

Reality Television and its Effect on Public Awareness of Polycystic Ovary Syndrome

Gunner Parent, B.S., Oklahoma State University College of Osteopathic Medicine at the Cherokee Nation, Tahlequah, Oklahoma

Liza-Ann Whitaker, B.S., Oklahoma State University College of Osteopathic Medicine at the Cherokee Nation, Tahlequah, Oklahoma

Reece M. Anderson, M.P.H., Oklahoma State University College of Osteopathic Medicine at the Cherokee Nation, Tahlequah, Oklahoma

Caroline Markey, M.D., Department of Obstetrics and Gynecology, University of Oklahoma School of Community Medicine

Micah Hartwell, Ph.D. Oklahoma State University Center for Health Sciences, Department of Psychiatry and Behavioral Sciences, Tulsa, Oklahoma

Corresponding Author: Mr. Gunner Parent, Oklahoma State University Center for Health Sciences. Address: 1111 W 17th St., Tulsa, OK 74107, United States. Email: gunner.parent@okstate.edu Phone: (918) 582-1972

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Abstract

Background: Television is an effective outlet to disseminate public health information. The reality television series *My Big Fat Fabulous Life* and *Teen Mom* featured a discussion of polycystic ovary syndrome (PCOS). Our primary objective was to investigate the effect of discussion regarding PCOS within the context of reality television on public awareness and interest.

Methods: We used Google Trends to capture monthly relative search interest (RSI; 0-100) in “Polycystic ovary syndrome” and “PCOS” from January 2004 through November 2021. An autoregressive integrated moving average (ARIMA) modeling technique was used to compare relative search interest for the disorder compared to the forecasted data trend. We then used an integral function to summate continued interest encompassing the subsequent disclosures.

Results: Our analysis showed a significantly increased RSI for the term “Polycystic ovary syndrome” following a discussion of the condition on *My Big Fat Fabulous Life*. The peak RSI was 58.55% higher than expected. Additional peaks in RSI corresponded to disclosures of PCOS diagnoses by other celebrities, resulting in a cumulative RSI increase of 1297 (95% CI: 1292.00 - 1302.24) – an average of 15.76 points (95% CI: 5.71 - 25.80) higher interest than forecasted.

Conclusion: Our results suggest that discussions of PCOS among celebrities on reality television shows are strongly associated with an increased public interest. Celebrity depictions of PCOS may have a positive effect on raising awareness and funding for PCOS research – a valuable insight for health professionals to consider.

Introduction:

Television is one of the most effective outlets for disseminating health information, particularly concerning public health issues including safer sex practices, mental health, and substance abuse.¹ Previous studies have revealed an individual's healthcare interpretation and perception may be influenced by television portrayals of patients, nurses, and physicians.^{2,3} Yet medical dramas often poorly represent medical conditions due to the prioritization of entertainment over medical accuracy.⁴ However, reality television offers a unique—and often widely viewed—forum to describe the effect medical conditions can have on daily life. Such is the case with Whitney Thore, Maci Bookout, and Kailyn Lowry, stars of *My Big Fat Fabulous Life*, *Teen Mom OG*, and *Teen Mom 2*, respectively—whose diagnoses, symptoms, and complications with polycystic ovary syndrome (PCOS) were exhibited on their respective programming.

PCOS is one of the most frequently diagnosed endocrine disorders affecting women and adolescents of reproductive age. Worldwide estimates of PCOS prevalence range between 6% and 13%, depending on the country and varying diagnostic criteria.⁵ The negative effects of PCOS are vast and can adversely affect multiple systems including the metabolic, reproductive, and psychological systems.⁶ Additionally, PCOS symptoms vary from vague to severe such as irregular menstrual cycles, depression, anxiety, and hyperinsulinemia.⁷ Despite clear diagnostic criteria, precise treatment options have yet to be established for PCOS—as the etiology is unknown.

Due to the potentially severe effects—and the gaps in medical knowledge surrounding the etiology of PCOS—public coverage of individuals with PCOS may serve to raise awareness and research funds. Previous research has illustrated that prominent figures in the media have been able to raise public awareness surrounding specific topics, such as cleidocranial dysplasia,⁸ Asperger syndrome,⁹ and colorectal cancer.^{10,11} Thus, our primary objective was to investigate the potential increase in public awareness of PCOS following the disclosures of PCOS diagnosis on the television series *My Big Fat Fabulous Life*, *Teen Mom OG*, and *Teen Mom 2*.

