



# The Effects of Polycystic Ovarian Syndrome on Anxiety and Self Esteem

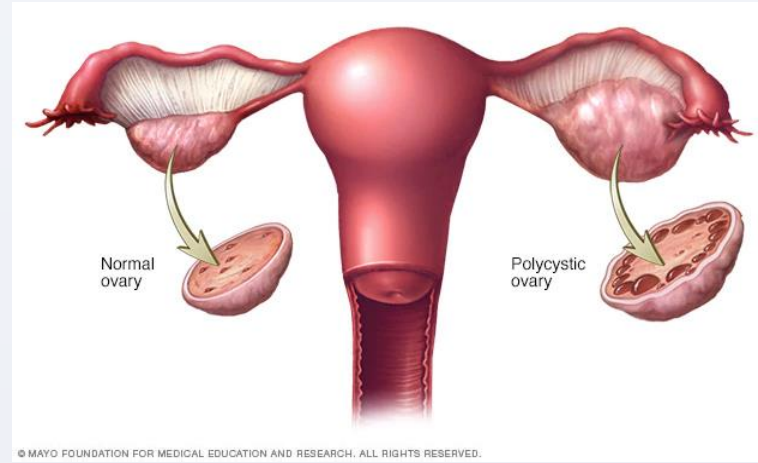
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## Introduction

Polycystic Ovarian Syndrome (PCOS)- leading endocrine disorder in women (7)  
Diagnosis- two of three symptoms (7)



- Irregular menstruation
- Cysts in the ovaries
- Imbalanced hormone levels
- 10,000,000+ women with PCOS (7)
- Majority of women go undiagnosed (7)
- Other symptoms (7)
  - Excess hair growth (facial hair, chest hair, etc.), Hair thinning/ balding, Acne, Weight issues (overweight, obesity)
- More likely to develop other health risks (7)
  - Insulin resistance, Type 2 diabetes, Cardiovascular disease, Uterine cancer, Infertility, Metabolic Syndrome (7)
- Mental disorders (7)
  - Depression, Anxiety, Bipolar disorder, Insomnia, Body dysmorphia
- Cause-unknown (7)
- No cure (7)
- Treatments (7)
  - Diet change, Lifestyle change, Medication (Metformin)

Anxiety- intense fear and distress that is overwhelming and prevent people from doing everyday things (6)

