

## Awareness of Uterine Artery Embolization as a Treatment for Fibroids among Saudi Women

### Abstract

**Context:** No study has investigated the awareness of uterine artery embolization (UAE) as a treatment option for uterine fibroids among Saudi women. **Aims:** The aim of this study was to investigate Saudi women's awareness of UAE as a therapeutic modality for uterine fibroids. **Settings and Design:** This was a cross-sectional study conducted in Hail and Riyadh. **Subjects and Methods:** In 2019, an anonymous online questionnaire was sent via social media to women residing in Hail and Riyadh. The questionnaire contained 11 multiple-choice questions divided into two parts. The first part contained questions about demographic characteristics and one question about their history of fibroids. The second part contained items pertaining to awareness of treatment options for uterine fibroids and whether they were aware of UAE. **Statistical Analysis Used:** The Chi-square test was used for statistical analysis. **Results:** Eight hundred and forty-five responses have been received. Overall, 76.1% of the respondents had never heard of UAE. Awareness of treatment options for uterine fibroids was significantly associated with education level and participants' involvement in a medical field ( $P < 0.05$ ; Chi-squared test). 9.2% were from respondents who reported a history of fibroids. Among them, 71.7% had never heard of UAE; 9% had heard about it from an obstetrician or gynecologist. Only 6.4% of the participants were aware of all the treatment options for uterine fibroids; 28.2% believed that hysterectomy was the only treatment for uterine fibroids. **Conclusions:** This study highlights the need for public awareness of the treatment options for uterine fibroids to appropriate candidates.

**Keywords:** Saudi Arabia, uterine artery embolization, uterine fibroids, women

### Introduction

Uterine artery embolization (UAE) is a safe, effective, and minimally invasive procedure,<sup>[1]</sup> becoming an important gynecological and interventional radiological procedure.<sup>[1-3]</sup> As critical medical decisions require patients to be well-informed and involved in the decision-making process, the awareness of UAE becomes necessary.<sup>[4]</sup> Only two previous studies in the USA have investigated the awareness of UAE among women.<sup>[5,6]</sup> No study has assessed the awareness of UAE as a treatment option for uterine fibroids among Saudi women. Thus, this study investigated Saudi women's awareness of UAE as a treatment for uterine fibroids.

### Subjects and Methods

In this cross-sectional study conducted in 2019, a self-administered, anonymous,

online questionnaire was sent to women living in Hail and Riyadh provinces of Saudi Arabia via social media. Using an online sample size calculator, we estimated that a sample size of 385 each was required among the total population of Riyadh (2,243,446) and Hail (271,840) to obtain statistically useful findings, with a 95% confidence interval.<sup>[7,8]</sup> The ethics committee at the College of Medicine, University of Hail (approval number HREC-00082/CM-UOH.11/19), provided ethical approval for this study. Information of informed consent was present in the first section of the questionnaire; agreement to complete the questionnaire was accepted as a willingness to participate in the study [Appendix 1].

The questionnaire contained 11 multiple-choice questions, which were divided into two sections. The first section contained items on demographic characteristics (including age, level of education, nationality, and marital status)

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Alreshidi MN, Alshubrmi D, Alrashidi I, Arabi M. Awareness of uterine artery embolization as a treatment for fibroids among Saudi women. Arab J Intervent Radiol 2020;4:79-82.

**Meshael Nazzal Alreshidi<sup>1</sup>, Dalal Alshubrmi<sup>1</sup>, Ibrahim Alrashidi<sup>2</sup>, Mohammad Arabi<sup>3</sup>**

<sup>1</sup>Medical Intern, College of Medicine, University of Hail, Hail, <sup>2</sup>Department of Radiology, Prince Sultan Military Medical City, <sup>3</sup>Department of Radiology, National Guard Health Affairs, Riyadh, Saudi Arabia

Received: 09-05-2020

Revised: 26-05-2020

Accepted: 14-06-2020

Online Published: 25-07-2020

#### Address for correspondence:

Dr. Meshael Nazzal Alreshidi, College of Medicine, University of Hail, Hail 55476, Saudi Arabia.

E-mail: me.shaal2010@hotmail.com

#### Access this article online

Website: www.arabjir.com

DOI: 10.4103/AJIR.AJIR\_21\_20

#### Quick Response Code:



and one question about whether or not the respondent had a history of fibroids. The second section contained items about the respondent's awareness of treatment options for fibroids and whether they were aware about UAE. The validity of the questionnaire was confirmed independently by two interventional radiologists [Appendix 1].

