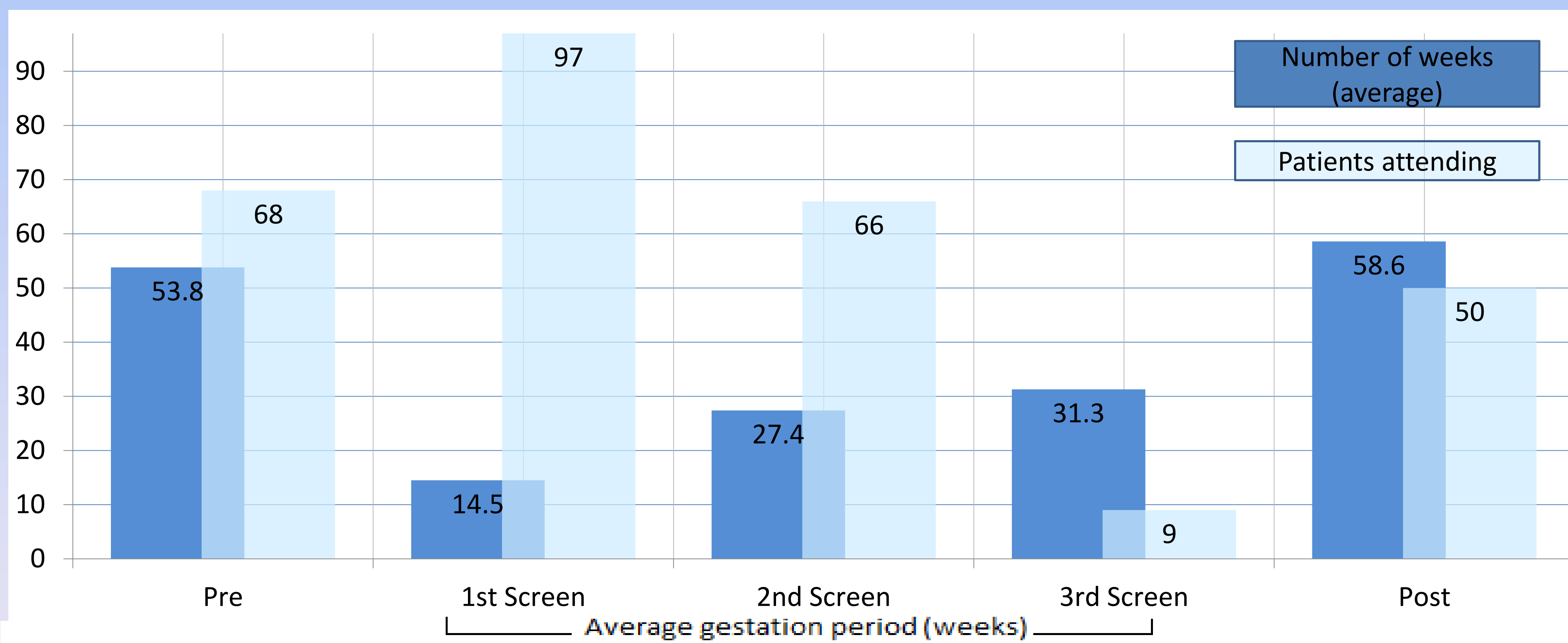
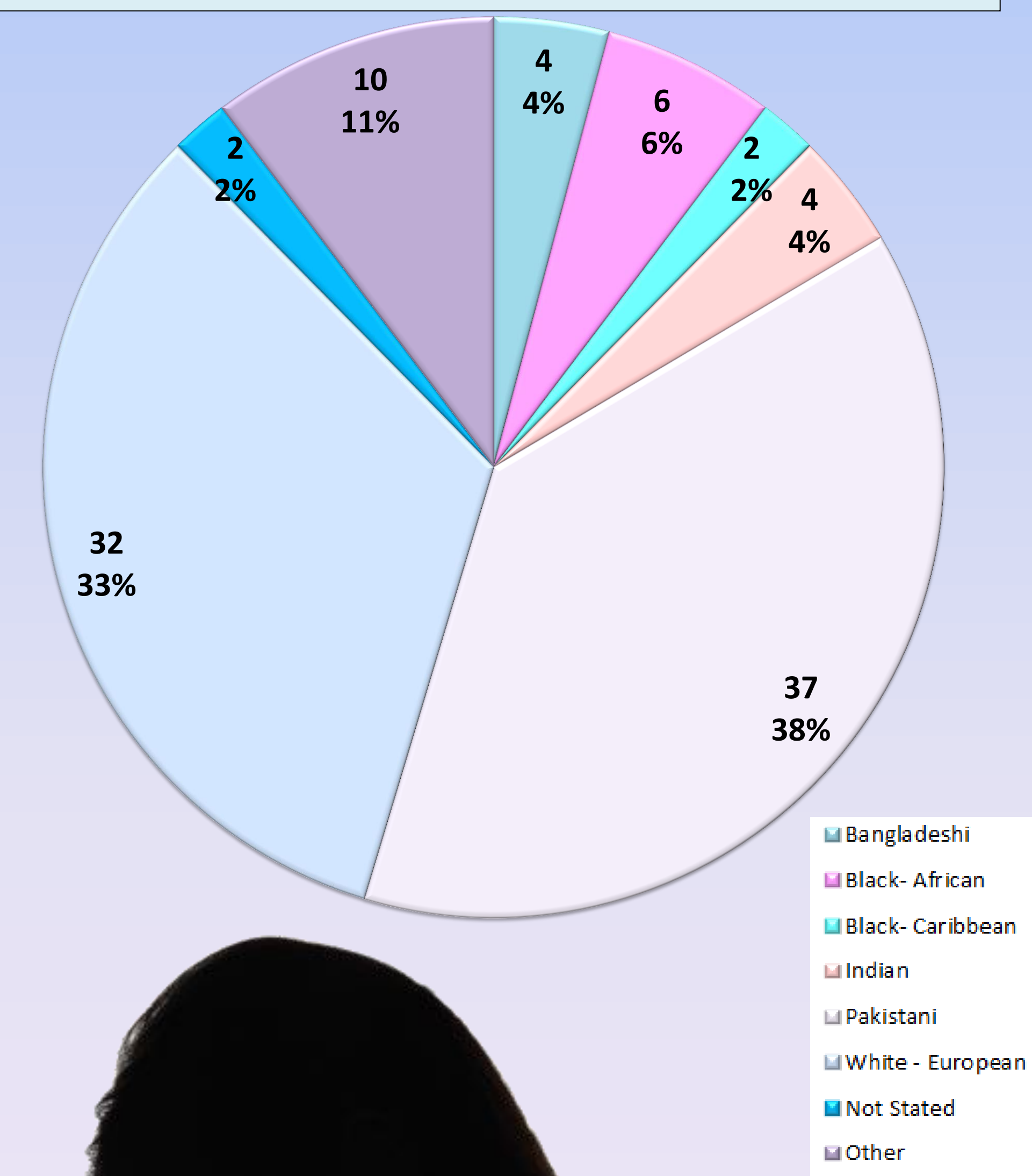


