

REVIEW

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Women's contraceptive knowledge, attitudes, and practices in Algeria, Morocco, and Tunisia: a scoping review

Sabrine Chengane^{1,2}, Roa Sabra¹ and Angel M. Foster^{1*}

Abstract

Background Although Algeria, Morocco, and Tunisia have made significant progress in family planning and remain committed to achieving socio-economic and sustainable development goals, recent years have seen a decline in contraceptive use and a rise in unmet contraceptive need.

Aim Our review aimed to explore available information and identify gaps in the literature on family planning in Algeria, Morocco, and Tunisia by synthesising published literature on women's contraceptive knowledge, attitudes, and practices in these three countries.

Methods Our review followed the framework outlined by Arksey and O'Malley [1] and revised by Levac and colleagues [2]. We conducted a comprehensive search of Medline (Ovid), Embase (Ovid), CINAHL (EBSCOhost), and Web of Science, a supplementary search in Google Scholar, and a hand search of ASJP, CAIRN.info, EMHJ, and La Tunisie Médicale. We included literature in Arabic, English, and French published between January 1990 and September 2024, focusing on women's contraceptive knowledge, attitudes, and practices in the Maghrib.

Results We identified 671 articles from the databases and 70 reports from the supplementary and hand searches. After removing duplicates, conducting initial screens, and retrieving full texts we ultimately included 63 sources in our review. Existing literature revealed that, although contraceptive knowledge has increased over the past decades, gaps in knowledge and misinformation persist. Additionally, fear of side effects and rumours contribute to negative attitudes toward contraception. Through this review, we observed that specific contraceptive methods promoted by early family planning programmes, and the strategies used to promote them, may have had a lasting impact on contraceptive practices, even decades later.

Conclusion Our review highlights the importance of exploring changes in knowledge and attitudes and the factors that influence them, as well as women's lived experiences with contraceptive use and access to services. This knowledge can provide more contextually relevant evidence to inform effective family planning policies and interventions.

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Plain English Summary

Like many countries, Algeria, Morocco, and Tunisia have committed to advancing women's status and health and promoting socio-economic development. A key avenue for achieving these goals is ensuring access to family planning and its essential component, contraception. Algeria, Morocco, and Tunisia have made significant progress in family planning since they introduced national initiatives in the 1960s. However, recent years have seen a decline in contraceptive use and a rise in unmet contraceptive need, reversing earlier trends. To understand this change, we sought to explore the extent of available information and identify gaps in the literature on women's contraceptive knowledge, attitudes, and practices in these three countries. Using a rigorous methodology, we conducted a review of existing studies to summarise what is known on the topic and ultimately included 63 sources. Our study found that misinformation and lack of contraceptive knowledge persist. This knowledge gap, along with fear of side effects and common rumours, shape women's attitudes toward contraception. These attitudes in turn affect their choice and use of contraceptives. We also observed that the strategies used in the design of early family planning programmes in these three countries, which promoted specific contraceptive methods, may have had a lasting influence on women's practices. Overall, this review shows that research on contraception needs to focus more on women's real-life experiences. By understanding these experiences and women's perceptions and use of contraceptives, decision-makers can formulate more relevant and effective family planning policies and interventions.

Keywords Algeria, Contraception, Family planning, Maghrib, Morocco, North Africa, Tunisia, Women's health

Background

Many nations globally have expressed their commitment to fighting maternal and infant mortality, advancing women's status and health, and promoting socio-economic development. Three countries in the Maghrib region, Algeria, Morocco, and Tunisia, are among those nations that demonstrated these commitments by working towards the Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), and International Conference on Population and Development (ICPD) agendas [3]. A key avenue to achieving these goals and agendas is ensuring access to contraception [4].

Algeria, Morocco, and Tunisia adopted family planning measures in the 1960s, with Tunisia leading the way with the first national programme in the region. While the Maghrib countries share historical, linguistic, and socio-cultural similarities rooted in Arab, Islamic, and Amazigh¹ heritage and identities, as well as colonial links with France, they have adopted different approaches to family planning policies and programmes [5].

In response to a sociological survey conducted in 1962 aiming to assess population contraceptive knowledge and attitudes, in 1964, the Tunisian government collaborated with Ford Foundation and the Population Council to launch an experimental family planning programme in 12 urban and semi-urban clinics, the first family planning in both the Arab World and Africa [6]. The programme expanded nationally over the 1960s and in 1970 the Tunisian Ministry of Public Health launched the first

autonomous family planning centre that evolved into a network of facilities over the ensuing decade that offered contraceptive methods free of charge. The national family planning programme helped raise awareness about contraception and birth spacing and early efforts had a strong focus on promoting the intrauterine device (IUD) and tubal ligation² [5–7]. In 1973, the Office National du Planning Familial et de la Population (ONPFP) was established to further strengthen family planning efforts. It later became Office National de la Famille et de la Population (ONFP), expanding its services and extending outreach into rural areas throughout the 1980s [6]. Also in 1973, abortion became legally permissible, without restrictions as to reason, in the first trimester and under specified conditions after that gestational duration [8]. In 2001, Tunisia became the first country in the Arab region to register an emergency contraceptive pill (ECP), Nor-Levo[®]. Subsequent efforts to expand access led to the integration of ECPs into the public health sector through evidence-based protocols, as well as in the private sector where they are available without prescription directly from pharmacies [8].

These strategies contributed to a decline in fertility from 8 children per woman in the early 1960s to 2.05 children per woman in the late 1990s. In 2021, the fertility rate was 1.8 children per woman [9]. The contraceptive prevalence rate in Tunisia increased from 31% in 1978 to 62% in 2001 [9]. Contraceptive prevalence dropped to 54.1%, according to the 2023 Multiple Indicator Cluster Surveys (MICS), while the fertility rate remained at 1.8 children per woman in 2023 [10, 11].

¹ Amazigh is the preferred term used to refer to indigenous North Africans. Another term also commonly used is Berber.

² Commonly referred to as 'female sterilisation' in the literature.

In preparation for its family planning programme, Morocco established the High Commission on Population in 1966. Like Tunisia, the Moroccan government collaborated with Ford Foundation and the Population Council, as well as the Swedish International Development Authority and the International Planned Parenthood Federation (IPPF) for planning and implementation [12, 13]. Two years after Tunisia, in 1966, Morocco launched the National Family Planning Programme as an experimental initiative, then expanded it by integrating it into various healthcare structures managed by the Ministry of Health [14]. Morocco also conducted a national survey on contraceptive knowledge and attitudes in 1966 and 1967 [12]. In the years following the launch of the programme, the government showcased its commitment to its family planning policy by establishing different population commissions, divisions, and central services, including the Association Marocaine de Planification Familiale (AMPF) in 1971 [13].

The programme initially focused on those in urban areas and the Lippes Loop (an IUD) was the primary method; oral contraceptive pills (OCPs) and condoms were not distributed through the public system when the national programme was launched. However, in 1969, the government shifted its strategy by introducing OCPs into the governmental programme and provided three free cycles and allowed for pharmacy dispensing; by 1974, OCPs had become the most widely used contraceptive method in Morocco [14, 15]. Attempts in the 1990s to shift back to IUD use were unsuccessful, indicating a lasting preference for OCPs [16]. In 2008, Morocco authorised the sale of NorLevo®. In part due to minimal promotion, awareness and use were initially low. Although a provider's prescription was officially required, ECPs were often available in pharmacies without one, and AMPF-supported clinics offered them at a subsidised price [17].

These efforts contributed to the decline of the fertility rate from 5.6 children per woman in 1980 to 2.5 children per woman in 2004 [18]. The contraceptive prevalence rate increased from 19% in 1980 to 67.4% in 2011 [18]. According to data from the 2018 Enquête Nationale sur la Population et la Santé Familiale (ENPSF), the contraceptive prevalence was 70.8% [13]. Although fertility had decreased over the years, it showed fluctuations with a slight increase beginning in 2014, rising from 2.21 to 2.38 children per woman by 2018. At the same time, the use of different data sources and methodologies such as census and demographic surveys has shown varying trends, making it difficult to establish a clear long-term pattern [13, 19].

