Sexual Health and Relationship Education and Supporting Services Available to Young People in Tehran; Needs Assessment and Programme Design

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as a thesis for the degree of
Doctor of Philosophy in Medical Studies
In January 2022

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Abstract

Background: Sexual Health and Relationship Education (SHRE) provides individuals with the knowledge and skills set which helps them to manage risky behaviours and make informed decisions and to protect themselves against STIs, risky behaviour, and unintended pregnancy. Such education is minimally provided in Iranian schools and universities; and previous research has indicated a demand and the need for SHRE among young people across the social spectrum (Chapter 1).

Aim: The overall aims of this project were to (i) conduct a needs assessment of the SHRE and sexual health service needs of young adults living in Tehran, (ii) investigate how such provision could be improved or augmented, taking the account of the views of health professionals and policymakers, and (iii) design a tailor-made SHRE programme for the future development of improved provision to be delivered in Tehran.

Methods: This PhD project explored Iranian young adults' sexual health education, training, and service needs and ways to improve or augment the existing provision (Chapter 3). This was followed by an investigation of Iranian healthcare professionals' assessments of, and recommendations for, sexual health education and service provision for young people in Tehran (Chapter 4). Both of these studies employed detailed thematic analyses of interview transcripts. Finally, a tailor-made programme outline for an improved SHRE provision for young adults in Tehran was developed based on the findings of the first two studies, recommendations made in international guidance on the optimal content of SHRE programmes, and further stakeholder consultations using a public involvement methodology (Chapter 5).

Results: Young adults in Tehran expressed their need and demand for enhanced sexual health education and healthcare. They highlighted existing barriers such as almost non-existent official education and the lack of reliable resources, taboo and cultural barriers, and lack of trust and confidentiality when seeking sexual health information, advice, and healthcare. This has resulted in ambiguities and misconceptions, including those regarding the cause and

transmission of STIs and the correct use of contraception methods. They unanimously expressed their dissatisfaction with available sexual health education and provided recommendations for an improved provision, including holding mixed-gender extracurricular workshops with a comprehensive approach to sexual health and relationship education (Chapter 3). Validating young adults' views, healthcare professionals emphasised the need for improved SHRE and service provision for young adults. They also confirmed the barriers highlighted by young Tehranians and collectively supported augmentation of educational provision and healthcare services and provided recommendations on how this could be achieved (Chapter 4). A bespoke SHRE programme was then developed based on the aforementioned needs assessments, in addition to comments from the programme's stakeholders and best practice guidelines published by six national and international organisations. The programme provides content and delivery recommendations, along with objectives and deliverables for each content category. The final programme outline is intended as a blueprint for improved SHRE provision in Tehran, and potentially Iran (Chapter 5).

Conclusion: This PhD project has generated two novel in-depth needs assessments complemented by a theory- and evidence-informed, tailor-made SHRE programme outline which has the potential to augment the currently minimal SHRE provision in Tehran. This enhanced programme will have the capacity to provide young adults with reliable and non-judgmental sexual health and relationship knowledge and skills, which can result in improved sexual health and confidence in managing healthy relationships. Overall, this research demonstrates the unmet needs and desires of Tehranian young adults and healthcare professionals concerning sexual health and relationship education. It provides several recommendations for the future development and implementation of SHRE programmes in Tehran.

Acknowledgements

I would like to thank my supervisors, Professor Charles Abraham, Dr. Sarah Denford, and Professor Angela Shore, for their guidance and support and for believing in my potential. In particular, I would like to express my gratitude to Professor Charles Abraham, for having my back in difficult times and unfortunate occasions that happened in my PhD journey and to Professor Angela Shore, for supporting me beyond words can explain. A genuine thank you goes to Dr. Sarah Richardson for her sincere pastoral support.

I would like to thank my late mentor and kind supporter, Dr. Borislav Dimitrov, for his tireless mentorship beyond my time with him as a Masters student. I am also grateful to Payam Atoofi, for patiently proofreading my thesis and to Behnam Naghashi and Dr. Mehrdad Eftekhar, for acting as local partners and research facilitators in Tehran. Special thanks go to Dr. Abbas Sedaghat, who passionately helped and encouraged me with my data collection journey in Tehran. It goes without saying that data collection would have not been possible without those who stepped forward to participate in this project's studies. I thank each and every one of them for supporting my research.

Last but not least, I would like to thank my mom, for all the motivation and support, wisdom, and inspiration she fulfils me with.

بدون تو هیچ چیزی ممکن نبود مامان. با همه ی قلبم ازت متشکرم.

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Author's Declaration

I declare that the research reported in this thesis is entirely my work. All the studies reported in this thesis were planned, conducted, and written by me.

This thesis includes three studies, two of which have been produced as manuscripts for publication in peer-reviewed journals. Chapters 3 and 4 have been published at the time of submitting the thesis. Both of these manuscripts are co-authored but all are primarily the result of this doctoral project and my work. Both manuscripts presented in Chapters 3 and 4 are written by me.

Throughout the PhD, supervisory guidance was provided by the primary co-supervisors Professor Charles Abraham (CA), and Dr. Sarah Denford (SD). Additional support was provided by Professor Angela Shore. I wrote and finalised all manuscripts included in this thesis. My substantial contribution to each of the two co-authored manuscripts is detailed below.

I developed the protocol for both studies, (Chapters 3 and 4), which was improved by inputs from my supervisors, Professor Charles Abraham (CA) and Dr. Sarah Denford (SD). I conducted the literature review, approached local partners to be involved as identification and recruitment means, applied for relevant permissions and ethics committee approvals, recruited the participants, conducted data collection, analysis, and interpretation, and wrote the manuscript. CA and SD critically revised the study design, supervised the data collection process, and advised on the analysis and interpretation of the data. CA and SD commented on the final version of the manuscript and approved the final version for submission.

List of Publications

Two papers were generated for publication from this doctoral project. Chapters 3 and 4 include these papers, exactly as they appeared in journals.

Chapter 3 has been published as:

Sheikhansari, N., Abraham, C., Denford, S., & Eftekhar, M. (2021). A qualitative assessment of the sexual-health education, training and service needs of young adults in Tehran. *BMC Public Health*, *21*(1), 1386. https://doi.org/10.1186/s12889-021-11371-x

Chapter 4 has been published as:

Sheikhansari, N., Abraham, C., & Denford, S. (2021). Health-Care Professionals' Assessments of, and Recommendations for, Sexual-Health Education and Service Provision for Young People in Tehran. *Frontiers in Public Health*, *9*, 634795. https://doi.org/10.3389/fpubh.2021.634795

Abbreviations

AIDS: Acquired Immune Deficiency Syndrome

CBD: Centre for Behavioural Diseases

CSE: Comprehensive Sexuality Education

HCP: Healthcare Professional

HIV: Human Immunodeficiency Virus

HPV: Human Papillomavirus

HSV: Herpes Simplex Virus

IM: Intervention Mapping

IMB: Information, Motivation, and Behavioural Skills

IPPF: The International Planned Parenthood Federation

LGBTQ: Lesbian, Gay, Bisexual, Transgender, and Queer

MDGs: The Millennium Development Goals

MENA: The Middle East and North Africa

MRC: UK Medical Research Council

NGO: Non-Governmental Organisation

NHS: UK National Health Service

NICE: The National Institute for Health and Care Excellence

PBA: Person-based Approach

RSE: Relationships and Sex Education

SHE: Sexual Health Education

SHRE: Sexual Health and Relationship Education

STI: Sexually Transmitted Infection

TA: Thematic Analysis

UN: The United Nations

UNAIDS: The United Nations Programme on HIV and AIDS

UNESCO: The United Nations Educational, Scientific and Cultural Organization

UNFPA: The United Nations Population Fund

UNHCR: The United Nations High Commissioner for Refugees

UNICEF: The United Nations Children's Fund

VPN: Virtual Private Network

WHO: World Health Organization

YA: Young Adult

Chapter 1: Introduction

The World Health Organization (WHO) defines sexual health as "*a state of physical, emotional, mental and social well-being in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled"* (World Health Organization (WHO), 2006).

To achieve this, young people need to receive sexual health and relationship education (SHRE), which provides them with the necessary skills and knowledge to enable them to make informed decisions about their sexual relationships and the potential consequences of their behaviours. However, SHRE is not available to young people in Tehran.

The three studies described in this thesis aimed to identify the SHRE and sexual health service needs of 18-25-year-old young adults living in Tehran and to suggest ways on how such provision could be enhanced or augmented.

1.1: Definition of terms used in this thesis

The word "*Tehranian*" is used throughout this report instead of "Tehran citizens" and/or "people living in Tehran" to make this thesis more concise and easier to read. The words "*young adults*" are also used in place of "18-25-year-olds" and "18-25-year-old young adults/people". Also, "Sexual Health and Relationship Education", is interchangeably used with its abbreviated format, "*SHRE*".

The next section of this thesis will explore contextual information, followed by a literature review and the aims and scope of this PhD project.

1.2: Iran

Iran, also called Persia, with the official name of the Islamic Republic of Iran, is a country of 83 million people located in Western Asia (World Bank, 2020). It is the second-largest country in the Middle East and is home to numerous ethnic, linguistic, and religious groups. Persian is the most widely spoken and the country's official language and Islam is the most followed religion (Encyclopedia Britannica, 2021). Over 40 million people in Iran are under 30 years of age (Iranian Institute of National Statistics, 2018a).

Although a part of the Middle East and North Africa (MENA) region, Iran is culturally and socially different from its neighbouring countries and other MENA territories, due to differences in language and political structure (Doyle et al., 2012; World Bank, 2020). It is the only Islamic republic within the Middle East and the only country that enforces single-sex education and compulsory hijab (Iranian Parliament, 2005). Iran's political framework combines elements of theocracy and presidential democracy, making the country an Islamic republic in which the supreme leader, president, parliament, and judicial administration share power and influence the country's policies.

Iran, unlike other countries within the region, has an almost non-existent foreign population, despite being the fifth largest refugee-hosting country in the world (United Nations High Commissioner for Refugees (UNHCR), 2017). This contrasts with Iran's neighbours such as Qatar or the United Arab Emirates, with over 88% of their population being expatriates (Snoj, 2019).

Iran is relatively culturally isolated, so opportunities for Iranians to learn from other nations is limited, despite widespread access to the Internet. In 2018 more than 69% of the country's population had access to the Internet, with more than 28 million internet users on mobile phones (Internet Stats and Telecommunications Reports, 2018).

In general, it is considered inappropriate to discuss sex and related topics, such as sexual health or sexual health knowledge and education in public and even within the family unit. As a result, sexual education is not viewed as a parental

obligation by families. Yet, sexual material is easily and confidentially available to internet users, including young adults. It is unclear, however, what content is being accessed, and how accurate such information is. There is, therefore, a population of young Iranian adults who have limited access to regulated SHRE but who, nonetheless, want to actively explore their sexuality, and discuss sexuality with their friends.

Although socioeconomic differences divide the lifestyles of Tehran's young adult residents, there is a degree of cultural homogeneity about norms regulating discussions around sexual behaviour and sexuality (Motamedi et al., 2016). This could be explained through the widespread use of the Internet and social media. As some researchers have concluded that access to media, the availability of sexual contents and materials, and the ease of interactions and relationships with the opposite sex has resulted in different attitudes towards sex and sexuality in young adults, compared to their older generation (Taleghani et al., 2017).

Figure 1.1: Map of Iran showing provinces and neighbouring countries (On the World Map, 2020).

1.2.1: Tehran

Tehran, Iran’s largest city and capital, has 8.8 million residents - approximately 10% of the country’s population. Of these, 13% (approximately 1.04 M) are between 18 and 25 years old, 27% of whom are married (Iranian Institute of National Statistics, 2018). Tehran is the most populous city in Iran and West Asia and is the third most populous capital in the Middle East. It is also the biggest Persian-speaking city in the world and is Iran’s economic centre (Earth Watching, n.d.). While roughly 99% of Tehranians understand and speak Persian, there are large populations of other ethnolinguistic groups who live in Tehran and speak Persian as a second language (Curtis et al., 2008; TABNAK, 2010).

There are 22 districts in Tehran, with districts 1, 2, 3, and 6 being the most affluent and districts 15,16,17,18, and 19 the most deprived areas (AfkarNews, 2017; Asadi-Lari et al., 2013). The most deprived areas also have the poorest urban facilities, including hospitals, clinics, schools, and recreational facilities.

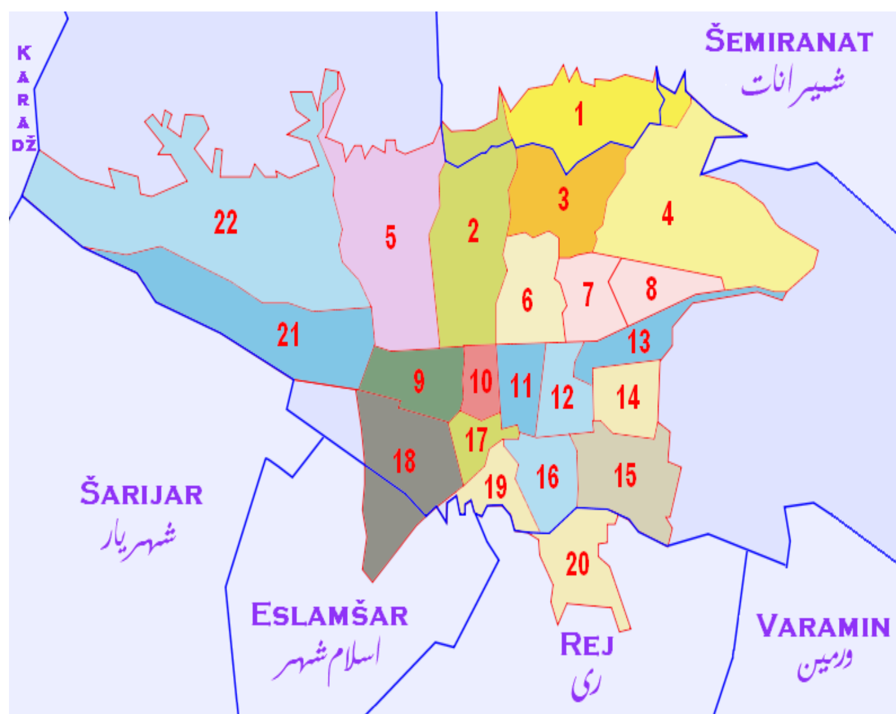

Figure 1.2: Map of Tehran showing the 22 districts (Orijentolog, 2011).

1.2.2: Education in Tehran

Young people in Iran complete schooling at 18 and this is the legal age at which they can get married. More than 92% of Tehran's residents are literate and have attended formal schools, which is above the 85.5% national literacy level. There are two main types of schools: private and public schools (Iranian Institute of National Statistics, 2018b; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2016). There is also a smaller category of schools; referred to as special private schools (e.g., foreign embassy schools and International Baccalaureate (IB) / Bilingual schools). All schools, except for foreign embassy schools, are single-gender and follow the curriculum set by the Iranian Ministry of Education. Children start school at age six, and graduate (from high school) when they are eighteen (World Education Profiles, 2012).

There are 10 universities in Tehran, and approximately 487,000 18-25-year-old students were admitted into university courses in Tehran in the 2016-2017 academic year, so almost one half of 18-25-year-olds in Tehran attend university (Iranian Ministry of Education, 2018). These students represent a wide mix of socioeconomic backgrounds, including those from disadvantaged backgrounds and students who have migrated from small towns to Tehran, to attend university (Iranian Ministry of Education, 2018).

1.3: Sexual Health and Relationship Education (SHRE) in Iran

SHRE has never been included in Iranian school curricula due to various cultural and social reasons. Consequently, young adults are likely to have variable levels of sexual health knowledge; as their understanding will be based on self-education (e.g., via books or the Internet). Although internet access is monitored and certain content, including most content related to sex and sexuality, is blocked, it is possible to access the information through proxy. Although there are no clear statistics of virtual private network (VPN) use in Iran, some unofficial records suggest at least 30 million citizens use internet proxy daily (Islamic Republic News Agency (IRNA), 2020).

Many universities offer a single SHRE module ("*Science of Family and Population*") which is a 20-hour course taught by a lecturer specialising in religious and spiritual studies (Iranian Ministry of Education Information Centre, 2018). The module includes material on "the importance of marriage", emphasising "the sinfulness of premarital sexual relationships" and "the grace of being a parent". It targets heterosexual individuals and does not include information relating to many elements of SHRE considered important by the WHO (e.g., sexual consent, prevention of sexually transmitted infections, use of available contraception options, or safer sexual practices across sexual orientations). It is compulsory for all bachelor students to attend this module, hence it is offered as a standard module in every university at the undergraduate level, regardless of university type and ranking and the programme of study.

There are also pre-marriage classes run by the Ministry of Health and Medical Education, teaching similar content which are compulsory for people to attend before getting married (Iranian Ministry of Health and Medical Education, 2000).

1.4: Sexual healthcare and services in Tehran

In the late 1980s, following the Iranian revolution and ceasefire with Iraq, the Iranian government invested in a series of contraceptive and family planning programmes which lasted until the early 2010s. During that time, the country's total fertility rate declined considerably; from five and a half at the programme's initiation to two children per woman, making this initiative one of the most successful voluntary family planning programmes in the world. This national programme encouraged family size of two or fewer children through the provision of educational programmes at universities and media, along with free access to condoms, vasectomies, and contraceptive pills provided at sexual health and other community health centres (Amnesty International, 2015). Consequently, extensive family planning courses were introduced at universities, which mainly included information on contraception methods, but also contained information on STIs, safe sex, and condom use (Abbasi-Shavazi et al., 2009).

In 2013, however, related to concerns about Iran's rapidly ageing population, a new national-level policy was introduced by the national parliament in an attempt to increase the country's population. As a result, condoms, contraceptives of all kinds, and fertility-limiting surgeries such as vasectomies were banned from all government-funded hospitals and health clinics. The policy also banned "any promotional information concerning contraception and reduction in childbearing", including removing all education about different methods of contraceptives available. This included the removal of the family planning module from universities, which was replaced with the aforementioned "Science of Family and Population" (Amnesty International, 2015).

As a result of this policy change, those wishing to use condoms and contraceptive pills have to purchase them independently, thus potentially increasing health inequality. In other words, the current use, availability, and accessibility of contraception methods and condoms, are bound to individuals' financial status, preference, and self-acquired knowledge rather than a national sexual and reproductive health support system that provides to all citizens from all socioeconomic backgrounds.

Currently, there are 9 clinics across greater Tehran and 3 in Tehran's suburbs referred to as "centres for behavioural disease", which provide free and confidential testing for sexually transmitted infections (STIs) (Iran University of Medical Sciences (IUMS), n.d.). However, these clinics are not publicly advertised and are mainly used by "high-risk" groups such as drug users and sex workers, hence attending such facilities is stigmatised (Iran University of Medical Sciences (IUMS), 2017).

1.5: Sexually Transmitted Infections (STIs) prevalence in Iran

Globally, there are over one million STIs transmitted daily (World Health Organization (WHO), 2021). These include approximately 374 million new infections annually with chlamydia, gonorrhoea, syphilis, and trichomoniasis. Worldwide, a considerable number of people are living with STIs, including more than 490 million people with herpes simplex virus type 2 (HSV2), 300 million women with Human Papillomavirus (HPV), and over 37.7 million people living

with HIV (The Joint United Nations Programme on HIV and AIDS (UNAIDS), 2020; World Health Organization (WHO), 2021). STIs can cause short- and long-term consequences on sexual and reproductive health, such as genital symptoms, infertility, pregnancy complications, pelvic inflammatory diseases, cancers, and increased risk of HIV transmission in addition to psychosocial and financial consequences (Gottlieb et al., 2014).

There is no published national data on the burden of STIs in Iran. According to officials, 66000 HIV-positive individuals are currently living in Iran, of whom, approximately 20% were infected through unprotected sexual intercourse (Islamic Republic News Agency (IRNA), 2017). Between 6% and 9% of Iranian women are diagnosed with Human Papillomavirus (Islamic Republic News Agency (IRNA), 2018). Also, HIV transmission, which is now largely transmitted through unprotected sexual relationships is on the rise (Amnesty International, 2015; Iranian Institute of AIDS Research, 2015; Islamic Republic News Agency (IRNA), 2017).

According to news agencies, since 2013, and the removal of publicly available contraceptives and contraceptive education, the rate of STIs have increased nationally (Islamic Republic News Agency (IRNA), 2017). There are 250,000 illegal abortions performed annually, and illegal abortion rates have been constantly on the rise (KhabarOnline, 2014). Legal abortions are rarely permitted under scrutinised and restricted circumstances, namely only in conditions where the mother’s life is at severe risk in pregnancies from a legal marriage (Iranian Ministry of Health and Medical Education, 2013).

There is no national data available on unintended pregnancies. Nonetheless, the number of abortions performed annually, suggests that the rate of unintended pregnancies has also increased.

Moreover, one in every 8 marriages nationally and 1 in every 4 marriages in Tehran end in divorce. Out of these, 80% of divorces are attributed to marital dissatisfaction (Young Journalists Club (YJC), 2015). This issue is compounded by the lack of sexual health services in Tehran, as the limited availability and

accessibility is a barrier to citizens accessing sufficient sexual health and relationship advice and services in a timely and preventive manner.

1.6: What is Sexual health and relationship education (SHRE)?

Comprehensive, scientifically accurate, evidence-based sexual health and relationship education is also referred to as "sexual health education" (SHE), "comprehensive sexuality education" (CSE), and "relationships and sex education" (RSE). In this thesis, the term "sexual health and relationship education" (SHRE) will be used to refer to all such education and training.

As an internationally recognised advisory and policy designing body promoting health and well-being solutions for all nations across the globe, United Nations Population Fund (UNFPA) defines comprehensive sexuality education (CSE) as "*a right-based and gender-focused approach to sexuality education, whether in school or out of school. CSE is curriculum-based education that aims to equip children and young people with the knowledge, skills, attitudes and values that will enable them to develop a positive view of their sexuality, in the context of their emotional and social development…… and to acquire accurate information about human sexuality, sexual and reproductive health, and human rights…, explore and nurture positive values and attitudes towards their sexual and reproductive health, and develop self-esteem, respect for human rights and gender equality…. and develop life skills that encourage critical thinking, communication and negotiation, decision-making and assertiveness.*" Thus, this education could be provided in or out of school (United Nations Population Fund (UNFPA), 2014).

1.7: Why is sexual health and relationship education (SHRE) important?

Sexual health and SHRE are a matter of global importance and require attention and support (United Nations Population Fund (UNFPA), 2014). UNFPA recommends that all children and young people receive comprehensive SHRE to be equipped with the knowledge, skills, and attitudes that will enable them to develop a positive view of their sexuality, within the context of their personal and social development (United Nations Population Fund (UNFPA), 2014). Furthermore, The WHO has specified detailed goals concerning family planning,

HIV/STIs, and HIV/STIs knowledge as a part of its Millennium Development Goals (MDGs); which are targets defined by the United Nations (UN) for population development by the year 2030 (United Nations, 2015). These include goal 5 which is focused on improving maternal health through removing barriers to contraceptive prevalence rate and elimination of unmet needs for family planning and goal 6 which highlights improving condom use rate and contraceptive prevalence rate and increasing the percentage of the population aged 15-24 years with comprehensive and correct knowledge of HIV/AIDS.

Comprehensive SHRE can reduce the risk of unwanted pregnancies and incidence of STIs (Boonstra, 2011; United Nations Population Fund (UNFPA), 2014). It provides individuals with the necessary skills and knowledge to enable them to protect themselves against STIs and manage their sexual relationships. It also provides them with the knowledge to comfortably communicate about sex, sexuality, and sexual health, with their intimate partners or friends and family (United Nations Population Fund (UNFPA), 2014).

Sexual health knowledge also enables individuals to negotiate their needs and desires around sexual activity, condom use, and self-protection; thus, facilitating healthy relationships (United Nations Population Fund (UNFPA), 2014). Also learning about sexual organs and their function is a necessary component in enabling young adults to make more informed choices regarding family planning (United Nations Population Fund (UNFPA), 2014).

1.8: What should sexual health and relationship education (SHRE) include?

SHRE should include skills-based training to enable individuals to communicate about sex and sexual health and make informed decisions about their health and relationships (United Nations Population Fund (UNFPA), 2014). Information should be culturally relevant, and easy to understand and talk about. Sexual health and relationship education must cover sexual anatomy, puberty and menstruation, consent, online safety and violence prevention, contraception methods and condom use, sexually transmitted infections (STIs), pregnancy and abortion, and sexual rights and access to services (International Planned Parenthood Federation (IPPF), 2010; New Zealand Ministry of Education, 2015;

Sex Information and Education Council of Canada (SIECCAN), 2021; The UK Government Department for Education, 2021; United Nations Population Fund (UNFPA), 2014).

Although SHRE can be provided both in and out of schools, the inclusion of SHRE in schools' curricula is favoured by most governments (Kirby, 2008; Mason-Jones et al., 2016). This is because schools have a very wide reach across populations and are a controlled environment in which the skills of educators and the content of educational materials can be evaluated and assured. Schools are the place where young people spend most of their time. Also, schools have the facilities and skill bases to deliver educational objectives (Mason-Jones et al., 2016).

Many sexual health and relationship programmes have been successfully applied in school settings. These interventions are based on behavioural change theories or modifications of them. Most frequently employed theories include Social Learning Theory (Bandura, 1977), Social Cognitive Theory and the Health Belief Model (Rosenstock et al., 1988), the Theory of Planned Behaviour (Ajzen, 1991), and the Information, Motivation, and Behavioural Skills (IMB) Model (Fisher & Fisher, 1992). These school-based programmes aimed to increase sexual health knowledge and awareness of sexually transmitted infections (STIs) and sustain relationship management strategies such as condom use and delaying sexual relationship initiation.

1.9: What is the evidence base for the effectiveness of sexual health and relationship education (SHRE)?

Although sexual health education is not provided in all countries, where it exists, research and evaluation studies have demonstrated that comprehensive, accurate, and age and developmentally appropriate sexual health education is effective in increasing sexual health knowledge and reducing risky behaviour (Alford et al., 2008). For example, a 2012 review of 66 different SHRE programmes in the USA concluded that such programmes could reduce STIs and teenage pregnancy rates (Chin et al., 2012). The review also provides evidence suggesting that the provision of comprehensive SHRE for young people between the ages of 15 and 19 years can reduce risky sexual behaviour by up to 50% in

comparison to abstinence-only information (Chin et al., 2012). Furthermore, a report by the United Nations Educational, Scientific and Cultural Organization (UNESCO) describes a comprehensive review of the effectiveness of 85 SHRE interventions for young people between the ages of 15 and 24 years, delivered in schools, community centres, and health clinics in developing countries (29 interventions), the United States (47 interventions) and other developed countries (11 interventions). The review provided evidence to suggest that SHRE is effective for reducing risky sexual behaviour (e.g., unprotected sex). Students have reported greater ability in protecting themselves against STIs through condom use and believed they could communicate their needs and concerns with their partners more effectively as a result of the comprehensive sexual education programmes (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2009). Importantly, there was no evidence that SHRE leads to earlier or more frequent sexual relationships (United Nations Educational, Scientific and Cultural Organization (UNESCO), 2009). Thus, there is an international consensus that SHRE is effective. Nonetheless, this evidence consists mainly of self-reported behaviour changes; and larger randomised controlled trials have reported underwhelming results. It is important to note, however, that many of these trials compared SHRE interventions to already existing sex education that had been improved over time (Wight, 2011; Wight et al., 2002). The impact of state-of-the-art SHRE in cultures where little SHRE development has occurred is less clear, although there are indications that to be effective, SHRE may need to develop in the context of wider cultural changes (Wight et al., 2012).