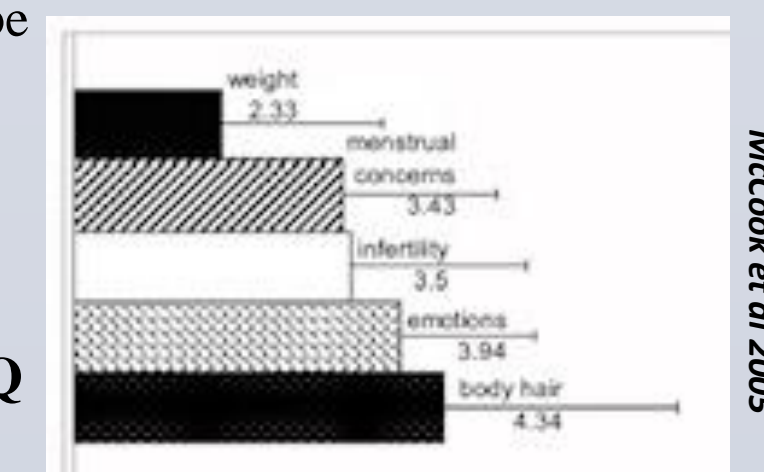
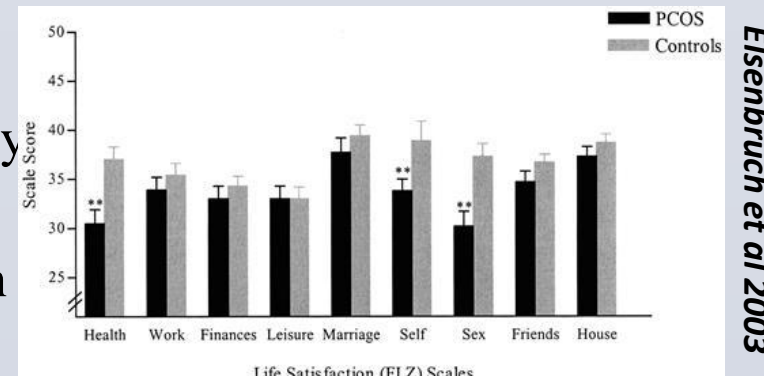
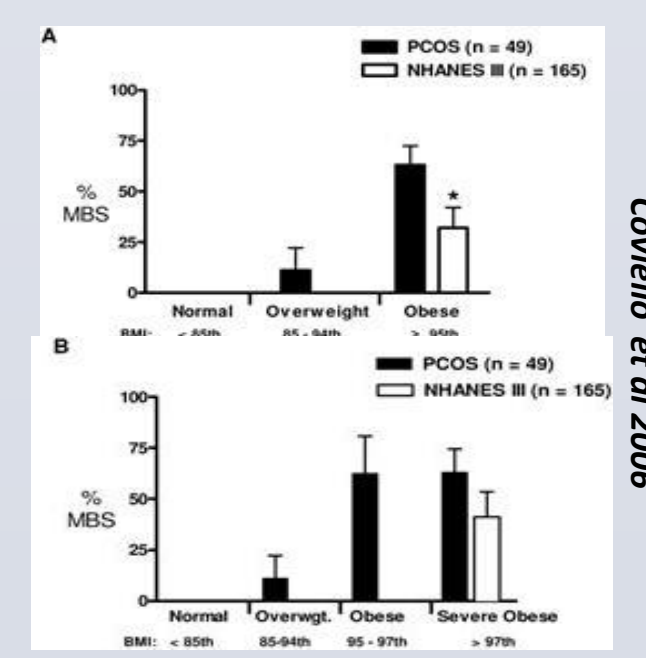
- Most common mental health concern in the US (6)
- 40 million adults have anxiety disorder (6)
  - Panic disorder-having panic attacks (6)
  - Phobias-certain things, places, or people that cause irrational fear (6)
  - Generalized Anxiety Disorder- chronic worrying about everyday life (6)
  - Social Anxiety Disorder- intense fear about social humiliation (6)

Body Dysmorphia (BDD)- A mental illness involving obsessive focus on a perceived flaw in appearance. (5)

- Affects 1.7%-2.4% of the general population (5)
- 5 million-7.5 million people in the US (5)
- BDD may be more common than this due to people feeling reluctant in sharing their symptoms (5)
- People with BDD are more likely to have other common psychological disorders such as social anxiety and OCD (5)
- Cause is unknown as well as how the symptoms develop and progress over time (5)
- BDD patients show abnormalities with cognitive function, poor decision-making, deficiencies in recognizing facial emotions (5)
- BDD patients find ambiguous decisions more threatening and they have more delayed responses to words that have a positive connotation such as “beauty” and “attractive” (5)

## Literature Review

- **Coviello et al 2006**
  - Adolescent Girls with Polycystic Ovary Syndrome Have an Increased Risk of the Metabolic Syndrome Associated with Increasing Androgen Levels Independent of Obesity and Insulin Resistance,
- **Elsenbruch et al 2003**
  - Women are more likely to feel unfulfilled with children when they have PCOS
  - Women are less likely to have children
  - Women with PCOS are less likely to drink alcohol or smoke
  - Women with PCOS are more likely to be insecure than women without PCOS
  - PCOS can affect the way women interact with others
- **McCook et al 2005**
  - Women felt insecure about their facial hair, weight gain and infertility issues
  - Participants felt grateful just that PCOS was being looked in



## Problem Statement

**Problem**  
Women with PCOS can suffer from anxiety and body dysmorphia

**Goal**  
To investigate the impact of PCOS on Mental Health

## Hypothesis

Women with PCOS will be more likely to report feelings of anxiety and concerns regarding mental health and physiological affects of the disorder