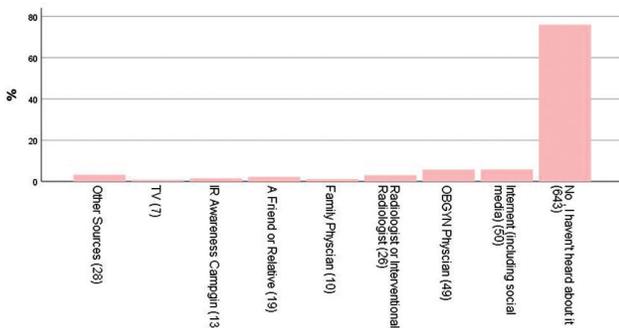
**Statistical analysis**

The data are shown as frequencies and percentages. Categorical data were compared using the Chi-squared test. All statistical analyses were performed using SPSS for Windows (v. 22; IBM Corp., Armonk, NY, USA).  $P < 0.05$  was deemed statistically significant.

**Results**

A total of 845 women attempted to complete the questionnaires and returned them; 792 (93.7%) were Saudi nationals and 53 (6.3%) were non-Saudis. A total of 404 (47.8%) respondents from Riyadh and 441 (52.2%) from Hail returned the completed online questionnaires. Among the 845 respondents, 198 (23.4%) were belonged to medical field and 78 (9.2%) were diagnosed with uterine fibroids. Table 1 shows the participants' demographic information.

Overall, 643/845 (76.1%) respondents had never heard of UAE, and 49 (5.8%) had heard about it from an obstetrician or gynecologist. Other sources of knowledge about UAE, as reported by the respondents, are shown in Figure 1. Of the 404 respondents from Riyadh, 298 (73.7%) were not aware of UAE, and of the 441 respondents from Hail, 345 (78.2%) were unaware of UAE ( $P = 0.02$ ; Chi-squared test). Of the 198 respondents who worked or studied in a medical field, 50 (25.2%) respondents were aware of all the treatment options for fibroids. Conversely, only 75 (11.5%) of the 647 women who did not work or study in a medical field knew of all the treatment options for fibroids ( $P < 0.001$ ; Chi-squared test). The relationship between age and awareness of UAE was statistically significant; the highest percentage was in the group between 45 and 55 years old ( $P < 0.001$ ; Chi-squared test). Table 2 represents the percentage of awareness in each age group. There was a



**Figure 1: Sources of knowledge about uterine artery embolization**

statistically significant association between knowledge of all treatment options for uterine fibroids and level of education; the academic education subgroup had the highest proportion of respondents who were aware of all the treatment options for uterine fibroids (107/609 participants; 17.6%) ( $P = 0.01$ ; Chi-squared test). Table 3 represents the percentage in other levels of education.

Of the 78 participants who were diagnosed with uterine fibroids, 71.8% were unaware of UAE; 9% had heard about it from an obstetrician or gynecologist. Only five (6.4%) of these women knew of all the treatment options for uterine fibroids, and 22 women (28.2%) believed that hysterectomy was the only treatment option for uterine fibroids.

**Table 1: Demographic information of the study cohort**

	n (%)
Age group (years)	
<15	9 (1.1)
15-24	281 (33.3)
25-34	260 (30.8)
35-44	212 (25.1)
45-55	66 (7.8)
>55	17 (2.0)
Marital status	
Single	343 (40.6)
Married	424 (50.2)
Widowed	18 (2.1)
Divorced	60 (7.1)
Level of education	
Illiterate	4 (0.5)
Elementary school	13 (1.5)
Intermediate school	36 (4.3)
High school	183 (21.7)
Academic	609 (72.1)

**Table 2: Relationship between age and awareness of uterine artery embolization**

Age	n (%)
<15	2 (22.2)
15-24	66 (23.4)
25-34	57 (21.9)
35-44	52 (24.5)
45-55	22 (33.2)
>55	3 (17.6)

**Table 3: Level of education and knowledge of all treatment options**

Level of education	n (%)
Illiterate	1 (25)
Elementary	1 (7.6)
Intermediate	1 (2.7)
High school	15 (8.1)
Academic and higher	107 (17.5)

## Discussion

UAE is a well-documented and less invasive alternative to hysterectomy for symptomatic uterine fibroids.<sup>[9]</sup> It has shown a lower rate of complications in comparison to surgery.<sup>[2]</sup> It also has a shorter length of hospital stays.<sup>[10]</sup> The aim of this study was to investigate the awareness of UAE as a potential therapeutic modality for uterine fibroids among women in Saudi Arabia.