Methods:

On November 18th, 2021, we used Google Trends (<https://trends.google.com/trends/?geo=US>) to retrospectively analyze monthly search interest in “Polycystic ovary syndrome” from January 2004 through November 2021 to capture a 17-year trend in search interest for the disorder. Relative search interest (RSI) data from Google Trends is presented as a percentage relative to the highest volume (0-100%) of any compared topic within the searched timespan. Our search was limited to the United States, using Google's query categorization of “disease.” An autoregressive integrated moving average (ARIMA) modeling technique was used to compare relative search interest for the disorder compared to a forecasted trend had Thore not spoken out about her diagnosis on *My Big Fat Fabulous Life*. We then used an integral function to summate continued interest encompassing the subsequent disclosures on *Teen Mom OG* and *Teen Mom 2*. This study did not constitute human subject research and, therefore, was exempt from ethics review.

Table 1: Original air date month and description of *My Big Fat Fabulous Life*, *Dancing with the Stars*, *Teen Mom OG*, *this is Us*, and *Teen Mom 2* episodes that featured discussion of Polycystic Ovarian Syndrome (PCOS).

Date	Description
January, 2015	Whitney Thore first discusses her PCOS diagnosis on <i>My Big Fat Fabulous Life</i> .
September, 2015	Thore discusses PCOS again on <i>My Big Fat Fabulous Life</i> .
September, 2017	<i>Dancing with the Stars</i> contestant Sasha Pieterse talks about her health scare and weight loss with PCOS.
February, 2018	Maci Bookout meets with doctors to find new ways to manage her PCOS on <i>Teen Mom OG</i> .
September, 2018	<i>This is the Us</i> season 3 premiere features a character's portrayal of PCOS diagnosis.
July, 2019	Bookout shares her PCOS goals with a <i>Teen Mom OG</i> producer with the same condition. Bookout also goes to Washington D.C. to advocate for PCOS. Thore discusses PCOS again on <i>My Big Fat Fabulous Life</i> .
December, 2020	Kaylin Lowry discusses her 'cancer scare' on <i>Teen Mom 2</i> , which is related to her PCOS diagnosis.
March, 2021	Bookout 'lights up Chattanooga' to support PCOS Awareness Month on <i>Teen Mom OG</i> .
June, 2021	Lowry talks about being diagnosed with PCOS, her fertility plans, and hurtful comments she received on social media on <i>Teen Mom 2</i>

Results:

Observational analysis of the trends showed RSI in "Polycystic ovary syndrome" increased significantly following Thore's disclosure and continued to increase as PCOS was featured on multiple shows thereafter. The peak RSI (94) following Thore's disclosure resulted in a 34.72 (95% CI: 27.82-41.61) higher RSI compared to the forecasted model—a 58.55% increase (Figure 1). From January 2015 through November 2021 multiple peaks occurred that extended beyond the predicted confidence interval, coinciding with additional diagnosis disclosures by the celebrities mentioned, in addition to a performer on "Dancing with the Stars," resulting in a cumulative RSI increase of 1297 (95% CI: 1292.00-1302.24)—an average 15.76 points (95% CI: 5.71-25.80) higher interest than monthly forecasted data (Figure 1).

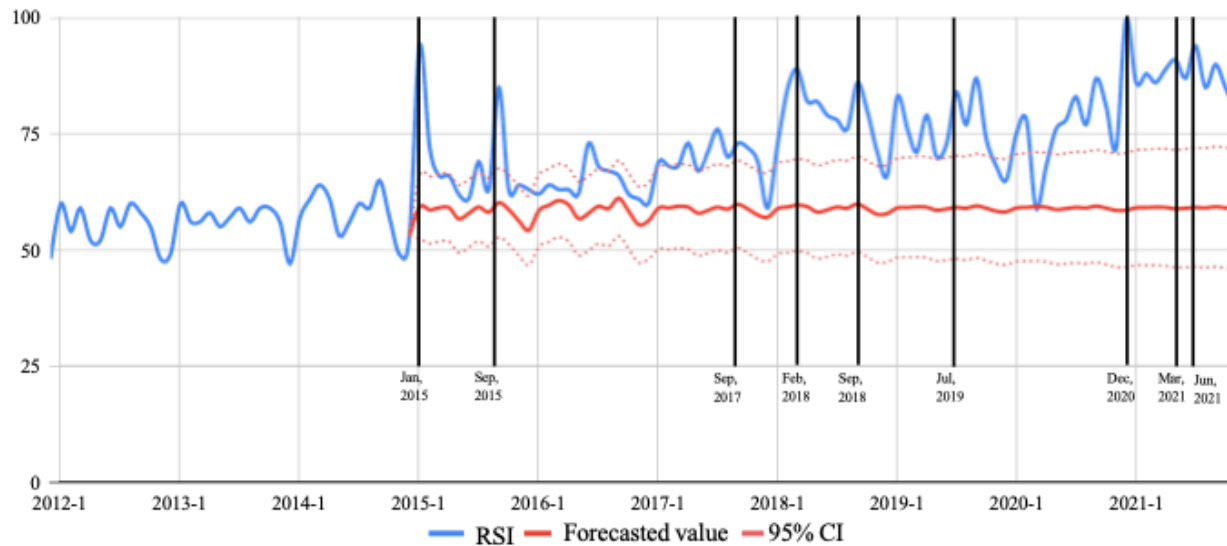


Figure 1. Relative search interest (RSI) for polycystic ovarian syndrome (PCOS) from Google Trends with comparative forecasted values had PCOS not become a topic featured on reality television in 2015.