## Methodology

**Participants**  
n=599  
Women  
Open participation  
Instagram ads - @pcosaa  
Website ads - pcosaa.org

**Survey- “Teal Talk”**  
Online Survey  
Google Forms  
Variation of questions  
Multiple Sections of the survey



Administered April 1, 2018- May 30, 2018

## Different types of questions

Range from 1-5  
(1= not at all, 5=majority of the time)  
Yes/ no  
Short answer explanations  
Multiple choice

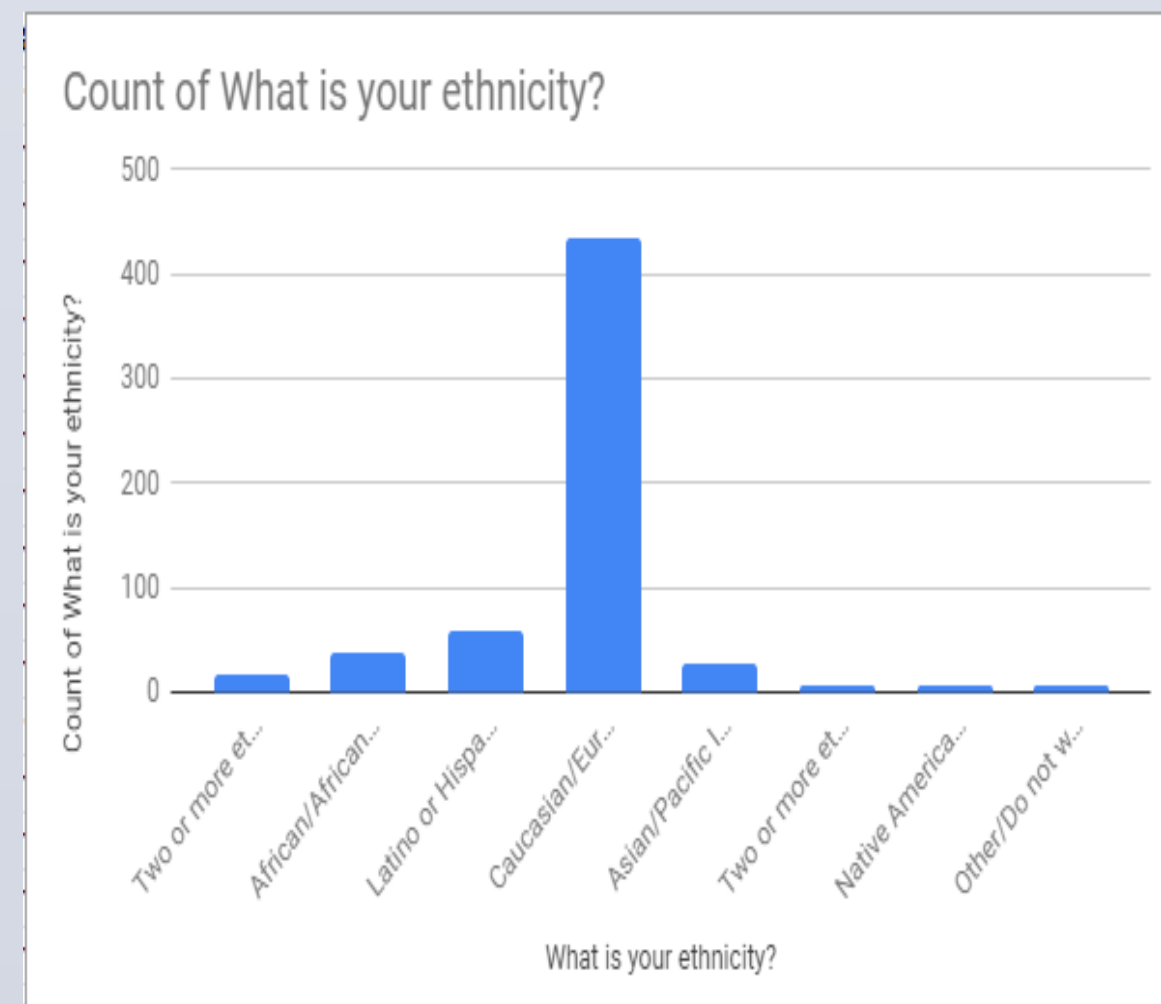


Figure 1-nationality demographic of participants

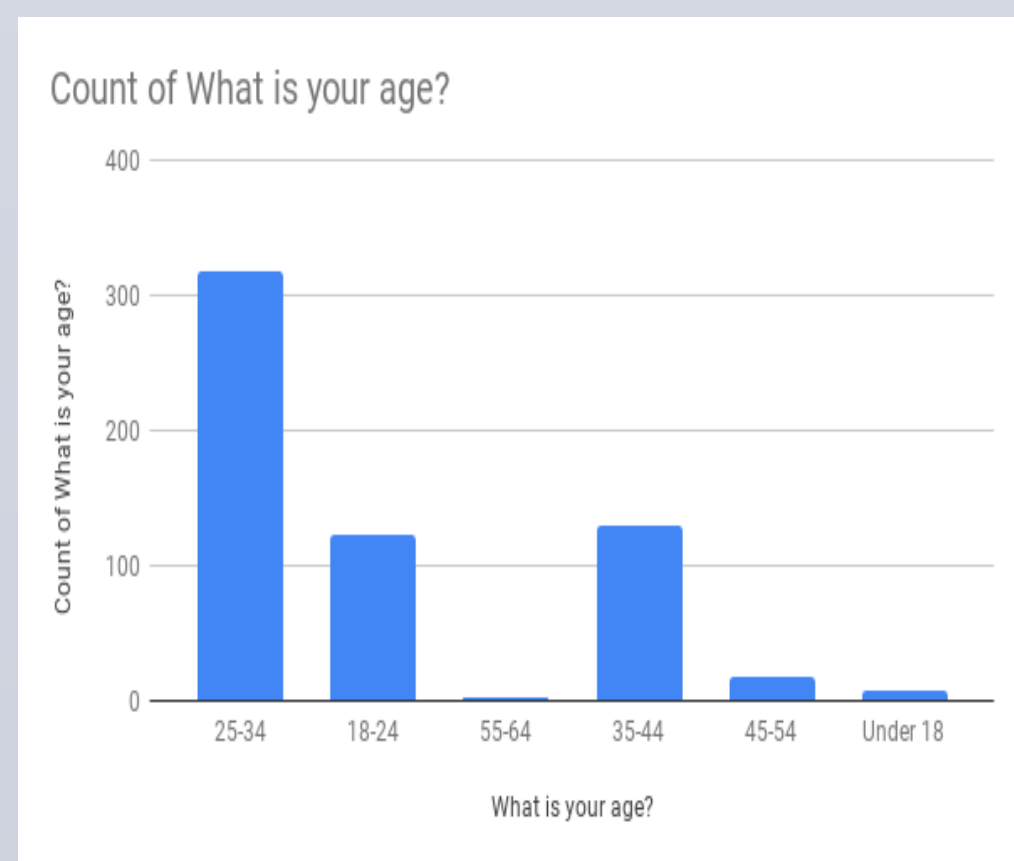
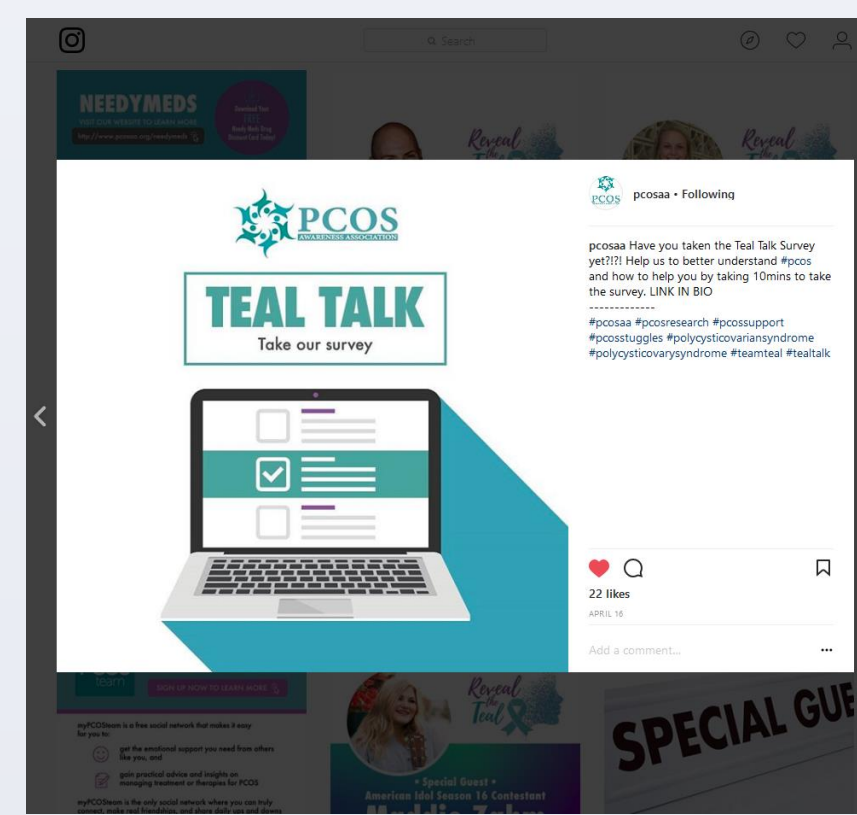