Finally, a review of reviews by Denford et al. (2017) incorporating 37 systematic reviews (and 224 primary trials) suggests that comprehensive school-based SHRE is effective in increasing knowledge, changing attitudes, and reducing self-reported risky sexual behaviour; and provides a list of 32 design, content and implementation characteristics that may enhance the effectiveness of SHRE interventions (Denford et al., 2017). Moreover, this, and other reviews found little evidence for the effectiveness of abstinence-only programmes (Denford et al., 2017; DiCenso et al., 2002; Kirby, 2008). These are programmes in which young people are encouraged to delay all forms of sexual activity. Not only were these interventions found to be ineffective for changing behaviour, but they also overlook groups such as Lesbian Gay Bisexual Transgender Queer (LGBTQ)

who cannot be legally married in many societies. At least three systematic reviews report little evidence for the effectiveness of abstinence-only programmes (DiCenso et al., 2002; Kirby, 2008; Scher et al., 2006). These reviews found that abstinence-only interventions can improve knowledge, but there is little evidence of impact on behaviour. Based on a review of four abstinence-only programmes, DiCenso et al. (2002) concluded that such programmes can increase unwanted pregnancies among participants in abstinence-only interventions compared to those who have received comprehensive sexual education (DiCenso et al., 2002). Overall, tentative evidence suggests that such interventions may increase STIs, unwanted pregnancy, and early initiation of sexual relationships (DiCenso et al., 2002; Fonner et al., 2014; Scher et al., 2006; Underhill et al., 2007; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2009).

1.10: SHRE needs of young people in Iran

There is only a very limited literature about the knowledge, attitudes, and behaviour concerning relationships and sexual health education of young people in Iran. Nonetheless, this literature reflects similar themes and concerns as seen in the global literature on SHRE content and effectiveness. In particular, studies of sexual health and sexual health education in Iran conclude that there is an urgent need for improved SHRE and the introduction of programmes that address young people in general, rather than just married couples.

Researchers have highlighted the need for SHRE in an Iranian context (Behboodi Moghadam et al., 2015; Djalalinia et al., 2015; Mirzaee et al., 2017; Mosavi et al., 2014; Samadaee Gelehkolaee et al., 2021; Shahhosseini & Hamzehgardeshi, 2015; Yari et al., 2015). Lack of sexual health knowledge, ease of access to unreliable and inaccurate information through the Internet, and an increase of risky sexual behaviours among adolescents were among the issues highlighted.

This was in addition to cultural and social changes resulting in the initiation of premarital sex (Javadnoori et al., 2012; Mosavi et al., 2014; Shahhosseini & Hamzehgardeshi, 2015). Additionally, research participants mentioned lack of priority for SHRE, fearmongering to persuade individuals to remain abstinent,

lack of appropriate and relevant educational material, and unqualified and incompetent teachers, as major issues with the current provision of limited sexual education (Javadnoori et al., 2012).

The impact of poor SHRE extends well into adulthood. The existing literature suggests that married couples do not feel confident in their sexual health and relationship knowledge, despite attending pre-marriage classes (Bostani Khalesi et al., 2016; Bostani Khalesi & Simbar, 2017; Farnam et al., 2011; Mehrolhassani et al., 2018; Mokhtari zanjani et al., 2013; Moodi & Sharifzadeh, 2008; Pourmarzi et al., 2014; Rahmani et al., 2011; Rezabeigi davarani et al., 2016; Yazdanpanah et al., 2014). Although there is no official evaluation of pre-marriage classes available, these studies suggest evidence for this provision's ineffectiveness.

Furthermore, some studies report non-existent SHRE and limited awareness of STIs as the main reasons for misconceptions leading to risky sexual behaviour, such as multi-partnership, inconsistent use of condoms, and refraining from being tested for HIV and other STIs (Mirzaee et al., 2017; Shahnazi et al., 2013; Shokoohi et al., 2016). For example, Shokoohi et al. (2016) conducted a cross-sectional survey in 13 provinces in Iran and surveyed 4950 Iranians aged between 15-29 about HIV knowledge. They found young people’s knowledge of HIV to be very limited, with misconceptions such as the existence of an effective vaccine against HIV reported by over 50% of the respondents. Interestingly, 69% of the participants named media as their main source of knowledge. Given the lack of officially endorsed and reliable scientific information in the Iranian media, it is possible that misconceptions such as these are supported by misleading information found in the media. It is noteworthy that reviews of other countries’ SHRE programmes show that STIs knowledge can increase, and misconceptions can be reduced through the provision of SHRE in schools or other locations (Denford et al., 2017; DiCenso et al., 2002; Kirby, 2008).

Moreover, Samadaee Gelehkolaee et al. (2021) conducted 28 stakeholder interviews and 9 focus groups with a number of Iranian parents, teachers, counsellors, and religious leaders and concluded that “*Most of the participants believed that teachers, parents, and adolescents had very limited information*

about sexual health and that appropriate educational content needed to be designed to address the educational needs of each group separately." This work of research along with other Iranian literature in this field, confirm the need for sexual health and relationship education, and call for a customised, culturally-appropriate and co-designed SHRE provision in Iran.

1.11: Barriers to SHRE delivery and provision in Iran

Iranian research highlights a series of barriers and challenges to sexual health education provision in Iran (Latifnejad Roudsari et al., 2013). These include sex being a taboo topic, the illegality of sex outside marriage, lack of legal support around sex and sexuality, lack of legal and social freedom regarding premarital sex, intergenerational gaps, and religious uncertainties. Thus, inevitably, the research work reported in this thesis, was constrained by the cultural and religious values of Iranian society.

Additionally, some research participants have commented that SHRE materials evoked erotic thoughts rather than planning around safe sex practice and self-protection (Latifnejad Roudsari et al., 2013; Shariati et al., 2014). This could be due to the limitations of the Persian language, in which gender, sex, and sexuality all have a close and similar root (Jensiat, Rabeteye Jensi, and Tamayolate Jensi respectively). Participants were also concerned that sex education will promote early initiation of premarital sex, but global research contradicts this view (DiCenso et al., 2002; Scher et al., 2006; Underhill et al., 2007). However, the cultural resistance and social barriers are not unique to Iran, and have been previously reported in other developing countries (Gunasekara, 2017; Keogh et al., 2018; Wight et al., 2012).

1.11.1: Structural barriers and barriers to access services

Research has also identified several barriers to seeking sexual healthcare, especially among women and girls (Shariati et al., 2014). There were reports of previous negative experiences, not knowing where or who to go to for sexual healthcare and sexual information, negative and judgmental attitudes of health

providers towards clients, and lack of confidentiality (Akbari et al., 2013; Shariati et al., 2014).

Some implementation and structural barriers were also identified, including lack of coordination and collaboration between the various sectors of health centres and policy-making bodies, and lack of a specific strategy towards young adults and their health issues (Akbari et al., 2013; Shariati et al., 2014). Religious and cultural conservatism, lack of a specific strategy for sexual health and education, and lack of coordination and collaboration between different health and policy-making sectors were among the challenges noted in these studies. These barriers have not only restricted access to, and provision of sexual health education and services, but also have led to an increase in unsafe abortions and ambiguity in the national status of STIs prevalence. Misconceptions regarding SHRE and sexual healthcare can increase social stigmatisation of such services leading to the isolation of adolescents and disempowering them from seeking help and care (Akbari et al., 2013; Karimi et al., 2017; MirzaiiNajmabadi et al., 2019).

Social and cultural norms and attitudes related to SHRE have impacted young adults' motivation to access sexual health knowledge and care facilities (Farahani et al., 2012; Shariati et al., 2014) and could potentially limit their ability to make healthy decisions regarding their sexual choices. For example, as sexual health services have always been designed and tailored for married couples, many unmarried or single people do not think that the services are available for them. Designing and implementing open and confidential sexual health services aimed at young adults and unmarried citizens has the potential to enhance the sexual knowledge and care-seeking habits of all citizens.

Collectively, these studies suggest an existing need and demand for SHRE in Iran. As Farahani et al. (2012) note, "*Due to poor knowledge… misconceptions about sexual health and a lack of consistent contraceptive and condom use among adolescents and young people in Iran, both young men and women are susceptible to sexual and reproductive health hazards such as sexually transmitted infections (STIs), HIV/AIDS, pregnancy and unsafe abortion.*"

1.12: SHRE interventions in Iran

In response to the limited government-funded / supported Sexual Health and Relationship Education (SHRE), attempts have been made to develop and implement interventions targeting sexual health in Tehran (Mahmodi & Valiee, 2016; Rahmati Najarkolaei et al., 2013). However, the evidence for the effectiveness of such programmes is limited. Although programme development and evaluation of this kind is valuable as it provides foundations for future improvements, unfortunately, the quality of the research is generally poor, and further work is needed. Overall, such studies describe the development and content of interventions, the use of theory, or integration of public involvement (or co-design) inadequately; thus, limiting our ability to replicate or identify effective components within these interventions. Recruitment and randomisation procedures are also poorly described, and samples are small and underpowered, raising questions about the validity of the research. Despite this, the work strongly indicates an interest in SHRE amongst Iranian citizens and highlights that SHRE provisions are likely to be well received by different target populations.

As an example, Mahmodi and Valiee (2016) recruited Iranian Muslim women from government-funded health centres affiliated with Tehran University to assess the effectiveness of an intervention comprising SHRE for improving the quality of life of Iranian Muslim married women aged between 20 and 45 years.

Sixty women were randomly allocated to either the intervention or no intervention (control) condition. The intervention comprised three forty-five-minute sessions covering sexual anatomy, reproductive and sexual health, communication and negotiation skills, and promotion of a respectful and positive approach to sexual relationships with a married partner. Participants were asked to complete pre- and post-intervention questionnaires specifically designed for the study. Whilst details about the validity and reliability of the measures are not provided, the researchers reported that the intervention led to a statistically significant increase in self-reported quality-of-life in women in the intervention group compared to those in the control condition. Although there is no clear description of how psychological and behavioural changes were assessed (e.g., knowledge, attitudes, or behaviour), the authors claim that the intervention also had an impact

on attitudes towards sex, sexual pleasure, and reduced marital discord, so highlighting the potential benefits of improved SHRE in Iran.

Similarly, Rahmati-Najarkolaei et al. (2013) describe the evaluation of an abstinence-only education programme on the knowledge, attitudes, and intentions among female students aged 15-25 years who were studying law or literature at the University of Tehran. Participants were allocated (not randomised) to intervention (law students, n=53) or control (literature students, n=56) groups. Students in the intervention group received four 90 minutes training sessions distributed in 4 weeks. The intervention, reportedly based on the Social Cognitive Theory, targeted knowledge, self-efficacy, perceived benefits of HIV education, perceived susceptibility to HIV, and sexual abstinence intentions. While there is strong evidence suggesting abstinence education is not effective (Denford et al., 2017; Kirby, 2008), it is possible that the cultural and legal content in which this intervention was developed limited the kind of intervention that could be implemented. The training material, although not described in detail, included Islamic advice regarding abstinence, HIV education, and strategies to refuse risky offers. Pre and post-test questionnaires which included questions on [HIV] knowledge, self-efficacy for abstaining from sexual behaviours, perceived benefits of abstinence, and perceived susceptibility to HIV were distributed to participants. The global literature demonstrates the lack of impact of abstinence-only interventions on behaviour (Denford et al., 2017). Unsurprisingly, these authors report that the programme did not have an impact on reducing self-reported premarital sex or avoiding “risky offers” (although it is unclear how this was assessed). However, participants who completed the post-test questionnaires showed significant improvements in knowledge about HIV/STIs and increased perception of the benefit of abstinence. Therefore, while limited, this study illustrates that improvements in SHRE are likely to have positive effects on knowledge and beliefs.

Notwithstanding these limitations, existing Iranian research indicates a strong desire for SHRE among a range of populations, and the potential acceptability of SHRE delivered formally by research teams or through peer educators.

This has been trialled in Turkey, Iran's north-western neighbour with many similarities between the two country's culture and minimal SHRE provision.

Turkey offers simple modules on human biology and reproductive organs to high school students (Joseph, 2005). However, as with Iran, there have been researcher-led efforts to improve the situation, including a peer-led SHRE intervention that provided some evidence for the acceptability of this approach. Polat et al. (2012) describe a peer-led SHRE programme for 15-20-year-old residents of Mersin, a large province in Turkey (Polat et al., 2012). Forty-one student volunteers from the Mersin Medical University were trained by medical and healthcare specialists to deliver SHRE to their peers. Each volunteer trainer was asked to recruit and deliver training to 100 peers between the ages of 15 and 20 years in schools, universities, cafes, and other communal spaces; and 4100 peers reportedly received the intervention. The authors state that their designed programme comprised modules on: human anatomy, physiology of sexual functions, STIs prevention and protection, contraception and condom use, and self-administered breast examination. Volunteers were also given educational booklets and brochures to distribute to their peers. A total of 3941 participants completed pre- and post-test questionnaires, and the authors state that the intervention led to an improvement in knowledge, corresponding to the content of the intervention. This included increased knowledge on contraception options, HIV-awareness, male and female sexual organs, and the importance of condom use.

Such studies illustrate that SHRE interventions can be implemented despite cultural barriers, providing adequate support is in place. Whilst acceptability was not formally assessed, participants appeared willing to participate in the intervention. Given the strong cultural similarities between Turkish and Iranian citizens, a similar approach of using peer leaders may be achievable in Tehran, to promote comprehensive SHRE. It is worth mentioning that this programme was supported by the United Nations Population Fund (UNFPA) and was financially sponsored by the Netherlands embassy in Turkey, hence it is unclear whether such an intervention could work without this support.

1.13: Conclusions

Considering the limited SHRE provision and sexual healthcare facilities for young people in Iran and its associated health and relationship issues, understanding and addressing the SHRE needs of this population group is vital. Limited researcher-led and community-based interventions may be effective and beneficial to a minor population, but a detailed understanding of young adults, as recipients of these programmes needs to be acquired. Also, those who oversee designing and delivering this education provision and services need to have a say about the essentials, facilitators, and barriers of augmented SHRE provision in Tehran. Programme design and development must be guided by choosing appropriate theories and frameworks and should be tailored to the target population through utilising evidence for the context. Given the limited literature in the Iranian context and that no research has specifically been dedicated to exploring and addressing the SHRE and service needs of Tehranian young adults, an in-depth needs assessment with SHRE providers and recipients and a tailored programme design focused on the needs of this specific population could have a substantial public health impact.

1.14: Theoretical Frameworks

The Medical Research Council (MRC) guidance for developing and evaluating complex interventions advises researchers to select appropriate theories and methods at each stage of the development, evaluation, and implementation of interventions (Craig et al., 2013). The advantage of using theory to guide the development, implementation, and evaluation of studies is that theories provide clear reasoning for the cause of a certain phenomenon and therefore offer a roadmap, that can help researchers decide "*what*" needs to be targeted, for a specific behaviour or pattern to be changed or enhanced, and for a certain expected outcome. Therefore, theories can elucidate the impact or lack of impact of interventions, and therefore lead to more desirable outcomes (Michie & Abraham, 2004). Theories also present guidance on what changes are targeted, hence allowing clearer intervention descriptions as well as greater specificity on how interventions are evaluated, that is, what do we expect to change and how can this be reliably measured.

1.14.1: Information Motivation Behavioural skills Model

The Information, Motivation, and Behavioural Skills (IMB) Model (Fisher & Fisher, 1992) was adopted as a guiding theoretical framework for this project as it has been previously applied to many sexual health intervention design and evaluation studies (Anderson et al., 2006; Bahrami & Zarani, 2015; Barak & Fisher, 2001; Bazargan et al., 2010; Liu et al., 2014; Public Health Agency of Canada, 2008) and highlights the importance of changing knowledge, motivation (or intention) and skills to promote behavioural change.

The IMB Model suggests that behaviour is a result of being well-informed, strongly motivated, and having the right set of skills to perform a certain behaviour. The IMB model assumes that the components of information, motivation, and relevant behavioural skills must mutually coexist, in order to facilitate and sustain specified behaviours (e.g., condom use). It is important to understand which of these components need to be changed for behaviour change to occur and to properly design the change procedures in an intervention. Whilst each element alone would not be enough to cause a change in behaviour, each component needs to be fulfilled before expecting a certain behaviour to be enhanced or adjusted.

As a limited set of existing literature suggest minimal sexual health knowledge among Tehranian young adults, providing information through SHRE could be beneficial to this population as a preliminary step to motivate healthy sexual behaviour. However, the extent of this lack of knowledge among young people in Iran is not clear. For example, it is not clear how young adults are accessing information, which information sources are considered trustworthy and how accurate they are. This means young people may not have accurate knowledge of key topics such as: how to access sexual health facilities. Although information alone is unlikely to change behaviour, if knowledge is variable or insufficient. This may be critical to the design of an effective sexual health education intervention.

Motivation entails how strongly one intends, or wants to, perform an action, or sustain a new behaviour over time. Fishbein et al. (2001) proposed that motivation is affected by (i) an individual's perception of how the benefits of changing a behaviour outweigh the disadvantages of such action, (ii) the expectation that changing behaviour will cause a positive emotional reaction, (iii) a belief that others desire to see a certain behaviour changed in them, (iv) the behaviour being consistent with their self-image, and (v) feeling capable to change a certain behaviour (self-efficacy). Therefore, the techniques to alter motivation may emphasise persuasion; for example, by using fear-arousal messages. They may focus on normative influences, by informing individuals that "others" are behaving in a similar manner. Such techniques may be based on building self-efficacy, as individuals are unlikely to exert considerable effort on goals that are unlikely to be achieved. Those who exhibit high levels of self-efficacy, set themselves more challenging goals, utilise more effort, develop more flexible problem-solving strategies, and are more persistent (Bandura, 1977).

Nonetheless, at times well-informed, highly motivated individuals fail to perform appropriate behaviours as they lack the necessary skills to do so. In such circumstances, motivation-building techniques will not be successful and may even be counterproductive. For instance, if young adults do not like approaching a sexual health centre due to negative expatiations or do not know how to access it, they need information, reassurance, and instructions to develop the skills necessary to (i) formulate a plan to make an appointment and (ii) attend such an appointment. The development of such behavioural skills requires, not only enhanced knowledge, but also instruction, formulation of plans, feedback on performance, and repeated practice to develop habits. This will ensure proficiency and also enhances self-efficacy.

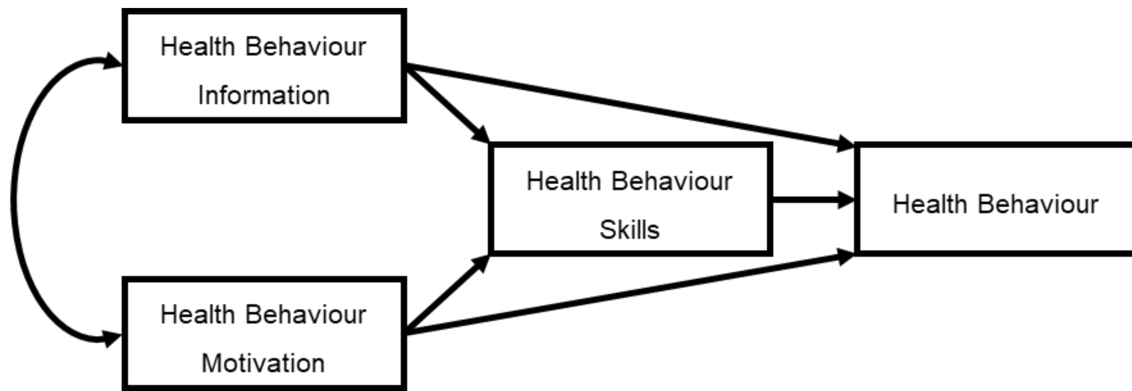

Figure 1.3: Information, Motivation, and Behavioural Skills (IMB) Model, (Fisher & Fisher, 1992)

1.15: Research Aims

The overarching research question of this thesis was, "What are the sexual health and relationship education (SHRE) needs of Tehranian young adults and how can the existing provision be augmented or enhanced?"

Using a multi-methods approach, the specific aims were to: (i) explore and describe sexual health knowledge among Tehranian young adults and to understand healthcare professional's views of these needs, (ii) identify young adults' sources of sexual health information and accessibility and cost of sexual health services to them and (iii) collect healthcare professionals' views on the content, feasibility, and accessibility of enhanced sexual health education in Tehran and to identify what additional sexual services would be most valued by Tehranian young adults. Finally, this project aimed to develop a blueprint for an improved SHRE that could promote better knowledge, enhanced sexual healthcare motivation, and the skills to manage relationships and sexual health, while being implementable in Tehran. This final part of the doctoral research sought to combine local needs assessments and current materials used in Iran with international guidelines and materials illustrating best practice in SHRE.

1.16: Overview of the thesis

This thesis includes six chapters. Chapter 1 is this introductory chapter and Chapter 6 includes a general discussion, highlighting research, policy, and practice implications of the research. The methodology used in this PhD project is explained in Chapter 2. Chapters 3-5 report the three completed studies. The studies reported in Chapters 3 and 4 have been published in peer-reviewed journals.

As it may not be possible to determine how the studies are related to one another in a doctoral project, a more detailed overview of each of the three studies and how each contributes to the overall objectives of this PhD project is presented in the rest of this chapter.

Chapter 3 reports a qualitative assessment of the sexual health education, training, and service needs of young adults in Tehran. This study used interviews, transcriptions, and thematic analysis to explore the views of 18-25-year-old Tehranians concerning their sexual health and relationship education and service needs, including their source of information and perceived accessibility to sexual health services. The results showed that there is indeed an existing need and demand for SHRE amongst Tehranian young adults and that they have relied on online resources and social media for learning about sexual health and relationships. Noting their demand for an intra/extra-curricular sexual health and relationship educational program, provision of interventions in universities and health/community facilities are necessary for best outreach and maximising participation. Furthermore, this study highlights the strong need for confidential, affordable, and non-judgmental sexual health services available to young adults living in Tehran.

Chapter 4, reports the second study in this doctoral research. Employing a very similar methodology to study 1, this study examined healthcare professionals' assessments of, and recommendations for, sexual health education and service provision for young people in Tehran. The sample included professionals involved in clinical practice, education, and policy development. The study focused on Tehranian young adults' sexual health and relationship education and

service needs, including their sources of information and accessibility to sexual health services, from healthcare professionals' perspectives. The results confirmed findings from the first study and emphasised the need and demand for sexual health and relationship education tailored to young adults, along with sexual healthcare facilities that serve young Tehranians in confidence. Furthermore, the feasibility of such tailored intervention was confirmed by healthcare professionals, which can inform future interventions' design, delivery, and evaluation.

Chapter 5 presents a sexual health and relationship education (SHRE) intervention development and implementation guide in the form of a programme outline, including learning objectives and suggested time allocations. This was developed using an 8-stage integration and consultation methodology. The final programme outline is provided for healthcare professionals and policymakers and addresses specific content and delivery methods which need to be taken into consideration to improve the SHRE provision in Tehran. This study drew upon six SHRE best practice guides designed and developed by national and international organisations, as well as Persian materials used in Iran. The views of various experts were drawn upon; and finally, the draft programme was discussed with a local sample of young people in Tehran as well as a group of healthcare professionals. This stakeholder involvement allowed for refining the final programme outline, which represents an important starting point for improved SHRE for young people in Tehran.

1.17: References

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Chapter 2: Methods

This chapter describes the methods and approaches used in the three empirical chapters in this thesis. In studies one and two, semi-structured interviews were used to collect data, and thematic analysis was applied to extract the meaningful themes from interview transcripts. In Chapter 5 qualitative content analysis was employed to select and categorise content recommendations made by international SHRE guidelines, and stakeholder consultations were used to refine a proposed SHRE programme created for young Tehranians.

2.1: Qualitative research

Qualitative research contributes to the growing body of scientific evidence in many disciplines by exploring and interpreting individual experiences and social events, as it occurs in a natural, rather than experimental context (Cristancho et al., 2018; Denzin & Lincoln, 2011). Qualitative research aims to explore opinions, beliefs, and lived experiences of individuals or groups of people, and the context in which such perspectives are formed and experienced. Qualitative methods facilitate inductive reasoning, through capturing detailed differences and similarities in individual accounts of particular experiences. Instead of making assumptions about people's experiences and beliefs, it gives voice to participants' perspectives. Although qualitative research can involve a time-consuming data collection and analysis process, it provides an opportunity for in-depth understanding and interpretation of individuals' beliefs and attitudes and is commonly employed in health research to explore various complex issues (DeJonckheere & Vaughn, 2019; Jamshed, 2014; Kallio et al., 2016).

This PhD project included qualitative studies of Tehranian young people and healthcare professionals' views. Together these two studies constituted an assessment of the sexual health education and sexual health service needs of young people in Tehran. The studies used small samples of key stakeholders, representing those who need SHRE and sexual health services and those who design and deliver such education and services. These studies facilitated a thorough exploration of this sensitive and understudied area. The studies are

reported in Chapters 3 and 4 (Sheikhansari, Abraham, & Denford, 2021; Sheikhansari, Abraham, Denford, et al., 2021). They both used semi-structured interviews and applied thematic analysis to verbatim, translated interview transcripts. The findings from these studies were incorporated into recommendations for improved SHRE and sexual health services in Tehran.

2.1.1: Reporting standards for qualitative research

The Standards for Reporting Qualitative Research (SRQR) (O'Brien et al., 2014) includes a table of 21 items that are deemed essential for thorough and transparent reporting of qualitative research. Both qualitative studies reported in this thesis were conducted in accordance with these standards. For example, participants' anonymity and confidentiality were ensured during data collection and analysis, by obtaining verbal consent in contrast to written consent, and referring to participants as numbered individuals (e.g., person 23).

These standards were developed through a rigorous synthesis of recommendations and concepts for reporting qualitative research (Table 2.1) and call for a thorough explanation of qualitative studies' methods (e.g., sampling strategy, data collection, and analysis methods), results (e.g., interpretations and link to other empirical research), and other related matters such as received grants, ethical concerns, and potential conflicts of interest.

Table 2.1: Standards for Reporting Qualitative Research (SRQR) – A Synthesis of Recommendations (O'Brien et al., 2014).

