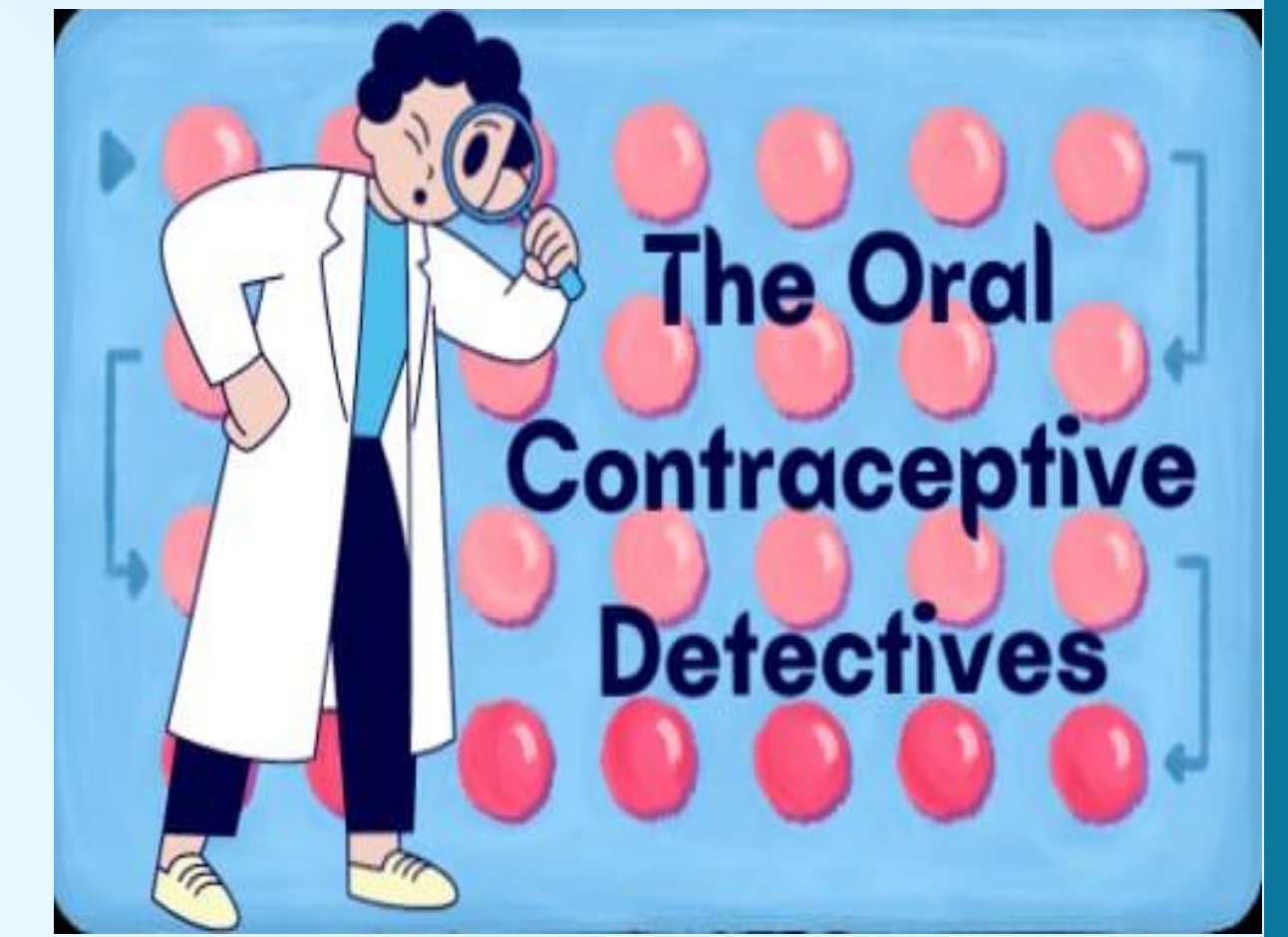


# A Study on the Incidence of Venous Thromboembolism (VTE) in Women Using Oral Contraceptives in Trinidad & Tobago

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## Introduction

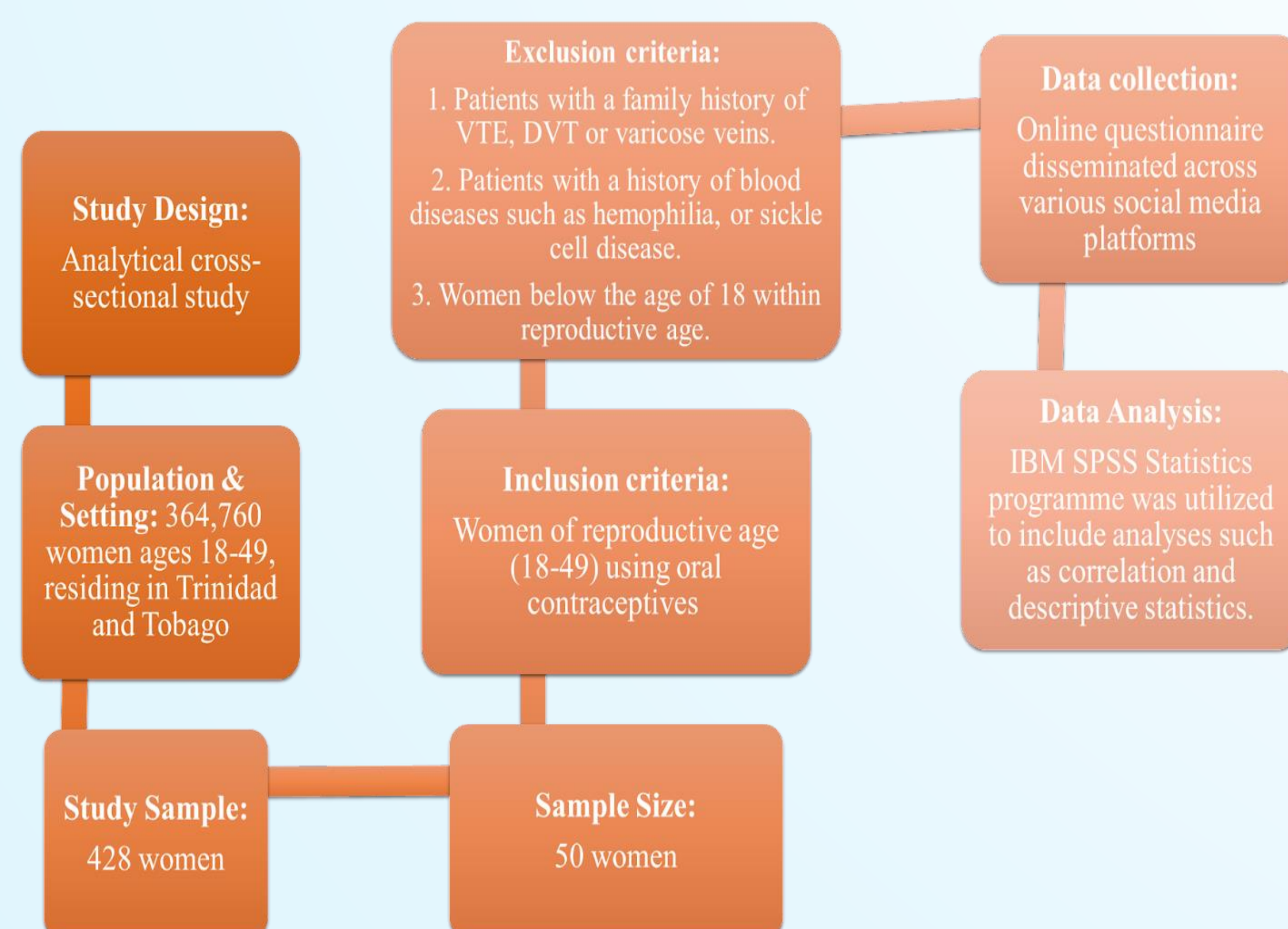
Oral Contraceptives (OCs) have aided in multiple hormonal concerns in women for years, having both benefits, and unwanted side effects, namely VTE. Generally, there is a two to four-fold increase of development of VTE among users of OCs compared to non-users (1-3), and a 3-fold increase in obese women. This incidence was observed to be higher in women using third generation OCs compared to those taking second generation OCs (1, 2). The risk of VTE development is also considered high among users of fourth generation OCs (3).

This study was conducted to determine the incidence rate of VTE among women with BMI  $\geq 30$  in Trinidad and Tobago and to provide improved safety guidelines for oral contraceptive use in Trinidad and Tobago.

## Objectives

1. To measure the incidence of VTE in women taking oral contraceptives.
2. To examine the correlation between the BMI of women using various generations of oral contraceptives and VTE diagnosis.

