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Review Article

Infertility in Muslim Refugees: A Review of the Literature

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Abstract

Many couples worldwide are affected by infertility, which is defined as an inability to conceive after at least one year of regular unprotected sexual intercourse. Many Muslim and Middle Eastern societies place a high societal value on having children and therefore, couples who are unable to conceive for various reasons often find themselves feeling stigmatized and socially isolated. Muslim refugees living in the United States face additional challenges and barriers to care due to their refugee status. This review is a synthesis of existing literature that 1) identifies Islamic viewpoints on infertility and assistive reproductive technology (ART), 2) explores the psychosocial impact of infertility for Muslim refugees, and 3) identifies barriers to care for this population. A PubMed search was conducted which yielded 592 records. After screening and removal of duplicates, 37 full-length texts were included for review. Key findings included different religious perspectives regarding various forms of ART between the two major sects of Islam (Sunni and Shia), significant social stigma and stress from infertility, and barriers to care such as high cost of treatment. Future research is needed in this area to better provide culturally competent care to Muslim couples experiencing infertility.

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Introduction

Infertility, defined as the inability to conceive after at least one year of regular unprotected sexual intercourse, affects approximately 70-80 million couples worldwide [1,2]. Infertile couples face a variety of psychological and social consequences, and for refugee populations the distress of infertility may be exacerbated by stressful life circumstances, the cultural importance of childbearing, and multiple barriers to treatment [3-5]. For Muslim refugees in particular, infertility carries significant social stigma, and religious doctrines limit the options available for treatment [6,7].

While existing literature describes the Islamic viewpoints regarding assistive reproductive technology (ART), and highlights barriers that immigrants and refugees may face when pursuing fertility treatment, there is a paucity of literature specifically focused on the impact of infertility among Muslim refugees. This paper will serve as a synthesis of the literature related to Islamic perspectives on assisted reproductive technology, and the psychosocial impact of infertility among Muslim refugees and barriers to care faced by this population.

Materials and Methods

A PubMed search was conducted using various combinations of the following key terms: refugees, reproduction, infertility, Islam, Muslim, parenthood, childlessness, immigrants (See Appendix for specific search terms). This search yielded a total of 592 articles (**Figure 1**). Duplicates were removed and articles were included that focused on the use of assisted reproductive technology among Muslim patients from the Middle East, the impact of infertility among Muslim men and/or women from the Middle East, and barriers to care among immigrants and/or refugees in accessing health care for ART. Articles were excluded if they were focused on Muslims from non-Middle Eastern countries (such as in Africa or Southeast Asia) or not written in English. The search was conducted in November 2018 and included all published articles on this topic from 1966. This study did not involve human subjects nor protected health information and therefore did not require Institutional Review Board (IRB) approval.

Results

A total of 37 articles met the inclusion criteria and were reviewed. Of these, 17 were studies, most commonly in the form of questionnaires or interviews of a small cohort of patients or couples. The remainder were comprehensive reviews or commentary articles. A summary of these studies and their conclusions is compiled in **Table 1**.

There were several important themes explored by these articles, including a thorough description of Islamic perspectives on infertility and ART, the psychosocial impact of infertility for Muslims, and barriers to care for refugees and immigrants.

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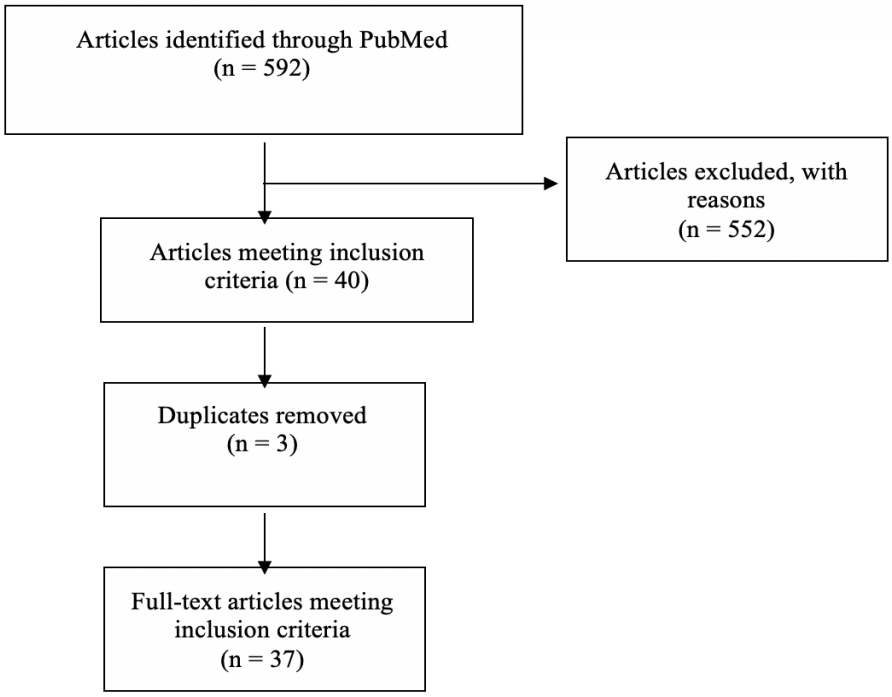