Four years after Algeria's independence, the first national population census in 1966 revealed concerning demographic growth trends [20]. Although the

government initially showed limited concern, advocacy from the Union Nationale des Femmes Algériennes (UNFA) eventually succeeded in bringing the issue to political attention, leading to the establishment of a pilot centre for birth spacing at Mustapha Bacha Hospital in Algiers in 1967 [21]. Similar to the efforts undertaken in Tunisia and Morocco, the Association Algérienne pour la Recherche Démographique et Sociale (AARDES) conducted the first contraceptive knowledge, attitudes, and practices (KAP) survey in 1967–1968. The findings revealed broad acceptance of family planning, while also highlighting the religious influence on the public's contraceptive attitudes. In 1968, the Algerian Higher Islamic Council issued a fatwa³ in favour of birth spacing [20, 21]. During the 1970s, the government expanded services by creating centres for Protection Maternelle et Infantile et Espacement des Naissances (PMI/EN) [20]. In the 1980s, the Algerian government launched the Programme National de Maîtrise de la Croissance Démographique (PNMCD) to expand access to birth spacing information and services, which were then integrated into health centres, polyclinics, and dispensaries; OCPs were the primary contraceptive method promoted [20]. Although Algeria has registered several ECPs, there is no available information on current availability or use in the country [17, 22].

The impact of the PNMCD has been considerable. The total fertility rate decreased from 8 children per woman in 1970 to 2.8 children per woman in 1998 [23]. Moreover, contraceptive use among women in Algeria increased from 36% in 1986 to 57% in 1995 [24]. According to the 2019 MICS for Algeria, contraceptive prevalence had dropped to 53.6% [25]. The fertility rate increased to 3.1 children per woman in 2014, then began declining after 2018, reaching 2.8 children per woman again in 2023 [26].

Despite implementing policies and committing to contraceptive-focused strategies to help meet health and development goals, these countries continue to experience challenges, as reflected in contraceptive use and unmet need trends. In Morocco, unmet contraceptive need levels remained largely unchanged (11.3% in 2018), while in Algeria, they increased from 7% in 2013 to 14.1% in 2019 [13, 25, 27]. Although unmet contraceptive need increased from 7% in 2011–12 to 19.9% in 2018 in Tunisia, it decreased slightly to 16.1% in 2023 [10, 28, 29]. These patterns, alongside fluctuating contraceptive use rates, some of which have declined compared to earlier rates, suggest ongoing challenges in sustaining progress in these countries. Recognising the importance of this topic and the need for evidence to better understand women's contraceptive knowledge, attitudes, and practices in the

³ A fatwa is a religious opinion or ruling offered by a qualified Islamic jurist.

Maghrib, we undertook this scoping review. While contraceptive use is influenced by a range of factors beyond knowledge and attitudes, these remain crucial in shaping contraceptive literacy, practices, and access to services. Through this work, we aimed to explore the extent of available information on the topic and identify gaps in the literature.

Methods

Protocol

Our review followed the framework outlined by Arksey and O'Malley and revised by Levac and colleagues [1, 2]. In consultation with a research librarian at the University of Ottawa, we developed an a priori protocol based on this framework and accordingly completed the five required steps. We reported our findings following the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) checklist [30, 31].

Eligibility criteria

In the first step, we formulated our primary research question: What do we know about women's contraceptive knowledge, attitudes, and practices in the Maghrib? To further structure this review, we defined our secondary research aims as: What is the state of contraceptive knowledge and attitudes among women of reproductive age in the Maghrib and what contraceptive practices do women engage in?

We defined our population of focus (women and girls of reproductive age, aged 15–49), the context (three countries of the Maghrib: Algeria, Morocco, and Tunisia),

and the key concepts within our topic of contraception including knowledge, attitudes, and practices.

For the scope of our review, contraceptive knowledge refers to awareness of contraceptive methods, sources of information, and available services that enable women to make informed decisions [32, 33]. Contraceptive attitudes refer to perceptions, beliefs, and feelings about contraceptives, which are closely related to intention of use [32, 34]. Contraceptive practices refer to the use (or non-use) of one or more contraceptive methods, as well as experiences accessing them.

To widen our reach, we included materials in Arabic, English, and French that were published between January 1990 and September 2024 (inclusive), as we conducted our most recent database search in September 2024. We present our inclusion and exclusion criteria in Table 1. We did not exclude publications based on their type, study design, or quality; however, we excluded abstracts if the full text was missing or inaccessible. We did not critically appraise source material or assess their quality.

Information sources and search strategy

We searched the databases Medline (Ovid), Embase (Ovid), CINAHL (EBSCOhost), and Web of Science for published literature to identify source materials in multiple disciplines. SC also conducted a supplementary “hand search” of journals and platforms including Algerian Scientific Journal Platform (ASJP), CAIRN.info, Eastern Mediterranean Health Journal (EMHJ), and La Tunisie Médicale using the same inclusion and exclusion criteria presented in Table 1. We elected to include these platforms and journals primarily for their relevance to the geographic focus and scope of our review. Additionally, SC and RS independently conducted a supplementary search on Google Scholar in French and English. These supplementary searches yielded various types of published literature, including different types of grey literature. For each search of these sources, we included the first 100 results, as these represent the most relevant items suggested by the platform or website. By applying the inclusion and exclusion criteria to these results, we selected additional source material to include in the full-text screening phase.

We used a full range of topic-relevant keywords in English and their variations in database search strings. For the supplementary searches, we used relevant keywords in Arabic, English, and French to capture a wide range of literature from different sources. SC and AMF selected keywords based on commonly used terminology in the relevant literature on our concepts and context. SC then developed a comprehensive search strategy in consultation with a research librarian. Table 2 shows an example of search strings that we used for the database search.

Table 1 Inclusion and exclusion criteria for published source material in this scoping review on women's contraceptive knowledge, attitudes, and practices in the Maghrib

Inclusion criteria	Exclusion criteria
- Included women and girls of reproductive age (15–49)	- Focused on individuals other than women and girls of reproductive age (15–49)
- Addressed contraceptive methods used by women and girls with the intention to prevent pregnancy	- Focused exclusively on contraceptive methods used by individuals other than women and girls; or used for any reason other than preventing pregnancy
- Published between January 1, 1990, to September 4, 2024* (inclusive)	- Published before 1990
- Focused on the Maghrib countries: Algeria, Morocco, and Tunisia; or included one or more of these countries	- Focused on countries other than Algeria, Morocco, and Tunisia
- Published in Arabic, English, or French	- Published in a language other than Arabic, English, or French

* September 5, 2024, was the day on which we last updated our literature search in the four main databases

Table 2 Example of search strategy for Medline (Ovid) used in this scoping review

Step	Query
1	exp Contraception/
2	Contraception Behavior/
3	Family Planning Services/
4	family planning.ti, ab.
5	Population Control/
6	(birth control* or birth spacing).ti, ab.
7	(pregnan* adj3 prevent*).ti, ab.
8	contracept*.ti, ab.
9	exp Contraceptive Agents, Female/
10	(oral contracept* or (contracept* adj3 pill*) or OCP*).ti, ab.
11	(contracept* implant* or Nexplanon or birth control implant).ti, ab.
12	exp Contraceptive Devices, Female/
13	((intra-uter* adj3 device*) or (intrauter* adj3 device*) or IUD*).ti, ab.
14	exp Norgestrel/
15	(contracept* adj3 patch*).ti, ab.
16	((vagin* adj3 ring*) or NuvaRing).ti, ab.
17	(tubal ligation or tub* sterilization or female sterilization).ti, ab.
18	(inject* adj3 contracept*).ti, ab.
19	Family Planning Services/
20	((withdraw* adj5 (contracept* or birth control or sex* or ejaculat*)) or coitus interruptus).ti, ab.
21	(Lactational amenorrhea method* or (breastfeed* adj3 contracept*).ti, ab.
22	(Basal Body Temperature or ovul* detect* or bbt or (sympto-therm* adj3 method*) or (symptotherm* adj3 method*).ti, ab.
23	africa, northern/ or algeria/ or morocco/ or tunisia/
24	((North* adj3 africa*) or maghrib* or maghreb* or alger* or tunis* or morocc* or MENA or arab? or berber* or amazigh*).ti, ab.
25	exp Attitude to Health/
26	awareness/ or comprehension/ or perception/
27	((attitude* or behavi* or understand* or percept* or opinion* or belie* or view* or stance* or aware* or perspect* or decision* or comprehen* or practic* or us* or experienc* or utiliz*) adj6 (contracept* or "family planning" or "birth control*" or "birth spacing").ti, ab.
28	(knowledge or attitude* or practic*).ti, ab.
29	exp Women's Health/
30	exp Women's Health Services/
31	reproductive health/ or sexual health/
32	Mothers/
33	exp Postnatal Care/
34	(woman* or women* or girl* or female* or feminin*).ti, ab.
35	exp Women/
36	Female/
37	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22
38	23 or 24
39	25 or 26 or 27 or 28
40	29 or 30 or 31 or 32 or 33 or 34 or 35 or 36