Figure 2- Age demographic of participants



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Teal Talk

**Mental Health and Relationships**

This section asks about your experiences with anxiety, stress, relationships, and depression, including some personality traits and the ability to look inward.

Before you were diagnosed with PCOS, how often did you experience anxiety and stress?

Not at all 1 2 3 4 5 Majority of the time

How often have you experienced anxiety and stress since being diagnosed?

Not at all 1 2 3 4 5 Majority of the time

Do you experience anxiety over your PCOS symptoms?

Yes  
No

Do you think having PCOS has increased your anxiety and stress?

Yes  
No

If yes, why?

Your answer

Do you have frustration that is associated with your PCOS?

Yes  
No

Do you have frustration that is NOT associated with your PCOS?

Yes  
No

Are you introverted or extroverted?

Introverted  
Extroverted  
Both

Have you experienced depression?

Yes, before my PCOS diagnosis  
No, neither before nor after my PCOS diagnosis  
Yes, after my PCOS diagnosis

Have you ever experienced body image issues?

Yes  
No

If you have experienced body image issues, was it before and/or after your diagnosis?

Before  
After  
Both  
Neither

Was this a change that occurred after you were diagnosed?

Yes  
No

How has your PCOS diagnosis affected your relationship(s)?

I was not really affected by my relationship  
It has created a lot of stress in my relationships  
It has caused some uncomfortable amounts of stress, but have been able to get through it  
I am not in a relationship where this is an issue

How do you feel that your friends/family/support groups, impact or play a role in your quality of life?

Positively  
Negativity  
Neither positively nor negatively

How has your PCOS diagnosis changed your outlook on relationships?

I am afraid to discuss my PCOS with a significant other  
I am open to discussing my PCOS with a significant other  
I am afraid that my PCOS will cause me to be lonely  
I have not been able to feel or approach discussing my PCOS with a significant other

How has your PCOS diagnosis changed your outlook on life?

I have an optimistic outlook on life  
I have a pessimistic outlook on life  
I have neither an optimistic or pessimistic outlook on life  
It depends on the situation at hand  
I have not really thought about how PCOS has changed my life

Do you share your PCOS story with other women?

All of the time  
None  
Sometimes

Do you think discussing PCOS aids in research and/or outreach?