Figure 1 Study Methodology

In Islam, infertility is seen as a "God-given" condition [3]. However, Islamic society is a pronatalist society that places a high value on having children, therefore treatment of infertility is encouraged [7,8]. Islamic teachings place some restrictions on the use of assisted reproductive technology such as in-vitro fertilization (IVF) and intracytoplasmic sperm injection (ICSI). In general ART is permissible for married heterosexual couples [8,9], but there is disagreement between the Sunni and Shia sects of Islam regarding the use of donor egg and sperm. For Sunni Muslims, the use of donor gametes is prohibited, as the involvement of a third party makes the use of an egg or sperm donor tantamount to adultery [7,8,10-14]. However, some Shia scholars have approved the use of donor gametes [9,13,15-18].

Even when the use of donor egg or sperm is acceptable from a religious standpoint, from a personal and cultural standpoint many Muslim men and women would not desire to do so [19-21]. Concerns include disruption of inheritance in a traditionally patrilineal society [13,16] and the possibility that children conceived using third-party assistance could unknowingly enter into incestuous relationships with their half-siblings in the future [16,18]. Some men felt that a child conceived using donor sperm "would not be my son."[15]

For Muslims, alternatives to ART such has adoption and surrogacy are also restricted. Formal adoption as known in Western society (where the child takes the surname of the adoptive parents and is integrated into the family and a legal heir) is prohibited under Islamic law [16,22]. While taking in and raising orphaned children is encouraged in Muslim societies, adoption is more similar to the Western concept of foster care or guardianship, as the child keeps their biological father's name [12,15]. Surrogacy is prohibited in Sunni Islam, again due to involvement of a third party [7,23], but Shia scholars are accepting of the practice [11,17]. Still, a debate remains over who should be regarded as the "real" mother of a child born via surrogate: the birth mother, or the woman who will ultimately raise the child [11, 22-24].

Parenthood carries high social value in Muslim societies [4,24,25] and is often tied to an individual's self-perception of manhood or womanhood [3,26,27]. In a pronatalist society, infertility essentially becomes a "social crisis,"[3,5] accompanied by substantial distress and stigma for both men and women [11,26,28,29]. The stigma associated with infertility may sometimes lead infertile couples to keep their infertility--and its treatment--a secret [10,29,30].

Muslim men reported feelings of emasculation and some blamed themselves for their infertility, believing it was a punishment for engaging in premarital sex or that they had "spent" all of their sperm [4,29]. Women from Middle Eastern countries reported feeling significant societal pressure to bear children [31,32]. In cases of infertility, women may be blamed for "reproductive failing" which may lead to marital discord [3]. They may fear divorce if they are unable to have children [31], face depression and anxiety [26,32], or experience social isolation [26] due to their infertility. Additionally, they may have an increased risk of being victims of domestic violence [33]. Often, women turn to religion to deal with infertility, either reading the Qur'an [31], praying [34], or seeking advice from religious leaders [31,34].

Barriers to diagnosis and management of infertility for immigrants and refugees include the high cost of ART [5,16,35], language and cultural barriers [5,35], and difficulty navigating a new health care system [36]. Of these, the high cost of treatment was most frequently noted to be the most significant barrier to care. The reported cost of a single cycle of IVF ranged from $10,000 to $20,000 [3,5], which is unaffordable for refugees who may live in poverty and lack health insurance [4,5]. Even when offered discounts on treatment, patients reported that the cost of ART was prohibitive [3].