Table 2 (continued)

Step	Query
41	37 and 38 and 39 and 40
42	limit 41 to yr="1990–2024"

Study selection

We imported the results of the database searches to Covidence (Veritas Health Innovation, Melbourne, Australia), a literature review management software. As a first step, the principal and second reviewer (SC and RS, respectively) independently screened all titles and abstracts of the source material identified through the database search. Items that met the inclusion criteria, even those without an abstract, were included in the full-text review to avoid missing any relevant item. The two reviewers held meetings throughout the process to discuss and resolve any inclusion or exclusion conflict. We directly added the selected source material from the supplementary searches to the full-text review after screening them for primary inclusion and exclusion criteria during retrieval. We eliminated duplicates both automatically, as detected by Covidence, and manually during screening and review.

Data charting, synthesis, and analysis

SC and AMF designed a charting form to capture source material characteristics and information relevant to our review questions, including information about contraceptive knowledge, attitudes, and practices. SC and RS independently reviewed and charted content from the included literature using Covidence and Microsoft Excel® (Microsoft® Corp., Redmond, WA) to manage the charted data. SC analysed the charted data for content and themes in Microsoft Excel® and ATLAS.ti and summarised the source material characteristics. This process allowed us to synthesise the information from the included literature to answer our review questions.

Results

PRISMA outline

We retrieved a total of 671 records from the databases: Medline (Ovid), Embase (Ovid), CINAHL (EBSCOhost), and Web of Science. Covidence automatically identified duplicates ($n = 152$), and we eliminated further duplicates manually as we progressed through screening ($n = 16$), totalling 168 eliminated duplicates. Through the first step of screening of titles and abstracts of 503 records, we excluded 266 records and sought 237 records for retrieval. We retrieved 63 records, but 174 lacked the full text.

Our supplementary search via other sources including Google Scholar, ASJP, CAIRN.info, EMHJ, and La Tunisie Médicale yielded 67 records after removing 3 duplicates. We added these to the full-text review, resulting in 130

records. At this stage, we excluded 65 records as irrelevant to our review questions and 2 due to language (other than Arabic, French, or English). After consensus meetings, we identified 63 records for inclusion in our scoping review. We outline these details in the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 flow diagram [30] in Fig. 1.

Literature characteristics

We present the characteristics of the included records in our review in Table 3. Of the 63 records included in our review, 50 were published as journal articles. These appeared in a variety of journals, including disciplinary, regional, international, or university-based publications. Notably, the peer review status of some journals, especially non-commercial or locally published ones, was unclear. We categorised the included records based on the overarching methodological approach adopted in them. “Qualitative” includes both empirical studies and qualitative analyses of literature and “quantitative” includes empirical research as well as studies and analyses not involving primary data collection. Most of the included records ($n=42$) adopted a quantitative approach.

While some articles focused on individual countries (Algeria ($n=16$), Morocco ($n=21$), and Tunisia ($n=11$)), others addressed combinations of two or all three, either separately or within regional or global studies. Few records in our review were in Arabic ($n=2$); most were in

English ($n=32$) and French ($n=29$). The majority of the records included information on contraceptive practices ($n=59$) and/or addressed contraceptive attitudes ($n=40$). Less than half of the records included information on contraceptive knowledge ($n=28$). These records included data from different time periods, with most covering the 1990s ($n=34$), the 1980s ($n=21$), and/or the 2000s ($n=17$). Fewer records addressed recent data from 2010 to 2019 ($n=11$) and only two records contained data from the 2020s.

Findings from the synthesis

Our content analysis of the source material included in our scoping review offered insights into contraceptive knowledge, attitudes, and practices among women in Algeria, Morocco, and Tunisia. We provide a brief summary of the included literature in our review in Table 4.

Contraceptive knowledge

Knowledge of contraception in the three Maghrib countries has increased over the decades following the adoption of their respective family planning programmes in the 1960s. By the early 1990s, contraceptive knowledge was considered ‘practically universal’ among both urban and rural women in Algeria and Morocco [43, 44].

While the studies explored knowledge across various populations and settings, most consistently found that most married women were familiar with contraception, with OCPs being the most commonly known method

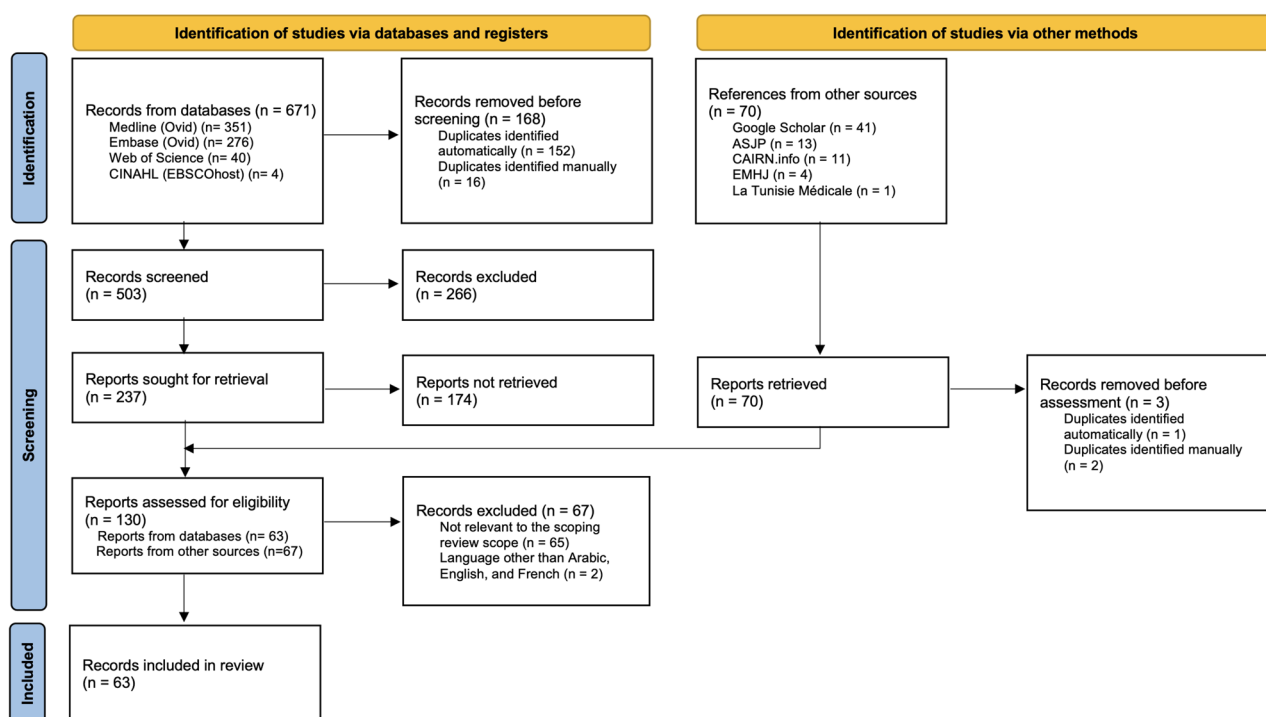


Fig. 1 PRISMA flow diagram of study selection for this scoping review on women's contraceptive knowledge, attitudes, and practices in the Maghrib [30]

Table 3 Characteristics of the literature included in this scoping review ($N=63$)