	Topic		Item
1	**Title and abstract**	Title	Concise description of the nature and topic of the study. Identifying the study as qualitative or indicating the approach (e.g., ethnography, grounded theory) or data collection methods (e.g., interview, focus group) is recommended
2		Abstract	Summary of key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results, and conclusions
3	**Introduction**	Problem formulation	Description and significance of the problem/phenomenon studied; review of relevant theory and empirical work; problem statement
4		Purpose or research question	Purpose of the study and specific objectives or questions
5	**Methods**	Qualitative approach and research paradigm	Qualitative approach (e.g., ethnography, grounded theory, case study, phenomenology, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g., postpositivist, constructivist/interpretivist) is also recommended
6		Researcher characteristics and reflexivity	Researchers' characteristics that may influence the research, including personal attributes, qualifications/experience, relationship with participants, assumptions, and/or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results, and/or transferability
7		Context	Setting/site and salient contextual factors
8		Sampling strategy	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g., sampling saturation)
9		Ethical issues pertaining to human subjects	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues
10		Data collection methods	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process,

	Topic		Item
11			triangulation of sources/methods, and modification of procedures in response to evolving study findings
11		Data collection instruments and technologies	Description of instruments (e.g., interview guides, questionnaires) and devices (e.g., audio recorders) used for data collection; if/how the instrument(s) changed over the course of the study
12		Units of study	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)
13		Data processing	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymisation/deidentification of excerpts
14		Data analysis	Process by which inferences, themes, etc., were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach
15		Techniques to enhance trustworthiness	Techniques to enhance trustworthiness and credibility of data analysis (e.g., member checking, audit trail, triangulation)
16	**Results/findings**	Synthesis and interpretation	Main findings (e.g., interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory
17		Links to empirical data	Evidence (e.g., quotes, field notes, text excerpts, photographs) to substantiate analytic findings
18	**Discussion**	Integration with prior work, implications, transferability, and contribution(s) to the field	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application/generalisability; identification of unique contribution(s) to scholarship in a discipline or field
19		Limitations	Trustworthiness and limitations of findings
20	**Other**	Conflicts of interest	Potential sources of influence or perceived influence on study conduct and conclusions; how these were managed
21		Funding	Sources of funding and other support; role of funders in data collection, interpretation, and reporting

2.1.2: Data collection methods and instruments

Interviews are the most commonly used data collection method in qualitative research, and could be conducted in a structured, semi-structured, or unstructured manner (Jamshed, 2014). Semi-structured interviews are the most frequently used qualitative data collection strategy in health services research (DeJonckheere & Vaughn, 2019; Kallio et al., 2016). This method allows the researcher to keep interviewees engaged in the consideration of predefined issues while also allowing them the freedom to introduce what is important in their opinion.

Researchers can ask participants several open-ended questions, which are based on a predefined topic guide, that includes questions related to the study's aims and objectives (DiCicco-Bloom & Crabtree, 2006; Whiting, 2008). Nevertheless, they allow interviewees to address issues in the order they choose and to introduce ideas outside the topic guide, where appropriate. The topic guide comprises a number of core questions and some prompt questions related to the central query. Interviews are mainly captured through audio recording (as it was done in studies 1 and 2), as this allows the researcher to focus on the interview content and facilitates the "verbatim transcription" of the interview. Recordings were complemented with written notes, including remarks on non-verbal cues and other details that the researcher deemed necessary to be noted.

Given the sensitive subject matter, the cultural and social concerns around sexual behaviour (Askari et al., 2020; Joodaki et al., 2020; Latifnejad Roudsari et al., 2013), and the need to elicit participants' own needs and perspectives, structured interviews were not considered appropriate as their transactional and inflexible nature made them unsuitable for the needs assessment work undertaken in this project. The researcher needed to establish trust between herself and the participants and to convey her willingness to listen to their individual perspectives. Unstructured interviews, on the other hand, would not allow enough focus and detail orientation as was needed by this research. Not having a predefined topic guide could have resulted in interviews taking too long and the final dataset failing to address the questions that prompted the research. The researcher was also conscious that a lack of structure in interviews, might result in oversharing of

personal details by the interviewees, which would have potential consequences to the promised anonymity and confidentiality of the participants' data.

Focus groups were disregarded as the research subject is considered taboo in the local culture, hence there were concerns about participant recruitment issues, an exhibition of behaviours and responses associated with demand characteristics and social desirability, lack of participant trust, and fears of breach of confidentiality, all of which could compromise research reliability and validity. Focus groups can also encourage conformity and suppression of minority opinions and therefore were not suitable for this project's aims.

2.1.2.1: Methods used for studies 1 and 2 as qualitative needs assessment study

Study 1

Semi-structured, face-to-face interviews were conducted in person with 18-25-year-old Tehranians in a convenient location (university-owned/healthcare setting facilities) in Greater Tehran with one interviewer and one interviewee present. Participation was voluntary, and no incentives were provided to these key informants. Interviews took approximately 45 minutes and were conducted by the candidate. No relationship was established between the interviewer and the interviewees prior to interviews. The research was conducted in accordance with the Standards for Reporting Qualitative Research (O'Brien et al., 2014). The study, and all data collection procedures, were approved by the ethics committees of The University of Exeter Medical School and the Iran University of Medical Sciences.

Sampling and data collection

Convenience sampling involved placing advertisements in health clinics and university health centres in Tehran. Interested people were asked to contact the research team and were provided with a participant information sheet. Those who consented to participate were given details of the interview time and location by telephone. Interviews were conducted in quiet, private rooms in a hospital or

university setting most convenient to the participant. Interviewees were made aware that they could withdraw at any time without giving a reason. Verbal consent (rather than written consent) was obtained from every participant to protect the interviewees' anonymity. All participants consented to interviews being recorded and for quotations to be reported anonymously.

Interviews

The semi-structured topic guide for this study is provided in Appendix 3.4. The guide included questions on (1) sexual health knowledge, (2) perception of personal knowledge, (3) content of any sexual health education, (4) source of sexual and sexual health information, (5) confidence in preventing STIs and protecting oneself in sexual relationships, and (6) perceived accessibility of sexual healthcare and contraceptives. The topic guide was developed in accordance with the research questions and was pilot tested on 5 young adults. Interviews were conducted in Persian except for one, in which the interviewee requested use of English. Recorded interviews were transcribed verbatim, anonymised, and translated, where necessary.

Participants

One hundred and forty-five people responded to recruitment advertisements, of whom, 60 met the inclusion criteria of being Iranian and aged 18-25, speaking Persian as a first language and living in Greater Tehran. Thirty-five people declined to be interviewed when contacted or were not available during the data collection period. Twenty-five young women (N=18) and men (N=7) from various educational backgrounds, including those with high school diplomas (4), Bachelor's degrees (13), and Master's degrees (8) were interviewed. Participants were from mixed socioeconomic backgrounds (high income (9), middle income (4) and lower income (12)). They identified as agnostic (11), atheist (1), theist (only believing in God) (10), and religious (identifying with a religion, including Islam and Christianity) (3). They were 18-25 years old, with the mean age of 23.

Study 2

Semi-structured interviews were conducted with male and female HCPs and policymakers in locations convenient to them within Greater Tehran. The study was approved by the ethics committees of both The University of Exeter Medical School and the Iran University of Medical Sciences and conducted in accordance with the Standards for Reporting Qualitative Research (O'Brien et al., 2014).

Sampling and data collection

Purposive sampling was used to recruit a range of HCPs working in public and private health sectors in Tehran. Some had direct contact with patients / clients while others did not. All were experts in sexual health and/or were responsible for designing and delivering sexual health services, interventions, and/or policies.

Inclusion criteria were being Iranian, based in Tehran, speaking Persian as a first language and having direct or indirect relationship with sexual health initiatives delivered in Tehran, including policy-making and client advisory services. The sample was recruited using a snowballing procedure in which participants were asked to provide names of other HCPs meeting our criteria. These were telephoned and, if interested, provided with information about the study and invited to participate. Those who consented were asked for a convenient interview time and location. Participants were informed that they could withdraw at any time without providing a reason. Verbal consent (rather than written consent) was obtained from every interviewee to protect anonymity. All participants consented to interviews being recorded and for quotations to be reported anonymously.

Participants

Twenty-nine HCPs were contacted. Twelve declined or were unavailable during the data collection period. Seventeen Iranian, Persian-speaking HCPs working in Greater Tehran were interviewed (5 men and 12 women). These included HCPs with and without medical qualifications, those in clinical contact with patients and clients (N=7), and social workers and community health consultants (N=10), of

whom seven were policymakers or had a high level of influence on policy development and implementation in relation to sexual health.

Interviews

A topic guide was developed to plan semi-structured interviews (Appendix 4.4). The guide included questions on HCPs perception of (1) young Tehranians' sexual health knowledge, (2) young Tehranians' confidence in preventing STIs and protecting themselves in sexual relationships, (3) content and quality of existing sexual health education, (4) sources of sexual health information for young Tehranians, (5) recommendations for improved provision of sexual health education in Tehran, (6) current sexual health services, and (7) accessibility of sexual healthcare and contraceptives. The topic guide was revised after pilot testing with 5 HCPs. Interviews were completed in the Persian language and recorded interviews were transcribed verbatim, anonymised, and translated into English.

2.2: Qualitative data analysis

There are a number of methods for analysing qualitative data (including interview transcripts). The choice of an analysis method is dependent on the aim of the research. In both qualitative studies reported in this thesis, thematic analysis (TA) was used, which is an analysis method used to identify and interpret patterns within a dataset and could be used to explore opinions and beliefs of individuals and groups.

2.2.1: Thematic analysis (TA)

To understand the characteristics of the SHRE needs of young people in Tehran, it was assumed, based on prior research, that young people's SHRE and service needs were not being met. We began with a theoretical framework specifying that these deficits may be affecting young people's information, motivation, and behavioural skills (IMB) (Fisher & Fisher, 1992), in relation to optimising their sexual health. Consequently, a grounded theory approach was not appropriate; as we were not starting from scratch. Furthermore, we did not know how young

people and clinicians in Tehran would evaluate current provision or needed provision, therefore, a quantitative content analysis (Krippendorff, 2018; Weber, 1990) was not possible, because we had to develop categories to best represent respondents' views. Between these two poles of "no-assumptions-qualitative" and "known-categories-qualitative" content analyses there are a variety of methods which support exploratory, inductive understanding of people's views using interviews from purposively selected samples. One of such methods is thematic analysis (Braun & Clarke, 2006).

Thematic analysis (TA) is a method of identifying, analysing, and describing patterns within a data item (a single interview) or a dataset (multiple interviews). These patterns are called themes, which explain an overarching meaning and are sometimes accompanied by sub-themes, which are used to describe a noticeable point within a theme (Braun & Clarke, 2006). Thematic analysis is an appropriate method for flexibly analysing and summarising important aspects of large datasets generated from participatory research, highlighting their similarities and differences, and creating insights and interpretations of data. This method has been widely used in health psychology research and has enabled researchers to extract core beliefs and concerns from small samples that may illustrate wider population positions.

In thematic analysis, themes can be identified in an inductive or deductive manner, where an inductive approach refers to the identified themes as being derived from empirical data, and a deductive approach is driven by the theoretical interests of the researcher (Patton, 1990). Although the IMB Model was used to guide the data analysis (i.e., organising the data in order based on information, motivation, and behavioural skills components), an inductive approach was employed for both qualitative studies reported in this thesis. While we were aware of the importance of information, motivation, and behavioural skills in relation to competent and mature sexual self-regulation, we did not begin with any hypotheses and our analyses was driven by the transcripts' content. Thus, our approach was primarily inductive (Robinson, 1951). Because the aim was for the themes to be data-driven, the data were coded without being fitted into a pre-existing framework or theory, but only organised based on the IMB Model. The inductive approach was adopted because of the limited relevant literature in this

area within the Iranian context, along with a further lack of empirical studies based on theory. Moreover, themes were identified in a semantic approach, which refers to the themes being highlighted within the explicit meanings of the data, rather than through searching for an underlying reason which was not clearly quoted by the interviewees (Patton, 1990), as this approach matched the studies' purpose.

While there are many approaches, through which qualitative data could be analysed, thematic analysis was the most appropriate method for the two qualitative studies reported in this thesis. This was because the aim of this project was not to establish underlying social and psychological factors affecting behaviour and attitudes or to generate a theory on why young adults believe or behave in a certain manner, but to explore the needs and experiences of young adults and healthcare professionals in Tehran which would be enlightening in designing a programme to enhance their future experiences with SHRE. For example, while Study 1's topic guide proposed questions on potential barriers to accessing sexual healthcare, it did not aim to go further than identifying these barriers, i.e., to link them to individual experiences or evaluate the reasons behind them, rather, it was intended to name the barriers, in order to address them accordingly in the programme outline generated in study 3. Therefore, the aim was to translate an identified barrier (e.g., lack of awareness about existing sexual healthcare) into a realistic, proposed solution (provision of contact details of such facilities in SHRE workshops/day courses in Tehran), without deeply exploring the reason behind this lack of awareness.

Braun and Clarke (2006), describe six steps of thematic analysis, which involve a recursive movement between the dataset, the coded extracts, and the final analysis report.

Table 2.2 lists the six steps which are also described below, while Table 2.3 highlights quality criteria by which thematic analyses can be judged. These were applied to the two qualitative studies reported in this thesis.

The application of these steps to this project are explained below.

Step 1: Familiarisation with data

All interviews were conducted by the candidate and transcripts were stored on NVivo, a software that assists in storing and organising qualitative data. The candidate immersed herself with each interview transcript along with the entire set of transcripts in order to become familiar with the depth of the content. This process included the repeated and active reading of the data, where patterns were actively sought.

Step 2: Generating initial codes

This step involved the generation of initial codes from the data. Codes highlight a distinctive aspect of the data which appear relevant to the research question (Boyatzis, 1998). It is worthy to mention that coded data are different from themes, which are broader and encompass excerpts of data that share a unified meaning. The candidate systematically searched the entire dataset, providing complete and equal attention to each interview transcript, and colour-coded excerpts in the data items that formed patterns. As no dataset is without contradiction, inconsistencies within and across transcripts were also highlighted in order to give voice to all opinions that were shared by participants.

Step 3: Searching for themes

After all transcripts were initially coded, different codes were sorted into potential overarching themes, without being matched to prior hypotheses, and solely based on their shared meaning. Some initial codes were grouped together forming main themes, while others created sub-themes. At this stage, some codes were merged to form a broader code, which was then turned into a theme or a sub-theme, while some redundant codes were discarded as they did not add

a distinctive meaning to the existing group of themes and sub-themes. Quotes relating to each preliminary group of themes and sub-themes were allocated to them accordingly.

Step 4: Reviewing themes

During this stage, some nominated themes collapsed into each other, as few seemingly separate themes were found to form a single theme. This was to ensure data within themes were coherent and meaningful, and each theme was clear and distinctive. A provisional thematic map was formed at this stage, where themes and their sub-themes were listed.

Step 5: Defining and naming themes

At this point, themes were further defined and refined, highlighting the core meaning of each theme. All themes in general and individual data represented by each theme were determined. Then, a detailed analysis was written for each theme, ensuring that no themes were overlapping.

Step 6: Producing the report

At this stage, the thematic analysis was refined and put together to form a final report, complementing a final version of the thematic map. The report included themes, sub-themes, and quotes related to each of them, telling a coherent story.

In addition to a thorough analysis, qualitative research should establish credibility, reflexivity, and lack of confirmability to be trustworthy (Lincoln & Guba, 1985). This means results must represent plausible interpretations drawn from the interviewees' original quotes (credibility). The findings should also be confirmed by other researchers, ensuring that results and interpretations of the data are driven from participants' opinions, and not fabricated or falsely claimed by the data analyst (confirmability). Moreover, the research analyst must be aware of their own perceptions, biases, and preconceptions, and ensure these do not interfere with data analysis and reporting of results (reflexivity).

Table 2.2: Phases of thematic analysis (Braun & Clarke, 2006).

Phase	Description of the process
1. Familiarising yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire dataset, collating data relevant to each code.
3. Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes	Checking if the themes work in relation to the coded extracts (Level 1) and the entire dataset (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Table 2.3: A 15-point checklist of criteria for good thematic analysis (Braun & Clarke, 2006).

Process	Number	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original dataset.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed / interpreted, made sense of / rather than just paraphrased or described.
	8	Analysis and data match each other / the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organised story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done / i.e., described method and reported analysis are consistent.

Process	Number	Criteria
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as active in the research process; themes do not just 'emerge'.

2.2.2: Data analysis for studies 1 and 2

NVivo was used to store transcripts and allocate excerpts to categories. A thematic analysis was conducted employing guidelines provided by Braun and Clarke (2006). This involved six stages of analysis applied to anonymised interview transcripts. These included (1) establishing familiarity with the data (reading, re-reading, and note taking), and (2) generating initial category definitions (sketching definitions and identifying content examples and recurring categories). Step 3 involved a more systematic search for themes and overlapping/corresponding content categories (checking if emerging definitions are applicable across interviews or are too general/specific). During step 4 the emergent categories were reviewed (checking that defined categories are distinct and correspond to multiple examples from interviews). Steps 3-5 involved multiple meetings between the candidate and their two main supervisors to critically discuss each of the category definitions, the differences between categories, and the appropriateness of each excerpt allocation to the category definition. The fifth step was to finalise the category definitions and the conceptual tree to which they belonged. Finally, interviews were re-read to ensure selection of all excerpts were relevant to the final category definitions and the results report written was illustrative of the category tree, category definitions, and the overall coding of transcripts (Braun & Clarke, 2006).

To ensure validity, two researchers (the candidate's first and second supervisors) each coded five interviews separately and reviewed themes. Many meetings were held in which the candidate and their supervisors discussed transcript excerpts and identified appropriate thematic definitions. This resulted in collaborative interpretation and validation of textual categorisation and facilitated

detailed consideration of any differences of interpretation. The final themes and sub-themes were defined and reviewed by the candidate and their supervisors who discussed all selected quotes and their thematic allocations. The results of this coding are provided in Appendix 3.5-3.7. The candidate recorded reflective notes during data collection and revisited these through data analysis to ascertain inclusion and explanation of details expressed by participants.

2.3: Content analysis

Content analysis is a data analysis method that is used to decide the presence of certain themes, or concepts within a qualitative data source. Researchers use content analysis to establish the presence and meaning of certain themes, concepts, or contents in texts, and to therefore draw conclusions and characterise the meaning that authors try to convey.

An informal content analysis was employed in the final study of this PhD project, to identify and summarise key SHRE contents recommended by international organisations, in order for them to inform a tailor-made SHRE programme in Tehran. These analyses were "informal" in the sense that they did not involve quantitative coder reliability analyses. It is acknowledged that the candidate did not conduct a reliability analysis of the allocation of content to core categories (Krippendorff, 2018); and this would be a useful addition to an extended investigation of the most appropriate curriculum for a new Iranian SHRE programme.

This method was chosen as it allowed for content recommendations to be extracted from each guideline, through a rapid analysis of the text. It also allowed the researcher to compare these recommendations to the SHRE content used in Tehran and to the needs expressed by Tehranian young adults and healthcare professionals in previous studies, clarifying what SHRE could/should be in Tehran. A more comprehensive study of the ideal, globally agreed content of SHRE for young people could employ a panel of experienced SHRE providers and researchers to reach a consensus position which could differ from our current derivation of an ideal SHRE consensus from the used key guidelines.

Content analysis could be employed to reveal similarities and differences in various materials and media regarding a certain subject, after which such qualities could be highlighted to augment an intervention or preliminary legislation. It also allows for close and direct analysis of data, in a quantitative and qualitative format (i.e., how many sources have recommended what kind of content), while being accessible and easy to comprehend.

For the third study in this thesis, an informal qualitative content analysis was performed, and the text in each selected guideline was read and reviewed to define conceptual categories. By dividing the text into categories, focus was directed to coding specific patterns that informed the research aim (Krippendorff, 2018), which was generating a list of SHRE content recommendations. For the final study in this thesis, six international SHRE guidelines were selected. The guideline search and selection process is explained in the study's respective chapter in detail. Each guideline was then inspected for any piece of text which clearly recommended a content category or delivery method for SHRE programmes. No content and delivery method rules were decided prior to the guidelines' content analysis. This flexible approach allowed for the introduction and inclusion of novel and important material that could significantly improve the final programme's content. Once the analysis was finalised, there were several sets of recommended SHRE content, which were then presented as a final report. This report was provided to Tehranian young adults and healthcare professionals as stakeholders, resulting in further discussions and adjustments, which consequently formed the final programme outline.

2.4: Stakeholder involvement

The Medical Research Council (MRC) framework advises relevant stakeholders of an intervention to be included at all stages, from intervention development to outcome evaluation (Craig et al., 2013). Such engagement can inform methods to minimise barriers and enhance uptake of the intervention. Theory and evidence-based interventions are likely to be unsuccessful without user engagement, and consequently, implementation could become challenging and ineffective; hence stakeholder involvement before delivering a final product is a prerequisite of intervention effectiveness (Yardley, Ainsworth, et al., 2015;

Yardley, Morrison, et al., 2015). Understanding target groups' views on the intervention's arrangement, content, and delivery methods is instrumental in identifying and correcting potential challenges, including low uptake rates and minimal adherence (Guise et al., 2013).

The ultimate aim of most health research is to improve health outcomes through the provision of relevant interventions. Interventions' uptake, relevance, acceptance, and engagement can be optimised, through co-design work that shape the interventions to the needs of intended end-users and other stakeholders (Craig et al., 2013). To achieve this goal, several organisations globally, advise for health service developers, providers, and end-users to be involved and consulted in the health research and intervention design process (Domecq et al., 2014; Involve UK, 2021; Lee et al., 2017; Manafo et al., 2018; Patient Centred Outcomes Research Institute (PCORI), 2021; Slattery et al., 2020).

The involvement of key stakeholders and engaging with those who will deliver and receive interventions is critical to maximising intervention effectiveness. While best practice SHRE guidelines (e.g.; International Technical Guidance on Sexuality Education by a group of UN agencies) advise for incorporating stakeholders' opinions, this has not been considered in developing the materials currently being used in the Iranian SHRE provision.

Stakeholder involvement initiatives can be used to facilitate study to support planning interventions and refining materials (Brett et al., 2010, 2014a, 2014b; Cukor et al., 2016). To initiate the process, the desired outcome from stakeholders' consultations should be decided and stakeholders should be identified and recruited (Brett et al., 2010; Puts et al., 2017). Although such activities require dedicated time, human capital, and finances, there is an advantage to employing stakeholders' involvement initiatives to health research and intervention design. Many studies suggest that intervention materials are deemed as more appropriate and applicable to stakeholders as a result of incorporating stakeholders' involvement, as this can result in refining the materials as per the stakeholders' specific needs and suggestions (Camden et al., 2015; Manafo et al., 2018; Puts et al., 2017).

Given the novelty of this project's aim to design an SHRE programme targeted at Tehranian young adults and considering the benefits of stakeholders' involvement in informing interventions' relevance and acceptability, stakeholder consultations were employed to refine the programme content and method of delivery, through involving professionals who would be overseeing the delivery of this program, along with end-users, who would be 18-25-year-old Tehranians. Stakeholder involvement was also essential as this bespoke programme was based on content that was developed in countries other than Iran, and therefore stakeholder involvement could inform cultural appropriateness and ensure the content is engaging and easy to understand. This method of stakeholder engagement is thoroughly explained in Chapter 5, which reports on a study about designing a tailored SHRE programme for 18-25-year-old young adults living in Tehran.

2.5: References

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Chapter 3: A Qualitative Assessment of the Sexual Health Education, Training, and Service Needs of Young Adults in Tehran

This chapter presents the first empirical study in this thesis, which comprises a qualitative needs assessment. This was performed to answer the research question "*What are the SHRE, and sexual health service needs of Tehranian young adults?*", which in combination with the needs assessment reported in the next chapter, would help to inform the development of a bespoke SHRE programme outline for young adults in Tehran. A version of the following text was published in BMC Public Health (Sheikhansari, Abraham, Denford, et al., 2021).

3.1: Abstract

Background: Sexual Health and Relationship Education (SHRE) provides individuals with knowledge and skills to manage risky behaviours and take informed decisions to protect themselves against STIs, and unintended pregnancy. Only minimal SHRE is provided in Iranian schools and universities; and previous research has highlighted needs and demands for improved SHRE and sexual services in Iran. This study explored young, Iranian adults' experience of, and need for sexual health education, sexual skills training, and sexual healthcare services, as well as their views on how to augment and improve existing provision.

Design and methods: Semi-structured interviews were conducted with a sample of 25 young adults who lived in Tehran, Iran, and had volunteered to participate in the study. Transcripts were analysed using thematic analysis.

Results: Participants explained their needs and demands for sexual health education and sexual healthcare. They unanimously expressed their dissatisfaction with available SHRE and sexual healthcare provision. They highlighted barriers to gaining sexual health information and seeking advice and healthcare, including lack of reliable resources, taboo and cultural barriers, and lack of trust and protected confidentiality. This has resulted in ambiguities and misconceptions, including those regarding the cause and transmission of STIs,

and correct use of contraceptives. Participants recommended improvements, including holding mixed-gender extracurricular workshops with a comprehensive approach to sexual health and relationship education.

Conclusions: There is a clear need and demand for provision of relevant and reliable sexual health and relationship education for young adults in Tehran. This should be addressed to empower young people to make informed choices and avoid risky sexual behaviour.

3.2: Background

Tehran is the most populous city in Iran with a population of 8.5 million, including approximately 1.04 million people aged 18-25. Young people in Iran complete schooling at 18; and this is the legal age at which they can get married. Approximately 500,000 students are admitted into university courses across the 10 universities in Tehran. So, almost half of 18-25-year-old Tehranians attend university (Iranian Institute of National Statistics, 2018a, 2018b). There are, therefore, considerable opportunities to reach this age group with extra-curricular education and preventive services.

Sexual health and relationship education (SHRE) can provide knowledge, motivation and skills to help people to, (i) understand the potential consequences of their sexual behaviour, (ii) make informed decisions about sexual relationships, (iii) more comfortably communicate about sex, sexuality, and sexual health, and (iv) protect themselves against sexually transmitted infections (Abraham & Denford, 2020; Denford et al., 2017).

While not essentially leading to sustained change of behaviour, SHRE is effective in increasing sexual health knowledge, including information on contraceptive and condom use, and STIs prevention, and does not promote earlier sexual debut. A review of reviews incorporating 37 systematic reviews (and 224 primary trials) indicated that comprehensive school-based SHRE is effective in increasing knowledge, changing attitudes, and reducing risky sexual behaviour (Denford et al., 2017). Similarly, a review of 85 SHRE interventions for young people aged 15-24, delivered in schools, community centres, and health clinics in the United

States of America (USA) as well as developing countries, concluded that these interventions were effective and that there was no evidence indicating that SHRE is associated with earlier or more frequent sexual encounters (The United Nations Population Fund (UNFPA), 2010). Nonetheless, SHRE may have limited effects in the context of oppositional, and unchanging culture values (Wight et al., 2012). Ideally, SHRE should promote "*a state of physical, mental and social well-being in relation to sexuality... requiring a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence*" (Montgomery & Knerr, 2018; The World Health Organization (WHO), n.d.).

SHRE has never been included in Iranian school curricula, so, sexual health knowledge is based on less regulated media and discussions with other young people (Islamic Republic News Agency (IRNA), 2017). Consequently, young adults can have poor sexual health knowledge (Medical Express, 2016; Mostafaee, 2019). Many universities including those in Tehran, offer a single SHRE module ("Science of Family and Population") which is a 20-hour course taught by a lecturer specialising in religious and spiritual studies (Iranian Ministry of Education Information Centre, 2018). This module targets heterosexual people and does not include information relating to many elements of SHRE considered important by the World Health Organization (WHO), such as sexual consent, prevention of sexually transmitted infections, correct use of available contraception options, and safer sexual practices across sexual orientations (The World Health Organization (WHO), n.d.). There are also pre-marriage classes teaching similar content, which are compulsory for people getting married, (Iranian Ministry of Health and Medical Education, 2000). However, it is unclear how often such courses are run.