Discussion:

Our results suggest that Thore, Bookout, and Lowry’s reality television appearances have been strongly associated with a continued increase in PCOS public awareness. Following Thore’s initial disclosure of her PCOS diagnosis in January 2015, the search trend for PCOS has remained above the forecasted values through November 2021. Additional spikes in search interest were observed following the release dates of *Teen Mom 2* and *Teen Mom OG* episodes which featured firsthand discussion of PCOS from individuals experiencing symptoms and side effects. Relative search interest spikes were also observed corresponding to other PCOS-related television events including *Dancing with the Stars* when contestant Sasha Pieterse discussed her diagnosis and symptomology, and the *This is Us* season 3 premiere, which featured a portrayal of a woman diagnosed with PCOS.

While research demonstrates associations between PCOS and co-morbidities such as obesity, insulin resistance, infertility, cancer, and mental health disorders, little is still known about the etiology of PCOS itself.^{12,13} Studies have indicated that mass media and social media are low-cost tools that can garner public interest in health-related topics.^{14,15} Aside from Thore, Bookout, and Lowry being on reality television series, all are active on other media platforms, including podcasts and social media – which expands the availability of content regarding their mention of PCOS. This could contribute to a broader audience engaging with or being introduced to this women’s health topic, and potentially reducing PCOS-related stigma. One potential drawback to the expanded influence of non-medical professionals discussing health-related topics is the risk of unintentional misinformation.^{4,8} One example of this occurred following the Season 3 premiere of *This is Us*, where social media platforms were inundated with viewers who expressed dissatisfaction regarding the misrepresentation of individuals with PCOS.¹⁶ However,

evidence has shown that increased public awareness and interest in health topics can positively shift health behavior change^{4,8} and potentially increase research funding.

Implications & Recommendations

Given the prominent increase in public awareness of PCOS following reality television episodes—Teen Mom Series, My Big Fat Fabulous Life, and Dancing with the Stars— timing may be crucial to acquire funding for increased research to improve the screening for and treatment of PCOS. Currently, the International Guideline for the Assessment and Management of PCOS provides 166 recommendations for the treatment and management of PCOS—however, evidence for these recommendations was considered of low/moderate quality.⁶ Therefore to improve patients' experience and management of PCOS—studies should focus on research quality and extensive collaboration between researchers, practitioners, and patients. Additional factors that may improve PCOS research include increased stakeholder representation including patients, their families, and physicians—and an accurate understanding of PCOS symptoms.

The appearances of Thore, Bookout, and Lowry on reality television series may have a positive impact on raising awareness for PCOS. Further, Bookout – along with other celebrities and women diagnosed with PCOS – gathered at Capitol Hill demanding and succeeding in having lawmakers support PCOS advocacy and funding through the PCOS Awareness and Research Act.^{17,18} This act provides a national framework to increase awareness and funding for PCOS by recognizing the month of September as PCOS Awareness Month and supporting PCOS Advocacy Day. As much remains unknown regarding the etiology of PCOS, increased awareness and research funding into this topic may have profound benefits on the quality of life for affected individuals.

Strengths & Limitations

Google Trends was the sole data source used in this study. While Google Trends data is a valuable tool to gauge interest in a subject, it cannot determine search intent. PCOS is a common diagnosis and peaks in search interest could be affected by a litany of factors such as specialty-specific conferences which may confound the results of Google Trend analyses. Thus, the interpretation and generalizability of this study are limited. While extrapolating these results beyond the study context may be limited, the ARIMA model aims to account for potential confounders and provide context for the influence that media can have on public awareness of medical conditions including PCOS. Further, Google Trends is a reliable gauge of public interest in many health conditions.^{9,19}

Conclusion

Since the initial airing of an episode of *My Big Fat Fabulous Life*, in which its central figure, Whitney Thore, revealed her PCOS diagnosis, our data indicate a sustained increase in public interest in this topic. Search interest was further increased when PCOS was discussed by participants on Teen Mom OG and Teen Mom 2. These results reflect the potential positive and lasting impact of television and celebrity influence on curiosity regarding health topics in the

general population. In understanding these trends, advocating platforms for underfunded and underrepresented health issues may seek out similar publicity to increase research focus and funding.

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