Characteristics	Frequency (n)
Geographic focus	
Algeria	24
Morocco	32
Tunisia	24
Publication language	
Arabic	2
English	32
French	29
Publication type	
Journal article	50
Book chapter	5
Report	2
Letter to the editor	1
Thesis	1
Brief	1
Book	2
Conference paper	1
Study design	
Quantitative	42
Qualitative	13
Review	5
Interview	1
Brief	1
Mixed method	1
Themes	
Contraceptive knowledge	28
Contraceptive attitudes	40
Contraceptive practice	59
Time period of the data discussed	
1950–1959	1
1960–1969	8
1970–1979	8
1980–1989	21
1990–1999	34
2000–2009	17
2010–2019	11
2020–2024	2
Year of publication	
1990–1999	24
2000–2009	16
2010–2019	16
2020–2024	7

[63, 80, 82, 92]. Other contraceptive methods commonly recognised by women included external condoms⁴, IUDs, injectables, and tubal ligation as biomedical ('modern') options, alongside non-biomedical (also commonly referred to as 'traditional' or 'natural') methods such as

withdrawal and periodic abstinence [24, 38, 63, 72, 88]. Little literature included information on knowledge of other methods such as implants, the patch, vasectomy, diaphragms/cervical caps, spermicides, or creams [36–38, 80]. No literature included information about women's knowledge of emergency contraception and none specifically addressed knowledge of the internal condoms. However, it is possible that some studies presented information on these methods indirectly under broader categories such as condoms, vaginal methods, or 'other' methods, without reporting them individually [24, 35].

Notably, the language used across various source material often categorised contraceptive methods as either 'modern' or 'traditional/natural.' The literature also highlighted common sources of contraceptive information, including relatives and friends, medical professionals and hospitals, and media [7, 63, 85].

There is limited information about contraceptive knowledge among unmarried women, as most studies primarily focused on married women of reproductive age. Masmoudi-Soussi and colleagues examined the sexuality of single Tunisian university students, finding that knowledge of contraceptive methods was poor among this group [70]. Similarly, Essaghairi highlighted the lower quality of contraceptive knowledge among unmarried compared to married couples in Tunisia [51].

Misinformation and rumours appeared to be common factors affecting contraceptive knowledge and practices. Some studies shed light on these nuances in Morocco and Tunisia [41, 43, 56]. Common beliefs that hormonal contraceptives cause infertility, IUDs would 'fall out' in women performing heavy chores, and tubal ligation is ineffective because the fallopian tubes would 'grow back together' are examples of such rumours and misinformation [41, 43].

Contraceptive attitudes

Our scoping review revealed a spectrum of attitudes towards contraceptives. Although these stances were not necessarily explicitly classified as 'attitudes' in the literature, we categorised and present them in this review using the binary of positive and negative. Studies suggested that contraceptive attitudes were influenced by myriad factors, including personal desire for children, societal perceptions of motherhood, and religious beliefs [42, 43, 60, 74]. Additionally, concerns related to contraceptive use, such as resistance to taking a daily pill, fear of experiencing side effects, health concerns, and the influence of rumours, played a significant role in shaping these attitudes [43, 56, 66]. The influence of religion on decision-making with respect to contraception is complex, as reflected in studies suggesting that women 'negotiate and reinterpret' Islamic mandates when making decisions about contraception [60, 80]. Although

⁴ We use external and internal condoms as inclusive language for all genders, as these terms are increasingly used in place of male and female condoms, respectively.