Free condoms are provided to sex workers and drug users in Tehran (Marandi et al., 2000). Other citizens can purchase contraceptives, including condoms, from pharmacies. However, because healthcare is predominantly privatised, such purchases are considered costly by middle class citizens, and especially by working class citizens, including young people. Thus, condoms can be purchased, but the cost can be prohibitive (Amnesty International, 2015). There are a limited number of clinics across Tehran, referred to as "Centres for

Behavioural Diseases", that offer free and confidential testing for sexually transmitted infections (STIs) (Ahmadi, 2018; Iran National Centre for AIDS Prevention, 2013). However, these facilities are not publicly advertised and are used primarily by "high-risk" groups such as drug users and sex workers; thus, attendance tends to be stigmatised.

A series of insightful studies have highlighted a need and demand for SHRE in Iran. For example, Shahhosseini and Hamzegardeshi (2015) interviewed 77 young women, aged 11-19; and concluded that there is a strong demand for SHRE and that, in its absence from school curricula, young adults have turned to unreliable internet sources. Mosavi et al. (2014) drew similar conclusions, based on interviews with adolescent girls and their mothers. These authors highlighted a lack of knowledge regarding sexual health, ease of access to unreliable and inaccurate information through the Internet, and evidence of increased risky sexual behaviour patterns among adolescents.

Mahmodi and Valiee (2016) and Rahmati Najarkolaei et al. (2013) designed and delivered sexual health and STIs awareness programmes aimed at Muslim women and university students, respectively. These studies recruited small and unrepresentative samples (60 married Muslim women and 109 female law or literature students at the University of Tehran, respectively) and used only pre-post-evaluations. The results are, nonetheless, encouraging because participants who completed these programmes showed significant improvements in knowledge about HIV/STIs, although we do not know if this translated into changes to their sexual health protection.

Despite these encouraging findings, there is a lack of research into what exactly young Iranians know about sex and sexual health, and what they want and need in terms of SHRE and sexual services. Moreover, research to date has not applied theoretically driven analyses to identify particular gaps in knowledge, motivation, and skills which might be expected to shape population-level behaviour patterns and could identify key SHRE targets. Such theoretical analysis could clarify exactly how improved services could impact perceptions, attitudes, motivations, and behaviours relevant to improved sexual health among young people in Iran.

The Information-Motivation Behavioural skills model (IMB) (Fisher & Fisher, 1992), proposes that people need to be well informed, motivated, and to have prerequisite skills to successfully change behaviour patterns. The model was developed as a framework to improve interventions designed to promote HIV-preventive behaviour and can be used to identify key targets for health promotion including, for example, accurate risk assessments, positive attitudes towards performing preventive actions, the perception that important others (e.g., partners) approve of protective actions and self-efficacy, and skills relevant to protective actions. The model has been applied in the design and evaluation of effective HIV-preventive behaviour (Fisher et al., 1994).

3.2.1: *The Present Study*

We aimed to clarify sexual health needs of young Tehranians by conducting needs assessment interviews with young Tehranians, as recommended by the Intervention Mapping framework, (Abraham & Denford, 2020; Bartholomew Eldredge et al., 2016).

Applying the IMB, we sought to understand what these young people know, the cognitive bases of their motivation, what skills and training they might need, and what services they valued and wanted. We defined four research aims.

1. To assess young people's sexual health knowledge, and to identify their sources of sexual health information and available advice, as well as their recommended sources.

2. To explore young people's beliefs, attitudes, norms, and motivations in relation to sexual health protection.

3. To investigate the availability and accessibility of sexual health services for these young people.

4. To explore what additional sexual health services would be most valued by this group.

3.3: Methods

Semi-structured, face-to-face interviews were conducted in person with 18-25-year-old Tehranians in a convenient location in Greater Tehran with one interviewer and one interviewee present. Participation was voluntary, and no incentives were provided to these key informants. Interviews took approximately 45 minutes and were conducted by the first author; a female doctoral candidate who has received training for interviewing young adults on sexual health. No relationship was established between the interviewer and the interviewees prior to interviews. The research was conducted in accordance with the Standards for Reporting Qualitative Research (O'Brien et al., 2014). The study, and all data collection procedures, were approved by the ethics committees of The University of Exeter Medical School and the Iran University of Medical Sciences.

3.3.1: *Sampling and data collection*

Convenience sampling involved placing advertisements in health clinics and university health centres in Tehran. Interested people were asked to contact the research team and were provided with a participant information sheet. Those who consented to participate were given details of the interview time and location by telephone. Interviews were conducted in quiet, private rooms in a hospital or university setting most convenient to the participant. Interviewees were made aware that they could withdraw at any time without giving a reason. Verbal consent (rather than written consent) was obtained from every participant to protect the interviewees' anonymity. All participants consented to interviews being recorded and for quotations to be reported anonymously.

3.3.2: *Interviews*

The semi-structured topic guide is provided in Appendix 3.4. The guide included questions on (1) sexual health knowledge, (2) perception of personal knowledge, (3) content of any sexual health education, (4) source of sexual and sexual health information, (5) confidence in preventing STIs and protecting oneself in sexual relationships, and (6) perceived accessibility of sexual healthcare and contraceptives. The topic guide was developed in accordance

with the research questions and was pilot tested on 5 young adults. Interviews were conducted in Persian except for one, in which the interviewee requested use of English. Recorded interviews were transcribed verbatim, anonymised, and translated, where necessary.

3.3.3: *Participants*

One hundred and forty-five people responded to recruitment advertisements, of whom, 60 met the inclusion criteria of being Iranian and aged 18-25, speaking Persian as a first language and living in Greater Tehran. Thirty-five people declined to be interviewed when contacted or were not available during the data collection period. Twenty-five young women (N=18) and men (N=7) from various educational backgrounds, including those with high school diplomas (4), Bachelor’s degrees (13), and Master’s degrees (8) were interviewed. Participants were from mixed socioeconomic backgrounds (high income (9), middle income (4) and lower income (12)). They identified as agnostic (11), atheist (1), theist (only believing in God) (10), and religious (identifying with a religion, including Islam and Christianity) (3). They were 18-25 years old, with the mean age of 23.

3.3.4: *Data analysis*

NVivo was used to store transcripts and allocate excerpts to categories. A thematic analysis was conducted employing guidelines provided by Braun and Clarke (2006). This involved six stages of analysis applied to anonymised interview transcripts. These included (1) establishing familiarity with the data (reading, re-reading, and note taking), and (2) generating initial category definitions (sketching definitions and identifying content examples and recurring categories). Step 3 involved a more systematic search for themes and overlapping/corresponding content categories (checking if emerging definitions are applicable across interviews or are too general/specific). During step 4 the emergent categories were reviewed (checking that defined categories are distinct and correspond to multiple examples from interviews). Steps 3-5 involved multiple meetings between the first three authors to critically discuss each of the category definitions, the differences between categories, and the appropriateness of each excerpt allocation to the category definition. The fifth

step was to finalise the category definitions and the conceptual tree to which they belonged. Finally, interviews were re-read to ensure selection of all excerpts were relevant to the final category definitions and the results report written was illustrative of the category tree, category definitions, and the overall coding of transcripts (Braun & Clarke, 2006).

To ensure validity, two researchers coded five interviews separately and reviewed themes. Many meetings were held in which the first three authors discussed transcript excerpts and identified appropriate thematic definitions. This resulted in collaborative interpretation and validation of textual categorisation and facilitated detailed consideration of any differences of interpretation. The final themes and sub-themes were defined and reviewed by the first three researchers who discussed all selected quotes and their thematic allocations. The results of this coding are provided in Appendix 3.5-3.7. The first author recorded reflective notes during data collection and revisited these through data analysis to ascertain inclusion and explanation of details expressed by participants.

3.4: Results

Thematic analyses generated 12 themes, incorporating 32 sub-themes which are listed in Appendix 3.5 and 3.6. In total, 505 quotations were extracted from 25 interviews. Table 3.1 lists the main themes and numbers of quotations allocated to each theme. Approximately 80% of the interview transcript text was extracted as relevant quotations. All participants contributed multiple quotations across themes. Appendix 3.6 and 3.7 provide the thematic map and all extracted quotations by theme and sub theme, respectively. These data show recurring content across interviews. It was notable that, in later interviews, little semantic refinement of the emerging thematic structure was added, suggesting that data saturation had been achieved. We concluded data collection after 25 interviews.

Table 3.1: 12 Main Themes

Theme	Number of Quotes
Sexual Health Knowledge and Perceptions of Personal Understanding	111
Used and Recommended Sources of Sexual Health Information	90
Availability and Quality / Content of Sexual Health Education	43
Understanding and Negotiation of Sexual Relationships	14
Concerns about Sexually Transmitted Infections (STIs)	22
Concerns about Pregnancy	21
Contraception and Condoms	65
Barriers to Using Sexual Health Services	66
Sexual Prohibition	19
Socioeconomic Sexual Health Inequalities in Tehran	13
Gender Power Inequalities in Sexual Relationships	12
Recommendations for Improved Sexual Health Education and Services in Tehran	29

Below we present a subset of illustrative quotations that highlight the core meaning of the 12 themes and highlight sub-thematic structure. We recorded demographic data, including age, socioeconomic status, and self-expressed religious beliefs, but we did not find differences in themes attributable to these individual characteristics.

Theme 1. Sexual Health Knowledge and Perceptions of Personal Understanding

Most participants expressed a good knowledge of sexual organs and could name and describe male and female sexual organs, in contrast to their knowledge of STIs, symptoms and transmission methods. Although HIV and HPV were named, their symptoms and transmission methods were often unclear. Other STIs were sometimes named but again there was a lack of understanding of transmission routes (sub-theme 1i and 1ii).

Participants reflected on their level of sexual health knowledge compared to their peers. These assessments were categorised as similar to others (sub-theme 1iii), not as good as others (1iv) or superior to others (1v). While a few felt they knew more, most felt their level of knowledge was equal to their peers. Interviewees also noted that socioeconomic deprivation was likely to be associated with less sexual health knowledge (1vi).

Theme 2. Used and Recommended Sources of Sexual Health Information

The lack of official SHRE is likely to encourage self-education. Interviewees highlighted various sources of sexual health information and sources of sexual health information they would recommend to their friends. These overlapped considerably.

Six source categories were identified as sub-themes. The Internet and social media (2i) were the most used and recommended sources of information. Interviewees mentioned popular social media apps like “Instagram” and “Telegram” along with “Google” as their source of sexual health information. By contrast, parents (2ii) were criticised for not discussing sexual health, although participants accepted that discussing sex was a taboo in their culture. Perhaps worryingly, pornography was identified as a learning tool by some male and female participants; with potential harms and informational benefits highlighted.

Porn really did help me, because there wasn't anything else that would show everything as real as it was. It helped me to see, understand, and discover things. However, watching porn is not healthy as it might make you have unrealistic expectations from yourself or your partner.

A few participants mentioned books (2iv) as a source of sexual health information, including general knowledge books (e.g., encyclopaedias).

Some participants described their own sexual experiences as key learning opportunities (2v), and many trusted their friends’ descriptions and advice. Contrary to normative expectations, we found that some young women, but not men, mentioned experimenting with sexual relationships, in order to learn more

about sex. Finally, although “doctors” were recommended as a useful source of information our interviewees did not report learning from this source (2vi).

Theme 3. Availability and Quality / Content of Sexual Health Education

Interviewees highlighted the very limited sexual health education provided in school, university and/or pre-marriage classes.

We’ve never had an official sex education class.

I’ve learned everything I know through experience. No one has taught me anything.

Theme 4. Understanding and Negotiation of Sexual Relationships

Interviewees discussed how young adults would manage sexual relationships. Quotes were categorised into three sub-themes (4i) Familiarity implies health in sexual partners, (4ii) Confidence and power in managing sexual relationships, and (4iii) Communication in sexual relationships. These often highlight confidence in managing relationships despite lack of formal SHRE and developed self-management and behavioural skills.

I usually try to talk about these kinds of stuff before starting any relationship and would tell him about what I want before sex.

[Young people are] rarely… concerned about STIs because they trust their partners and believe that they haven’t been with unhealthy people.

Theme 5. Concerns about Sexually Transmitted Infections (STIs)

Participants explained their concerns about STIs including (5i) Ambiguity and lack of education on STIs, (5ii) Invisibility of STIs, (5iii) Fear and worry about STIs, and (5iv) Perception of other groups’ lack of concern. Some were not concerned because of their perceived skills while others expressed quite serious fears about STIs. Many interviewees acknowledged lack of reliable information and STIs’

invisibility as reasons for misconceptions and, at times, poor motivation to prevent STIs.

We haven't been educated for it and this can be as harmful as the diseases themselves. We don't consider STIs [to be] serious diseases.

The fact that you can hide your STI from others makes them not to be concerned about it.

Theme 6. Concerns about Pregnancy

Interviewees were more concerned about pregnancy than STIs, because pregnancy was visible and could lead to more serious life consequences. This was attributed to (6i) Fear and worry about pregnancy outside marriage, and (6ii) Visibility of pregnancy leading to social and personal issues, especially because sex outside of marriage is not legal in Iran.

I remember that it was around 1 or 2 years ago that we were in a gathering and one of my closest friends came by and she was like 100% sure that [she was] pregnant and we were all scared as hell, not because of the pregnancy itself but because of the consequences…

Theme 7. Contraception and Condoms

Condoms were the most frequently mentioned contraception method with only a few participants identifying contraceptive pills as their preferred option. Interviewees discussed (7i) Condom availability and accessibility, (7ii) Condom cost, (7iii) Quality of Iranian condoms, (7iv) Ease of condom use, and (7v) Inconsistent use.

[Condoms are] accessible everywhere. You can find them in both pharmacies and supermarkets. Therefore, the accessibility and availability are good.

In my opinion you're better off not using condoms because you might be risking with a low quality one, maybe this way you would pull out because you don't have that trust.

I think they are expensive. … For foreign condoms, as imports are getting more complicated due to sanctions, the prices are getting higher, so they are more expensive.

Theme 8. Barriers to Using Sexual Health Services

Although there are government-funded sexual health centres in Tehran, our participants were not aware of them or how to access them. Participants also identified barriers in approaching doctors, including (8i) Cost of visiting doctors and sexual healthcare, and (8ii) Trust in doctors.

I don't know any sexual health clinics in Tehran… part of [the problem] is the lack of information on where to go, who to trust and spend… money on.

I have so many questions… and I can't afford to visit a doctor to ask them.

Interviewees reported reluctance to discuss their private lives, even when seeking advice or medical attention because they feared that these issues will be shared with their families or even law enforcement officials. Better relationships between young people and medical professionals might be facilitated by youth-friendly clinics in which confidentiality was explicitly guaranteed.

We are scared to tell the doctor about our issues, for example to tell them we've had sex out of marriage; and they would let our families know about it. I'm absolutely terrified about that.

Further personal and social barriers to seeking sexual healthcare in Tehran, include (8iv) Embarrassment as a barrier to sexual protection, (9v) Taboo, shame and social disapproval as barriers, (9vi) Health motivation, and (9vii) Denial / fear.

Some people are embarrassed to go and ask for condoms in a pharmacy; because it's usually out of hands' reach and you should ask someone to give it to you. If it's a lady selling it, it's even worse for men, they would be even more embarrassed.

Theme 9. Sexual Prohibition

Consistent with the identification of fear of social judgement as a barrier to seeking sexual healthcare, participants acknowledged that existing laws support social and cultural norms that portray sex as shameful or unacceptable for unmarried people and sanctify virginity in women.

I know girls who give in to any form of sexual relationship other than the vaginal intercourse only to protect their virginity, it's a huge concern for so many people to the extent they put themselves in painful positions to please the guy… to stay virgin.

Theme 10. Socioeconomic Sexual Health Inequalities in Tehran

Interviewees highlighted socioeconomic inequalities in sexual health, highlighting that citizens from lower socioeconomic backgrounds face challenges in accessing and paying for sexual healthcare and contraception methods.

And poor areas don't have much of a choice, both with doctors, and contraceptives and condoms.

Theme 11. Gender Power Inequalities in Sexual Relationships

Women interviewees indicated that they could not control heterosexual sexual encounters, including condom use, highlighting power inequalities and prioritisation of male partners' preferences; even when these young women were highly motivated to avoid STIs and pregnancy.

There is this need in girls to please guys, and they tend to agree with whatever guys tell them, like not using condoms or having rough sex. I've seen this in my friends' relationships.

Theme 12. Recommendations for Improved Sexual Health Education and Services

All participants thought of SHRE provision as necessary and believed sexual health education would have optimal results if started from an early age. They suggested subjects such as contraception and condom use, sexual organs, pregnancy, and relationship management skills to be included in short courses or workshops. Participants had varying opinions on the gender mix and delivery method of such programmes.

It should be started from the beginning of elementary school with teaching about sexual organs, then they should carry it on with sexual health in middle school.

In my opinion it would be better for the classes to be mixed-gender, so that we all benefit from it equally.

3.5: Discussion

To our knowledge, this is the first qualitative assessment exploring sexual health education and training, and service provision needs of 18-25-year-olds living in Tehran.

Participants expressed their demand for SHRE; and shared recommendations for a potential intervention. Twelve themes and 32 sub-themes were identified from our thematic analyses of 25 interviews. These highlighted the demand for, and lack of SHRE, and provided in depth insight to existing sexual healthcare provision and needs. Interviewees also shared their understanding of SHRE and elaborated their unofficial sources of information. The interviews illustrated the negative consequences of poor SHRE, in a lack of understanding of sexual relationships, STIs and contraceptives, and illustrated how inadequate knowledge influences sexual behaviour.

We found that poor sexual health knowledge has caused misconceptions, and young adults have turned to unreliable sources, including their friends and social media, to find answers. This can deepen misconceptions and ambiguities regarding the threat, cause, and treatment of STIs, the effectiveness of contraception methods, and the importance of consistent condom use. These findings correspond to those of Bostani Khalesi and Simbar (2017).

Moreover, young adults deemed the quality and content of existing SHRE programmes insufficient and ineffective and provided recommendations on ways to improve or augment current provision, which indicated their needs and demands for comprehensive SHRE and mirrors the conclusions of Pourmarzi et al. (2014).

Interviewees were unaware of existing government-funded sexual healthcare clinics and deemed visits to private doctors as limited by cost. They were concerned about confidentiality of their private information and the potential damage to their social image, even in conversations with doctors. Cultural barriers such as sexual prohibition and associated taboo and shame also discouraged visits to doctors.

Overall, the findings suggest a need for improved, well-advertised, accessible, confidential, and reasonably-priced sexual healthcare. Additionally, introduction of policies supporting patient confidentiality and pre-marriage sexual relationships would facilitate the removal of mistrust in current government-funded sexual healthcare services. Currently, contraceptives and condoms are not available for free, and long-acting reversible contraception (LARC) methods are only accessible through expensive, private clinics.

The information and skills foundation needed for effective STIs, and pregnancy prevention was found to be underdeveloped in these young people. Interviewees acknowledged inconsistent condom use and, especially young women, shared problems in negotiating protection. We concur with Mirzaee et al. (2017) that such findings highlight a need for healthy, mutual relationship and sexual relations education and training for young Iranians. Our findings indicate that this should include, basic biology of STIs transmission, self-management skills (e.g., setting

goals and priorities), relationship management skills, and protection skills, including condom-acquisition, negotiation, and use skills. Given the widespread use of internet sources, the creation of online training materials in Persian seems like an obvious first step to bridging this educational gap. This would also allow self-selection of short courses according to the needs of the users.

Young women expressed their lack of empowerment in managing sexual relationships, emphasising the need for materials particularly addressing these issues. Our findings also suggest that presentations by young Iranians, similar to the target audience for such SHRE classes, could optimise trust.

Our findings represent a novel needs assessment generating recommendations for improvement of health services and health education. Nonetheless, there are limitations to this research. We used a small sample, and the applicability of our findings to other groups, including those who live in suburbs of Tehran, remains unclear. In addition, our sample may reflect selection bias because those who agreed to be interviewed may have been more confident, than average, in their sexual health knowledge and skills. Moreover, since the interviewees appeared to be predominantly heterosexual, our findings may not adequately reflect the needs, demands and experiences of individuals with other sexual orientations and preferences.

A large-scale quantitative study with quotas set for respondent types could generate a more representative portrayal, including participants from diverse socioeconomic and sexual backgrounds, and those with special requirements (e.g., those with physical disabilities, learning difficulties, and physically limiting conditions). Such large-scale work could underpin tailored versions of SHRE and service provision for identified sub-groups. We found no discernible patterns, indicating differences in views across educational, socioeconomic, and religious backgrounds, perhaps due to the almost universal reliance on the Internet and social media sources.

Notwithstanding these limitations, our study presents insights and recommendations for the development of sexual health services and education for young people in Tehran and provides a good basis for developing and testing preliminary materials, incorporating learning from international developments. Additionally, our findings could provide guidance to policymakers about service and educational gaps that could prompt revision of SHRE and sexual healthcare provision for young Iranians, as recommended above. It would be interesting to explore young people's reflections and recommendations in relation to service provision with policymakers and healthcare professionals.

3.6: Conclusions

In conclusion, sexual health knowledge is poor amongst young Tehranians, and they do not perceive sexual healthcare as available and accessible. Young adults want comprehensive SHRE to understand and manage sexual health risks, and conduct their sexual relationships safely. They requested non-judgmental, confidential, accessible, and reasonably-priced sexual healthcare. This study (including findings reported in Appendix 3.5-3.7) highlights the problems young Tehranians face daily in managing their sexual health. These findings provide a blueprint for sexual health education and service enhancements that would meet these needs.

3.7: Declarations

3.7.1: *Ethics approval and consent to participate*

Interviewees were made aware that they could withdraw at any time without giving a reason. Verbal consent (rather than written consent) was obtained from every participant to protect the interviewees' anonymity. All participants consented to interviews being recorded and for quotations to be reported anonymously. They provided their verbal consent for their anonymous comments to be used following an audio-recorded interview. This was provided before the interviews were conducted. Details of consent questions are provided in Appendix 3.4. This procedure was approved by the ethics committees of The

University of Exeter Medical School and the Iran University of Medical Sciences, as stated in the Methods Section (3.3) of the manuscript.

3.8: References

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Chapter 4: Healthcare Professionals' Assessments of, and Recommendations for, Sexual Health Education and Service Provision for Young People in Tehran

This chapter presents the second empirical study in this thesis, which involves a qualitative needs assessment with Tehranian healthcare professionals. This was conducted to answer the research question "*What are the SHRE and sexual health service needs of Tehranian young adults according to healthcare professionals?*", which in combination with the needs assessment reported in the previous chapter, would help to inform the development of a bespoke SHRE programme for young adults in Tehran. A version of the following text was published in Frontiers of Public Health (Sheikhansari, Abraham, & Denford, 2021).

4.1: Abstract

Background: Only limited Sexual Health and Relationship Education (SHRE) is provided in Iranian schools and universities, while research has highlighted demand and need for improved SHRE among young adults. We explored healthcare professionals' (HCPs) assessments of, and recommendations for, SHRE and service provision for young people in Tehran.

Design and methods: Semi-structured interviews were conducted with a sample of 17 HCPs based in Tehran and verbatim transcripts were analysed using thematic analysis.

Results: Participants confirmed the need for improved SHRE and service provision for young adults. HCPs described how a lack of reliable educational resources for young adults, taboo and cultural barriers, and a lack of trust and confidentiality prevented young people from accessing information and services. They unanimously supported education and services to be augmented, and provided recommendations on how this could be achieved.

Conclusions: A number of positive suggestions for the improvement of SHRE and Iranian sexual health services in Iran were identified.

4.2: Introduction

Healthcare Professionals (HCPs) in Iran, as in other countries, face cultural barriers to implementing evidence-based sexual health education and training (Schaalma et al., 2004). Optimal sexual health and relationship education (SHRE) for young people could challenge normative and even legal constraints in Iran. Yet STIs and abortion rates indicate that better education is needed. Available data suggests that more than 66,000 people are HIV positive in Iran, of whom, approximately 30% were infected through unprotected sexual intercourse (Islamic Republic News Agency (IRNA), 2017; Medical Express, 2016), and that this transmission route explains increasing numbers of cases (Amnesty International, 2015; Iranian Institute of AIDS Research, 2015; Medical Express, 2016). Moreover, illegal abortions are increasing and have been estimated to exceed more than 1000 cases per day (Mostafaee, 2019).

Tehran is the most populous city in Iran with a population of 8.5 million (in a country of 81M) (Iranian Institute of National Statistics, 2018a), including approximately 1.04M people aged 18-25 (Iranian Institute of National Statistics, 2018b). Young people in Iran complete schooling at 18, the same age at which they can legally marry. Tehran has a limited number of “Centres for Behavioural Diseases” that provide confidential, free testing for sexually transmitted infections (STIs) (Iran National Centre for AIDS Prevention, 2013), but these facilities are not publicly advertised and are primarily used by “high-risk” groups including drug users and sex workers (Iranian Institute of AIDS Research, 2010). These clinics do not offer preventive or advice services for young people who contemplate romantic and sexual relationships before the age of 18 years (unlike e.g., Brook Clinics in the UK).

SHRE has never been included in Iranian school curricula but many Iranian universities, including those in Tehran, offer a single module (“Science of Family and Population”) which is a 20-hour course taught by a lecturer specialising in religious and spiritual studies (Iranian Ministry of Education Information Centre,

2018). The module is aimed at heterosexuals and does not include topics highlighted as best practice by The United Nations Educational, Scientific and Cultural Organization (UNESCO), such as sexual consent, prevention of sexually transmitted infections, use of available contraception options, and safer sexual practices across sexual orientations (Montgomery & Knerr, 2018; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2018). In addition, pre-marriage classes are compulsory before marriage, but deliver similarly limited content. Researcher-led sexual health education modules have also been reported for specific sub-groups (Pourmarzi et al., 2014), including married, Muslim women within particular healthcare settings (Mahmodi & Valiee, 2016). Overall, however, there is limited SHRE provision for young people in Tehran, and in Iran generally.

According to the World Health Organization (WHO), SHRE should promote "*a state of physical, mental and social well-being in relation to sexuality... requiring a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence*" (The World Health Organization (WHO), n.d.). SHRE is effective. A review of reviews incorporating 37 systematic reviews (and 224 primary trials) indicated that comprehensive school-based SHRE can increase knowledge, change attitudes, and reduce risky sexual behaviour (Denford et al., 2017). Denford and colleagues provide useful evidence-based recommendations for implementing optimal SHRE.

However, the importance of cultural and economic context on the capacity of SHRE interventions to change behaviours must be acknowledged (Wight et al., 2012). Also, the limited effectiveness of SHRE interventions in randomised controlled trials must be noted, especially when compared to already-developed sex education programmes (Wight, 2011).