The results from an anonymous online survey showed that most of the respondents in the present study had no awareness of UAE.<sup>[5]</sup> The study by the Society of Interventional Radiology showed that 62% of the participants had never heard of UAE, whereas in this study, 76.1% of the women were unaware of UAE.<sup>[5]</sup> In this study, 71.7% of the participants with uterine fibroids had never heard about UAE, whereas that in the study by the Society of Interventional Radiology was 44%.<sup>[5]</sup> Regarding the knowledge of all treatment options for uterine fibroids, there was a statistically significant difference between the responses of those who were involved in a medical field and those who were not. In both these groups, <25% of the women were aware about all the treatment options for uterine fibroids. Obstetricians and gynecologists are not actively engaged in increasing public awareness about UAE. This is because only <10% of the women who had been diagnosed with fibroids had heard about UAE from an obstetrician or gynecologist; this result is concordant with that reported by Lipman.<sup>[6]</sup> More than 25% of the respondents believed that hysterectomy was the only treatment option for uterine fibroids, which is very concerning and necessitates immediate intervention such as increasing awareness about UAE among medical graduates and clinical practitioners. In addition, new policies should be implemented that will guarantee the patient's right to information about all treatment options available for symptomatic uterine fibroid.

Although the study was limited to two cities in Saudi Arabia, the results obtained are informative and are likely to reflect the status of public information and awareness about the treatment options for uterine fibroids as Riyadh city represents almost one-fourth of the Saudi population.<sup>[7]</sup> Accessibility to UAE was somewhat limited in Hail as compared to Riyadh as it is only available in private hospitals. In participants who have uterine fibroids, this study did not investigate whether it was symptomatic or asymptomatic.

## Conclusions

The current study found that Saudi women have limited awareness about UAE as a potential treatment option for uterine fibroids. The study highlights the need for increasing awareness about UAE as a treatment option for uterine fibroids among applicable candidates.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Mara M, Kubinova K. Embolization of uterine fibroids from the point of view of the gynecologist: Pros and cons. *Int J Womens Health* 2014;6:623-9.
2. de Bruijn AM, Smink M, Lohle PNM, Huirne JAF, Twisk JWR, Wong C, *et al.* Uterine artery embolization for the treatment of adenomyosis: A systematic review and meta-analysis. *J Vasc Interv Radiol* 2017;28:1629-420.
3. Fonseca MC, Castro R, Machado M, Conte T, Girao MJ. Uterine artery embolization and surgical methods for the treatment of symptomatic uterine leiomyomas: A systemic review and meta-analysis followed by indirect treatment comparison. *Clin Ther* 2017;39:1438-5500.
4. Fowler FJ Jr., Levin CA, Sepucha KR. Informing and involving patients to improve the quality of medical decisions. *Health Aff (Millwood)* 2011;30:699-706.
5. Society of Interventional Radiology The Fibroid Fix: What Women Need to Know. Available from: [https://www.sirweb.org/patient-center/fibroid\\_fix2/fibroid-fix-report/](https://www.sirweb.org/patient-center/fibroid_fix2/fibroid-fix-report/). [Last accessed on 2019 Jun 05].
6. Lipman J. Awareness of uterine fibroid embolization (UFE) as a treatment option for uterine fibroids in a community-based practice. *J Vasc Interv Radiol* 2015;26:S138.
7. The General Population and Housing Census. Population Characteristics Survey; 2017. Available from: [https://www.stats.gov.sa/sites/default/files/population\\_characteristics\\_surveysar.pdf](https://www.stats.gov.sa/sites/default/files/population_characteristics_surveysar.pdf). [Last accessed on 2019, Jun 20].
8. Raosoft, Inc. Sample Size Calculator. Available from: [http://www.raosoft.com/sample\\_size.html](http://www.raosoft.com/sample_size.html). [Last accessed on 2019 Jun 20].
9. de Bruijn AM, Ankum WM, Reekers JA, Birnie E, van der Kooij SM, Volkers NA, *et al.* Uterine artery embolization vs. hysterectomy in the treatment of symptomatic uterine fibroids: 10-year outcomes from the randomized EMMY trial. *Am J Obstet Gynecol* 2016;215:745.e1.
10. Edwards RD, Moss JG, Lumsden MA, Wu O, Murray LS, Twaddle S, *et al.* Uterine-artery embolization versus surgery for symptomatic uterine fibroids. *N Engl J Med* 2007;356:360-70.