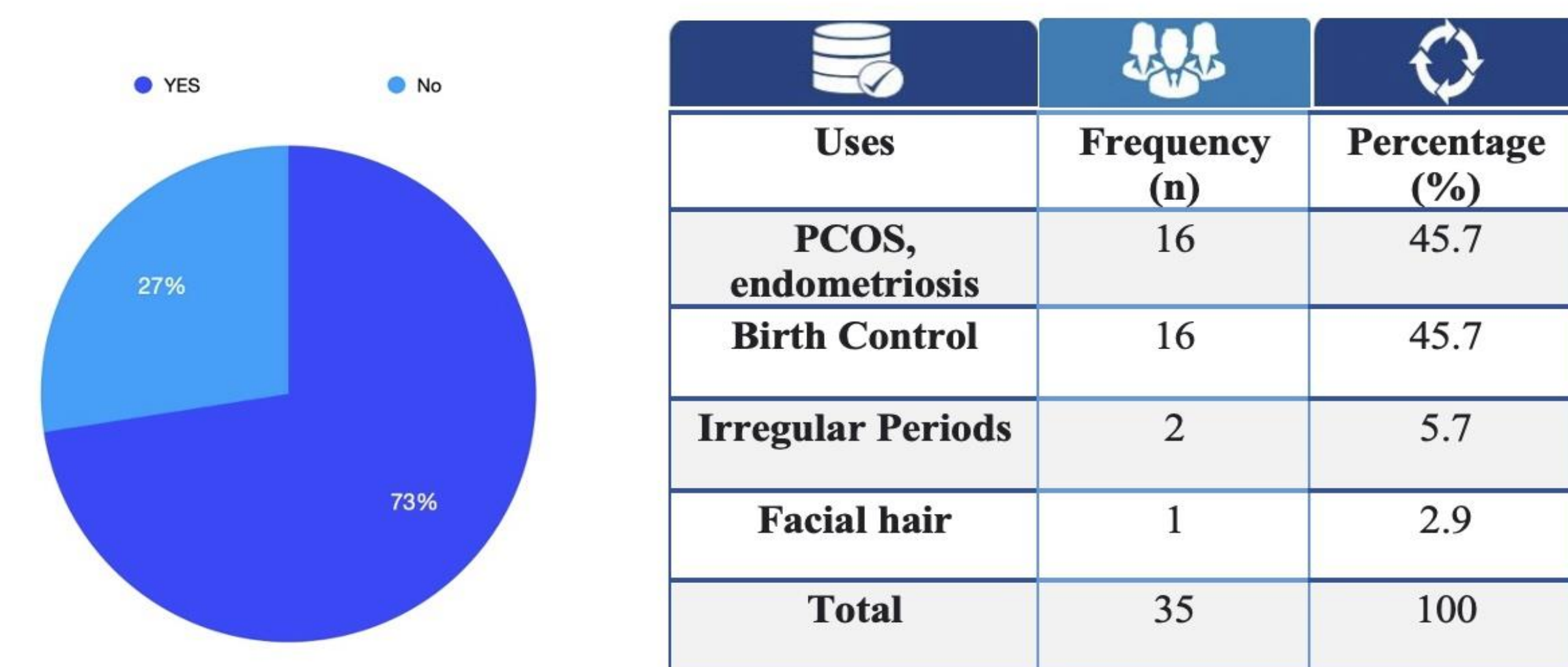
## Methodology



Ethical approval was granted from the Ethics Committee of the University of the West Indies. (Ref: CREC-SA. 1254/11/2021)