Additionally, a United Nations Educational, Scientific and Cultural Organization (UNESCO) (2018) review of 85 SHRE interventions, for young people (aged 15-24), delivered in schools, community centres, and health clinics in the United States of America and developing countries, concluded that such interventions

were effective and that there was no evidence showing that SHRE results in earlier or more frequent sexual encounters.

The demand for comprehensive SHRE in Iran has been documented. Shahhosseini and Hamzegardeshi (2015) conducted interviews with 77 young Iranian women, aged 11-19 and concluded that there was a strong demand for SHRE and that, in its absence from school curricula, young adults have turned to unreliable internet sources (e.g., Instagram and Telegram) (Pourmarzi et al., 2014). Mosavi et al. (2014) came to similar conclusions, based on semi-structured interviews with adolescent girls and their mothers. They highlighted a lack of knowledge regarding sexual health, use of unreliable and inaccurate information through the Internet, and increased risky, sexual behaviour patterns among adolescents. This corresponds to our findings from interviews with young Tehranians, which showed that young people used informal sources of sexual health information, including social media and friends, and that they did not trust medical consultations to be confidential. They unanimously expressed their dissatisfaction with the current health services, including preventative and educational support (Sheikhansari, Abraham, Denford, et al., 2021).

Despite public health needs and clear demand from young people there are socio-cultural barriers to the delivery of comprehensive SHRE in Iran. Latifnejad Roudsari et al. (2013) reported a qualitative study of interviews and focus group discussions with 57 students and 10 of their mothers in two large Iranian cities (Mashhad and Ahvaz). They found that social taboo, reluctance to discuss sexual matters, and concerns about negative consequences were barriers to using sexual health services. This was supported in a study by Mosavi et al. (2014), in which 247, 14–19-year-old girls and 26 of their mothers were interviewed along with 45 key informants in four Iranian cities (Tehran, Mashhad, Shahroud, and Qom). In accordance with other literature, social and cultural challenges were the most quoted barrier to SHRE development. These participants also highlighted the Iranian legal and political structure, which only recognises sexual health as an issue for legally married people. These barriers primarily, although not exclusively, affect women (Rahmati Najarkolaei et al., 2013). Najmabadi et al. (2019) studied a sample of 34 men, ageing from 22 to 66 years, both married and unmarried. They found socio-cultural barriers, particularly the stigmatisation of

sexual activity, prohibits open discussion and discourages help-seeking information provision and sexual healthcare.

So, given the potential effectiveness of SHRE and the lack of negative consequences observed across studies (Denford et al., 2017), the public health need, the demand especially from young people and the socio-cultural and legal barriers, what can be done to improve SHRE for young Iranians? We addressed this question through discussions with HCPs and policymakers in Tehran. Their views are important because involvement of key stakeholders and co-design of education and services is likely to optimise effectiveness (Abraham & Denford, 2020; Respicius Shumbusho et al., 2020).

4.2.1: *The Present Study*

We investigated the views of Tehran-based HCPs regarding sexual health education and services for 18-25-year-old (young) Tehranians. We also explored the potential utility of new workshops to augment the current provision. Discussion focused on five topics (full topic guide is available in Appendix 4.4).

1. Young Tehranians' sexual health knowledge and behaviour patterns,
2. Young Tehranians' sexual health and educational needs,
3. Current provision of sexual health and relationship education for young Tehranians,
4. Availability and accessibility of sexual health services for young Tehranians,
5. Acceptability, feasibility, and the optimal delivery of new workshops to augment current provision.

4.3: Methods

Semi-structured interviews were conducted with male and female HCPs and policymakers in locations convenient to them within Greater Tehran. The study was approved by the ethics committees of both The University of Exeter Medical School and the Iran University of Medical Sciences and conducted in accordance with the Standards for Reporting Qualitative Research (O'Brien et al., 2014).

4.3.1: *Sampling and data collection*

Purposive sampling was used to recruit a range of HCPs working in public and private health sectors in Tehran. Some had direct contact with patients / clients while others did not. All were experts in sexual health and/or were responsible for designing and delivering sexual health services, interventions, and/or policies. Inclusion criteria were being Iranian, based in Tehran, speaking Persian as a first language and having direct or indirect relationship with sexual health initiatives delivered in Tehran, including policy-making and client advisory services. The sample was recruited using a snowballing procedure in which participants were asked to provide names of other HCPs meeting our criteria. These were telephoned and, if interested, provided with information about the study and invited to participate. Those who consented were asked for a convenient interview time and location. Participants were informed that they could withdraw at any time without providing a reason. Verbal consent (rather than written consent) was obtained from every interviewee to protect anonymity. All participants consented to interviews being recorded and for quotations to be reported anonymously.

4.3.2: *Participants*

Twenty-nine HCPs were contacted. Twelve declined or were unavailable during the data collection period. Seventeen Iranian, Persian-speaking HCPs working in Greater Tehran were interviewed (5 men and 12 women). These included HCPs with and without medical qualifications, those in clinical contact with patients and clients (N=7), and social workers and community health consultants (N=10), of whom seven were policymakers or had a high level of influence on policy development and implementation in relation to sexual health.

4.3.3: *Interviews*

A topic guide was developed to plan semi-structured interviews (Appendix 4.4). The guide included questions on HCPs perception of (1) young Tehranians' sexual health knowledge, (2) young Tehranians' confidence in preventing STIs and protecting themselves in sexual relationships, (3) content and quality of

existing sexual health education, (4) sources of sexual health information for young Tehranians, (5) recommendations for improved provision of sexual health education in Tehran, (6) current sexual health services, and (7) accessibility of sexual healthcare and contraceptives. The topic guide was revised after pilot testing with 5 HCPs. Interviews were completed in the Persian language and recorded interviews were transcribed verbatim, anonymised, and translated into English.

4.3.4: *Data analysis*

NVivo was used to store transcripts and allocate excerpts to categories. Thematic analysis was undertaken using Braun & Clark's (2006) guidelines. This involved five stages of analysis of anonymised interview transcripts, including (1) becoming familiar with the data (reading, re-reading and note taking), and (2) generating preliminary category definitions (outlining definitions and identifying content examples and duplicate categories). Step 3 consisted of a more systematic search for themes and overlapping/corresponding thematic definitions (e.g., checking if emerging definitions were applicable across interviews or were too general/specific). In step 4 the developing thematic / sub-thematic definitions were revised (e.g., ensuring that defined categories were distinct and represented multiple examples across interviews). In step 5, we finalised thematic definitions and the conceptual tree in which themes were situated. Steps 3-5 involved multiple meetings between three researchers to critically discuss theme and sub-theme definitions and the allocation of quotes and the relationships between themes. Finally, transcripts were re-read and reviewed to ensure that the selection of quotes was appropriate and comprehensive. The first author made reflective notes during data collection and referred to these during analyses to ensure that participants' views were captured accurately.

4.4: Results

Analyses extracted 231 quotations from 17 transcripts, representing approximately 80% of transcript text. Thematic analyses generated 11 themes, incorporating 28 sub-themes. Theme names and the number of quotes representing each theme are presented in Table 4.1. All extracted quotations are

presented, by theme and sub-theme, in Appendix 4.7. Below we explain the meaning of each theme and sub-theme. Representative quotes are presented in Table 4.2.

Table 4.1: Main Themes

	Theme Name	**Number of Quotes**
1	Sexual Health Needs	9
2	Cultural and Social Barriers to Optimal Sexual Health Practices	31
3	Current Sexual Health Educational Provision	8
4	Limitations of Current Sexual Health Educational Provision	49
5	Informal Sexual Health Education and its Limitations	27
6	Sexual Health Services for Young People	8
7	Barriers to Seeking Sexual Healthcare	26
8	Recommendations for Improved Sexual Health Education and Services in Tehran	16
9	Support for a New SHRE Workshop	12
10	Content Suggestions for a New SHRE Workshop	33
11	Workshop Delivery Suggestions	12

Demographic data including age, gender, socioeconomic status, and self-expressed religious beliefs were recorded, but we did not find patterns in HCPs responses that were attributable to these characteristics and, therefore, these are not included in the *Results* section.

Table 4.2: Illustrative quotes by Theme and Sub-theme

Theme 1: Sexual Health Needs
Sub-theme 1a: Increasing STIs Prevalence *Nowadays HPV has become very common, so are herpes and vaginal infections, because multi partnership is more common.* Sub-theme 1b: Clients' Concerns About Unintended Pregnancy *If there's any concern, it is about pregnancy, not STIs. They are concerned about getting pregnant because they have no idea what they should do. It's a big problem that they don't know how to solve.*
Theme 2: Cultural and Social Barriers to Optimal Sexual Health Practice
Sub-theme 2a: The Iranian Legal Context *There's no legal support [for young people having sex out of marriage]. Pregnancy becomes obvious … so getting an abortion will become the person's only option. [This] leads to unsafe abortion that unfortunately happens a lot in Iran. Abortion is not legal in Iran unless mother's health is at risk or the foetus has a serious problem.* Sub-theme 2b: Social Norms and Taboo *It hasn't become normal in our culture for people to seek healthcare for their sexual issues.* *Our society hasn't reached that level of insight that looks at this [sexual health] as a normal thing in daily life that needs to be taken care of…. It is considered a taboo even by educated people.* Sub-theme 2c: Gender Inequalities *Women don't usually choose not to use condoms. They might try to teach their partners about some behaviours and see what is comfortable for them however it doesn't help much. Men feel they always know it all.* Sub-theme 2d: Pre 2008 / 2013 Policy and Services *All services that sexual health centres provide used to be free. But following policies aimed at increasing the population we don't offer contraceptives and condoms for free anymore.* *HIV used to be taboo, you couldn't talk about it comfortably, it was the same for STIs. In this golden era [2006-7] this taboo was broken [so that] they were discussing teams that would go to different areas of the city and provide free HIV tests for young adults. Now it's all gone.*

Theme 3: Current Sexual Health Educational Provision
We hold pre-marriage classes here. 2 hours of these classes are dedicated to sexual and pregnancy health. Around 90 minutes for ethics and religious rules, 45 minutes of legal rights and 90 minutes is dedicated to psychology. *We recruit high-risk and at-risk young adults. [The project] is developed by UNICEF's "All in Project" [and] located in "a deprived area". We were the first [such project] across the Middle East. Its name is "Youth Health Centre", 50% of its funding comes from UNICEF and the other 50% from the national budget. This programme teaches young adults about HIV.*
Theme 4: Limitations of Current Sexual Health-Educational Provision
Sub-theme 4a: Lack of Sexual Health Knowledge *Most young adults who come to my clinic don't know even the most basic information…. one of the common questions that I get is what contraception method should they use, and sometimes they ask how they should have sex, what position is better… They almost don't know anything about STIs.* *Most of our referrals come here [Centre for Behavioural Diseases] for STIs testing, HIV specifically. Yet, they have no information whatsoever, regarding STIs or pregnancy or anything else related to their sexual and relationship health.* Sub-theme 4b: Lack of Self and Relationship Management Skills *I think no one has the ability to manage their sexual relationships as they have never been taught or encouraged to do so.* Sub-theme 4c: Pre-Marriage Provision *I never see a difference between my married and unmarried patients in terms of sexual health knowledge or safer sexual behaviour. That may mean that these classes are probably nonsense. I haven't gone to check what they teach. Such classes should take place much earlier so people [do not] do things without knowing what's the right thing to do.* Sub-theme 4d: Organisational and Cultural Constraints on Improved SHRE *We don't get enough budget to set up as many centres with enough trainers and experts.* *Our education system doesn't let us go to schools to educate students about this stuff, the reason they give us is that the parents might complain about why did you tell this stuff to our children?* *Most of the decisions regarding this age group are being made by people who are from other generations and might not understand their issues. We need to communicate with them [young adults] to understand their real problems.*

Sub-theme 4e: Lack of Formal Evaluation of Programmes and Content

We have opened centres for behavioural diseases but we have never assessed how many people know of these centres or use them.

Theme 5: Informal Sexual Health Education and Its Limitations

Sub-theme 5a: Friends

Young adults know some stuff but not much, and they have learned it from their friends. They only use withdrawal. They only do it because their friends do it.

Sub-theme 5b: Internet and social media

All the information is on social media. They will learn where they can find the most reliable information. Society is helping itself with no official support.

But the Internet is like an ocean, anything could be found in it and many sources of information could be unreliable or misleading.

Theme 6: Sexual Health Services for Young People

Sub-theme 6a: Services in Centre for Behavioural Diseases

When people come here to get tested, they first go through a counselling session and then we test them for HIV based on the risky behaviours they've told us about.... If the result of the rapid test is positive, they are sent for further clinical tests…. Other STIs are not screened in this centre. People need to go to a specialist if they have other STIs symptoms.

Sub-theme 6b: Funding Limitations

The health budget is mostly focused on high-risk groups. For the general population there are not much done in terms of sexual health.

Unfortunately, at the moment all of our sexual health services, which are limited compared to the other countries, are only tailored for the high-risk groups.

Theme 7: Barriers to Seeking Sexual Healthcare
Sub-theme 7a: Lack of Publicity for Government Funded Sexual Healthcare Facilities *Regarding sexual healthcare facilities, there might be some centres but I don't know about them.* Sub-theme 7b: Costs *Those who can afford it, refer to private clinics and doctors, and receive all care needed, at times even illegally, like abortion. Those who can't, the absolute majority, suffer in silence.* Sub-theme 7c: Inequalities in Sexual Health and Care Seeking *We are in an affluent area of Tehran so normally I would expect people who refer to us to have a better level of knowledge in sexual health. They do have more knowledge in comparison to those who live in deprived areas.* Sub-theme 7d: Distrust in Available Services *Also, they don't trust these services [e.g., centres for behavioural diseases], they don't trust them to be confidential and non-judgmental. It means people find the Internet and their friends trusted sources instead of us. That's sad, but once we have lost this trust, we can't gain it back so easily.*
Theme 8: Recommendations for Improved Sexual Health Education and Services in Tehran
Sub-theme 8a: Creation of Official Sources of Information *Policymakers… don't want face-to-face communication about sex. Fine, tell our children what online source is reliable and educative and they will find [out for themselves]* Sub-theme 8b: Official School / University Based SHRE *We need… rigorous sexual health education right after elementary school. We need to teach a comprehensive course and let them ask all their questions. But I'm not the one who sets policies, unfortunately.*
Theme 9: Support for a New SHRE Educational Workshop
Everyone would love to attend such a workshop. There are no alternatives. This is like fresh air, a new idea. Something they have really wanted for so long.

Theme 10: Content Suggestions for a New Workshop
Sub-theme 10a: Anatomy of Sexual Organs *The first thing that needs to be taught is the anatomy of sexual organs. I would explain it in a way that is simple and easy to understand. They should learn about what happens during sex and how pregnancy occurs.* Sub-theme 10b: Pregnancy Prevention, STIs Protection, and Condom Use *How conception happens, how to aid or avoid it, how to keep healthy and avoid STIs. Who to go to, to fix things [if they contract an STI]. What… protection methods are available and why it is so important to buy, carry and use condoms.* Sub-theme 10c: Provision of Contact Details for Available Sexual Healthcare *Include addresses and contact details of [sexual health] centres.* Sub-theme 10d: Self and Relationship Management Skills *Management of sexual relationships… is really important*
Theme 11: Workshop Delivery Suggestions
Sub-theme 11a: Mixed or Single Gender Classes *These are sensitive subjects and not everyone is comfortable with them. You will need to ask your audience whether they want to be in mixed or single gender settings.* Sub-theme 11b: *Group Discussions and Q&A* *Let them ask any questions they have and let them be as open as they wish to be. It's their first chance in their lifetime.*

1. Sexual Health Needs

Participants expressed concern about the increasing numbers of STIs identified amongst young people in Tehran, especially HPV and Genital Herpes, and inferred that these represented new patterns of more risky sexual behaviour (sub-theme 1a). A few participants also highlighted concerns about unintended pregnancy, emphasising that these concerns were often more important to young people than those relating to STIs because of the social visibility of pregnancy and the socio-cultural context (1b).

2. Cultural and Social Barriers to Optimal Sexual Health Practice

Participants highlighted a range of socio-cultural barriers, including the lack of legal and service support for individual sexual choices (2a). Participants noted that the illegality of sexual relations outside marriage and of abortion, created fear, and repressed open discussion of safer sexual practices and service use among unmarried people (2b). This prevents the normalisation of sexual healthcare for unmarried people.

Participants also discussed gender power inequalities, highlighting disempowerment of women in heterosexual relationships and the implications for contraceptive use and STI-preventive practices. The challenge here is to provide support for young women to take responsibility and skilfully manage their sexual health (2c).

Some participants highlighted 2013 changes in national policy and their healthcare implications. They explained that a successful national family planning programme had been in place between 1998-2006, which involved free and unlimited access to condoms and contraception methods including tubectomy and vasectomy. This was largely withdrawn in 2013 as national policies focused on increasing Iran's population (2d).

3. Current Sexual Health Educational Provision

Participants commented on current provision, including HIV-awareness courses delivered in high schools and STI-awareness courses delivered in universities. Participants were, unsurprisingly, better informed about educational initiatives run by their own organisations, but these various programmes are not officially evaluated, and the number of users/recipients is unknown. Overall, HCPs painted a picture of a patchy educational service with some centres of excellence but poor provision for the general population of young people.

4. Limitations of Current Sexual Health Educational Provision

Almost all interviewees agreed that sexual health knowledge was poor among their young patients/clients. A concerning lack of understanding of sex, contraception, and STIs was reported. Interviewees attributed this to a lack of reliable information sources, including official sexual health education (4a). This was combined with poor self and relationship management skills among young Tehranians due to limited interpersonal communication skills-training during their education (4b).

Participants were critical of existing pre-marriage classes in terms of SHRE delivery, including content range, delivery methods, timing of the intervention, and lack of evaluation (4c); and supported more comprehensive, more accessible SHRE, including workshops. However, they also recognised that cultural constraints render such developments problematic, including parental objections, and policymakers' lack of understanding of the sexual health needs of young people (4d). Participants also highlighted a gap between what policymakers and legislators deem necessary and the education that front-line HCPs view as essential to protect health and promote well-being; and noted that current provision is not usually evaluated in terms of reach, use, or impact (4e).

5. Informal Sexual Health Education and its Limitations

Two clear sources of sexual health information for young Tehranians were identified; friends (5a), and the Internet (5b). Both were considered to be popular but were acknowledged as sources of unreliable information that could engender potentially wide-spread misinformation and sub-optimal sexual practices (such as using withdrawal as a contraception method).

6. Sexual Health Services for Young People

Sexual healthcare services offered by "Centres for Behavioural Diseases" (CBDs) (6a) were discussed by interviewees. In Iran, general health centres resemble a GP office or clinics for family medicine, where general health and well-being concerns are addressed, while CBDs provide specialised STI services.

Participants noted the lack of preventive services and one-stop-shop services (e.g., most CBDs only focus on HIV). The lack of preventive services was lamented and generally attributed to limited funding (6b).

7. Barriers to Seeking Sexual Healthcare

Almost all participants noted the lack of publicity for government-funded sexual healthcare, including CBDs (7a) and that cost was a major barrier (7b), especially since healthcare is mostly privatised in Iran, highlighting socioeconomic inequalities in healthcare access (7c), especially for young Tehranians many of whom do not have secure incomes.

Participants also noted that young people distrust official sexual health services (7d), fearing that confidentiality will not be respected and that doctors may be judgmental.

8. Recommendations for Improved Sexual Health Education and Services in Tehran

There was consensus for two important changes needed to improve SHRE education and services for young people. First, participants recommended that, in the absence of comprehensive SHRE, officials recognise young people's use of the Internet as an educational resource and offer endorsement and recommendation of reliable online educational resources (8a). Second, participants recommended development of comprehensive SHRE in secondary schools and universities across Iran (8b). Although, there was pessimism about this being accepted as future policy.

9. Support for a New SHRE Workshop

Participants believed that a new SHRE workshop or day-course would be beneficial. All HCPs unanimously supported such a new SHRE workshop and 12 of them provided longer quotes, which are included in Appendix 4.7.

10. Content Suggestions for a New SHRE Workshop

Anatomy of sexual organs was considered essential by many participants as this subject is not fully covered in human biology courses in schools (10a). STIs prevention, use of condoms and other contraceptives for pregnancy prevention were suggested by all participants (10b). In addition, wider publicity for existing services (10c), and relationship management skills (10d) were highlighted as important content.

11. Workshop Delivery Suggestions

Participants were divided on the merits of same versus mixed-gender classes (11a). Some believed mixed classes would facilitate breaking taboos while others felt that same-gender classes would provide a more relaxed learning environment, especially for young women. Participants supported group discussions and Q&A opportunities (11b).

4.5: Discussion

To our knowledge, this is the first qualitative investigation of HCPs' views of sexual health education, training and service provision for young Tehranians. Together with previous studies of young Iranians' views of SHRE and sexual health services in Iran, our findings highlight a serious public health need and a potentially culturally acceptable way forward. In particular, (i) official endorsement of selected online resources, and (ii) provision of new culturally-tailored, government-endorsed workshops for young Iranians focusing on knowledge transfer, STIs and pregnancy prevention, and relationship management skills are recommended.

Confirming previous research, HCPs suggested that a lack of SHRE in Iran contributes to increasing STIs and illegal abortions (Bostani Khalesi & Simbar, 2017). Interviewees were critical of existing initiatives, which predominantly focus on HIV-awareness, and do not cover core content such as contraception and relationship management skills. HCPs clearly identified a lack of governmental support and funding as the key challenge to developing more comprehensive

SHRE, similar to previous conclusions made by Yazdanpanah et al. (2014) and Mehrolhassani et al. (2020).

Despite the availability of a small number of government-funded sexual healthcare clinics, HCPs believed that (i) most young Tehranians are unaware of these facilities and, perhaps more importantly, (ii) these services do not provide preventative content. Interviewees also noted the high cost of medical consultations, which exaggerates existing socioeconomic (SES) inequalities. This is particularly problematic as the majority of the population cannot afford private healthcare. Furthermore, HCPs were aware of a lack of trust among many young people, suggesting that many fear breaches of confidentiality, which would ultimately damage their social image, even in conversations with doctors. HCPs highlighted the need for improved, well-publicised, accessible, confidential and affordable sexual healthcare in combination with a comprehensive SHRE programme.

HCPs made a series of recommendations for future services. In particular, SHRE that clearly explains the physiology and function of sexual organs and the mechanism underlying STIs transmission and pregnancy. In addition, they emphasised the importance of training young people in skills such as relationship management, condom-acquisition, condom-use negotiation, and consistent condom use. Participants also recommended training materials specifically addressing support for women to manage sexual relationships more confidently and to control their sexual health including instructions on how to best negotiate condom use, confirming findings of Mirzaee et al. (2017).

HCPs noted that young people depend on unreliable educational sources, including their friends and social media, and are consequently largely uninformed and unskilled, confirming previous findings (Bostani Khalesi & Simbar, 2017; Sheikhansari, Abraham, Denford, et al., 2021). Participants recommended the creation of culturally tailored, government-endorsed reliable online training materials in the Persian language as an initial step to bridging the identified SHRE gap. Creation of culturally-appropriate SHRE materials has been evaluated in other countries, such as Turkey, and found to increase sexual health knowledge amongst young adults, while also reducing myths, and sexist beliefs and

behaviours (Kahraman, 2017). It is reasonable to expect that similar positive outcomes would be seen in Iran.

Interviewees noted that existing educational initiatives focus predominantly on HIV-awareness, and do not include content on contraception or relationship management skills. They highlighted organisational constraints including limited funding for sexual health educational programmes and lack of cooperation between various ministries and organisations responsible for such programmes. The lack of evaluation of existing programmes was also discussed. This casts doubt on the efficacy and reach. There was a sense of pessimism among our HCPs because they, themselves, cannot transform the sexual health services. Improvements will require operational and political decisions by national level managers and policymakers. Nonetheless, an understanding of the views of HCPs provides guidance on priorities for improvement to SHRE and sexual health services in Iran.

Moreover, HCPs considered the quality and content of existing programmes, including courses tailored to marrying couples, to be ineffective and provided recommendations for how the current provision should be improved or augmented. This indicated their perceived need and demand for provision of comprehensive SHRE (cf. Mehrolhassani et al. (2020); Yazdanpanah et al. (2014)).

In spite of limited government-funded sexual healthcare clinics, HCPs believed that young Tehranians are unaware of these facilities and viewed visits to private doctors as limited by cost. They therefore recommended publicising such services to all social groups including young adults. Interviewees mentioned lack of trust in available services and believed that young Tehranians doubt their confidentiality and fear the potential damage to their social standing, even in conversations with doctors.

In general, the results suggest a need for improved, well-publicised, accessible, confidential and fairly-priced sexual healthcare. Additionally, co-creation and testing of comprehensive SHRE modules was strongly supported.

We recruited a unique mix of private and public sector HCPs from different managerial and client-serving backgrounds. Their opinions help to draw a robust evidence-based picture of sexual health knowledge and practices among young Iranians. Our findings provide a novel needs assessment with helpful recommendations to improve sexual health services and education. Nevertheless, there are limitations to this research. A small sample was used and the views of important stakeholders (e.g., clergies and religious leaders) were absent from this study. Nonetheless, our findings support those of Akbari et al. (2013), who included Iranian religious leaders in their study and recruited a larger number of participants, indicating that there is a consensus across stakeholders about needed SHRE and service improvement. Thus, our study presents useful recommendations for improved SHRE and sexual health services for young Iranian adults, adding a new voice to previous studies focusing on the views of young people.

In conclusion, HCPs judged young Tehranians' sexual health knowledge to be poor and believed that existing government-funded sexual healthcare is lacking and inaccessible. They strongly suggested that available sexual health provision should be augmented and recommended development of non-judgmental, accessible, confidential and fairly-priced sexual healthcare, availability of publicised sexual health clinics, as well as provision of culturally-tailored, government-endorsed reliable online training materials in Persian. These recommendations complement and correspond to suggestions made by young Iranians, across studies. Collectively this body of research recommends action to develop new culturally acceptable SHRE for young Iranians.

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Chapter 5: Development of an SHRE programme outline for young adults in Tehran; integration of needs assessments, best practice guidelines, and stakeholder consultations

Following the empirical studies reported in Chapters 3 and 4, this chapter presents the final study in this thesis, which involves the development of an SHRE programme for Tehranian young adults, informed by the previous two studies' results and international best practice SHRE guidelines, and refined through consultations with stakeholders. This was conducted to answer the research question "*What should be included in a tailored SHRE programme for sexual health and relationship education (SHRE) for young adults in Tehran?*"

5.1: Introduction

Sexually transmitted infections (STIs) and their health consequences, as well as unplanned pregnancy, are globally important public health concerns. Access to contraceptives, instruction on correct contraceptive use (including condom use), and early diagnosis and treatment can effectively prevent STIs and unplanned pregnancies (Steen et al., 2009). Therefore, the provision of sexual health and relationship education (SHRE) in and out of educational settings, as well as accessible sexual health clinics and community health centres are crucial to promoting preventive sexual behaviour patterns and optimal sexual health.

Across countries, there are barriers other than sexual health knowledge and awareness, and accessibility of sexual healthcare facilities that young adults need to overcome to access and use sexual health services, including stigma, shame, and fear of judgement (Bersamin et al., 2017; Cassidy, Bishop, et al., 2018; Cassidy, Steenbeek, et al., 2018). Culturally-appropriate interventions are needed to minimise such barriers and enhance sexual knowledge, competence, and health amongst young adults.

