Bridging the Knowledge Gap: The Impact of Educational Interventions on PCOS Diagnosis and Treatment

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CLINICAL QUESTION

"Among primary care providers, does providing education about Polycystic Ovary Syndrome (PCOS) increase providers' knowledge regarding its pathological process, symptoms, and treatment options?"

ABSTRACT

Polycystic Ovary Syndrome (PCOS) is a common, often underdiagnosed endocrine disorder affecting women's reproductive, metabolic, and mental health. Primary care providers (PCPs) face challenges in diagnosis and management due to knowledge gaps and low confidence. This project introduced a 35-minute educational intervention, with pre- and post-session surveys measuring changes in knowledge and confidence. Results showed significant improvements, highlighting the intervention's impact on enhancing PCPs' clinical competence in PCOS care.

INTRO / GOALS / OBJECTIVES

Introduction

Polycystic Ovary Syndrome (PCOS) affects 9–18% of women of childbearing age, yet 50–70% remain underdiagnosed or misdiagnosed (Helm et al., 2016; Satveit, 2017). The complex presentation of PCOS — including irregular menstruation, hyperandrogenism, infertility, metabolic complications, and mental health issues — makes diagnosis challenging. Despite established diagnostic criteria like the Rotterdam and NIH guidelines, provider knowledge gaps contribute to delayed diagnoses, inadequate education, and suboptimal care (Christ & Cedars, 2023). Women with PCOS often feel unheard, dismissed, and unaware of long-term risks such as type 2 diabetes, cardiovascular disease, and infertility (Sydora et al., 2023).

Goal

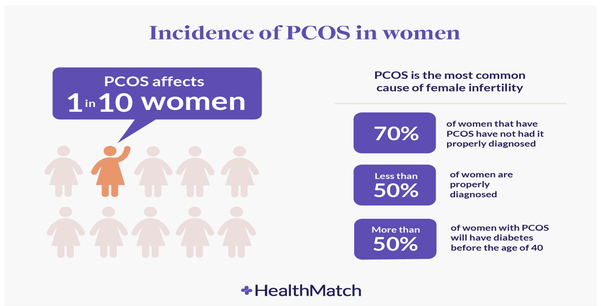
To improve primary care providers' knowledge, confidence, and clinical competence in diagnosing and managing PCOS through targeted educational interventions.

Objectives

•Increase provider understanding of PCOS pathophysiology, diagnostic criteria, and treatment options.

•Emphasize the importance of lifestyle management and early intervention to prevent long-term complications.

•Enhance provider-patient communication to improve patient satisfaction and long-term health outcomes.



METHODS

Methodology

The project took place at Blue Ridge Health Services (BRHS) in Hendersonville, NC, a Federally Qualified Health Center serving diverse populations across Western North Carolina. The intervention aimed to enhance primary care providers' (PCPs) knowledge and confidence in diagnosing and managing PCOS through an educational session.

Participants:

15 healthcare providers from BRHS participated.

Intervention:

A 35-minute in-person educational presentation on PCOS, covering pathophysiology, diagnostic criteria, treatment options, and the importance of lifestyle management.

Design:

A pre- and post-survey assessed provider knowledge, confidence, and self-efficacy in managing PCOS. The pre-questionnaire established baseline understanding, while the post-survey measured changes after the session.

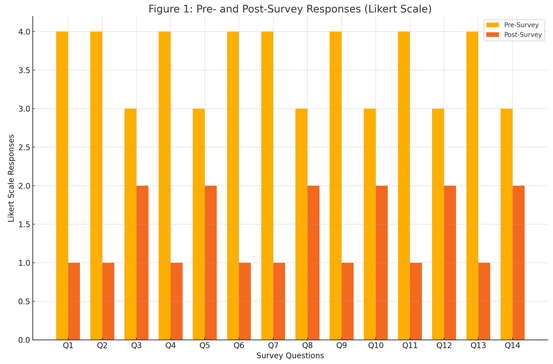
Materials:

•Surveys assessing provider knowledge, patient satisfaction, and clinical practices related to PCOS.

Pre- and Post-Survey Responses (Likert Scale

This bar chart illustrates the shift in responses for each question (Q1–Q14), highlighting the change from pre-survey to post-survey scores. A decrease in scores indicates an improvement in participants' confidence and knowledge, as lower scores on the Likert scale represent stronger agreement and higher self-assessed competence. The visual representation shows a noticeable trend toward lower post-survey scores, reflecting the positive impact of the educational intervention.

