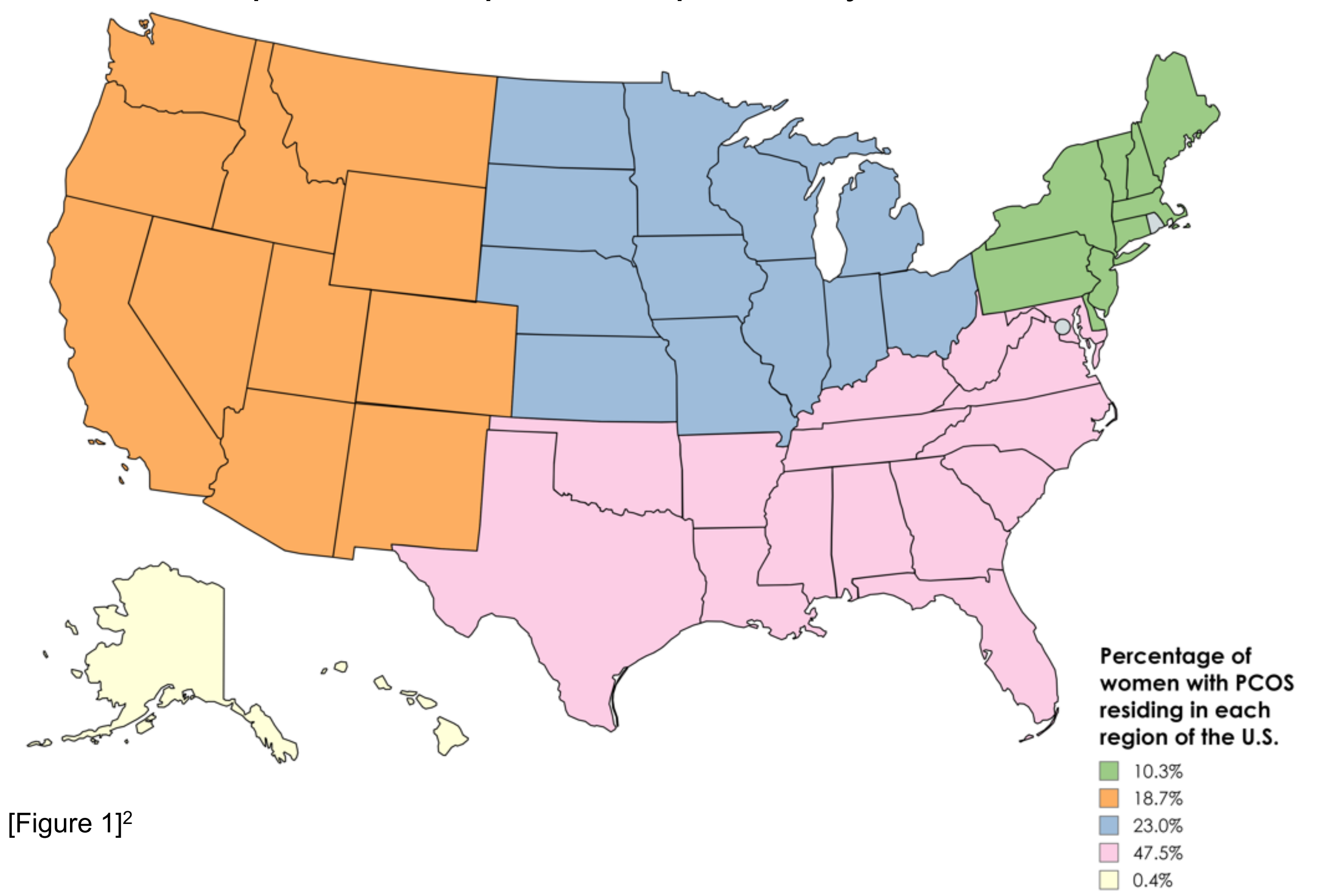




## BACKGROUND

- Polycystic Ovary Syndrome (PCOS) is a chronic, reproductive, and metabolic condition **affecting up to 15% of women of reproductive age**, often characterized by hirsutism, insulin resistance, obesity, and infertility
- In the United States (U.S.), approximately 10% of reproductive age women are diagnosed, with nearly half of diagnosed cases residing in the South part of the U.S.<sup>1,2</sup> [see Figure 1]
- **Depression and anxiety** are proposed to be caused by an inadequate amount of serotonin, dopamine, and norepinephrine circulating within the central nervous system in women with PCOS<sup>3</sup>
- ❖ These and other mental health issues can lead to decreased quality of life (QOL), and **women with PCOS have higher risks for development of these issues**<sup>4,5,6</sup>
- International guidance for the management of PCOS is published by the European Society of Human Reproduction and Embryology (ESHRE), and recently underwent an update to their guidelines<sup>7</sup>
- ❖ U.S. guidelines are made by American Society of Reproductive Medicine (ASRM) in collaboration with ESHRE
- Pharmacists commonly dispense medications used to manage PCOS, with opportunities for expanded involvement
- PCOS is perceived to be a “low importance” topic within pharmacy school curriculum<sup>8</sup>