5.1.1: *Approaches to designing and developing interventions*

Despite attempts to develop sexual health education in Iran, current provision of SHRE, and advice and treatment facilities fall far short of international guidelines. Research recommends theory and evidence-based approaches to intervention design and delivery (Bartholomew & Mullen, 2011).

The MRC framework for complex interventions calls for the relevant stakeholders of an intervention to be included at all stages, from intervention development to outcome evaluation. This is to ensure that generated data are implementable (Craig et al., 2013).

To design, deliver and evaluate a health intervention, researchers must account for context. This includes the characteristics of the target population, their socioeconomic status and background, beliefs and social norms, available services and previously delivered interventions, and the extent and severity of the studied problem (Campbell et al., 2007). Hence, interventions should be based on clear needs and gaps, demonstrated by needs assessments and need to be dynamic, iterative, flexible to change, open to future evaluation and implementation, and engaging a wide range of stakeholders facilitates these features (de Zoysa et al., 1998; Green & Kreuter, 2005; O'Cathain et al., 2019).

Stakeholder involvement is important in recognising and prioritising health needs that will be targeted by the intervention in a predetermined population. Such engagement is best to include interdisciplinary teams of health practitioners, and policymakers, researchers, and the target population and can inform methods to minimising barriers and enhancing uptake of the intervention (Wight et al., 2016).

There are various approaches to involving stakeholders in intervention design, including Intervention Mapping and Person-based Approach (PBA), both of which require needs assessments to be performed prior to intervention design and relevant stakeholders to be included in designing and evaluating the intervention. This is because the involvement of key stakeholders and co-designing interventions with those who will deliver and receive them is critical to maximising intervention effectiveness.

For example, the person-based approach (PBA) is used to assess and improve the acceptability and feasibility of an intervention and to increase the possibility of an effective outcome once the intervention is delivered (Yardley, Morrison, et al., 2015). The person-based approach aims to base the development of interventions on the views of the individuals who will use them. This is achieved through mixed methods research and particularly iterative qualitative studies. PBA allows intervention developers to understand how different people within the same target group may view an intervention, which content is appropriate and helpful to them, and which elements may be rejected, thus how the intervention can be developed as more engaging and effective.

Qualitative research, mostly in form of interviews, is the core focus of the person-based approach at the planning stage, in order to understand the needs and opinions of the people who will be experiencing the intervention. This is to identify intervention content and components that are most quoted and are therefore deemed as necessary by end-users (Yardley, Morrison, et al., 2015). Further stakeholder involvement is needed in the intervention development stage, to obtain views on every component of the prototype intervention. The intervention is then adjusted based on stakeholders' comments, and further evaluation is carried out to investigate whether the modifications made have resulted in creating an acceptable intervention (Yardley, Morrison, et al., 2015).

The Intervention Mapping (IM) framework (Bartholomew Eldredge et al., 2016; Bartholomew et al., 1998) illustrates the steps that need to be taken from problem identification to problem solving or improving the situation. Intervention mapping is an iterative process which is based on the use of theories and evidence and emphasises the participation of all stakeholders (Fernandez, Ruiter, et al., 2019).

The original IM approach comprises of six steps, each including several tasks incorporating theory and evidence. Achieving each of the tasks and finalising every step serves as an illustrative guide for the subsequent steps and completing the problem-solving journey. Once all steps are completed, the final product presents as a blueprint for designing, implementing, and evaluating interventions which are strengthened with a basis of theoretical and pragmatic evidence.

The six steps and associated tasks of the IM process are:

1. Performing a needs assessment to identify the problem, the population concerned with the problem, and what needs to be changed for them.

2. Creating series of change objectives using behavioural factors, classifying which attitudes should be directed by the intervention.

3. Using theory-based intervention methods that match the behavioural determinants and converting these to pragmatic remedies based on the chosen methods.

4. Integrating the product generated from step 3 to an organised programme.

5. Strategising the adoption, application, and sustainability of the programme in real-life contexts.

6. Creating an evaluation plan to perform effectiveness and process evaluations.

In order to highlight the essential tasks involved with each step, Abraham and Denford (2020) revisited the original IM approach and created a 10-task framework which encompasses various angles of problem identification, solution design, and evaluation process. It is broken into categories, each assigned with several tasks (Abraham & Denford, 2020). These are:

A. Understanding the problem and identifying behaviour change targets.

    1. To understand and define the problem, including assessing the needs of target groups.

2. To clarify how behaviour change can solve the problem.

3. To identify which group of people, need to change which behaviour and at what level.

B. Understanding the mechanism and including evidence-based behaviour change techniques.

4. To understand the context and reasons that sustain identified behavioural patterns in the target population.

5. To design interventions that can improve parts of, or the complete behaviour pattern.

C. Co-creating, piloting, and refining the intervention.

6. Piloting the intervention's prototypes to understand whether they are acceptable, applicable, and affordable.

7. Refining and enhancing the product through incorporating the opinions of those who will deliver and receive the intervention. This will optimise implementation reliability and effectiveness.

8. Execute the intervention, and detect and curtail embedding problems.

D. Evaluation of efficacy and effectiveness

9. Exploring whether the intervention shows evidence of changing targeted behaviours to evaluate its efficacy.

10. Evaluate effectiveness by trying the intervention in new contexts and scaling up to focus on new groups and populations.

As was demonstrated above, Abraham and Denford (2020) have presented a detailed task list which helps researchers to ensure an intervention is needed before dedicating time and resources to its planning and development (Abraham & Denford, 2020). It advises for interventions to be co-created with their respective stakeholders, including end-users and implementers to optimise adoption, effectiveness, and sustainability.

Although the time and resource limitations of a PhD project did not allow for the complete application of the IM framework and the 10-item task list, four steps of the IM framework were followed in this thesis, facilitated by items 1-5 and 7 of the 10-item task list. Two comprehensive qualitative needs assessments explored the needs of stakeholders in a specific context (18-25-year-old Tehranians, and healthcare professional and sexual health experts living in Tehran), corresponding to task 1 and the first step in the IM framework. To design this programme outline, the change objectives were defined as (i) improved information, (ii) improved motivation, and (iii) provision of preliminary knowledge on behavioural skills that would facilitate a healthy relationship, all of which were sourced from the aforementioned needs assessments and best practice SHRE guidelines (IM step 2, tasks 2 and 3).

The Information, Motivation, Behavioural Skills Model (IMB) provided a useful theoretical framework and a logic model, using which, the programme content was grouped and organised (Table 5.14). IMB implies that behaviour is unlikely to change, unless sufficient information, adequate motivation, and relevant behaviour skills are present. Several studies and national guidelines have used the IMB Model to inform intervention design in a variety of health promotion scenarios, including STI prevention and sexual health promotion (Anderson et al., 2006; Bahrami & Zarani, 2015; Barak & Fisher, 2001; Bazargan et al., 2010; Liu et al., 2014; Public Health Agency of Canada, 2008). Thus, applying this model, optimal SHRE needs to provide accurate information that is wanted and valued by the recipients, needs to nurture motivation to optimise sexual health, and needs to provide instruction on relevant behavioural skills and access to necessary resources (IM step 3 / tasks 4 and 5).

These steps led to the third study, which involves the stakeholders' opinions in designing an SHRE programme. Stakeholder consultations were employed to investigate the intervention users' needs, and incorporating opinions of those who deliver them, to improve the proposed programme's comprehensiveness and effectiveness (IM step 4 / task 7).

Our previous studies concluded that SHRE and sexual healthcare provision in Tehran do not achieve these aims and do not meet young adults' sexual health needs. This was confirmed by interviews with young adults and healthcare professionals and is underlined by rising rates of STIs and illegal abortions. The young adults and healthcare professionals who were interviewed offered recommendations on the content and delivery of enhanced SHRE, and sexual healthcare services in Tehran.

5.1.2: *The Present Study*

This study aimed to develop an evidence-based outline of an enhanced sexual health and relationship education (SHRE) programme for 18-25-year-old Tehranians. Young people in Iran complete schooling at 18 and this is the legal age at which they can get married. Therefore, educating the young people aged 18 and above is likely to be more acceptable and thus, a more feasible first step towards developing enhanced SHRE in Iran. At 18, young people do not need their parents' or guardians' consent to attend SHRE courses, which could be culturally and socially controversial for some families.

The research involved the integration of four sources of evidence 1) our previous work (Sheikhansari, Abraham, & Denford, 2021; Sheikhansari, Abraham, Denford, et al., 2021), in which the views, needs, and requirements of Tehranian young adults and healthcare professionals were explored; 2) existing international best practice guidelines available in the English language; 3) existing Persian-language materials which are officially approved for use in Iran; and 4) the views of stakeholders on the design and content of the proposed improved SHRE programme.

An 8-step action plan was designed to 1) summarise the stakeholder recommendations from previously conducted needs assessments, 2) generate a search strategy and inclusion and exclusion criteria in order to source and review best practice SHRE guidelines in the English language, 3) extract the content and delivery recommendations included in those guidelines, 4) identify the Persian-language SHRE materials currently used in Iran, 5) map the Persian-language materials against the extracted recommendations and define the "gap", 6) create a proposed SHRE blueprint including content recommendations from needs assessments and the international guidelines to supplement omissions in the Persian materials, 7) present this proposal to stakeholders to review and to seek their opinions to refine the materials, and 8) adjust the proposed blueprint incorporating improvements suggested by stakeholders and produce a final version of a bespoke SHRE programme to be used in Tehran. These steps are described below.

The study objectives were to:

1. Draw upon young people's and healthcare professionals' recommendations in Iran to provide a blueprint for enhanced SHRE for young adults in Tehran,
2. To identify and assess the content of existing SHRE used in Tehran,
3. To employ the content of state-of-the art international guidance on SHRE,
4. To integrate recommendations from these sources into recommendations for improved SHRE provision for young adults in Tehran,
5. To refine these recommendations through consultations with stakeholders including young people and healthcare professionals.

5.2: Methods

This study comprised 8 steps:

Step 1: Summarising the stakeholder recommendations from previously conducted needs assessments

The recommendations made by Tehranian young adults and healthcare professionals in the two previous needs assessments were summarised. Only recommendations for improved content were considered and extracted from the studies reported in Chapters 3 and 4. The results of these studies (including all identified themes) were reviewed, and relevant quotes were checked (see Appendix 3.5 – 3.7). Specific content recommendations were extracted and collated in a table. These were categorised, and frequent suggestions were highlighted.

All identified themes and their respective quotes in both studies were reviewed for content suggestions. Quotations from two themes were found to be especially relevant. These were theme 12, "Recommendations for improved sexual health education and services", from study 1 (Chapter 3) and theme 10, "Content Suggestions for a New SHRE Workshop", from the second study (Chapter 4). All sentences that included a content suggestion were assessed, and exact words were used as content recommendations. For example, all sentences mentioning "condoms" were classified as recommendations regarding "condom use". Where sentences contained multiple recommendations, all phrases were noted and categorised. For example, when someone mentioned "condom use for pregnancy prevention", both "contraception" and "condom use" were noted as content suggestions.

Step 2: Identification and review of English-language best practice guidelines

We generated a search strategy to identify internationally recognised best practice guidelines. Inclusion criteria were:

- Best practice SHRE guidelines published between 2010-2020,
- In the English language,
- Aimed at policymakers/governments/education planning and development organisations,
- With free full texts available.

The exclusion criteria were:

- Documents providing recommendations to audiences other than policymakers/governments/education planning and development organisations,
- Documents containing recommendations for specific sub-groups (e.g.; refugees, youth with mental health issues),
- and documents generated by the US organisations, because of SHRE policies in the USA.

This involved the steps explained below.

Data sources and search strategy

Best practice guidelines were identified between March and June 2021 using four strategies: (1) searching online databases, (2) searching internet resources using search engines, (3) citation searching, and (4) consulting SHRE experts.

Science Direct[1], PubMed[2], NICE[3], and Cochrane Library[4], were searched as the main sources for the health-related scientific literature using the keywords: “best practice”, “guidelines”, “sexual health”, and “sexual health education”, in the order which is specified in Table 5.1. Relevant filters were used and adjusted for each database accordingly. Reference lists of identified guidelines were also carefully inspected for citations that included the keywords: “Best Practice” OR “guidelines”, AND “sexual health” OR “sexual health education”.

As it became apparent that the number of relevant guidelines identified from the above sources was very limited, Google[5] was searched as the most used online search engine. The terms “Best Practice sexual health”, “Best Practice sexual health education”, “Guideline sexual health”, and “Guideline sexual health education” were searched on Google, and the first 10 pages were screened for links to documents matching the study’s inclusion criteria.

In addition, SHRE experts in Iran and the candidate’s supervisors, and two other professionals in the UK were asked to suggest documents and online resources that were potentially missed. However, no extra suggestions were made by consulted experts. The UK professionals had previously collaborated with the candidates’ supervisors on a study about best practice sexual health education in schools, and were recommended by the researcher’s second supervisor based on their expertise in sexual health education.

In order to clarify this 8-step methodology, the results of searches conducted in these stages are presented here, in the methods section.

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[1] https://www.sciencedirect.com/

[2] https://pubmed.ncbi.nlm.nih.gov/

[3] https://www.nice.org.uk/

[4] https://www.cochranelibrary.com/

[5] https://www.google.com/

Table 5.1: Search Strategy for Online Databases and Search Engine

Websites	Search Terms/ Keywords	Filters	Results	Compliant with the inclusion criteria
PubMed	Best Practice OR guidelines, AND sexual health OR sexual health education in Title/Abstract	Free full text available, English language, guideline (type of material) and published between 2010-2020	223 Articles	None
Science Direct	Best Practice, guidelines, sexual health, sexual health education	Published between 2010-2020, Practice guidelines (article type)	73 Articles	None
NICE	None	Published between 2010-2020, Guidance (Evidence type), Public health (Area of interest)	211 Articles	2
Cochrane Library	Best Practice OR guidelines, AND sexual health OR sexual health education	Published between 2010-2020, Topics: Reproductive & sexual health	31 Cochrane reviews, 5 Cochrane protocols, and 36 Cochrane editorials	None
Google	Best Practice sexual health, Best Practice sexual health education, Guideline sexual health, Guideline sexual health education	Free full text available, English language, and published between 2010-2020	400 Results	43

Refining the sample of retrieved documents

All searches were conducted by the candidate. Guidelines were defined as documents which included clear recommendations on SHRE content (such as documents enlisting a detailed SHRE curricula) which were based on the concept of comprehensive sexual education (CSE), as defined by UNFPA. CSE involves "*a right-based and gender-focused approach to sexuality education, whether in school or out of school. CSE is curriculum-based education that aims to equip children and young people with the knowledge, skills, attitudes and values that will enable them to develop a positive view of their sexuality, in the context of their emotional and social development…… and to acquire accurate information about human sexuality, sexual and reproductive health, and human rights…, explore and nurture positive values and attitudes towards their sexual and reproductive health, and develop self-esteem, respect for human rights and gender equality…. and develop life skills that encourage critical thinking, communication and negotiation, decision-making and assertiveness*" (United Nations Population Fund (UNFPA), 2014).

These guidelines needed to be inclusive of human rights and designed based on scientific evidence. Identified documents were published by the governments of the UK, Canada, Australia, and New Zealand, and international organisations such as the United Nations (UN). Only the guidelines in the English language, aimed at policymakers/governments/education planning and development organisations, with free full text(s) available, which contained recommendations and guidelines on content and delivery of SHRE were retained. Documents providing recommendations to parents and caretakers, or communities (as opposed to young adults) were excluded. In addition, recommendations for specific sub-groups, for example, young adults with learning difficulties or ethnic minorities were excluded. This is not because such guidance is unimportant. The candidate acknowledges that these are crucial to the planning and provision of comprehensive SHRE. However, for the purpose of this study, and to provide recommendations for an augmented, generic SHRE for young adults in Tehran, these documents were excluded. They should be reconsidered when such an augmented SHRE is implemented, to ensure comprehensive reach.

Documents produced by organisations in the USA were also excluded, as abstinence-only education is strongly encouraged and not all states mandate scientifically accurate guidance. Hence existing guidelines from the USA were considered suitable for methods of instruction, rather than content and implementation and were therefore excluded. Figure 5.1 (Flow-diagram) shows how the sample of documents was reduced and refined.

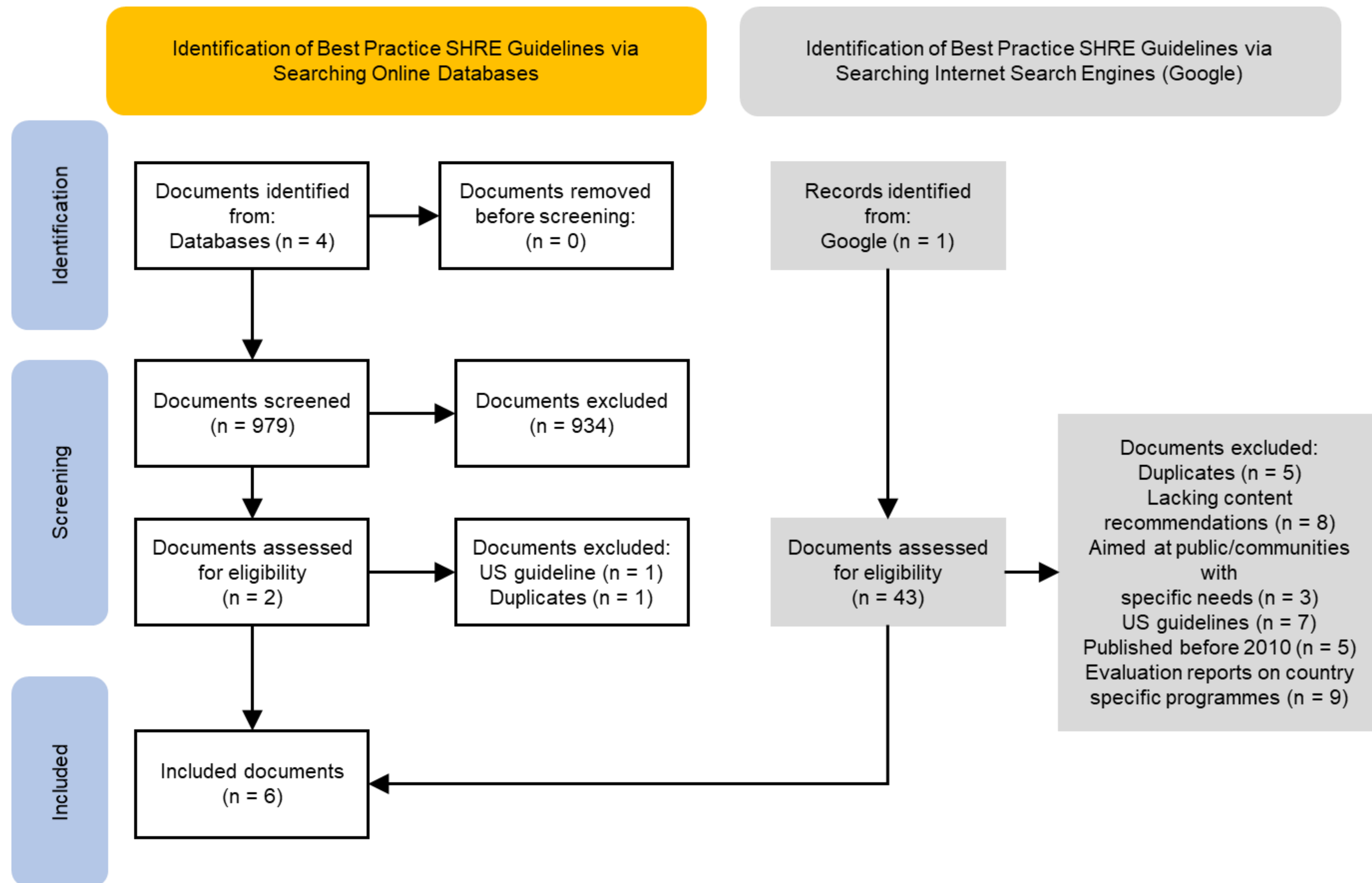

Figure 5.1: Flow-diagram – Refining the sample of retrieved documents.

All documents were scanned for their titles, abstracts, and table of contents; and were checked against the study's inclusion and exclusion criteria. The documents were then reviewed, and the guidelines which included recommendations on content and delivery were selected. Where duplicates were found, the most recent versions were included. As a result, six guidelines were selected to inform this study.

Step 3: Extraction of the content and delivery recommendations from the selected guidelines

The six retained guidance documents were reviewed for SHRE content recommendations, a table was developed by the candidate, which was then amended and refined with insights and feedback from both supervisors. The table included headlines and a summary of content and deliverable recommendations made in all guidelines in addition to characteristics such as country of origin, year of publication, target audience, and recommended contents and delivery mode. All six retained guidelines were read and reviewed by the candidate, and under supervision. This involved an informal content analysis in which the guidance from each document was categorised, and similar recommendations were grouped together across documents. We did not conduct a reliability check on this categorisation process because the aim was merely to capture the most important and most common SHRE content recommendations. Each of the six guidance documents was then searched and mapped for specific SHRE content and recommendations on SHRE delivery. The candidate and their supervisors reviewed the table; and discrepancies were resolved through group discussions.

In addition to sampling best practice guidelines, a number of UK, English-language SHRE information websites designed for public use were selected and reviewed for text and images relevant to the content recommendations made in best practice guidelines (i.e., how to use condoms, how many contraception methods are available). These included Brook[6], Bish[7], Sexpression[8], Sexwise[9],

[6] https://www.brook.org.uk/

[7] https://www.bishuk.com/

[8] https://sexpression.org.uk/

[9] https://www.sexwise.org.uk/

NHS One You and NHS Live Well[10]. These were selected in consultation with UK experts in SHRE and the candidate's supervisors. Once again, an informal content analysis was performed to classify text and data which provided guidance on various SHRE-related subjects in each of the above resources. Consequently, it was revealed that these materials overlapped considerably and therefore, Brook was chosen as the state-of-the-art database for content suggestions. Hence links to relevant Brook materials were added to the final list of content recommendations for the SHRE guideline in Tehran. This was to assist the healthcare professionals and young adults who reviewed the materials to envisage how such content would be delivered (e.g., to see pictures, the tone and language used, and the extent to which each subject is discussed).

Step 4: Identification and description of the content of officially-endorsed Persian-language SHRE materials used in Tehran

Data sources and accessing materials

The SHRE materials currently used in Iran are not publicly available and are only accessible to their intended users (e.g., pre-marriage books are available to registered couples at pre-marriage classes only). Therefore, Persian-language materials currently used for school, university, and pre-marriage classes were identified through consultations with four Iranian sexual health experts who were responsible for delivering the school/university and pre-marriage classes and were fluent in English. These experts were introduced to the candidate by the Iranian co-author of Study 1, who was responsible for research facilitation of this PhD project in Tehran. The identities of these professionals could be further discussed with the author of this thesis.

Further categorisations were undertaken in consultation with the same four Iranian SHRE experts, to classify the Persian-language materials into SHRE and non-SHRE. SHRE content was considered as the material that was directly relevant to sexual health and relationship management as per the guidelines identified in *Step 2*, including information on sexual anatomy, contraception

[10] https://www.nhs.uk/live-well/sexual-health/

choice and use, and consent and relationship management. The rest of the content was marked as non-SHRE. This included advice on diet and healthy eating, religious guidance on marriage and the importance of having a family, and laws and regulations regarding marriage and divorce. The list of Persian-language materials and their sample content of SHRE and non-SHRE material is included as Appendix 5.1.

Identified documents

All Persian-language materials that are currently in official use in schools, universities, and pre-marriage classes were included. These contained six slides about HIV that are taught in high schools, an unofficial course plan used for the "Science of Population" module at universities, and four booklets that are used in pre-marriage classes. All identified Persian materials were searched for SHRE and non-SHRE content. Final classifications were checked and approved by the same four Iranian healthcare professionals.

Step 5: Mapping the Persian-language SHRE content against international recommendations

The Persian-language SHRE content was translated to English, and translations were read and confirmed by the same four experts who collaborated in *Step 4*. Finally, the candidate checked the SHRE content in the Persian materials against the content recommended in the best practice guidelines identified in *Step 1* (Table 5.7), alongside Appendix 5.1 (all Persian materials). Each Persian document was checked for content corresponding to each content category as per the best practice guidance and was assessed by the candidate for meeting internationally recommended content requirements where applicable (e.g.; condoms as the main content category, and condom use and condom acquisition skills as sub-categories). The documents were assessed independently and were not merged (i.e., each booklet and set of slides were checked independently). This process revealed content in the identified SHRE guideline documents that were not included in the Iranian materials.

Step 6: Recommendations for enhanced SHRE in Tehran

An SHRE programme outline comprising content summaries, objectives, and illustrative resources was created by the candidate, aimed at 18-25-year-old Tehranian young adults, who speak Persian as their first language and live in Greater Tehran. To create this document, content recommendations extracted from *Steps 1-3* were integrated. First, all content and delivery recommendations were extracted from Table 5.7, and were checked against recommendations made by Tehranian young adults (Table 5.3), to ensure all suggested content is included. The subjects were adopted exactly as were recommended by the guidelines, and similar terms were used to describe the subject where appropriate (e.g.; using the term “sexual rights” as opposed to “rights”). Consequently, objectives were identified through revision of the six selected best practice guidelines, and consultations with the candidate’s supervisors and the four Iranian HCPs. Multiple meetings were held in which objectives for each content category were reviewed and refined; and discrepancies were resolved through discussions. Finally, illustrative examples were added using a link to relevant content on Brook, in order to clarify the message that each subject would convey. Each content category was then classified as essential or desirable based on the best practice recommendations, and a suggested duration was proposed. The suggested content, objectives and classifications were reviewed and confirmed by the candidate’s supervisors and the four Iranian HCPs who were consulted in previous stages. Any discrepancies were resolved through group discussions.

Step 7: Stakeholder consultations with Iranian healthcare professionals and young adults

To assess the acceptability of the proposed SHRE programme, local stakeholders were invited to review the materials. An approach similar to that used in patient-and-public involvement studies (Involve UK, 2021; Patient Centred Outcomes Research Institute (PCORI), 2021) was adopted.

Two stakeholder groups were convened. Healthcare professionals’ recruitment was undertaken in private and government-funded health clinics and hospitals. Relevant healthcare professionals who were (i) in charge of designing and

delivering school/university and pre-marriage classes materials or (ii) had sexual healthcare client-facing roles were invited to join the consultation. An advertisement for the study was placed in all above locations along with the candidate's contact details. Twenty healthcare professionals responded and contacted the candidate. Through informal telephone conversations with all interested healthcare professionals, the candidate established their availability, their role and area of expertise, and their access and willingness to use online meeting platforms such as "Zoom"[11], "Google Meet"[12], "Skype"[13], and "Microsoft Teams"[14].

Through this process, a six-person multidisciplinary team of stakeholder healthcare professionals was assembled. The professionals worked at The Iran University of Medical Sciences, The Centre for Behavioural Diseases, The Iranian Centre for HIV Prevention, and The Iranian Ministry of Health. Together, the stakeholders provided expertise in sexual health services, policymaking, and design and delivery aspects of current HIV prevention and pre-marriage classes in Iran. They were selected because of their availability to review the materials thoroughly and participate in an online meeting, in which they had the opportunity to provide opinions on the proposed materials.