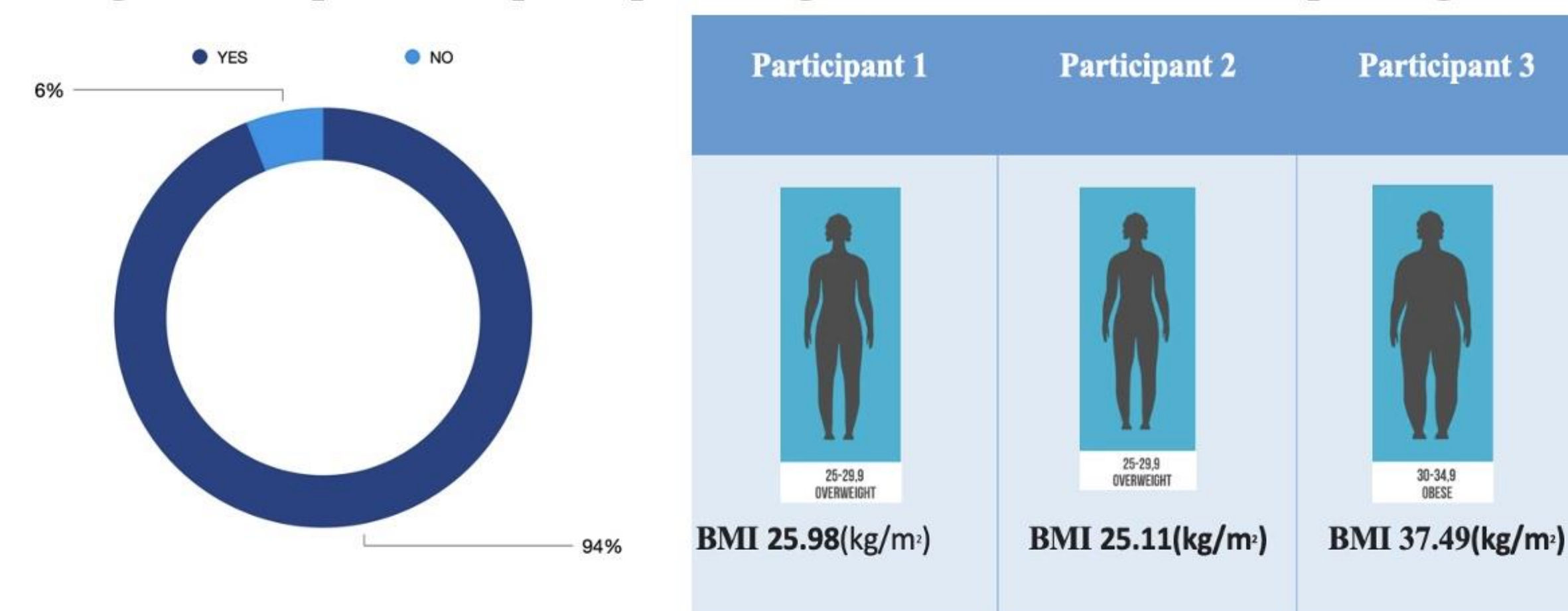
## Results

Figure 1: Proportion of participants prescribed oral contraceptives and intended uses.



- The proportion of participants prescribed with OCs were 73% with the majority of OC usage dedicated to Birth Control and Treatment of PCOS and endometriosis.

Figure 2: Proportion of participants diagnosed with VTE and corresponding BMI



- Overall, only 6% of participants were diagnosed with VTE and of these participants, BMI values were in the overweight and obese classifications.
- This relationship between BMI and VTE diagnosis was found to be positively correlated ( $r = .280$ ) and statistically insignificant ( $p = .051$ ;  $p\text{-value} > 0.05$ ).

Figure 3: Comparison of Participants diagnosed with VTE

Participant	VTE Diagnosis	Timeline of Diagnosis	OC used before diagnosis	Number of Times Diagnosed with VTE	Anticoagulant Used	History of PCOS
1	Yes	> 1 Year	Novynette < 6 months	1	Aspirin	No
2	Yes	> 1 Year	Diane- 35 > 6 months/ < 1 Year	1	Aspirin	No
3	Yes	> 3 Years	Diane- 35 >1 Year	Unknown	Aspirin	Yes

- All 3 VTE-diagnosed participants were also identified to have been on aspirin and 3rd generation OCs, namely Novynette and Diane, for periods of time (varying from <6months to >1 year).
- VTE diagnosis and history of PCOS to be negatively correlated ( $r = -.030$ ) and statistically insignificant ( $p = .836$ ;  $p\text{-value} > 0.05$ ).

## Discussion

- There was a positive correlation between BMI and VTE diagnosis however, said correlation was found to be insignificant because of the small sample size.
- Participants diagnosed with VTE used the Diane-35 and the Novynette brands which are third generation OCs that contain desogestrel and cyproterone acetate respectively. OCs containing these hormones had an increased risk of developing VTE.
- These participants were found to have been diagnosed within a year of OC use, this was consistent with the literature that suggests VTE risk was highest during the first few months of OC use.
- 14% of Trinidadian and Tobagonian women were unaware of the risk of VTE formation with OC use. Therefore, a greater effort should be made to educate women using OCs of the risk of VTE development.

## Conclusion

With the demographic of Trinidad & Tobago being vulnerable to developing VTE due to risk factors such as ethnicity, BMI over  $25\text{kg/m}^2$ , smoking, as well as the availability of OCs at primary health care facilities and pharmacies, more conclusive research should be done to determine the incidence of VTE development. There are no current studies of the risk of VTE from contraceptive use in the Caribbean. Therefore, this study should continue and expand to the wider Caribbean region.

## References

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