Furthermore, language and cultural barriers pose challenges for this population. A study at an urban hospital that serves Latino immigrants noted that communication issues may have impeded patients' understanding of the causes and treatment of infertility

Table 1 Study description and key findings

Study authors	*Year published*	*Methods*	*Key findings*
Ahmadi A, Bamdad S. [21]	2017	Questionnaire of 405 Iranian men and women in 2012, using a 5-point Likert scale to assess attitudes towards treatment for infertility	The most widely accepted form of infertility treatment was IVF with husband's sperm and wife's eggs. The least accepted were gestational surrogacy and use of donated gametes, even though these are legally acceptable in Iran.
Al-Jaroudi DH. [32]	2010	Interview-based survey of 51 Saudi Arabian women from February 2008-January 2009	The use of herbal medicine was common in this population (68.6% of women initially; this dropped to 15.7% after they began treatment at the infertility clinic). About 22% of women reported their husband would leave them if they were unable to bear children. Most women (72.5%) turned to religion to cope with heir infertility, either by reading the Qur'an on their own or seeking a sheikh to read for them.
Ardalan A, Vahidi S, Mohammad K, Russel M. [31]	2010	Survey of 10,783 women (age 19-49) living in Iran from 2004-2005	14.8% of women reported infertility at some point during married life, and of these, 81.1% had pursued diagnosis/treatment. Those that did not seek diagnosis/treatment reported they did not do so because of a desire for secrecy (33.6%), opposition from husband (18.7%), family member opposition (12.6%), poor access to care because of distance (12.6%), lack of trust in health care provider or delivery center (9.3%), or inability to pay (7.3%).
Aslan MM, Ugurel V, Elter K. [19]	2017	Survey of 133 fertile (had at least one child that was spontaneously conceived without fertility treatments) and 133 infertile women age 18-45 in Turkey from January 2015-December 2015	Most women reported a lack of knowledge about oocyte donation (fertile=88%, infertile=82%). A majority of women reported they would not accept oocytes in the case of infertility (fertile=88%, infertile=82%), and many women said their husbands would not approve of oocyte donation (fertile=73%, infertile=49%).
Hasson J, Tulandi T, Shavit T, Shaulov T, Seccareccia E, Takefman J. [27]	2017	Questionnaire-based study using the validated fertility quality of life (FertiQoL) questionnaire of 1,020 infertile immigrant (22.3%) and non-immigrant (77.7%) men and women who were seen in a Canadian reproductive clinic from March-July 2015	Immigrants were of lower socioeconomic status and despite receiving the same governmental funding for infertility treatment, reported lower satisfaction with their quality of life.
Inhorn MC. [4]	2018	Semi-structured interviews of 95 Arab patients (55 men and 40 women) seen in an infertility clinic near Detroit, Michigan from 2003-2008	Many men expressed difficulty accessing care for infertility in the United States due to factors such as cost. The author described these men as existing in a "reproductive exile—unable to return to war-torn countries, yet unable to gain access to the promises of American reproductive medicine."
Inhorn MC. [15]	2006	Interviews with 220 Lebanese, Syrian, and Lebanese Palestinian men who were seen at two infertility clinics in Beirut, Lebanon (2003)	Most Muslim men (Shia and Sunni) are not accepting of adoption or gamete donation. Many men held the sentiment that a child conceived in such a manner would not be their true child, a belief they often justified with religious doctrines.
Inhorn MC. [30]	2004	Interviews at two IVF clinics in Cairo, Egypt (1996), and two in Beirut, Lebanon (2003)	Men faced with infertility felt very emasculated. A significant social stigma surrounding infertility was noted, often resulting in secrecy.
Inhorn MC, Fakih MH. [3]	2006	Semi-structured interviews of 30 infertile men in Dearborn, Michigan from September 2003-August 2005	Men expressed their desires for children as well as the religious limitations of certain practices (such as the use of donor sperm or adoption). The majority of men reported that the high cost of ICSI in the United States prohibited them from accessing this service, and as a result some considered returning to the Middle East for treatment.