Young adults' recruitment was undertaken in private and government-funded health clinics and hospitals as well as university health centres where an advertisement for the study was placed including the candidate's contact details. Eighty young adults who were all 18-25-year-old Tehranians, contacted the candidate. Through informal telephone conversations with all interested young adults, the candidate asked about their availability, the municipality district they lived in (to learn of their socioeconomic background), and if they have attended university (to understand their level of education). The interested young adults were also asked to confirm their access to online meeting platforms such as "Zoom", "Google Meet", "Skype", and "Microsoft Teams".

[11] https://zoom.us/

[12] https://apps.google.com/meet/

[13] https://www.skype.com/en/

[14] https://www.microsoft.com/en/microsoft-teams

Young Tehranian stakeholders were selected based on their availability to review the materials in a timely manner (reading all content thoroughly and making notes) and attend a follow-up online meeting, where they would answer questions about various aspects of the proposed materials. As a result, six 18-25-year-old Tehranians were invited to join public involvement activities from a range of socioeconomic (affluent, middle class, working class) and educational backgrounds (high school diploma, university degree holders).

Consultation Procedures

The proposed SHRE programme and a participant information sheet were emailed to each healthcare professional and young adult two weeks before attending a one-to-one online meeting with the candidate to discuss their opinion. The content document received by the stakeholders and the participant information sheet are included as appendices 5.2 and 5.3 in Appendix. All meetings were held with one participant at a time, online on “Skype”, “Zoom”, “Google Meet” or “Microsoft Teams” platforms due to COVID-19 restrictions. Participation was voluntary, and no incentives were provided. Participants were asked about the proposed SHRE content and delivery and were invited to offer alternative suggestions and improvements. As with the guidance on stakeholder involvement projects (NHS National Institute for Health Research, 2015) these interviews were not recorded and contributions were not attributed to particular participants. Rather, all suggestions were collated, and the overall comments were summarised. As such, ethics approval was deemed to be unnecessary.

The topic/question guide that shaped discussions with stakeholders included questions on (i) content quality and recommendations for extra / less content, (ii) barriers to accessing/delivering such materials in a potential educational intervention/workshop, (iii) order and comprehensiveness of the content, and (iv) extra recommendations. Questions corresponding to each of these topic categories are presented in Table 5.2.

Stakeholder involvement sessions were conducted in the Persian language. The candidate took notes on each stakeholder’s views and collated opinions from all twelve volunteers.

Table 5.2: Topic guide for stakeholder consultations

	Topic	Corresponding Questions
1	Content, order, and categorisation	1. What are your thoughts on each subject on the course content document? Can you think of any problems with accessing this content? If yes, how could we improve this? 2. Do you think that this course plan achieves the purpose of the project, which is the provision of sexual health and relationship education? 3. What do you think of the sequence of information? Would you prefer the subjects reordered in any specific format? Could these be communicated easier or in a more user-friendly format? 4. How about the number of subjects covered? Is there anything missing which you would like to see as a part of the course? Would you recommend removing any subjects from the current course plan? Why? 5. Is there content in the essential section that you think should be marked as desirable or vice versa? 6. Did you find any of the contents difficult to understand?
2	Potential barriers, recommended mode of delivery, and course duration	1. Can you think of any problems with delivering this content? If yes, how could we improve this? 2. What is the best method of delivery? What do you think of the proposed programme - what do you like and not like? 3. What length of a course would be acceptable to you?
3	Additional suggestions	1. How would you improve this proposed SHRE programme?

Step 8: A blueprint for improved SHRE for young adults in Tehran

Following *Step 7*, the document generated in *Step 6* was adjusted to reflect changes suggested by the stakeholders. This was managed in three steps. First, the changes requested by participants were categorised in terms of content, order, and desirability. This involved changing the order of content and changing an "essential" subject to a "desirable" one and/or vice versa. Second, requests for addition of missing content were noted. Since the general feedback from participants was positive, and minimal critique was offered, only minor changes

were needed. Third, and finally, additionally requested subjects and relevant objectives were added to the content list. The latter amendments were undertaken in consultation with the candidates' supervisors and the Iranian experts whose advice was sought in earlier stages. This resulted in a final blueprint for an SHRE course to be delivered for young adults in Tehran.

5.3: Results

Findings for each of the 8 research steps are:

1. Summarising stakeholders' recommendations from (previously conducted) needs assessments
2. Identification and review of the English-language best practice guidelines
3. Extraction of the content and delivery recommendations from the selected guidelines
4. Description of the content of officially-endorsed Persian-language SHRE materials used in Tehran
5. Mapping the Persian-language SHRE content against international recommendations
6. Recommendations for an enhanced SHRE programme suitable for young adults in Tehran
7. Review of proposed SHRE materials by Iranian healthcare professionals and young adults
8. Integration of the above to generate a revised SHRE programme outline for young adults in Tehran

Step 1: Summarising stakeholders' recommendations from (previously conducted) needs assessments

Table 5.3 presents the extracted recommendations from the studies reported in Chapters 3 and 4. In total 112 quotes including content recommendations for SHRE in Tehran were identified from the previous two studies. These quotes were categorised into 8 topic or subject groups as shown below:

1) sexual and reproductive organs,
2) puberty and body changes,
3) fertility and reproduction,
4) sexually transmitted infections (STIs) including HIV,
5) contraception and condom use,
6) relationship management skills (e.g., condom negotiation, saying no to unwanted encounters),
7) communication and decision-making skills,
8) provision of contact details for available sexual healthcare facilities.

The most recommended subject by both groups (young adults, YA, and healthcare professionals, HCP) was contraception and condom use (45 quotes), and the least recommended content was puberty and body changes (3 quotes). There was a strong consensus amongst young adults and healthcare professionals regarding the importance of learning about sexual anatomy (YA: 10, HCP: 9) and puberty and body changes (YA: 2. HCP:1). Some topics were emphasised more by one group than the other, including contraception and condom use (YA: 12, HCP: 33) and STIs prevention (YA: 4, HCP: 18). Provision of contact details for available sexual healthcare was only recommended by healthcare professionals.

While some recommendations were not explained in detail (e.g., Puberty) by the interviewed young Tehranians and healthcare professionals, clarifications were offered for some others (e.g.; contraception options and use), which were noted accordingly. By contrast, recommendations made by healthcare professionals tended to be more detailed and specific, presumably because of their greater knowledge and expertise.

The range of recommendations and the number of times each was quoted as well as illustrative quotes are presented in Table 5.3. All extracted quotes are included in Appendix 3.7 and 4.7.

Table 5.3: Recommendations from the needs assessments, reported in Chapters 3 & 4.

	Content Recommendation	Example Quote
1	Sexual and Reproductive Organs (YA: 10, HCP: 9) - Discussing male and female genitals and sexual organs	*It should be started from the beginning of elementary school with teaching about sexual organs. (YA)* *The first thing that definitely needs to be taught is the anatomy of sexual organs. (HCP)*
2	Puberty and Body Changes (YA: 2, HCP: 1)	*Girls' periods usually start at the age of 9 or 10, so in an open-minded society we should teach them about the anatomy of their bodies. (YA)* *… puberty and body changes, periods. (HCP)*
3	Contraception and Condom Use (YA: 12, HCP: 33) - Different contraception methods, and their success and failure rates - Different contraception options and choosing the right one for individual circumstances - How to buy, carry, and use condoms	*Then they should talk about sexual health and preventive methods. (YA)* *Contraceptive methods and their failure rates, which methods are out there and who should choose what method. (HCP)* *Then I would tell them about STIs and how they can use condoms to protect themselves. (YA)* *They should be taught about using condoms. (HCP)*
4	Fertility and Reproduction (YA: 3, HCP: 1)	*I would explain about how these things happen scientifically. Like pregnancy. (YA)* *How conception happens, how to aid or avoid it. (HCP)*

	Content Recommendation	Example Quote
5	Sexually Transmitted Infections (STIs) and HIV (YA: 4, HCP: 18) - STIs transmission, prevention, and protection methods - General information including the name of common STIs - Regular STIs testing - HPV vaccination	*In middle school we should work on their sexual health and disease prevention. (YA)* *Also teach them about all STIs, prevention and protection methods. (HCP)*
6	Relationship Management (YA: 2, HCP: 5) - Saying no to risky and unwanted sexual encounters and offers - Negotiation of condom use	*Advice on sexual relationships should start at the ages of 12 or 13. (YA)* *I believe now the most important subject that needs to be covered is the management of sexual relationships. (HCP)*
7	Communication and Decision-Making Skills (YA: 0, HCP: 6)	*Social and communication skills, like learning to have the courage to say no even if there is a risk that they would lose the person's interest or the relationship altogether. (HCP)*
8	Provision of Contact Details of Available Sexual Healthcare (YA: 0, HCP: 6)	*I would tell them the contact details and locations of sexual health centres in case they need to refer to a specialist. (HCP)*

Step 2: Identification of English-language best practice guidelines

Results of the search process

Our search identified 979 documents, which included one or some of the searched keywords. Of these, 934 were excluded after their titles, abstracts, and tables of content were checked and assessed against the inclusion criteria. This resulted in 45 guidance documents being retained. These were developed by 12 international and 21 national organisations and included content recommendations that could be used to support the design and development of SHRE (Table 5.4).

Forty-three of the forty-five guidelines were identified through searching for grey literature using an internet search engine (Google), as opposed to more traditional scientific literature search sources (e.g.; PubMed), because such guidelines are often not published in peer-reviewed outlets. All of the guidelines included references to human rights and referenced evidence of effectiveness reported in the scientific literature, including articles, systematic reviews, and reviews of reviews. Table 5.4 presents the number of identified guidelines developed by each international and national organisation. It is worthy to note that some guidelines were created in collaboration with multiple organisations, details of which are mentioned in Table 5.5.

Table 5.4: Number of Identified Guidelines developed by National and International Organisations

	Organisation	Number of Identified Guidelines	International / National
1	United Nations Population Fund (UNFPA)	5	International
2	World Health Organization (WHO)	5	International
3	Sex Information and Education Council of Canada	4	National, Canada
4	International Planned Parenthood Federation (IPPF)	3	International
5	New Zealand Government Ministry of Education	3	National, New Zealand
6	United Nations Educational, Scientific and Cultural Organization (UNESCO)	3	International
7	UK Government Department for Education	2	National, UK
8	The Joint United Nations Programme on HIV/AIDS (UNAIDS)	2	International
9	United Nations Children's Fund (UNICEF)	2	International
10	Human Reproduction Program (HRP)	2	International
11	UK Government, House of Commons	2	National, UK
12	Government of Western Australia, Department of Health	2	National, Australia
13	The Federal Centre for Health Education (BZgA)	2	National, Government of Germany
14	The National Society for the Prevention of Cruelty to Children (NSPCC)	1	National, UK
15	The Council for the Curriculum, Examinations and Assessments (CCEA)	1	National, UK
16	Action Canada	1	National, Canada

	Organisation	Number of Identified Guidelines	International / National
17	Houses of the Oireachtas	1	National, Republic of Ireland
18	Plan International	1	International
19	The United Nations Entity for Gender Equality and the Empowerment of Women (UN WOMEN)	1	International
20	Brook UK	1	National, UK
21	The National Council for Curriculum and Assessment (NCCA)	1	National, Republic of Ireland
22	The Independent Advisory Group on Sexual Health and HIV by Medical Foundation for AIDS & Sexual Health (MedFASH)	1	National, USA
23	Centres for Disease Control and Prevention (CDC)	1	National, US Government
24	Connecticut Department of Education	1	National, USA
25	Minnesota Psychological Association	1	National, US Government
26	Canadian Council on Learning	1	National, Canada
27	National Association of School Nurses (NASN)	1	National, USA
28	Education, Training and Research (ETR)	1	National, US based NGO
29	Washington Office of Superintendent of Public Instruction	1	National, US Government
30	The American College of Obstetricians and Gynaecologists (ACOG)	1	National, USA
31	Family Planning Victoria	1	National, Australian Government

	Organisation	Number of Identified Guidelines	International / National
32	American School Health Association	1	National, USA
33	Population Council	1	International
34	Future of Sex Education Initiative	1	National, USA
35	Sex Education Forum UK	1	National, UK

Thirty-nine of the identified documents were excluded as they did not match the study's inclusion criteria. The reason for exclusion of these documents is explained in Table 5.5.

Table 5.5: Included and Excluded Documents.

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
1	Standards for Sexuality Education in Europe	2010	WHO Regional Office for Europe and BZgA	Excluded. Updated and more comprehensive version is included (item 18 on this list)
2	Putting Sexuality Back into Comprehensive Sexuality Education Tips for delivering sex-positive workshops for young people	2016	International Planned Parenthood Federation (IPPF)	Excluded. The complete version is included (item 4 on the list)
3	Relationships Education, Relationships and Sex Education, and Health Education in England Summary of Department for Education (DfE) statutory guidance on what schools in England must and should deliver	2019	The National Society for the Prevention of Cruelty to Children (NSPCC)	Excluded. Summary of an included document (item 13 on this list)
4	Framework for Comprehensive Sexuality Education (CSE)	2010	International Planned Parenthood Federation (IPPF)	Included
5	Relationships and Sexuality Education Guidance	2019	The Council for the Curriculum, Examinations and Assessments (CCEA)	Excluded. Did not include content recommendations
6	The State of Sex-Ed in Canada	2019	Action Canada	Excluded. Evaluation of SHRE provision in Canada

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
7	School-based Relationships and Sexuality Education (RSE): Lessons for Policy and Practice	2018	Houses of the Oireachtas	Excluded. Review of SHRE provision in Republic of Ireland
8	Sexuality Education – A Guide for Principals, Boards of Trustees, and Teachers	2015	New Zealand Government Ministry of Education	Excluded. Summary of an included document (items 10 and 11 on this list)
9	Operational Guidance for Comprehensive Sexuality Education: A Focus on Human Rights and Gender	2014	UNFPA	Excluded. Summary of an included document (item 18 on this list)
10	Sexuality Education – A Guide for Principals, Boards of Trustees, and Teachers: Years 1–8	2018	New Zealand Government Ministry of Education	Included
11	Sexuality Education – A Guide for Principals, Boards of Trustees, and Teachers: Years 9–13	2018	New Zealand Government Ministry of Education	Included
12	Sexual and Reproductive Health and Rights	2016	Plan International	Excluded. Did not include content recommendations
13	Relationships Education, Relationships and Sex Education (RSE) and Health Education	2019	UK Government Department for Education	Included
14	Questions & Answers: Sexual Health Education in Schools and Other Settings	2020	Sex Information and Education Council of Canada	Excluded. Did not include content recommendations
15	Canadian Guidelines for Sexual Health Education	2020	Sex Information and Education Council of Canada	Excluded. Did not include content recommendations

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
16	Merging Evidence, Lessons and Practice in Comprehensive Sexuality Education, A Global Review	2015	UNESCO	Excluded. Review of SHRE provision in a global context
17	Promoting Goals in Population, Reproductive Health and Gender	2003	UNFPA	Excluded. Published before 2010
18	International Technical Guidance on Sexuality Education An Evidence-Informed Approach	2018	UNAIDS, UNFPA, UNICEF, UN WOMEN, WHO	Included
19	International Technical and Programmatic Guidance on Out-of-School Comprehensive Sexuality Education	2020	UNFPA, UNESCO, WHO, UNICEF, UNAIDS, HRP (human reproduction programme)	Excluded. Another version is included (item 18 on the list)
20	Relationships and Sex Education in Schools (England)	2020	UK Government House of Commons	Excluded. Review of SHRE provision in England
21	Sex and Relationships Education (SRE) for the 21st Century	2014	Brook UK, Sex Education Forum UK	Excluded. Did not include content recommendations
22	Sex and Relationship Education Guidance	2000	UK Government Department for Education	Excluded. Published before 2010
23	The Evaluation of Comprehensive Sexuality Education Programmes: A Focus on the Gender and Empowerment Outcomes	2015	UNFPA	Excluded. Evaluation of SHRE programmes

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
24	WHO Consolidated Guideline on Self-care Interventions for Health: Sexual and Reproductive Health and Rights	2019	WHO, HRP (Human Reproduction Program)	Excluded. Did not include content recommendations
25	Relationships and Sexuality Education (RSE) in Primary and Post-Primary Irish Schools	2018	Republic of Ireland, The National Council for Curriculum and Assessment (NCCA)	Excluded. Evaluation of SHRE provision in the Republic of Ireland
26	Sexual Health Education in the Schools: Questions & Answers	2015	Sex Information and Education Council of Canada	Excluded. Did not include content recommendations
27	Sexuality Education in Europe and Central Asia State of the Art and Recent Developments	2018	Government of Germany, The Federal Centre for Health Education, BZgA and the International Planned Parenthood Federation European Network, (IPPF)	Excluded. Review of SHRE provision in 25 countries
28	Canadian Guidelines for Sexual Health Education	2008	Sex Information and Education Council of Canada	Excluded. Published before 2010
29	Progress and Priorities – Working Together for High Quality Sexual Health. Review of the National Strategy for Sexual Health and HIV	2008	The Independent Advisory Group on Sexual Health and HIV by Medical Foundation for AIDS & Sexual Health (MedFASH)	Excluded. Published before 2010

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
30	Life Lessons: PSHE and SRE in Schools	2015	UK Government House of Commons	Excluded. Review of SHRE provision in England
31	Developing a Scope and Sequence for Sexual Health Education	2016	US Government, CDC	Excluded. Provided by a US government / US based Organisation
32	Guidelines for the Sexual Health Education Component of Comprehensive Health Education	2007	US Government, Connecticut Department of Education	Excluded. Provided by a US government / US based Organisation
33	Best Practices for Sexual Health & Relationship Education	2018	Minnesota Psychological Association	Excluded. Provided by a US government / US based Organisation
34	Best-Practice: Sexuality Education for Children and Youth with Physical Disabilities- Developing a Curriculum Based on Lived Experiences	2010	Canadian Council on Learning	Excluded. Provides guidelines for youth with physical disabilities
35	Sexual Health Education in Schools	2017	National Association of School Nurses (NASN)	Excluded. Provided by a US government / US based Organisation
36	Best Practices of Sex Education	2019	ETR, a US based NGO	Excluded. Provided by a US government / US based Organisation
37	Reviewed SHE Instructional Materials List	2019	US Government, Washington Office of Superintendent of Public Instruction	Excluded. Provided by a US government / US based Organisation

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
38	International Guidelines on Sexuality Education: An Evidence Informed Approach to Effective Sex, Relationships and HIV/STI Education	2009	UNESCO	Excluded. Published before 2010
39	Comprehensive Sexuality Education	2020	ACOG (the American College of Obstetricians and Gynaecologists)	Excluded. Provided by a US government / US based Organisation
40	Reproductive and Sexual Health	2020	Australian Government, Family Planning Victoria	Excluded. Aimed at public, similar to Brook in the UK
41	Sexuality and Relationship Education Training to Primary and Secondary School Teachers: An Evaluation of Provision in Western Australia	2018	Australian Government, Government of Western Australia, Department of Health	Excluded. Evaluation of SHRE provision in Western Australia
42	Relationships and Sexuality Education	2012	Australian Government, Government of Western Australia, Department of Health	Excluded. Provided links to SHRE information and activities aimed at public
43	National Sexuality Education Standards	2012	American School Health Association, Future of Sex Education Initiative.	Excluded. Provided by a US government / US based Organisation

	Identified Documents	Date of Publication	Publishing Organisation	Included / Excluded
44	It's All One Curriculum: Guidelines and Activities for a Unified Approach to Sexuality, Gender, HIV, and Human Rights Education	2011	Population Council	Included
45	Developing sexual health programmes A framework for action	2010	World Health Organization, Department of Reproductive Health and Research	Excluded. Did not include content recommendations

In summary, searching online databases and Google identified 979 documents, of which 934 did not meet the study's inclusion criteria. The remaining 45 documents were assessed for eligibility and six were found to match the inclusion criteria and so were retained for analysis. These were:

1. International Technical Guidance on Sexuality Education, An Evidence-Informed Approach (UNESCO, UNAIDS, UNFPA, UNICEF, UN WOMEN, WHO) (2018)

2. Framework for Comprehensive Sexuality Education (CSE) (International Planned Parenthood Federation (IPPF)) (2010)

3. Sexuality Education. A Guide for Principals, Boards of Trustees, and Teachers: Years 1–8 (New Zealand Government Ministry of Education) (2020a)

4. Sexuality Education. A Guide for Principals, Boards of Trustees, and Teachers: Years 9–13 (New Zealand Government Ministry of Education) (2020b)

5. Relationships Education, Relationships and Sex Education (RSE) and Health Education (UK Government Department for Education) (2019)

6. It's All One Curriculum: Guidelines and Activities for a Unified Approach to Sexuality, Gender, HIV, and Human Rights Education (Population Council) (2011)

These guidelines were written for use by programme designers and policymakers responsible for developing, implementing and evaluating SHRE programmes in and out of school settings.

Most guidelines were aimed at head teachers and school teachers, followed by curriculum developers, SHRE programme designers, school principals, education policymakers, government education ministers, and leaders. Table 5.6 illustrates the intended audiences defined by each guideline.

Table 5.6: Intended Audience by Guideline

	Audience	Guidelines					
		1	2	3	4	5	6
1	Curriculum developers, SHRE programme designers	✓	✓				✓
2	Head teachers, School teachers	✓		✓	✓	✓	✓
3	School principals, School administrators	✓				✓	✓
4	Community educators						✓
5	Governing bodies, Proprietors					✓	
6	Education policymakers, Government education ministers	✓	✓				✓
7	Boards of Trustees			✓	✓		
8	Leaders, Senior leadership teams			✓	✓	✓	
9	Health authorities, Healthcare professionals	✓	✓				
10	Non-governmental organisations (NGOs), Youth workers	✓					

Step 3: Extraction of the content and delivery recommendations from the selected guidelines

The six retained guidance documents were searched for recommendations on SHRE. Recommendations from each were categorised in terms of (1) content, (2) duration of delivery (e.g., how long should the course be delivered for), and (3) delivery methods. Findings are presented in Table 5.7. There was a strong consensus regarding SHRE content across guidelines. Overall, 15 core areas were identified. Eight of these corresponded to the 8 topic areas recommended

by young adults and healthcare professionals in the previous studies, which are categorised in *Step 1* (Table 5.3).

Searching the six best practice guidelines for SHRE content recommendations also generated seven new subject areas, not mentioned by the interviewed Tehranian stakeholders. These were:

1. Consent
2. Pleasure
3. Abortion
4. Gender and Sex
5. Sexual Rights
6. Violence Prevention
7. Staying Safe Online with Sexual Content and Image Sharing

Table 5.7 to Table 5.9 summarise the content and delivery recommendations extracted from each of the six retained guidelines.

Table 5.7: Content and Delivery Recommendations, Extracted from Best Practice Guidelines

Guideline 1 International Technical Guidance on Sexuality Education: An Evidence-Informed Approach		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Pleasure, Relationship management, Communication and decision-making skills, Violence prevention, Staying safe online with sexual content and image sharing, Sexual health services, Consent, Puberty and body changes, Abortion.	During school or out of school hours. No specific duration advised.	During school or out of school hours. Focus on spiral training where the age and development stage of participants are considered and each level of education is built upon previous learnings. Safe and non-judgmental learning, accessible and confidential with opportunities to ask questions. The guideline advises for inclusion of a strong support system, tolerance and acceptance, observing cultural and religious reservations, and a whole school/holistic approach.

Guideline 2 Framework for Comprehensive Sexuality Education (CSE)		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Pleasure, Relationship management, Communication and decision-making skills, Violence prevention, Sexual health services, Consent, Puberty and body changes, Abortion	During school or out of school hours. No specific duration advised.	During school or out of school hours. Safe and non-judgmental learning, accessible and confidential with opportunities to ask questions, availability of self-education resources. The guideline advises for inclusion of a strong support system, tolerance and acceptance, observing cultural and religious reservations, and provision of self-education resources.

Guideline 3 Sexuality Education – A Guide for Principals, Boards of Trustees, and Teachers: Years 1–8		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Pleasure, Relationship management, Communication and decision-making skills, Violence prevention, Staying safe online with sexual content and image sharing, Sexual health services, Consent, Puberty and body changes.	During school hours, as guided by the New Zealand Government's Department of Education.	During school hours. A whole school approach is introduced where gender identity is taken into consideration for use of gym, shower and restroom facilities. A holistic curriculum approach is recommended where SHRE training is reinforced in other subjects such as arts and philosophy. Classes are encouraged to be held in mixed-gender settings. Safe and non-judgmental learning, accessible and confidential with opportunities to ask questions, availability of self-education resources. Focus on spiral training where the development stage of participants is considered and each level of education is built upon previous learnings. The guideline advises for inclusion of a strong support system, tolerance and acceptance, and observing cultural and religious reservations.

Guideline 4 Sexuality Education – A Guide for Principals, Boards of Trustees, and Teachers: Years 9–13		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Pleasure, Relationship management, Communication and decision-making skills, Violence prevention, Staying safe online with sexual content and image sharing, Sexual health services, Consent, Puberty and body changes.	During school hours, as guided by the New Zealand Government's Department of Education.	During school hours. A whole school approach is introduced where gender identity is taken into consideration for use of gym, shower and restroom facilities. A holistic curriculum approach is recommended where SHRE training is reinforced in other subjects such as arts and philosophy. Classes are encouraged to be held in mixed-gender settings. Safe and non-judgmental learning, accessible and confidential with opportunities to ask questions, availability of self-education resources. Focus on spiral training where the development stage of participants is considered and each level of education is built upon previous learnings. The guideline advises for inclusion of a strong support system, tolerance and acceptance, and observing cultural and religious reservations.

Guideline 5 Relationships Education, Relationships and Sex Education (RSE) and Health Education		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Relationship management, Communication and decision-making skills, Violence prevention, Staying safe online with sexual content and image sharing, Sexual health services, Consent, Puberty and body changes, Abortion.	During school hours, as guided by the UK Government's Department of Education.	During school hours. Classes are encouraged to be held in mixed-gender settings. Cultural and religious reservations are advised to be taken into consideration. Safe and non-judgmental learning, accessible and confidential with opportunities to ask questions, availability of self-education resources. Focus on spiral training where the development stage of participants is considered and each level of education is built upon previous learnings. The guideline advises for inclusion of a strong support system, tolerance and acceptance, and a whole school/holistic approach.

Guideline 6 It's All One Curriculum: Guidelines and Activities for a Unified Approach to Sexuality, Gender, HIV, and Human Rights Education		
Content Recommendation	**Duration**	**Delivery Method / Setting**
Gender and sex, Sexual rights, Sexual and reproductive organs, Fertility and reproduction, Contraception and condom use, STIs and HIV, Pleasure, Relationship management, Communication and decision-making skills, Violence prevention, Sexual health services, Consent, Puberty and body changes, Abortion.	Specially developed for young people aged 15 and older, no specific duration advised.	During school and out of school hours. Specially developed for young people aged 15 and older, for in and out of school use. The guideline advises SHRE to be accessible, confidential, including a strong support system, tolerant and accepting, and observant of cultural and religious reservations.