[Figure 1]<sup>2</sup>

## OBJECTIVE

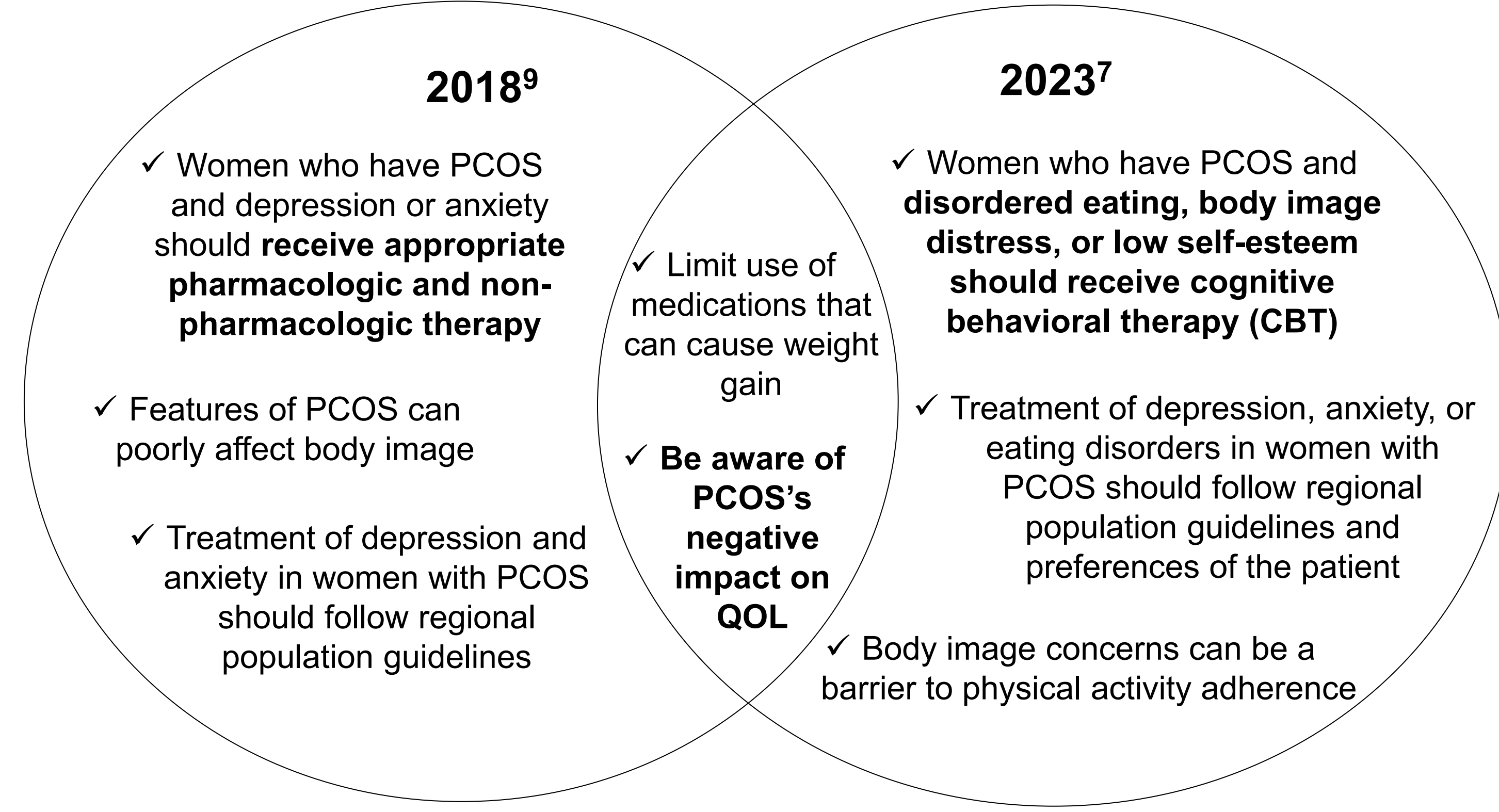
- Describe current ESHRE/ASRM guideline recommendations and insights from updated literature related to pharmacologic and non-pharmacologic options for treatment of mental health issues in women with PCOS

## METHODS

- Changes in recommendations from ESHRE guidelines between 2018 and 2023 publications were described
- An unstructured review was conducted
- ❖ Articles located in PubMed related to the objective were included if published on or after 2018
- ❖ Search phrases used included the following: “pcos and depression”, “pcos and psychotherapy”, “pcos and body image”, “pcos and behavioral therapy”, “pcos and anxiety”, and “pcos and mental health”