Table 1 Study description and key findings (**continued)**

Study authors	*Year published*	*Methods*	*Key findings*
Inhorn MC, Patrizio P, Serour GI. [17]	2010	Qualitative ethnographic interviews with IVF physicians, patients, and clerics in Egypt (1996, 2007) and Lebanon (2003-2005, 2009), as well as Italian physicians and patients coming to the USA for treatment (2008-2009)	In Sunni Egypt, religious restrictions on third-party donation are adhered to because of its comparison to adultery, the possibility of incest among donor offspring, and concerns of disruption of the patrilineal inheritance. In contrast, in Lebanon, support from Shia religious authorities has made donor technology an acceptable means of preserving the marriage.
Khalili MA, Kahraman S, Ugur MG, Agha-Rahimi A, Tabibnejad N. [20]	2012	Follow-up survey of 198 infertile Iranian patients and 355 infertile Turkish patients from 2009-2010 after failed IVF/ICSI treatment	The majority of patients who discontinued ART without pregnancy did so due to financial constraints. There was little interest in adoption; in Iran, 3% of patients adopted children and in Turkey 0.6% of patients adopted. Very few patients were interested in using donor gametes (2.3% in Iran and 1.7% in Turkey).
Latifnejad Roudsari R, Allan HT, Smith PA. [35]	2014	Interviews of 30 infertile women: Muslim women who were seen in a fertility clinic in Iran (6 Shia Muslim, 6 Sunni Muslim), and English women who were seen in a fertility clinic in London, England (18 Christians)	Women (both Muslim and Christian) used various religious and spiritual coping mechanisms to deal with their infertility and find inner peace.
Mengesha ZB, Perz J, Dune T, Ussher J. [39]	2018	Online survey of 79 health care professionals (45.6% nurses, 30.3% general practitioners, 16.5% health promotion officers, and 7.6% allied health professionals) as well as semi-structured interviews with 21 health care professionals in Australia	Health care professionals (HCPs) recognize that addressing sexual and reproductive health care with refugee and migrant women is complex. A large proportion of all types of HCPs reported a lack of sufficient training in addressing these issues with refugee and migrant women (59.4% of nurses, 50% of GPs, and 38.6% of health promotion officers) and knowledge (27.8% of nurses, 20.8% of GPs, and 30.8% of health promotion officers).
Nachtigall RD, Castrillo M, Shah N, Turner D, Harrington J, Jackson R. [37]	2009	Qualitative interviews of infertile low-income immigrant Latino patients (105 women and 40 men) seeking treatment at an infertility clinic at a university-affiliated urban public teaching hospital	Delivering infertility services to this population was complicated by four major factors: 1) communication issues (language and cultural barriers), 2) lack of continuity due to medical students and residents being involved in care, 3) patient difficulty navigating the bureaucracy of clinic services (i.e, scheduling issues), and 4) patient difficulty in accessing care due to availability or affordability of treatment
Schmid J, Kirchengast S, Vytiska-Binstorfer E, Huber J. [28]	2004	Extensive body composition analysis and questionnaire of 49 women (35 Austrian and 14 Muslim immigrants) ages 18-39 with PCOS who had never given birth (Vienna, Austria, May 2001-April 2002)	There was no difference in PCOS symptomatology between groups. However, Muslim women reported that infertility had a greater negative impact on their quality of life.
Sheikhan Z, Ozgoli G, Azar M, Alavimajd H. [34]	2014	Qualitative questionnaire-based study of 400 infertile women seen in infertility treatment centers in Tehran, Iran from December 2010 to May 2011	The reported prevalence of domestic violence was 34.7%. Women reported physical violence (5.3%), emotional violence (74.3%) and sexual violence (47.3%). There was a significant association of domestic violence with unwanted marriage, increasing number of IVF attempts, drug abuse of the woman, smoking and addiction/ drug abuse of the husband, and mental/physical illness in the husband.
Zelkowitz P, King L, Whitley R, et al. [36]	2015	Anonymous questionnaires of 3,816 patients (45.7% immigrants and 54.3% Canadian natives) at a private clinic and a university teaching hospital in Montreal, Canada. Responses were divided temporally into three time points: 1) prior to public funding for ART, 2) immediately following public funding, and 3) 8 months after implementation of public funding.	After the implementation of public funding for ART, more patients with lower income and lower education sought treatment. Immigrant patients tended to be older and were more likely to be nulliparous, indicating possible delay of treatment.