Yes  
No  
Maybe/ never thought about it before

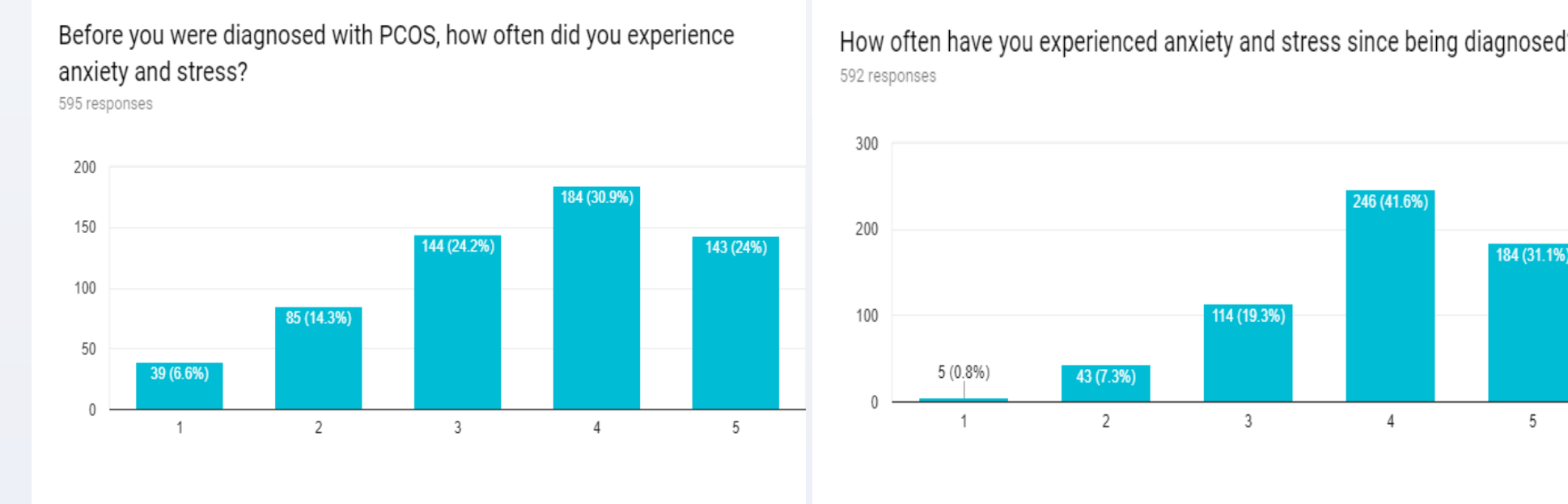
Do you think that knowing you are more likely to develop a mental disorder will make you more likely to develop that mental disorder?

Yes  
No  
I haven't thought about it

Do you believe that this is why so many women with PCOS develop mental health disorders, such as anxiety?

Yes  
No  
I haven't thought about it

## Results



Do you experience anxiety over your PCOS symptoms? 596 responses	
Yes	489 82%
No	107 18%

Do you think having PCOS has increased your anxiety and stress? 594 responses	
Yes	443 74.6%
No	151 25.4%

Have you experienced depression? 590 responses	
Yes, before	275 46.6%
No	134 22.7%
Yes, after	181 30.7%

Have you ever experienced body image issues? 590 responses	
Yes	551 93.4%
No	39 6.6%

If you have experienced body image issues, was it before and/or after your diagnosis? 584 responses	
Before	41 7%
After	69 11.8%
Both	448 76.7%
Neither	26 4.5%

## Analysis

**Numerical Data**  
Percentages of each answer calculated into exact amounts



## Common Findings

Most concerned about symptoms correlated to

-Image  
-Self esteem

Insecurities

-Weight gain  
-Excess hair growth  
-Skin & acne

Concerns

-Physiological symptoms  
-Possible health risks  
-Type 2 diabetes  
-Infertility

**Short Answer Response Analysis**  
Women with PCOS responded expressing concerns

-Lack of control  
-Cost of treatments  
-Unhelpful medical attention  
-Lack of normality  
-Relationships

## Discussion

Women with PCOS have increased health risks **physically & mentally**  
Women with PCOS are more concerned about their mental health **correlated with physiology**  
Facial hair, weight issues, infertility **Supported by McCook et. Al 2005**

Lack of information on PCOS

More information **better therapy & treatments**

**Increase** in stress and anxiety reported **after** diagnosis

Both **before and after** diagnosis **body image issues** reported

PCOS diagnosis has **changed** outlook on life & relationships

**Supports** PCOS's correlation with insecurities related to health concerns

**Pre-existent** concerns (insecurities, depression, anxiety) contribute to condition **after** diagnosis

## Conclusion

Hypotheses **Supported**

Women with symptoms of PCOS are **more likely** to have concerns about their mental health.