Figure 1: Pre- and Post-Survey Responses (Likert Scale)



Tools and Measures

•**Key Instruments:** Pre- and post-questionnaires (14 Likert-scale questions), a PowerPoint presentation, and feedback forms.

•**Survey Topics:** Providers' knowledge and confidence in diagnosing and managing PCOS, including pathophysiology, diagnostic criteria, treatment options, and patient education.

•**Educational Content:** Covered PCOS pathophysiology, diagnostic criteria (NIH, Rotterdam, Androgen Excess-PCOS Society), pharmacologic (OCPs, metformin, GLP-1 agonists) and non-pharmacologic treatments, and myth-busting.

RESULTS

Knowledge & Confidence Improvement:

•**Pre-survey Mean Score:** 2.29

•**Post-survey Mean Score:** 1.19

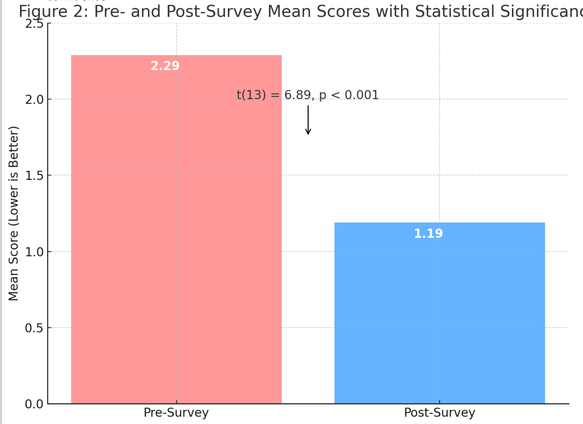
•**Statistical Significance:** t-statistic = 6.89, p-value = 0.0000715

•Scores shifted toward "Strongly Agree," indicating improved understanding and confidence.

Pre- and Post-Survey Responses (Likert Scale)

Pre- and Post-Survey Mean Scores with Statistical Significance." This figure illustrates the decrease in mean scores after the educational intervention, reflecting improved knowledge and confidence.

Figure 2: Pre- and Post-Survey Mean Scores with Statistical Significance



Correlation Analysis:

•**Pre-survey:** Moderate correlation between understanding PCOS and diagnostic confidence.

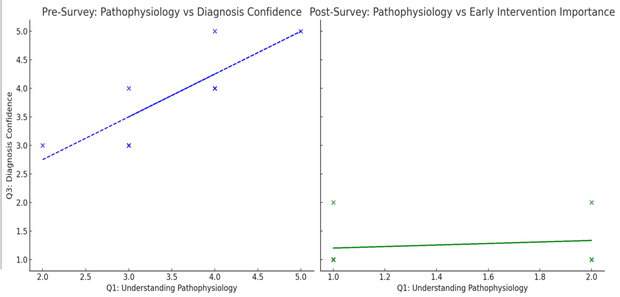
•**Post-survey:** Stronger correlation between understanding PCOS and recognizing the importance of early diagnosis.

Correlation of Pre- Post Survey Responses

The scatter plot with a trendline would work well to show the correlation between pre- and post-survey responses for specific questions. You could create two scatter plots:

1. **Pre-Survey Mode:** Plot Q1 (understanding pathophysiology) against Q3 (diagnosis confidence) to visualize the moderate positive correlation.

Post-Survey Mode: Plot Q1 (understanding pathophysiology) against Q2 (importance of early intervention) to show the strengthened correlation after the educational intervention.



CONCLUSIONS AND RECOMMENDATIONS

- **Impact of Education:** The intervention significantly increased providers' knowledge and confidence in diagnosing and managing PCOS, improving understanding of pathophysiology, symptoms, and treatment options.
- **Clinical Relevance:** Enhanced provider competence may lead to more accurate diagnoses, comprehensive patient care, and improved health outcomes for individuals with PCOS.
- **Study Limitations:** Small sample size, selection bias, and lack of long-term follow-up limit generalizability and the ability to assess lasting changes in practice.
- **Future Directions:** Larger, more diverse studies with extended follow-up periods are needed to confirm findings and evaluate the long-term impact of educational interventions on clinical care.
- **Practical Recommendations:** Expanding PCOS education to a broader range of healthcare settings and provider types could enhance diagnostic accuracy and holistic patient management.

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