Table 4 Brief summary of the included studies (*N*=63)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Anonymous (1990) [35]	To explore health indicators in the Moroccan population, including contraception.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Most married women were aware of various contraceptive methods, but there was a notable difference between knowledge and actual use, with the oral contraceptive pill (OCP) being the most commonly used.
Anonymous (1994) [36]	To present factors related to maternal and child health as part of the Pan Arab Project for Child Development (PAPCHILD).	Journal article	Quantitative	Algeria	Urban; Rural	Contraceptive knowledge, Contraceptive practices	Despite widespread knowledge of contraceptive methods, OCPs were the most commonly used. Contraceptive non-use was influenced by personal, relational, and religious factors varying across age groups.
Anonymous (1994) [37]	To explore health indicators in the Moroccan population, including contraception.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Contraceptive knowledge was common however contraceptive use varied across residence, age groups, and other personal factors.
Anonymous (1996) [38]	To explore health indicators in the Moroccan population, including contraception.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Biomedical contraceptive methods were more widely known and used than non-biomedical methods, particularly among women with higher education, and those with fewer children, with the public sector being the primary supply source.
Aoyama (2001) [39]	To examine reproductive health issues in the Middle East and North Africa (MENA) region and highlight the causes of reproductive health problems, and their outcomes.	Book	Review	MENA Region, including Algeria, Morocco, Tunisia	Urban; Rural	Contraceptive attitudes, Contraceptive practices	This text discusses family planning as an integral part of reproductive health across the MENA region, including Algeria, Morocco, and Tunisia. It explores family planning, the concept of contraceptive unmet need; and highlights aspects such as service access and quality, provider's technical competence, and private sector's role.
Bajos et al. (2013) [40]	To understand the social dynamics influencing contraceptive practices in four countries, including Morocco, and identify factors limiting contraceptive use within each unique social context.	Journal article	Qualitative	African countries, including Morocco	Urban	contraceptive attitudes	Contraceptive use in Morocco is shaped by social norms, gender dynamics, and healthcare barriers. Stigma, the prioritisation of male pleasure, and fears about hormonal contraception influence women's choices, challenging the idea that "unmet needs" are purely individual and emphasising the crucial role of broader societal norms.
Bakass & Ferrand (2013) [41]	To explore the sexual debut among Moroccan men and women and identify the "arrangements" involved in this process.	Journal article	Qualitative	Morocco	Urban	Contraceptive attitudes, Contraceptive practices	The authors identified some common practices among Moroccan men and women during the process of their sexual debut such as non-penetrative sex and the periodic abstinence to avoid pregnancy.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Benotmane & Faraoun (2001) [42]	To assess the gap between contraceptive use recommendations and actual contraceptive use among diabetic women in Oran, Algeria.	Letter to the editor	Quantitative	Algeria	Not specific	Contraceptive attitudes, Contraceptive practices	Diabetes mellitus influenced some women to adopt or switch contraceptive methods, though some choices were unsuitable. Sterilisation rates were notably higher than in the general population. Number of living children played a key role in contraceptive use, while diabetes complications had less impact. The absence of contraception among certain women suggested either a lack of awareness about unintended pregnancy risks or insufficient guidance from healthcare providers.
Bowen (1998) [43]	To examine the increase in contraceptive use in relationship with socio-economic indicators and rumours.	Journal article	Mixed method	Morocco	Not specific	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	This paper connects the increase in contraceptive use and shifting fertility patterns with societal concerns, as reflected in rumours and fears about changes in sexual behaviour and practices related to pregnancy termination.
Bradaia (2016) [44]	To examine the transformation of fertility according to socio-demographic factors including residence, education level, and employment.	Journal article	Quantitative	Algeria	Urban; Rural	Contraceptive knowledge, Contraceptive practices	Contraceptive knowledge became nearly universal in the 1990s, with use increasing over time, particularly for oral contraceptives, though intrauterine device (IUD) use remained low. Regional and educational disparities were notable in the 1980s until the 1990s, with urban areas and educated women showing higher usage.
Capelli (2017) [45]	To examine how sexual and reproductive health is understood and applied in Morocco through the lens of sexuality, out-of-wedlock pregnancy, and single motherhood.	Journal article	Qualitative	Morocco	Urban	Contraceptive attitudes, Contraceptive practices	Contraceptive use among women and adolescent girls is heavily shaped by societal stigma, gender dynamics, and concerns around fertility problems and reputation, leading to avoidance and inconsistent use of contraceptives.
Courbage (1996) [46]	To examine population growth in Morocco and discuss the underlying factors contributing to the demographic change.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	By the early 1990s, almost half of Moroccan women were using contraceptives.
Crognier et al. (1993) [47]	To analyse the data of reproductive life of the Berber population in the Southern province of Marrakesh.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	Contraceptive practices do not significantly extend interbirth intervals, aligning with the hypothesis that contraception is used to limit births when family size is deemed complete.
Curtis & Westoff (1996) [48]	To examine the relationship between the intention to use contraceptives and actual subsequent use over a three-year period in Morocco, using data from the Morocco Demographic and Health Survey and the Morocco Panel Survey.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	Women who intended to use contraception were likely to follow through. However, those who intended but did not use contraception were less likely to have used a method previously and more likely to have had an unmet need for family planning in 1995.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Dekkar (2002) [24]	To explore the evolution of contraceptive practices in Algeria since independence in 1962 and identify the key factors of this evolution.	Journal article	Quantitative	Algeria	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Contraception is predominantly considered a matter for women, and the pill remains the most commonly known and used method. Contraceptive knowledge increased over two decades (1970–1990 s), as well as its usage in both urban and rural settings
Delenda (2005) [49]	To explore the history and foundations of the national population policy, and examine contraception use among Algerian women by socio-demographic characteristics.	Journal article	Review	Algeria	Not specific	Contraceptive practices	Although rural areas have less infrastructures compared to urban areas, there was not a great difference between urban and rural contraceptive use. However, there was a difference between northern and southern areas.
Dimassi et al. (2017) [50]	To examine social determinants of contraceptive use in Tunisia.	Journal article	Quantitative	Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	While most Tunisian women use biomedical contraceptives, predominantly IUDs, social and geographic disparities persist. Urban, educated women tend to prefer non-biomedical methods, possibly due to concerns about biomedical methods, while rural, younger, and lower-income women face barriers to access, leading to higher unmet needs.
Essegghairi (2003) [51]	To examine and compare the family planning programmes in Algeria and Tunisia, and to highlight emerging issues in reproductive health in the two countries.	Thesis	Quantitative	Algeria, Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	This thesis explored the differences in contraceptive prevalence both between and within Algeria and Tunisia. Additionally, it highlighted variations in the most commonly used contraceptive methods in each country. The study also underscored the importance of addressing the unmet need for contraception among unmarried individuals. Furthermore, it highlighted how cultural, social, and personal factors shaped attitudes toward contraception, influencing family planning decisions and practices.
Feather (2020) [52]	To explore the differences between Morocco and Tunisia's approaches to sexual and reproductive health provision, and to examine the influence of conservative Islamic discourses on restricting sexual and reproductive health and rights.	Journal article	Qualitative	Tunisia, Morocco	Urban; Rural	Contraceptive knowledge, Contraceptive practices	Tunisia takes an inclusive, proactive approach to sexual and reproductive health (SRH), accommodating the needs of vulnerable women, while Morocco's conservative, religion-influenced policies restrict access, especially for unmarried women.
Frini & Muller (2023) [9]	To examine fertility in Tunisia through sociological factors such as extended family influence, marriage age, timing of contraceptive initiation, and patterns of contraceptive use.	Journal article	Quantitative	Tunisia	Urban; Rural	Contraceptive attitudes, Contraceptive practices	Extended family dynamics and the type of marriage influence contraceptive behaviour, highlighting the need for further research to ensure these factors are adequately considered in family planning programmes.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Gastineau (2010) [53]	To examine the demographic transition across the regions in Tunisia and highlight contraception practice changes.	Book chapter	Quantitative	Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	The most commonly used contraceptive methods were tubal ligation and IUDs, primarily for limiting rather than spacing births. Non-biomedical methods remained prevalent. Despite increased knowledge, some married women held negative attitudes toward family planning communication.
Gherissi & Tinsa (2017) [54]	To examine young people's perceptions of the sexual and reproductive health services available to them and to identify the factors influencing their satisfaction.	Journal article	Qualitative	Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes	This study highlights the existing contraceptive services in Tunisia and the barriers young women face in accessing them. It underscores the importance of accessible, youth-friendly information and resources for this population.
Guenauou (2022) [55]	To explore contraceptive practice in Tlemcen in Algeria with a focus on conservativeness and Islamic religion influence.	Journal article	Quantitative	Algeria	Urban	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Contraceptive use is influenced by cultural, societal, and religious factors, with oral contraceptive pills being the most commonly methods used in the study population.
Hall (1994) [56]	To examine the introduction and use of Cyclofem injectable contraceptive, in different countries, including Tunisia and to identify the main reasons for discontinuation of use.	Journal article	Quantitative	International, including Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Among the major medical reasons for discontinuation of use in Tunisian women were bleeding-related reasons and experience of side effects. Whereas negative perceptions were the major personal reason for discontinuation.
Hamada et al. (2004) [57]	To examine characteristics of pregnancy and childbirth among Moroccan teenagers.	Journal article	Quantitative	Morocco	Urban	Contraceptive practices	Contraceptive use among adolescents is significantly low and the most commonly used method among this population is the oral contraceptive pill.
Haut Commissariat au Plan (2006) [58]	To examine Morocco's demographic trends from 1960 to 2006 and the factors influencing them.	Report	Quantitative	Morocco	Urban; Rural	Contraceptive attitudes, Contraceptive practices	The use of contraceptives among women in Morocco has significantly increased since the 1960s, driven by economic participation. Urban areas have slightly higher adoption rates than rural areas, but the gap remained minimal. Improved education has contributed to shifting attitudes toward family planning through informed decision-making.
Hotchkiss et al. (1999) [59]	To investigate how maternal and child health (MCH) service use influences women's contraceptive decisions.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	The study finds a strong, likely causal link between MCH service use and later contraceptive adoption. Contraceptive prevalence could increase substantially by expanding MCH service coverage and utilisation.
Hughes (2011) [60]	To apply a contingency perspective in examining how the intersections of religion, economics, gender, and politics influence women's reproductive choices and service use.	Journal article	Qualitative	Morocco	Urban	Contraceptive attitudes, Contraceptive practices	Moroccan women negotiated and reinterpreted Islamic texts to justify the use of contraceptives and other reproductive health services. Contraceptive use was highest among the wealthiest class, with the pill being the most commonly used method.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Johnson (2018) [61]	To explore the national family planning programme implementation in Tunisia during the 1960s.	Journal article	Qualitative	Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	This paper explored the implementation of the family planning programme in the 1960s, addressing women's knowledge of, attitudes toward, and use of contraceptives in Tunisia.