## RESULTS

### ESHRE/ASRM RECOMMENDATIONS

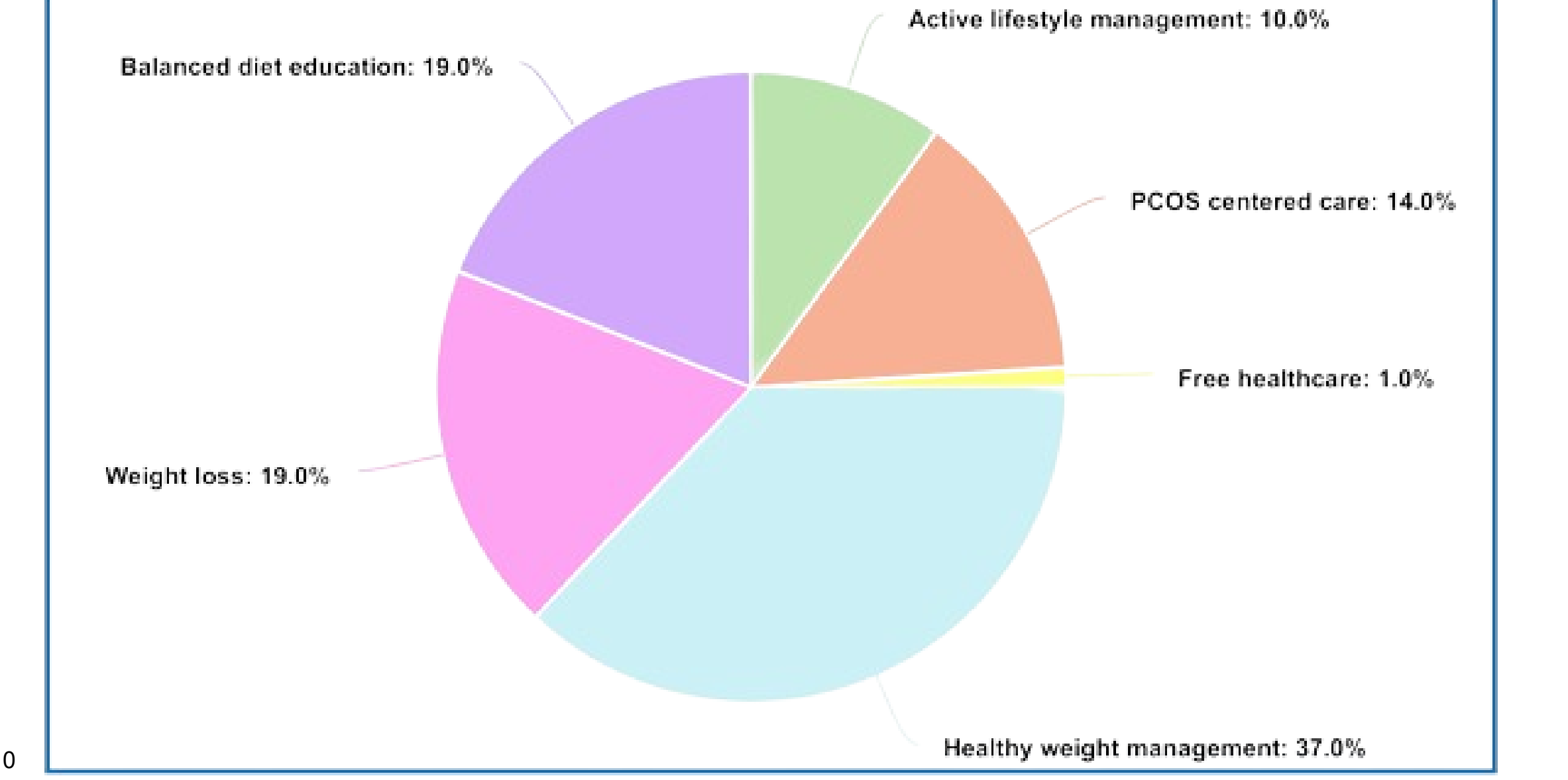


[Figure 2]<sup>7,9</sup>

### PATIENT PREFERENCES

- **What:** An Australian study published by Pirotta et. al aimed to determine what women with PCOS looked for in a lifestyle management program targeted towards alleviating PCOS symptoms
- **Who:** 286 Australian women with a self-reported PCOS diagnosis