Women reported an **increase** in stress and anxiety after diagnosis

Women with PCOS demonstrating anxiety are **influenced** by concerns involving physiological aspects of the disorder.

Women expressed insecurities of symptoms: facial hair, weight issues, & infertility

Women expressed concerns about their health: type 2 diabetes & metabolic syndrome

## Significance

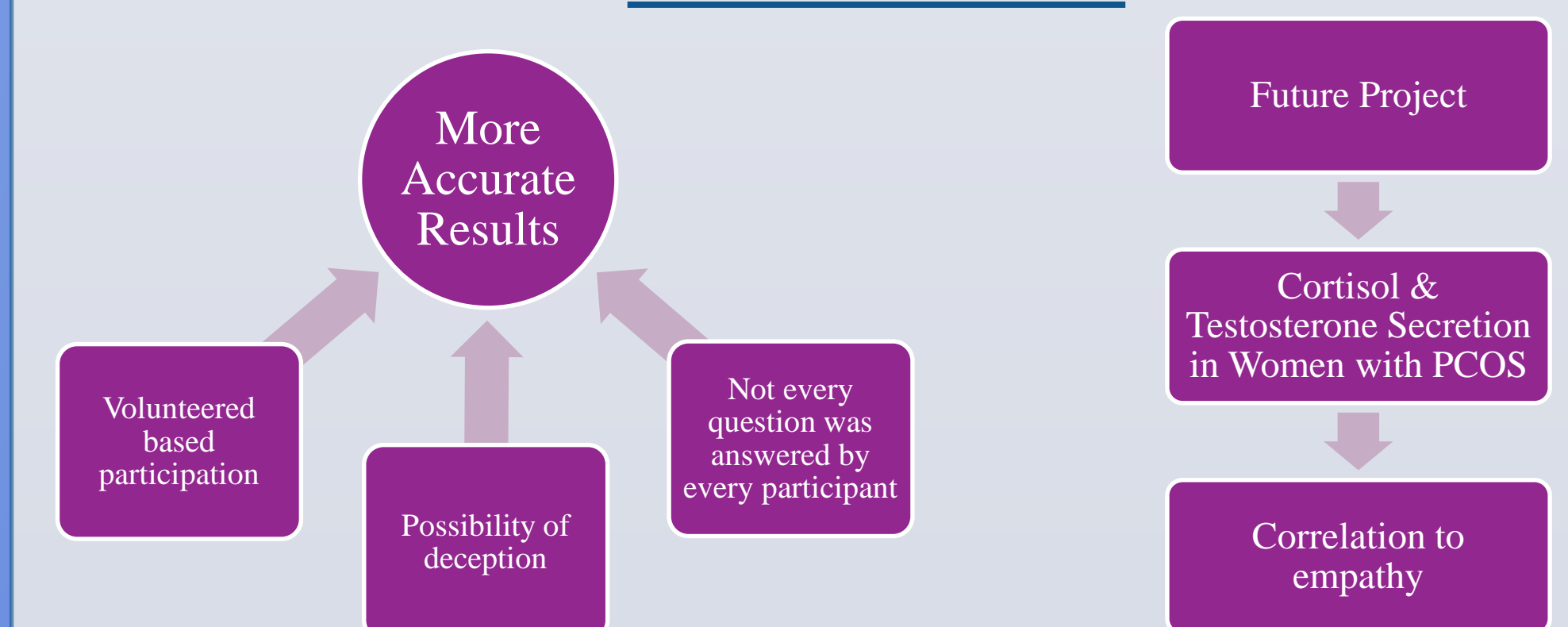
PCOS is the leading endocrine disorder **BUT** there is a major **lack** in education and awareness

Anxiety and low self-esteem are associated with PCOS along with other mental disorders

Further research will contribute to better treatment in all aspects

Research will spread awareness and education giving women with PCOS and people with mental health issues the support they need

## Future Research



## Acknowledgements

- Polycystic Awareness Association (PCOSAA)
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- My science research peers
- My parents

## References

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Unknown Cause of PCOS

Lack of Awareness and Education of PCOS

Lack of Research in PCOS and Mental Health