Kallander (2021) [7]	To explore how family planning and representations of modern womanhood shaped Tunisia's economic development.	Book chapter	Qualitative	Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Contraception was widely accepted in Tunisia, but its promotion relied on "coercive measures" that favoured IUDs and sterilisation, especially targeting rural women. Despite these dynamics, women actively used contraception to manage their reproductive lives.
Kouaouci (1999) [62]	To examine contraceptive unmet needs that are associated with weaknesses in the family planning system.	Conference paper	Quantitative	Algeria, Morocco, Tunisia	Not specific	Contraceptive knowledge, Contraceptive practices	Over the years, contraceptive use increased in the three Maghrib countries, while remaining primarily the responsibility of the woman. As usage increased, so did expectations for better service quality. While some issues, like wait times, improved, concerns about cost, availability, and inadequate counselling remained significant challenges.
Landry (1990) [63]	To explore perspectives of women who chose sterilisation.	Journal article	Quantitative	International, including Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes	This study highlighted the knowledge and previous use of contraceptives, and factors influencing the decision-making process to undergo sterilisation.
Lebsari (1998) [64]	To explore the evolution of family structure, modernisation, and their impact on family planning in Algeria.	Journal article	Qualitative	Algeria	Urban; Rural	Contraceptive attitudes, Contraceptive practices	This review addresses the broader context of family planning within different family structures and raises questions about the evolution of family planning practices due to modernisation.
Lebsari & Hadj Ali (2003) [65]	To analyse how family planning was initiated within couples in Algeria through the socio demographic context up to the early 1990s and explore the evolution of family planning in recent years.	Journal article	Quantitative	Algeria	Not specific	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	This article highlights factors influencing contraceptive behaviour in a couple, such as communication with the partner and the distribution of responsibility for contraceptive use. A woman's opinion appears to be crucial in determining family planning behaviour in a couple.
Lezzar (2007) [66]	To understand how psychological factors influence the practice of contraception among women.	Journal article	Qualitative	Algeria	Not specific	Contraceptive attitudes, Contraceptive practices	This paper suggests that the success of family planning programmes depends on the psychological acceptability of contraception at individual, couple, and cultural levels. A woman's psychological functioning significantly influences her contraceptive behaviour.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Maffi & Affes (2017) [67]	To discuss the situation of sexual and reproductive health services in Tunisia after the 2011 revolution, examining the roles of medical institutions, the impact of laws, and the therapeutic pathways.	Journal article	Interview	Tunisia	Urban; Rural	Contraceptive attitudes, Contraceptive practices	Women face barriers to accessing reproductive health services due to stigma, husband consent, and rising religious conservatism, which restrict their autonomy and rights, especially for unmarried women.
Magnani et al. (1999) [68]	to evaluate the impact of supply-side factors on contraceptive use among individuals who intend to adopt a method.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	While family planning services play a crucial role, supply environment, availability of family planning services, personal and household characteristics are also significant in influencing intentions to use contraceptives.
Makhlouf Obermeyer (1996) [69]	To examine association between son preference and fertility in Morocco and Tunisia, through the Demographic and Health Surveys.	Journal article	Quantitative	Morocco, Tunisia	Urban; Rural	Contraceptive practices	Son preference has a 'small and limited' impact on fertility and contraception use in Tunisia and Morocco
Mas-moudi-Soussi et al. (2006) [70]	To explore the sexual lives of Tunisian adolescent students and highlight the challenges they face.	Journal article	Quantitative	Tunisia	Urban	Contraceptive knowledge, Contraceptive attitudes	In Tunisia, discussing contraception during adolescence is often resisted due to societal norms. In the study population, 13% of adolescents lacked knowledge of contraception methods. The authors suggested that contraception education is more effective when delivered by peers.
Mathlouthi et al. (2013) [71]	To explore non-medicalised contraception and oral contraception and identify their physiological and psychological impact on women's sexuality.	Journal article	Quantitative	Tunisia	Not specific	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Oral contraceptive pill users had higher satisfaction rates and more frequent sexual activity. Non-medicalised contraception led to more changes in desire and pleasure.
Ministère de la Santé, de la Population et de la Réforme Hospitalière et al. (2015) [27]	To assess the well-being and living conditions of children, women, and households through a wide range of indicators covering health, education, child protection, and other key areas.	Report	Quantitative	Algeria	Urban; Rural	Contraceptive practices	The report provides an overview of contraceptive use by method and socio-demographic characteristics among married women of reproductive age, while also examining unmet needs between 2012 and 2013.
Moataz et al. (2020) [72]	To examine sexual practices and awareness level on sexuality and reproduction among youth and identify their sexual health education need.	Journal article	Quantitative	Morocco	Urban	Contraceptive knowledge, Contraceptive practices	While most young people are aware of contraceptive methods, their understanding is limited, and this gap in knowledge translates to low and inconsistent use of contraception.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Ouahid et al. (2023) [73]	To explore the influence of gender norms on access to sexual and reproductive health services.	Journal article	Qualitative	Morocco	Urban; Rural	Contraceptive attitudes, Contraceptive practices	This study highlights socio-cultural factors that influence access to contraceptive information and services, including cultural stigma, religious beliefs, and gender dynamics.
Oussedik (1990) [74]	To explore how women manage their fertility and how their approaches align with broader family or societal expectations.	Journal article	Qualitative	Algeria	Urban	Contraceptive attitudes, Contraceptive practices	Women's use of contraception is influenced by their societal roles and expectations, urbanisation, and education, with a motive to manage their relationships rather than fertility.
Pritchett & Summers (1994) [75]	To explore women's fertility behaviour, fertility preferences, and policies influencing fertility determinants.	Book	Quantitative	Tunisia	Not specific	Contraceptive attitudes, Contraceptive practices	In Tunisia, contraceptive use was influenced by access and information, but intentions played a more decisive role in fertility.
Roudi-Fahimi et al. (2012) [76]	To examine women's need for family planning in Arab countries using data from national surveys and highlight the importance of reducing unmet need.	Brief	Brief	Arab countries, including Algeria, Morocco, Tunisia	Urban; Rural	Contraceptive practices	This brief provides an overview of contraceptive use among married women of reproductive age in Arab countries. It also examines the background characteristics of women with unmet needs and offers recommendations to help address them.
Sadiqi (2008) [5]	To explore the diverse roles and contributions of women in Algeria, Morocco, and Tunisia, including their reproductive rights.	Journal article	Qualitative	Algeria, Morocco, Tunisia	Urban; Rural	Contraceptive attitudes, Contraceptive practices	Morocco's family planning success was largely driven by women's positive attitudes toward contraception. Tunisia's state approach favoured IUDs and sterilisation, while Algeria made no significant efforts to promote contraception post-independence. The pill was a widely successful method among women in urban and later rural areas in the Maghrib.
Safir (2000) [77]	To explore contraceptive trends and family planning policies over time, in three Maghrib countries.	Book chapter	Review	Algeria, Morocco, Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Contraceptive use has progressed over the years in the Maghrib, shaped by distinct cultural, religious, and policy contexts in each country.
Sari (1990) [78]	To explore aspects of demographic growth after independence in Algeria and highlight the significance of controlling this growth.	Journal article	Quantitative	Algeria	Not specific	Contraceptive attitudes, Contraceptive practices	Oral contraceptives were largely distributed by the public sector through PMIs, providing convenient access for women, who showed motivation to using contraception.
Sari (1994) [79]	To examine the family planning policy in Algeria, its barriers and challenges through a sociology lens, addressing contraception access.	Book chapter	Review	Algeria	Not specific	Contraceptive practices	Over 90% of women relied on oral contraceptive pills. Widespread shortages and price increase limited access, leading to regional disparities and many abandoning contraception in the early 1990s.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Seddik Khodja (2018) [80]	To identify the factors associated with contraceptive use in Algerian women in the city of Oran, with a focus on the main reasons for use, and the preferred methods.	Journal article	Quantitative	Algeria	Urban	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Most women had some contraceptive knowledge of at least one method, with the OCPs being the most commonly used method. Contraceptive attitudes are considerably influenced by different religious interpretations and beliefs, which divides women's views on its permissibility.
Seddik Khodja (2022) [81]	To examine the differences in contraceptive practices by sociodemographic factors among Algerian women.	Journal article	Quantitative	Algeria	Urban; Rural	Contraceptive attitudes, Contraceptive practices	In recent years, urban and rural areas witnessed equal propagation of contraceptive methods. Although some women use contraceptives early in marriage, higher usage was observed among those with more children.
Singh (1995) [82]	To review national survey data on knowledge and use of injectable contraceptives and other methods among women of reproductive age in twenty-five developing countries.	Journal article	Quantitative	International, including Morocco and Tunisia	Urban; Rural	Contraceptive knowledge, Contraceptive practices	Knowledge of the pill among married adolescent and young adult women in Morocco (1992) and Tunisia (1988) was nearly universal, and it was the most commonly used contraceptive method in this group. However, awareness and use of injectable contraceptives were limited, with less than half familiar and none using them in Morocco, and over half familiar but only 1% using them in Tunisia.
Speizer (1999) [83]	To explore how gender differences shape fertility desires, discussions, and contraceptive use within couples; and to investigate whether husbands hinder women's access of family planning methods.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive practices	This study highlights how both actual and perceived fertility desires of husbands influence women's contraceptive use. The findings underscore the need for greater male involvement in family planning programmes to address both real and perceived barriers.
Steele, Curtis, & Choe (1999) [84]	To examine the impact of service factors on contraceptive practice and continuation, and the adoption of a biomedical method following childbirth, using Morocco's Demographic and Health Surveys.	Journal article	Quantitative	Morocco	Urban; Rural	Contraceptive attitudes, Contraceptive practices	The availability of more contraceptive methods in a community increases postpartum contraceptive adoption. Women using nongovernment sources are more likely to discontinue the pill for method-related reasons and stop using contraception altogether, compared to those using government sources. Public health centres within 5 km increase method adoption after birth. Pharmacies reduce the risk of discontinuing the pill due to side effects and health concerns.
Sullivan et al. (2006) [85]	To understand skewed contraceptive method mix, factors explaining it, and its implications for family planning programmes and reproductive health.	Journal article	Review	International, including Algeria, Morocco	Not specific	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	In both Algeria and Morocco, the pill was the dominating contraceptive method due to mass media influence, provider bias, and social acceptance, leading to limiting method diversity.
Taaba (2018) [86]	To explore the reasons behind the increase of contraceptive non-use in 2012 in Algeria.	Journal article	Quantitative	Algeria	Urban; Rural	Contraceptive practices	Contraceptive use was influenced by education level and parity but did not vary according to residence in urban and rural areas.