[36]. In some instances, interpreters may not be well-educated in the proper medical terminology related to reproduction and infertility, and as a result concepts may become "lost in translation" and misunderstandings may ensue [5]. Muslim couples may travel great distances specifically to see an Arabic-speaking physician [13], as the thought of undergoing ART in a language that is not their native tongue may be "daunting" [13]. They may even specifically seek out Muslim providers whom they perceive will be more sensitive to the Islamic perspectives on ART [13]. Additionally, Muslim women may desire female medical professionals due to the cultural importance of modesty [3,13,25].

Adjusting to and navigating an unfamiliar health care system is another challenge for immigrants and refugees [5,36,37]. Muslims who have experienced discrimination in the United States may have a distrust of the US health care system [25]. Refugees may have traumatic histories, such as experiences of rape or other sexual abuse, which may pose a challenge for health providers [5,37,38]. Additionally, refugees, immigrants and migrants often struggle with a loss of social support such as extended family members [37].

Discussion

The impact of infertility for Muslim patients is significant, and religious and cultural values impact treatment decisions. An awareness of the Islamic perspectives on ART and the nuances of the acceptability of donor gametes would help providers provide more culturally competent care for their Muslim patients. However, it is important to approach patient encounters recognizing that each couple and each individual may have a different perspective or adherence to religion [10,12,15]. Therefore, providers should avoid making assumptions about which treatment option their individual patient may desire and should discuss all treatment options to help them make an informed decision [12].

An understanding of the obstacles that refugee patients face in their pursuit of fertility is critical to helping patients navigate the United States health care system. Of the barriers to care that were discussed, cost was the most significant. Fortunately, in some states, infertility treatment may be covered (at least partially) by insurance. Fifteen states (Arkansas, California, Connecticut, Hawaii, Illinois, Louisiana, Maryland, Massachusetts, Montana, New Jersey, New York, Ohio, Rhode Island, Texas and West Virginia) have "infertility insurance laws" that require insurance companies to either offer or cover infertility treatment [5,16]. However, these mandates vary widely by state, and coverage often does not include ART [1]. Refugee Medical Assistance, which provides health care coverage for a maximum of eight months, does not provide any infertility coverage [5]. Medicaid and state-funded safety net insurance programs will usually only provide coverage for the diagnosis of infertility, not treatment [5]. There are some organizations that provide grants for infertile couples who are legal permanent US residents, therefore refugees may be eligible for these awards after they are approved for permanent residency [5]. Ideally, providers and clinic staff who evaluate and treat refugees and immigrants for infertility should familiarize themselves with insurance coverage policies in their state and be aware of possible grants or other sources of funding available to patients to help cover the high cost of treatment.

The language barrier is another significant barrier for this population, especially considering the complex medical terminology involved in discussions of infertility and ART. Using skilled, professional interpreters at critical points in a patient's health care experience (such as at the initial intake visit, when a diagnosis is given, and when a poor prognosis is given) may be helpful in reducing miscommunication [36]. Furthermore, the use of visual aids may be another useful strategy to improve patient understanding [36].

This review is limited by possible bias in the existing literature, which may be in the form of unconscious cultural or religious bias by researchers. Furthermore, it is possible that limiting this review to records available in English excluded relevant literature that was written in Arabic or another language spoken in the Middle East.

Conclusions

In conclusion, an understanding of the social and psychological importance of childbearing to Muslim patients is of the utmost importance when considering the effects of infertility in this population. The management of infertility in the Muslim refugee population is complicated by unique challenges, such as a strong personal desire and societal pressure to have children, cultural and language barriers, and cost barriers to treatment. The paucity of existing literature related to infertility among Muslim refugees in the United States signifies a need for continued research in this area in an effort to provide more culturally competent care for this patient population in one of their most vulnerable moments.

Disclosure

The authors declare no conflict of interest.