What Women with PCOS Hope to Gain from a Lifestyle Management Program



[Figure 3]<sup>10</sup>

### EFFECTS OF COGNITIVE BEHAVIORAL THERAPY

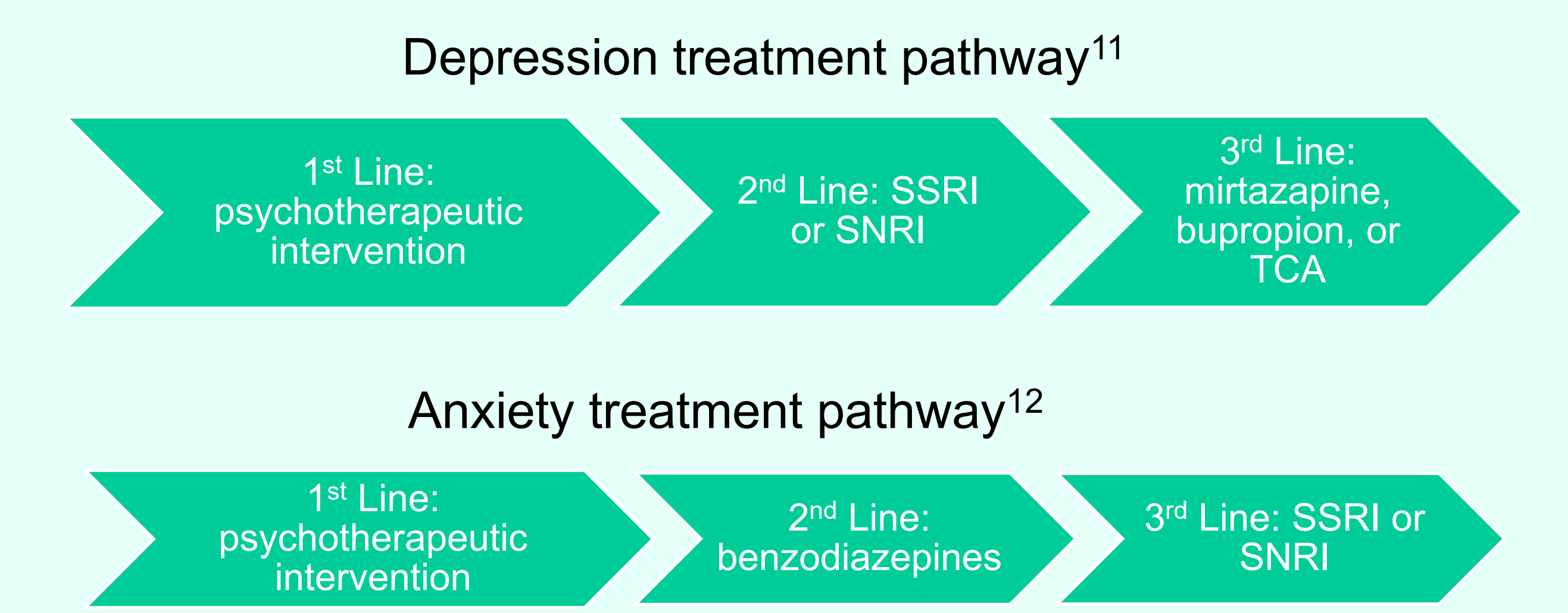
- **What:** An Iranian study published by Makidzadeh et. al that aimed to determine how CBT impacts various PCOS symptoms
- **Intervention:** Group CBT session once weekly for 8 weeks
  - 42 women in intervention group and 42 in control group evaluated before and after 8 week period
- **Who:** 84 Iranian women diagnosed with PCOS

	CBT Group Mean Score Pre-Intervention	CBT Group Mean Score Post-Intervention	Control Group Mean Score Pre-Intervention	Control Group Mean Score Post-Intervention	P-Value
Depression (using Beck's Depression Inventory) Range 0-63	24.4	6.7	23.3	24.5	<0.001
Anxiety (using Spielberger State-Trait Anxiety Inventory) Range 20-80	42.9	29.0	42.2	42.3	<0.001
QOL (using Quality of Life Questionnaire for Women with PCOS) Range 26-182	70.2	89.0	71.9	71.4	<0.001

[Figure 4]<sup>13</sup>

### THERAPEUTIC OPTIONS

- ESHRE guidelines currently recommend following the same treatment algorithms for anxiety and depression, regardless of PCOS status<sup>7</sup>
- ❖ Anxiety and depression treatment guidelines are set nationally by the American Psychological Association (APA)



## CONCLUSION

- Guideline recommendations now show a **larger emphasis on body image, eating disorders, and QOL when managing PCOS**
- ❖ Emphasized need for CBT to be offered to any woman struggling with body image
- ❖ Suggested appropriate pharmacotherapy for depression and anxiety

## FUTURE DIRECTIONS

- ❖ More research is needed to determine the best ways to appropriately treat mental health symptoms in women with PCOS
- ❖ **Recommendations For Pharmacists:** consider the mental and physical challenges that women with PCOS may experience
- ❖ **Recommendations For Pharmacy Educators:** encourage inclusion of PCOS in didactic curriculum, raising awareness of this common condition