Table 4 (continued)

Authors & year	Aim of study/paper	Publication type	Methodological approach	Study design	Setting	Themes	Most relevant findings
Tabutin & Schoumaker (2005) [87]	To present reliable and comparable demographic data on population trends since 1950 while providing a broad synthesis of key changes.	Journal article	Quantitative	International, including Algeria, Morocco, Tunisia	Urban; Rural	Contraceptive attitudes, Contraceptive practices	The rise of biomedical contraception, the increase in the age of marriage, and the decline in prolonged breastfeeding significantly contributed to lower fertility rates in the three Maghrib countries. The pill was the most widely used method in Algeria and Morocco, while the IUD was dominant in Tunisia, where female sterilisation became the second most common method.
Touati et al. (2001) [88]	To measure knowledge and use of contraceptive methods, identify preferred methods, and unmet needs.	Journal article	Quantitative	Tunisia	Other: suburban	Contraceptive knowledge, Contraceptive attitudes, Contraceptive practices	Most women are aware of biomedical contraceptive methods, usage patterns vary by age, education, and number of children. The IUD and sterilisation are the most commonly used methods, with many non-users interested in contraception, particularly IUDs. Contraceptives are mainly obtained from public sources.
Varea (1993) [89]	To examine the relationship between a number of biosocial variables and fertility patterns in a traditional Moroccan population.	Journal article	Quantitative	Morocco	Rural	Contraceptive practices	Findings from the Amizmiz population and similar traditional communities indicate that using non-biomedical contraceptive methods to control fertility at the end of the reproductive period is more common than previously assumed.
Varea et al. (1996) [90]	To analyse determinants of contraceptive use in the Arab-Berber population of Marrakech, a designated pilot area for the family planning campaigns within the national plan of 1973-77.	Journal article	Quantitative	Morocco	Rural	Contraceptive practices	Contraceptive use is influenced by various factors, individual and social, such as education, employment, urban residency, marital stability and family size.
Westoff & Bankole (2000) [91]	To explore trends in fertility limitation demand across developing countries, highlighting regional differences and shifts in met and unmet contraceptive needs.	Journal article	Quantitative	International, including Morocco and Tunisia	Not specific	Contraceptive practices	This paper examines trends in contraception use for birth limitation, unmet contraceptive needs, and women's risk of unintended pregnancy. Between the late 1970s and 1990s, data from Morocco and Tunisia show increased contraceptive use, a decline in unmet needs, and reduced exposure to unintended pregnancy risk among married women.
Yaakoubd & Vimard (2010) [92]	To examine Morocco's fertility transition while addressing contraceptive use and different socio-economic contexts.	Book chapter	Quantitative	Morocco	Urban; Rural	Contraceptive knowledge, Contraceptive practices	By the early 2000s, awareness and usage of biomedical contraception in Morocco had increased across all socio-economic groups, while non-biomedical contraception use also doubled, narrowing social, geographic, and economic gaps in contraceptive use, though slight disparities still persist.

some women viewed contraception as religiously prohibited, they still chose to use contraceptives, often for birth spacing or by justifying their use due to economic hardship [80].

Research has highlighted different negative attitudes toward specific contraceptive methods, such as OCPs, IUDs, injectables, and tubal ligation [43, 45, 56, 81].

Moreover, societal expectations and cultural norms in these countries contribute to negative attitudes regarding contraceptive use among certain groups. Adolescents who discuss contraception, women undergoing tubal ligation, and unmarried women seeking contraceptive services are a few examples of groups facing social stigma [41, 43, 70, 73].

More generally, women held positive attitudes toward contraception due to perceived benefits such as achieving desired family size and overcoming socio-economic challenges [5, 7, 66]. While contraception can be considered a couple's shared concern, studies highlighted women's central role in decision-making and choice of contraceptive methods [54, 63, 65]. The literature reported on preferences for specific methods as well as instances where women switched contraceptive methods either from biomedical to non-biomedical to avoid health effects, or from non-biomedical to biomedical due to perceived higher efficacy [80, 81, 88]. Extended family also appears to influence contraceptive behaviour, as reported in Algeria and Tunisia, and shifting perceptions of contraception in Algeria has been linked to growing acceptance among the older generation [9, 64].

Contraceptive practices

Most of the literature focused on contraception among married women, with evidence indicating that contraceptive use in the three countries was more prevalent among women with children [64, 88, 90]. On the other hand, poor contraceptive practices and limited access were observed among unmarried women [51, 73]. For instance, a study on sexual debut in Morocco highlighted that unmarried women often relied on periodic abstinence and withdrawal instead of methods that required clinic visits [41].

Over the years, contraceptive use increased among women of all education levels; however, some education-level differences have remained evident [38, 44, 50, 86]. Contraceptive use also varied between rural and urban areas. Studies showed that the gap between urban and rural contraceptive use decreased between the 1980s and 2000s, but the disparity did not disappear entirely [35, 49, 50, 58].

Oral contraceptive pills were the most widely used contraceptive method in Algeria and Morocco, whereas this method was less popular in Tunisia [27, 43, 44, 59, 76, 90]. In contrast, the IUD and tubal ligation were the most commonly used methods in Tunisia [43, 51]. Studies also suggested that women more commonly used biomedical methods than non-biomedical ones [24, 69]. Breastfeeding was one of the most commonly used non-biomedical methods [24, 36, 53].

Existing research pointed to various factors influencing women's discontinuation and non-use of contraceptives, with experienced side effects, health problems, or fear of side effects or complications being commonly cited [55, 56, 66, 84, 90]. Additional factors included husband disapproval, desire for pregnancy, and religion [36, 39, 43, 62, 84, 86].

Although the three countries made significant progress in their family planning outreach, unmet contraceptive

need persisted and varied. In Algeria and Tunisia, unmet need varied by socio-economic status and urban/rural residence. In Algeria, education level and age also played a role [27, 50].

A key finding from our review was the limited literature addressing contraceptive use among women living with disabilities or chronic diseases. Although one study in Algeria did not specifically present evidence on women with disabilities, it suggested that contraceptive use in this population may be low due to potential drug interactions or side effects that could impact health [80]. Additionally, one publication included a study in Algeria that highlighted changes in methods used by women with diabetes, with tubal ligation being more common in this population [42].

Discussion

Through this scoping review, we aimed to examine the extent of existing literature focusing on women's contraceptive knowledge, attitudes, and practices in Algeria, Morocco, and Tunisia. We observed that many studies included in our review used national surveillance data such as Demographic and Health Surveys (DHS), Pan Arab Project for Child Development surveys (PAP-CHILD), and MICS [50, 62, 81, 83]. Additionally, we noted that most of the data discussed in the literature originated from over two decades ago (the 1980s and 1990s). We found that a considerable portion of the literature addressed this topic through a sociology lens, often within the context of demographic growth, development, and politics, rather than through a health-oriented lens.

Our review revealed that contraceptive knowledge has significantly increased in the three countries over the years, and is often reported as universal or near-universal [43, 44]. However, evidence indicated that knowledge gaps persist and misinformation remains prevalent. Additionally, studies included in our review indicated that negative attitudes towards contraceptives stem from lack of knowledge, fear of side effects, and rumours. The literature also highlighted other factors that influence attitudes but can be overlooked when planning programmatic efforts, such as societal perceptions of motherhood, desire for children, and the role of the extended family. Therefore, continued research that explores changes in knowledge and attitudes and the factors that influence them is essential to effectively address misinformation and promote health literacy [93].

The initial focus on specific contraceptive methods in early national family planning efforts appears to have significantly influenced the acceptance and utilisation of those methods over time. For instance, early policy and programmatic choices such as Tunisia's emphasis on tubal ligation and IUDs, compared to Algeria and Morocco's promotion of OCPs, contributed to shaping

method preferences and practices among these populations decades later [7, 43, 85].