References

1. Ho JR, Hoffman JR, Aghajanova L, Smith JF, Cardenas M, Herndon CN. Demographic analysis of a low resource, socioculturally diverse urban community presenting for infertility care in a United States public hospital [doi]. Contracept Reprod Med. 2017 May;2(1):17–017.
2. Lindsay TJ, Vitrikas KR. Evaluation and treatment of infertility. Am Fam Physician. 2015 Mar 1;91(5):308-14.
3. Inhorn MC, Fakih MH. Arab Americans, African Americans, and infertility: barriers to reproduction and medical care. Fertility and Sterility. 2006 Apr 1;85(4):844-52.
4. Inhorn MC. Searching for love and test-tube babies: Iraqi refugee men in reproductive exile on the margins of Detroit [doi]. Med Anthropol. 2018 Feb-Mar;37(2):145–57.
5. Chow ET, Mahalingaiah S. Clinical vignettes and global health considerations of infertility care in under-resourced patients [doi]. Fertil Res Pract. 2016 Mar;2(1):4–016.
6. Serour GI. Islamic perspectives in human reproduction. Reproductive BioMedicine Online. 2008;17(Suppl 3):34-38.
7. Ahmad NH. Assisted reproduction—Islamic views on the science of procreation. Eubios J Asian Int Bioeth. 2003

Mar;13(2):59–61.
8. Chamsi-Pasha H, Albar MA. Assisted reproductive technology: Islamic Sunni perspective [doi]. Hum Fertil (Camb). 2015 Jun;18(2):107–12.
9. Schenker JG. Assisted reproduction practice: religious perspectives. Reproductive biomedicine online. 2005 Jan 1;10(3):310-9.
10. Dutney A. Religion, infertility and assisted reproductive technology. Best Practice & Research Clinical Obstetrics & Gynaecology. 2007 Feb 1;21(1):169-80.
11. Gooshki ES, Allahbedashti N. The process of justifying assisted reproductive technologies in Iran. Indian J Med Ethics. 2015 Apr;12(2):57-96.
12. Husain FA. Reproductive issues from the Islamic perspective. Human fertility. 2000 Jan 1;3(2):124-8.
13. Inhorn MC. Diasporic dreaming: return reproductive tourism to the Middle East [doi]. Reprod Biomed Online. 2011 Nov;23(5):582–91.
14. Ismail MS, Serour GI. Assisted reproductive medicine: current Islamic bioethical rules. Eur J Contracept Reprod Health Care. 1997 Sep;2(3):161–5.
15. Inhorn MC. "He won't be my son": Middle Eastern Muslim men's discourses of adoption and gamete donation. Med Anthropol Q. 2006 Mar;20(1):94–120.
16. Inhorn MC, Patrizio P. Is lower quality clinical care ethically justifiable for patients residing in areas with infrastructure deficits?. AMA journal of ethics. 2018 Mar 1;20(3):228-37.
17. Inhorn MC, Patrizio P, Serour GI. Third-party reproductive assistance around the Mediterranean: comparing Sunni Egypt, Catholic Italy and multisectarian Lebanon [doi]. Reprod Biomed Online. 2010 Dec;21(7):848–53.
18. Inhorn MC, Tremayne S. Islam, assisted reproduction, and the bioethical aftermath [doi]. J Relig Health. 2016 Apr;55(2):422–30.
19. Aslan MM, Ugurel V, Elter K. The attitudes of fertile and infertile women to Oocyte donation in a Muslim and secular population [doi]. Pak J Med Sci. 2017 Sep-Oct;33(5):1260–4.
20. Khalili MA, Kahraman S, Ugur MG, Agha-Rahimi A, Tabibnejad N. Follow up of infertile patients after failed ART cycles: a preliminary report from Iran and Turkey [doi]. Eur J Obstet Gynecol Reprod Biol. 2012 Mar;161(1):38–41.
21. Ahmadi A, Bamdad S. Assisted reproductive technologies and the Iranian community attitude towards infertility [doi]. Hum Fertil (Camb). 2017 Sep;20(3):204–11.
22. Altawil Z, Arawi T. Uterine transplantation: ethical considerations within Middle Eastern perspectives [doi]. Developing World Bioeth. 2016 Aug;16(2):91–7.
23. Aramesh K. Iran's experience with surrogate motherhood: an Islamic view and ethical concerns [doi]. J Med Ethics. 2009 May;35(5):320–2.