Fig 2. Attendance rates pre, during and post pregnancy, for pre and post columns, dark blue is the number of weeks before/after this pregnancy at which their last/first known screening was recorded.

Fig 1. Self declared ethnicity of pregnant patient



| Grades recorded at each screening |     |       |        |       |      |
|-----------------------------------|-----|-------|--------|-------|------|
|                                   | Pre | First | Second | Third | Post |
| ROM0                              | 52  | 64    | 43     | 1     | 40   |
| R1M0                              | 13  | 25    | 21     | 8     | 7    |
| R1M1                              | 3   | 7     | 1      |       | 2    |
| R2M0                              |     |       |        |       |      |
| R2M1                              |     |       | 1**    |       |      |
| R3AM0                             |     |       |        |       |      |
| R3AM1                             |     |       |        |       | 1**  |
| U                                 |     | 1     |        |       |      |
| Total attending                   | 68  | 97    | 66     | 9     | 50   |
| Referred to HES                   |     | 6*    | 1**    |       |      |

\*1 on R1M1 Digital surveillance monitoring      \*\* Same patient. DNA HES when R2M1 but deteriorated to R3AM1 post pregnancy.      \*\*Referred and had PRP

## Conclusion

The results of this audit suggest that retinopathy status remained fairly stable in the majority (93%) and only a minority developed referable disease (7%) during early pregnancy. Most cases improved or remained stable towards the end of gestation, however, as there is a still a risk of retinopathy developing or worsening, screening throughout pregnancy is essential. Outcomes for patients referred to HES and seen during pregnancy suggest that referable maculopathy mostly needed observation only, not requiring any treatment at that point. Only one patient developed R3, at their post partum visit and it has since been treated.