National data from the three countries show varied contraceptive method mix among married women, reflecting both shared patterns and differences in country-specific method preferences. In Tunisia (2023 data), method mix was balanced between the IUD (47.6%) and the oral contraceptive pill (OCP) (42.5%). The use of tubal ligation (2.9%), external condoms (2.2%), implants (2%), and injectables (1.5%) was limited, while other methods including breastfeeding (0.7%), vasectomy⁵ (0.3%), and internal condoms (0.2%) were used to a lesser extent. No use of periodic abstinence was reported and other methods were 0.1% [94]. Two ECPs are currently available in Tunisia: NorLevo (progestin-only) [®], which does not require a prescription, and ellaOne[®] (ulipristal acetate), which does; however, no data are available on their use [95].

In contrast, Algeria (2019 data) and Morocco (2018 data) showed a significant reliance on OCPs, which accounted for 86.7% and 82.4% of method use, respectively. Other methods such as IUDs (5.3% in Algeria; 7.8% in Morocco), external condom (4.7% in Algeria; 4.2% in Morocco), and breastfeeding (1.6% in Algeria; 1.9% in Morocco) were used at low levels. Permanent and long-acting reversible methods, including tubal ligation (0.9% in Algeria; 1.7% in Morocco), implants (0.7% in Algeria), injectables (1.7% in Morocco), and vasectomy (0.2% in Algeria) were limited or not reported. Periodic abstinence was negligible in Morocco (0.3%), while other methods and the internal condom were not reported [22, 96]. While Morocco had two ECPs available (NorLevo[®] and ellaOne[®]), no data were available on their use; and in Algeria, ECPs were not reported [95].

Recent years may have seen a shift in contraceptive use, with non-biomedical methods gaining increased popularity [50, 80]. This potential trend, requiring further investigation, suggests that users are prioritising what they perceive as 'safer' and more 'natural' options. This observation signals the need for studies of contraceptive knowledge, attitudes, and practices to understand behaviour change and the factors that influence this change and inform efforts to address misinformation.

Our review found a growing body of research on the topic of contraception, characterised by notable data generation during the 1980s and 1990s. These trends may have resulted from an interest in evaluating and assessing the impact of the family planning programmes launched in the 1960s. However, we also observed a decrease in data generation starting in the 2000s. Given the ongoing commitment in the three Maghrib countries to reducing maternal and infant mortality, advance women's health,

and foster socio-economic development, it is essential to return the topic of contraception to the forefront of research agendas in different disciplines, including work to address this topic through a health lens [3, 97]. Such an approach can inform policies not only grounded in demographic trends but also focused on health-related factors and dynamics, as contraception plays a key role in advancing women's reproductive health, rights, and broader population health outcomes.

Finally, few recent studies focused on the lived experiences of women's contraceptive practices and their access to services in the Maghrib. The literature is especially limited in addressing the specific needs of vulnerable groups, such as women living with disabilities or chronic diseases. These individuals may face unique contraceptive experiences and challenges that are not typically reflected in studies focused on healthy adults. Therefore, there is a critical need for more inclusive, dedicated research to explore these populations' experiences and needs, in order to inform equitable and adapted policies and programmes. Furthermore, qualitative research can help capture overlooked factors and local community dynamics, offering explanations for emerging trends as populations develop and change over time [98]. Such knowledge can complement national surveys and provide deeper insights to inform evidence-based policies to improve access to contraceptive services and procurement, while more effectively addressing health behaviours and literacy [99].

Limitations and implications

Our focus on exploring the extent of existing information on women's contraceptive knowledge, attitudes, and practices in the Maghrib reflects our recognition of their importance in understanding trends in contraceptive use and unmet need. However, we acknowledge that knowledge and attitudes should be considered alongside other factors that also shape contraceptive use and access to services. Although we took a rigorous approach to our scoping review, we note several limitations. First, we attempted to use a comprehensive search strategy to identify relevant literature by using a wide range of terms. However, we may have missed relevant records that used different terminology, especially since the topic of contraception can be addressed through different disciplinary lenses where language varies. Second, our search strategy involved searches in four major databases, hand searching of selected local journals and platforms, and supplementary searches in Google Scholar; however, we did not conduct hand searching of reference lists due to practical constraints related to time and resources to keep the review manageable [2].

While our approach was broad and reproducible in the four major databases, it is likely that we missed some

⁵ Commonly referred to as 'male sterilisation' in the literature.

relevant literature through the supplementary search, particularly those published in local journals, where many in-country researchers publish their work, which are not indexed in the selected databases. Additionally, we are aware that a significant portion of literature may exist as physical documents at research centres in the selected countries and are not accessible electronically. We also recognise that despite our efforts to include various sources, some relevant literature, such as books, dissertations, and edited volumes, may not have been fully captured by our search, even when available in full text electronically. This became evident when we noted the absence of certain known contributions on the topic, potentially due to how these types of publications are indexed or how we retrieved source material through our search strategy. Considering this and recognising the broader lack of recent data on the topic, this gap presents a barrier to advancing evidence-based policies informed by the key changes influencing contraceptive behaviour, such as evolving social norms and technologies. To help address this, we found it necessary to explore a wide range of literature by including non-peer-reviewed source material. Therefore, we reiterate the importance of continued evidence generation through research and documentation to fill this critical gap. Future scoping reviews on this topic and region may benefit from more extensive supplementary search strategies and systematic inclusion of various types of grey literature to ensure broader evidence mapping.

Finally, we adopted an independent charting approach in which each of the two reviewers extracted a single study. The principal researcher analysed all the charted data, synthesised relevant information, and translated the results into findings that answer our review questions. Therefore, we recognise the potential bias throughout the different steps of this scoping review. Nevertheless, we sought to minimize these limitations by consulting with a librarian specialised in health sciences research from the early stages of designing this scoping review protocol. We also held multiple meetings throughout the phases of the review to discuss progress and address any conflicts or emerging questions.

Conclusion

A significant body of research exists on the topic of contraception in Algeria, Morocco and Tunisia; however, much of it examines the 1980s and 1990s, through various lenses in the broader context of demographic growth and societal development. Stagnation in research on contraception in the three Maghrib countries, or perhaps its limited dissemination through peer-reviewed databases, reflects the possible relegation of contraception to a lower priority topic of inquiry. Existing literature often relied on data from periodic large-scale national studies,

suggesting a missed opportunity to explore lived experiences and dynamics through locally focused, mixed-method, and qualitative studies that contribute to more nuanced understanding of the topic. Importantly, additional research that explicitly adopts a health lens could help address knowledge gaps relevant to effective policy formulation and implementation. Our findings emphasise the need to elevate the topic of contraception in research agendas in the Maghrib and point to several gaps in the literature that warrant further investigation.

Abbreviations

AARDES	Association Algérienne pour la Recherche Démographique et Sociale
AMPF	Association Marocaine de Planification Familiale
ASJP	Algerian Scientific Journal Platform
DHS	Demographic and Health Surveys
ECP	Emergency contraceptive pill
EMHJ	Eastern Mediterranean Health Journal
ENPSF	Enquête Nationale sur la Population et la Santé Familiale
ICPD	International Conference on Population and Development
IPPF	International Planned Parenthood Federation
IUD	Intrauterine device
KAP	Knowledge, attitudes, and practices
MDGs	Millennium Development Goals
MENA	Middle East and North Africa
MICS	Multiple Indicator Cluster Surveys
OCP	Oral contraceptive pill
ONFP	National Board of Family and Population
ONPFP	Office National du Planning Familial et de la Population
PAPCHILD	Pan Arab Project for Child Development surveys
PMI/EN	Protection Maternelle et Infantile et Espacement des Naissances
PNMCD	Programme National de Maîtrise de la Croissance Démographique
PRISMA-ScR	Systematic reviews and meta-analyses extension for scoping reviews
PRISMA	Systematic reviews and meta-analyses
SDGs	Sustainable Development Goals
SRH	Sexual and reproductive health
UNFA	Union Nationale des Femmes Algériennes

Supplementary Information

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Supplementary Material 1: Additional file 1. Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.

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Authors' contributions

Concept and design: Sabrine Chengane, Angel M. Foster. Data screening, review, and charting: Sabrine Chengane, Roa Sabra. Data analysis and interpretation: Sabrine Chengane. Drafting of the manuscript: Sabrine Chengane. Manuscript review: Sabrine Chengane, Roa Sabra, Angel M. Foster. Supervision: Angel M. Foster. All authors read and approved the final manuscript.

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