24. Arbach O. Ethical considerations in Syria regarding reproduction techniques. Med Law. 2002;21(2):395–401.
25. Shahawy S, Deshpande NA, Nour NM. Cross-Cultural Obstetric and Gynecologic Care of Muslim patients [doi]. Obstet Gynecol. 2015 Nov;126(5):969–73.
26. Hasson J, Tulandi T, Shavit T, Shaulov T, Seccareccia E, Takefman J. Quality of life of immigrant and non-immigrant infertile patients in a publicly funded in vitro fertilisation program: a cross-sectional study [doi]. BJOG. 2017 Nov;124(12):1841–7.
27. Schmid J, Kirchengast S, Vytiska-Binstorfer E, Huber J. Infertility caused by PCOS—health-related quality of life among Austrian and Moslem immigrant women in Austria [doi]. Hum Reprod. 2004 Oct;19(10):2251–7.
28. Muaygil RA. Reexamining the prohibition of gestational surrogacy in Sunni Islam [doi]. Developing World Bioeth. 2017 Aug;17(2):112–20.
29. Inhorn MC. Middle Eastern masculinities in the age of new reproductive technologies: male infertility and stigma in Egypt and Lebanon. Med Anthropol Q. 2004 Jun;18(2):162–82.
30. Ardalan A, Vahidi S, Mohammad K, Russel M. Service utilization patterns for presumed infertile women in the Islamic Republic of Iran, 2004-2005 [doi]. Int J Health Plann Manage. 2010 Jul-Sep;25(3):287–97.
31. Al-Jaroudi DH. Beliefs of subfertile Saudi women. Saudi Med J. 2010 Apr 1;31(4):425-7.
32. Douki S, Zineb SB, Nacef F, Halbreich U. Women's mental health in the Muslim world: Cultural, religious, and social issues. J Affect Disord. 2007 Sep 1;102(1-3):177-89.
33. Sheikhan Z, Ozgoli G, Azar M, Alavimajd H. Domestic violence in Iranian infertile women. Med J Islam Repub Iran. 2014 Dec;28:152.
34. Latifnejad Roudsari R, Allan HT, Smith PA. Iranian and English women's use of religion and spirituality as resources for coping with infertility [doi]. Hum Fertil (Camb). 2014 Jun;17(2):114–23.
35. Zelkowitz P, King L, Whitley R, Tulandi T, Ells C, Feeley N, et al. A comparison of immigrant and Canadian-born patients seeking fertility treatment [doi]. J Immigr Minor Health. 2015 Aug;17(4):1033–40.
36. Nachtigall RD, Castrillo M, Shah N, Turner D, Harrington J, Jackson R. The challenge of providing infertility services to a low-income immigrant Latino population [doi]. Fertil Steril. 2009 Jul;92(1):116–23.
37. Merry L, Pelaez S, Edwards NC. Refugees, asylum-seekers and undocumented migrants and the experience of parenthood: a synthesis of the qualitative literature [doi]. Global Health. 2017 Sep;13(1):75–017.
38. Mengesha ZB, Perz J, Dune T, Ussher J. Preparedness of health care professionals for delivering sexual and reproductive health care to refugee and migrant women: a mixed methods study. Int J Environ Res Public Health. 2018 Jan 22;15(1):174.

Appendix

PubMed search terms:
("refugees"[MeSH Terms] OR "refugees"[All Fields]) AND (("reproduction"[MeSH Terms] OR "reproduction"[All Fields]) OR ("infertility"[MeSH Terms] OR "infertility"[All Fields])) AND ("humans"[MeSH Terms] AND English[lang]); (((((reproduction) OR infertility)) AND ((islam) OR Muslim*))) AND refugees; parenthood[All Fields] AND ("refugees"[MeSH Terms] OR "refugees"[All Fields] OR "refugee"[All Fields]); childlessness[All Fields] AND ("refugees"[MeSH Terms] OR "refugees"[All Fields] OR "refugee"[All Fields]) ; ("islam"[MeSH Terms] OR "islam"[All Fields] OR "muslim"[All Fields]) AND ("infertility"[MeSH Terms] OR "infertility"[All Fields]) AND English[lang] ; ("infertility"[MeSH Terms] OR "infertility"[All Fields]) AND ("emigrants and immigrants"[MeSH Terms] OR ("emigrants"[All Fields] AND "immigrants"[All Fields]) OR "emigrants and immigrants"[All Fields] OR "immigrants"[All Fields]) AND English[lang]