## Recommendation

To improve attendance rates, recommendations include education, outreach programmes, extended clinic times and the possibility of combining eye screening with other prenatal visits.

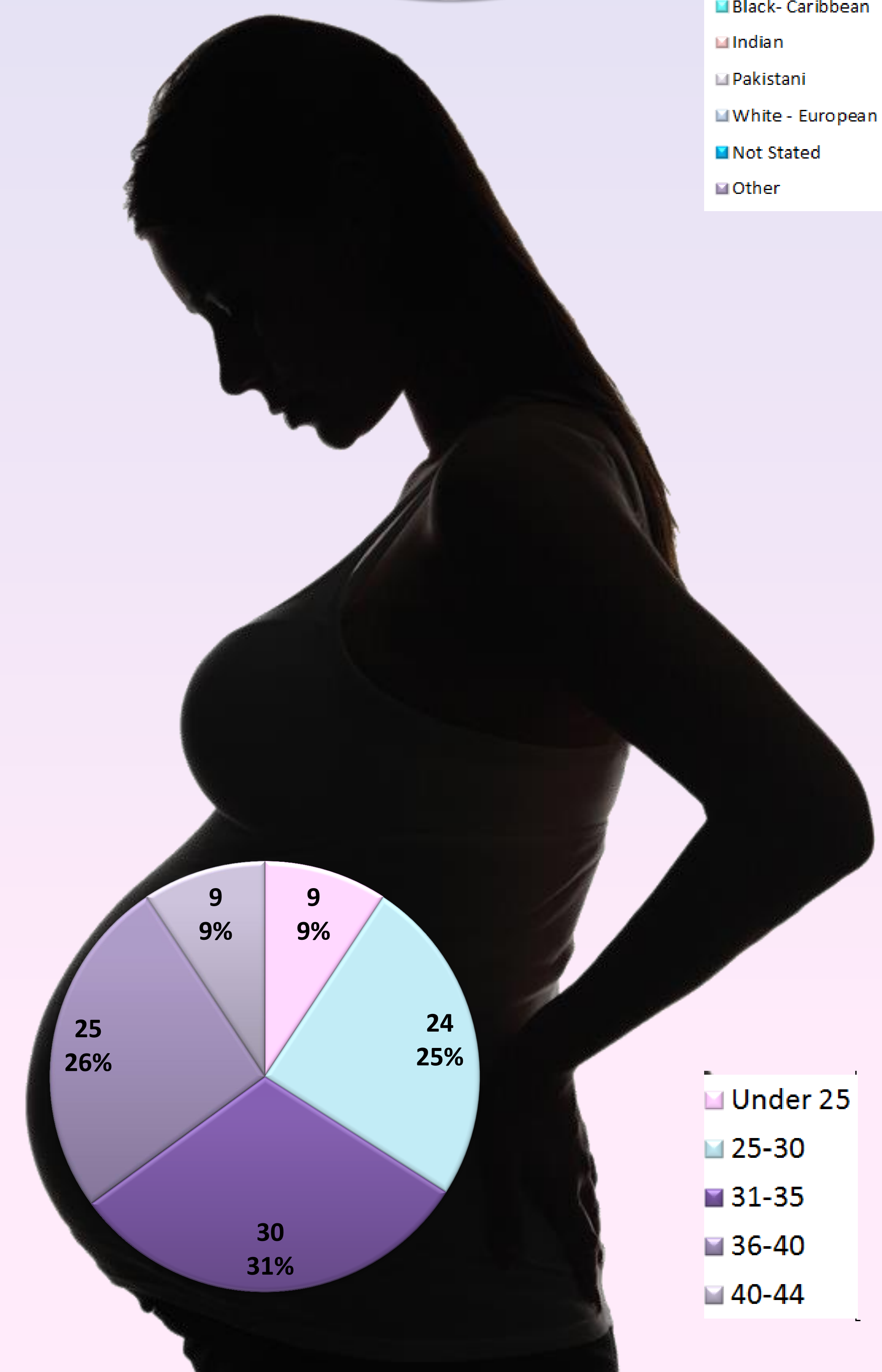


Fig 3. Age of patient during this pregnancy