Table 5.8 shows that almost all 15 subject areas were recommended by all six guidelines and lists these 15 subject areas with a summary of objectives based on the content of the six guidelines.

Table 5.8: Content recommendations and summary of objectives from all six guidelines

	Content Recommendation	Summary of Objectives	Guidelines					
			1	2	3	4	5	6
1	Sexual and Reproductive Organs	To describe external and internal male and female sexual and reproductive organs, and explain how these change during and after puberty, and to explain the functions of sexual organs in relation to reproduction, sexual activity, and sexual pleasure.	✓	✓	✓	✓	✓	✓
2	Puberty and Body Changes	To explain the age range in which boys and girls experience puberty, including the menstrual cycle and the various physical symptoms and feelings associated with periods, and to emphasise that menstruation is a natural and normal part of a female's development and should not be secret or stigmatised.	✓	✓	✓	✓	✓	✓
3	Consent	To provide information on what consent is and how to give and receive consent, the unacceptability of coercion, and the importance of individual rights.	✓	✓	✓	✓	✓	✓
4	Pleasure	To highlight that having sex is a mean for reaching mutual pleasure and should not be exclusively viewed as a mean for reproduction.	✓	✓	✓	✓		✓
5	Communication and Decision-Making Skills	To provide information and skills training on relationship management and self-protection, including assertiveness and saying "No", and explaining how making informed decisions can protect an individual's and their partner's sexual health and relationship well-being.	✓	✓	✓	✓	✓	✓

	Content Recommendation	Summary of Objectives	Guidelines					
			1	2	3	4	5	6
6	Relationship Management	To reiterate that consent is critical, and desire and willingness must be expressed by both partners. To establish that all relationships should be based on mutual respect, responsibility, openness, and acceptance, and to explain the need for trust, commitment, communication, and power balance in every relationship.	✓	✓	✓	✓	✓	✓
7	Sexually Transmitted Infections (STIs) and HIV	To describe a range of STIs, explaining their symptoms and their transmission methods, and the importance of consistent condom use, and regular testing. To emphasise the increased risk of STI transmission associated with multiple sexual partners and inconsistent condom use, highlighting that condoms are the only protection against STIs. To offer information on doctors, healthcare providers, and community health centres providing confidential advice and testing.	✓	✓	✓	✓	✓	✓
8	Contraception and Condom Use	To explain that condoms protect against unintended pregnancy and are the only protection against STIs. To discuss the correct and consistent use of contraceptives apart from condoms. To describe and provide instructions for use on contraceptives (other than condoms), their effectiveness, benefits, and side effects including reversible and permanent (sterilisation) methods, emergency contraception, and longer-acting reversible contraception or LARC (implants, intrauterine devices).	✓	✓	✓	✓	✓	✓
9	Fertility and Reproduction	To explain how pregnancy happens.	✓	✓	✓	✓	✓	✓

	Content Recommendation	Summary of Objectives	Guidelines					
			1	2	3	4	5	6
10	Abortion	To remind that lack of condom and contraceptives use is likely to result in an unintended pregnancy, and to provide information on abortion, its accessibility, and its potential consequences.	✓	✓			✓	✓
11	Access to SHRE Resources and Sexual Health Services	To provide information on available resources for self-study, and to provide information on clinics and sexual health services and test centres.	✓	✓	✓	✓	✓	✓
12	Gender and Sex	To discuss definitions and differences of sex, sexuality, and gender and how do they relate to one another. To encourage non-judgmental discussions about different sexual identities and orientations, and to emphasise on inclusion and acceptance. To explore gender roles and stereotypes and to discuss perceptions of masculinity and femininity within the family and society and how these lead to gender inequalities and gender bias.	✓	✓	✓	✓	✓	✓
13	Sexual Rights	To discuss gender equality and existing cultural and social barriers to exercising gender equality.	✓	✓	✓	✓	✓	✓
14	Violence Prevention	To describe and explain different types of abuse, including sexual, physical, and emotional abuse, and to identify behaviours associated with each of these. To provide safe and confidential information on places and contacts to reach out to, in case of experiencing violence.	✓	✓	✓	✓	✓	✓

	Content Recommendation	Summary of Objectives	Guidelines					
			1	2	3	4	5	6
15	Staying Safe Online with Sexual Content and Image Sharing	To discuss online abuse, including cyberbullying and blackmailing. To provide a list of safe and confidential contacts who can help provide advice on how to respond to online abuse.	✓		✓	✓	✓	

All guidelines recommended SHRE to be delivered as a part of school curricula, and three recommended both in and out of school training. A number of characteristics were suggested for SHRE courses, such as safe and confidential training, and inclusion of time and opportunity for the students to ask their questions. In terms of gender mix, three guidelines suggested a mixed-gender setting, while the other three did not provide any recommendations. Table 5.9 illustrates all delivery and setting recommendations made by the six guidelines, showing suggestions made by each guidance document.

Table 5.9: Delivery Method/Setting by Guideline

	Delivery Method/Setting	**Guidelines**					
		1	**2**	**3**	**4**	**5**	**6**
1	During school	✓	✓	✓	✓	✓	✓
2	Out of school hours	✓	✓				✓
3	Safe and non-judgmental learning	✓	✓	✓	✓	✓	
4	Focus on spiral training	✓		✓	✓	✓	
5	Accessible	✓	✓	✓	✓	✓	✓
6	Confidential	✓	✓	✓	✓	✓	✓
7	Providing opportunities to ask questions	✓	✓	✓	✓	✓	
8	Whole school/holistic approach	✓		✓	✓	✓	
9	Offering self-education resources		✓	✓	✓	✓	
10	Mixed-gender settings			✓	✓	✓	
11	Inclusion of a strong support system	✓	✓	✓	✓	✓	✓
12	Offering tolerance and acceptance	✓	✓	✓	✓	✓	✓
13	Observing cultural and religious reservations	✓	✓	✓	✓	✓	✓

Step 4: Description of the content of officially-endorsed Persian-language SHRE materials used in Tehran

The key documents identified included six slides about HIV for high schools, four booklets that are used in pre-marriage classes and an unofficial course plan for the "Science of Population" module at universities. Table 5.10 presents the details of each of these materials. In general, there is a limited SHRE content covered in all of these resources. The HIV-awareness slides do not provide detailed information on HIV transmission and prevention methods in a sexual relationship, and contain scientific language that is difficult to understand (e.g.: there are pictures of how the virus multiplies and consumes cells). Similarly, the books used for pre-marriage classes are also insufficient in relation to SHRE provision. Of all the four books, only one (Marriage and Islamic teachings, emotional and social relationships, sexual relationships, and healthy childbearing) contains minimal SHRE content (e.g.; male and female sexual organs in scientific terms and without illustrative pictures, and some contraceptive options, but not condoms). The other three are based on non-SHRE content, such as childbearing, laws around marriage registration and divorce, and ways to treat your spouse based on Islamic advice. Moreover, the module aimed at undergraduate university students ("Science of Family and Population") has no official course plan, and the general training guidance is based on Islamic teachings on family and marriage and has no SHRE content. Although there is a book suggested for the module, the book itself is not used and the general messages from the book are discussed in respective classes, based on the lecturers' individual course plans and teaching decisions. Table 5.10 provides further details on the Persian-language SHRE provision, its intended audience, delivery method and materials description.

Table 5.10: Description of Persian-language SHRE Materials

	Type of Provision	Audience	Delivery Period	Materials	Material's Description
1	HIV-Awareness	Senior high school students (15-17 years old)	Anytime during senior high school. Non-compulsory module. Delivery is dependent on the principal's discretion.	6 Slides	All slides are focused on HIV and offer minimal information and some pictures of the stages of the disease.
2	Science of Family and Population	Undergraduate university students	Anytime during an undergraduate course. Delivery and content are dependent on the lecturer's discretion.	1 Module. No official materials.	The module content is similar to the other non SHRE materials taught in pre-marriage classes and has no SHRE content. Although there is a book suggested for the module, the book itself is not used and the general messages from the book are discussed in respective classes, based on the lecturers' individual course plans and teaching decisions.
3	Pre-marriage classes	Couples wishing to be legally married	After obtaining a permission for legally registering a marriage and before receiving a legal marriage certificate.	Book 1: Marriage and Islamic teachings, emotional and social relationships, sexual relationships, and healthy childbearing	80 pages. Up to page 42 consists of religious teachings for a happy marriage.

	Type of Provision	Audience	Delivery Period	Materials	Material's Description
3	Pre-marriage classes	Couples wishing to be legally married	After obtaining a permission for legally registering a marriage and before receiving a legal marriage certificate.	Book 2: Marriage and Islamic teachings, Spouse's rights according to Islam	55 pages. Does not contain SHRE material. The booklet is focused on the couple's rights within a legally registered marriage.
				Book 3: A guide to a happy and lasting marriage for young couples	118 pages. This book has no SHRE content. Includes subjects such as house chores and division of duties, saving and financial stability, cooking and managing a healthy diet, and raising a happy child.
				Book 4: Love and Tranquillity	140 pages. Focusing on Islamic ways of managing life.

Step 5: Mapping the Persian-language SHRE content against international recommendations

Complete description of all Persian-language materials is included in Appendix 5.1. All Persian materials were assessed for SHRE and non-SHRE content, examples of which are displayed below in Table 5.11. In general, these materials were primarily focused on sustaining existing cultural and religious beliefs around marriage and family planning, and the SHRE content was insufficient and minimally explained. Of all 15 subject areas recommended by best practice guidelines, including the 8 subjects that were specifically requested by the interviewed Tehranian young adults and healthcare professionals (Table 5.3), only two are minimally and insufficiently mentioned in the current provision. These include male and female sexual organs and some contraceptive options. However, even in these two areas, use of scientific language, lack of illustrative resources and model demonstrations, insufficient, ambiguous, and possibly misleading content were identified. Thus, by the standards identified in international guidelines and the content recommended by young adults and healthcare professionals, these materials provide very poor SHRE.

These Persian materials are used in pre-marriage classes, which people attend before getting legally married. Since the legal age of marriage is 18, it can be assumed that the earliest an individual can access this minimal information is age 18. The Persian-language materials are highly focused on lifestyle and family management advice, and although they include useful information, SHRE content is minimal and largely absent. For example, the books taught in pre-marriage classes include information on marriage and its importance in Islam, childbearing, social and emotional aspects of marriage, legal rights of spouses and divorce laws, rights during engagement and after the proposal, and rules applied when getting officially married. Overall, the majority of the 15 recommended subject areas are missing from the Persian-language materials.

Table 5.11: Example of SHRE and non-SHRE Content in Persian-language Materials

			SHRE Content Example	**Non-SHRE Content Example**
1	Pre-marriage Classes	Book 1: Marriage and Islamic teachings, emotional and social relationships, sexual relationships, and healthy childbearing	Sexual anatomy of male and female organs: Sexual anatomy of males, Sexual anatomy of females. Contraception: Pills, Injections, Condoms, Emergency contraception.	Marriage and its importance in Islam, Childbearing, Social and emotional aspects of marriage.
		Book 2: Marriage and Islamic teachings, Spouse's rights according to Islam	Not applicable	Legal rights of spouses and divorce laws, Rights during engagement and after the proposal, Rules applied when getting officially married.
		Book 3: A guide to a happy and lasting marriage for young couples	Not applicable	House chores and division of duties, saving and financial stability, cooking and managing a healthy diet, and raising a happy child.
		Book 4: Love and Tranquillity	Not applicable	Focus on Islamic ways of managing life: How to compromise or be flexible towards your spouse, as is advised by religious leaders. Stories and religious analogies on resilience, flexibility, problem-solving, and standing together during difficult times.

			SHRE Content Example	Non-SHRE Content Example
2	HIV Slides	Slide 1	HIV focused content	Not applicable
		Slide 2	HIV focused content	Not applicable
		Slide 3	HIV focused content	Not applicable
		Slide 4	HIV focused content	Not applicable
		Slide 5	HIV focused content	Not applicable
		Slide 6	HIV focused content	Not applicable
3	University Module	Unofficial Course plan	Not applicable	How to choose the right spouse. Islamic model of a happy family, including equality and homogeneity. Financial management of family affairs. How to raise children.

Table 5.12 illustrates the Persian-language materials mapped to the 15 subject areas recommended by the best practice guidelines, and how the Iranian provision corresponds to such recommendations.

Table 5.12: Mapping Persian-language Materials against Content Recommendations from Best Practice Guidelines.

	Content Recommendations	Discrepancy with Best Practice Guidelines' Content Recommendations
1	Gender and Sex	The content at pre-marriage classes is solely focused on heterosexual couples, and traditional definitions of men and women, including their physical features and social roles. Therefore, content on different sexual identities and sexual orientations are not included.
2	Sexual Rights	Similar to "Gender and Sex", there is no mentioning of sexual rights in this set of materials.
3	Sexual and Reproductive Organs	Although the structures of male and female genitals are briefly explained, there are no illustrative figures; and figurative displays are not used in classes. Therefore, comprehension of the shape and location of these organs may be unclear to students. Moreover, hymen is named as a body organ in females, which will break during the first sexual intercourse. This may foster misconceptions and sustain cultural taboos around virginity.
4	Fertility and Reproduction	There is no content that directly explains how pregnancy happens, although there are non-SHRE contents describing the best methods of raising a child and healthy eating habits during pregnancy.
5	Contraception and Condom Use	Only contraceptive pills, injections and condoms are explained in detail. IUDs are not described. There is no information explaining where and how to access these contraceptives. No details are provided on the available brands; and the items are not displayed in the class. Condom use demonstration is not included. Emergency contraception is explained.
6	STIs and HIV	It is stated that only condoms protect against the STIs, however no STIs are described. Since HIV testing is included in the compulsory pre-marriage tests, there may be information provided on HIV in the labs, although this is unclear.

	Content Recommendations	Discrepancy with Best Practice Guidelines' Content Recommendations
7	Pleasure	There is no information on sexual pleasure.
8	Relationship Management	The text does not provide information on decision-making, problem solving or assertiveness as skills, as recommended by the best practice guidelines. There is limited information on some aspects of relationship management, for example on open discussion of needs and limits. Negotiation and assertiveness are not presented on individual behavioural skills. The nearest content is religious advice on managing a household and, importantly, being kind and considerate towards one's partner.
9	Communication and Decision-Making Skills	Similar to the content mapped onto for "Relationship Management", no information is included on learning about communication and decision-making skills.
10	Violence Prevention	No information on violence prevention is provided.
11	Staying Safe Online with Sexual Content and Image Sharing	There is no information on staying safe online with sexual content and image sharing.
12	Sexual health services	No information is provided on how and where to access sexual health services.
13	Consent	No information is provided on consent.
14	Puberty and Body Changes	No information is provided on puberty and body changes.
15	Abortion	Since abortion is illegal in Iran, there is no information available on abortion in these materials.

Step 6: Recommendations for enhanced SHRE in Tehran

The eight content areas recommended by Tehranian young adults and healthcare professionals in our previous needs assessment studies, were found to be included across the six retained best practice guidelines, while this content is mainly absent from the current provision and SHRE materials used in Tehran.

All 15 subject areas recommended by best practice guidelines were included in the proposed SHRE programme outline for use in Tehran (including the 8 subject areas recommended by Tehranian young adults and healthcare professionals). Detailed objectives were specified for each subject using objectives recommended in the six selected best practice guidelines, and consultations with the candidate's supervisors and the four Iranian HCPs. Additionally, illustrative links were added to related content on Brook, in order to demonstrate the message that each subject would communicate.

Overall, internationally recognised guidance provided recommendations on content and delivery methods which mirrored and extended the content identified in our two needs assessment studies. These were translated into a tailor-made SHRE programme that could be delivered in Tehran. This blueprint, highlighting content, including subjects, specific objectives, suggested duration of delivery, and illustrative links to materials used by Brook, is presented in Appendix 5.2. A modified version including revisions arising from consultations with young adults and healthcare professionals is included below in Table 5.14. The aim was to develop a locally-acceptable programme corresponding to the needs and aspirations of young Tehranian adults and healthcare professionals (who would be involved in design and delivery), that also followed best practice international guidance on SHRE.

Step 7: Review of proposed SHRE curriculum by young adults and Iranian healthcare professionals in Tehran.

The proposed new SHRE programme was reviewed by Tehranian young adults and healthcare professionals, to confirm that the content was easy to understand and met stakeholders' needs. Stakeholders were asked to assess whether the content was culturally acceptable and appropriate.

Consultation sessions with Tehranian stakeholders including young adults and healthcare professionals were held to refine the proposed SHRE blueprint. Three topic categories were discussed; (i) content, order, and categorisation, (ii) potential barriers, recommended mode of delivery, and course duration, and (iii) additional suggestions.

Consultations with Tehranian young adults and healthcare professionals confirmed that the proposed content was appropriate and acceptable from their perspective. The general feedback from public involvement consultations was positive and welcoming, and few critiques were offered. Stakeholders' comments are grouped into three categories below.

Content, order, and categorisation

The content was favoured by all participants. No recommendations were quoted on omitting a subject or adding a category. In relation to order, almost all stakeholders suggested moving "Consent" to later in the programme. Numerous comments highlighted consent as a complicated and undiscovered matter for the Iranian society and suggested it to be presented after "Puberty and Body Changes".

All stakeholders believed that the course will achieve its purpose in providing information and education on sexual health and relationships and that the content was easy to understand. Moreover, recommendations for additional content were provided. These focused on materials relating to (i) the hymen's existence and virginity myths, (ii) communication during and after sex, (iii) masturbation, (iv) smear tests, HPV vaccination and herpes medication, and (v) myth-busting

around anal and oral sex. Stakeholders suggested that all these content areas be highlighted in the proposed programme.

Most participants believed that all content marked as desirable should be considered essential. Nonetheless, "Violence Prevention" was considered essential by all participants.

Potential barriers, recommended mode of delivery, and course duration

Only COVID-19 regulations and government approval were mentioned as potential obstacles to delivery.

All participants strongly favoured face-to-face training, and a few recommended a hybrid, online and face-to-face approach as well as ensuring extended availability of the training materials on an online platform. While no recommendations were made about the individually allocated times for each subject, the programme itself was considered too long to be delivered in a single session, so a mix of half-day workshops and subdividing the content into 3-4 sessions were recommended. Also, a few participants recommended that "essential" and "desirable" content could be presented separately. Training a small number of participants, for example 10 in each session was considered ideal. The gender mix of participants was thought best selected by participants such that young adults who planned to join the programme could choose single or mixed-gender sessions.

Additional suggestions

Participants offered advice on ways to improve the delivery of this programme. These were (i) giving away condoms, contraceptive pills, and sanitary pads, (ii) onsite STIs testing, and (iii) provision of a hotline number, through which participants can contact healthcare professionals for their sex and relationship related questions and discount codes or free consultation time with private doctors.

Sample questions, young adults' and healthcare professionals' feedback, and proposed changes to the content are presented in Table 5.13. Paraphrased comments from stakeholders based on note-taking during the consultations are also presented to illustrate the type of feedback received.

Table 5.13: Revisions to the Proposed SHRE Programme Following Consultations

	Sample Question	Young adults' and HCPs' feedback	Proposed changes to the content
1	Do you think that this course plan achieves the purpose of the project, which is the provision of sexual health and relationship education?	I liked that the course includes almost every aspect of an intimate relationship. There is enough content on sex related matters like condom use, but also enough of relationship management content such as consent seeking and respecting your partner. A good mix. I believe no-one has the right sexual health knowledge in this country. We just practice with one another. Your course has a real potential to change that, to help us make informed decisions based on factual information, not based on instincts or emotions or fears.	No changes
2	What do you think of the sequence of information? Would you prefer the subjects reordered in any specific format?	Where consent is introduced now, doesn't feel right, your audience is unfamiliar with their own bodies and sexual desires, and suddenly is pushed to ask permission and discuss another persons' boundaries around their bodies and intimate needs. You should introduce consent later in the course and not as the first subject, because for most people, it will sound weird. They have never heard about it. First talk about puberty and menstruation and sexual anatomy, then talk about how to respectfully ask for permission for closeness and intimacy. Like you want to explain to a child.	"Consent" to be moved down after "Puberty and Body Changes".

	Sample Question	Young adults' and HCPs' feedback	Proposed changes to the content
3	How about the number of subjects covered? Is there anything missing which you would like to see as a part of the course? Would you recommend removing any subjects from the current course plan?	Under sexual anatomy, mention that there is no such a thing as hymen, and there is no hymen to break or bleed after the first sex. This helps break the taboo of virginity and myths around it. I would like to learn about communication during sex, how to ask for things to slow down, or be paused. Also add some information on masturbation and debunk myths about it being bad for your health. There is nothing included on the importance of regular smear tests, this should be added to the "STIs" section. The HPV vaccine is also not mentioned. There is nothing about masturbation. I think oral sex and anal sex should be explained explicitly. There are myths around them that need to be dispelled. Under "STIs," add HPV vaccination and taking medication for herpes. We see many people with questions on these topics on a daily basis in our clinics.	Additional content to be included about hymen and virginity myths, communication during and after sex, masturbation, smear tests, HPV vaccination and herpes medication, and myth-busting around anal and oral sex

	Sample Question	Young adults' and HCPs' feedback	Proposed changes to the content
4	Is there content in the essential section that you think should be marked as desirable or vice versa?	All the content marked as desirable is essential. I think "Violence Prevention" is seriously essential. All desirables are essentials in my opinion. These all form a comprehensive body of knowledge for someone who is just about to learn it all from the beginning. "Violence Prevention" is essential. I believe this entire course is essential.	All desirable subjects to be considered for being included as essential training. "Violence Prevention" to be moved to essential training.
5	Can you think of any problems with delivering this content? If yes, how could we improve this?	If you have the government's permission, there shouldn't be any problems. If you have the relevant permissions, there shouldn't be an issue with delivering this. Wait for COVID-19 restrictions to relax before running the course.	No changes.

	Sample Question	Young adults' and HCPs' feedback	Proposed changes to the content
6	What is the best method of delivery? What do you think of the proposed programme - what do you like and not like?	This should only be delivered in a face-to-face setting. Let your participants choose their preferred gender mix. I think real engagement happens only in a face-to-face setting. Deliver all desirables in a follow-up session to the essentials. A face-to-face class with a small number of people is best. Go for a hybrid approach. Also make things available online, so that they can read it later.	Delivery mode, gender mix and length of the course to be decided based on pilot studies and participants' preferences.
7	What length of a course would be acceptable to you?	You need to break this in 2-3 sessions, this cannot be covered in a single day. Divide these into 3-4 weeks, 3-4 hours per week.	Delivery mode, gender mix and length of the course to be decided based on pilot studies and participants' preferences.

	Sample Question	Young adults' and HCPs' feedback	Proposed changes to the content
8	How would you improve this proposed SHRE programme?	Add an incentive such as free STIs testing on the day, so they can learn about the importance of testing, and how easy it is done. Give away free condoms. Give away a package with condoms, sanitary pads and other relevant things. You can ask a group of private doctors to accept patients for half their usual consultation fee, if patients have a referral letter from you, or a specific discount code.	Incentives relevant to the course to be offered as a part of the training.

Step 8: A blueprint for improved SHRE for young adults in Tehran

Following consultations with Tehranian young adults and HCPs, the proposed SHRE programme outline (generated in *Step 6*) was refined based on stakeholders' recommendations. This resulted in the amended objectives in the content list presented in Table 5.14. Changes made to the content list included (i) "Consent" being presented later and becoming subject number 3, and (ii) objectives illustrating hymen and virginity myths, communication during and after sex, masturbation, smear tests, HPV vaccination and herpes medication, and myth-busting about anal and oral sex added to "Sexual Practices" and "Sexually Transmitted Infections" respectively. These objectives are presented in bold font for higher visibility. Despite recommendations on marking all desirable content as essential, this change was not included as it may be important to have the capacity to reduce the length of the programme, for example, so that it can be presented in stages. Thus, through discussions with the four Iranian experts (who have advised the candidate throughout), it was decided to retain the prioritisation of essential content.

Table 5.14: Final SHRE Programme Outline Including Recommendations from Tehranian Stakeholders

E: Essential, D: Desirable

	Subject	Suggested Duration	Objectives	Illustrative Resource
1	Sexual and Reproductive Organs	E 60 minutes + Q&A	• To describe external and internal male and female sexual and reproductive organs, and explain how these change during and after puberty. • To explain the functions of sexual organs in relation to reproduction, sexual activity, and sexual pleasure. • To provide instructions on observing genital hygiene. • To display and discuss models of male and female bodies, including sexual and reproductive organs.	https://www.brook.org.uk/topics/my-body/

	Subject	Suggested Duration	Objectives	Illustrative Resource
2	Puberty and Body Changes	E 60 minutes + Q&A	• To explain the age range in which boys and girls experience puberty and body changes during puberty. • To explain the menstrual cycle and the various physical symptoms and feelings associated with periods, including premenstrual syndrome. • To highlight products available in the local shops, including sanitary pads and menstrual cups, covering information on the pros and cons of each product. • To display and demonstrate how these products are used and disposed of. • To emphasise that menstruation is a natural and normal part of a woman's development and experience and should not be secret or stigmatised. • To reiterate that periods should occur regularly from puberty to menopause but not during pregnancy. • To provide contact details of clinics and health centres offering help and advice for painful, irregular, or missing periods.	https://www.brook.org.uk/topics/my-body/
3	Consent	E 60 minutes + Q&A	• To present and facilitate the discussion of definitions of consent, coercion, and pressure. • To provide information on what consent is and how to give and receive consent. • To emphasise the unacceptability of coercion and the importance of individual rights. • To explain the skills needed to provide, check upon, and refuse consent. • To highlight that sexual consent can be withdrawn at any time, by either partner. • To practice giving and refusing consent in a range of situations through role-playing.	https://www.brook.org.uk/your-life/how-to-give-and-get-consent/

	Subject	Suggested Duration	Objectives	Illustrative Resource
4	**Sexual Practices**	**E 60 minutes + Q&A**	• **To address questions and ambiguities around hymen and virginity myths.** • **To discuss the importance of communication during and after sex, reiterating the importance of consent, mutual pleasure, and respect.** • **To offer information on masturbation, busting myths, and answering questions around the subject.** • **To provide an opportunity for debunking myths around culturally unconventional modes of sex, including anal and oral sex.**	https://www.brook.org.uk/topics/sex/
5	Pleasure	E 45 minutes + Q&A	• To reiterate that consent is critical, and desire and willingness must be expressed by both partners. • To provide information on penetrative and non-penetrative sex, including mutual pleasure. • To highlight that having sex is often a mean to achieve mutual pleasure and should not be exclusively viewed as a mean to procreate.	https://www.brook.org.uk/topics/sex/

	Subject	Suggested Duration	Objectives	Illustrative Resource
6	Communication and Decision-Making Skills	E 45 minutes + Q&A	• To provide information on behavioural risk-assessment and understanding consequences of decisions, including decisions about sexual contact and sexual protection that may be influenced by peer-pressure, or the influence of alcohol and drugs. • To exemplify good communication skills, such as negotiating condom use, resisting pressure, and practising to say “No”. • To illustrate how making informed decisions can protect an individual’s and their partner’s sexual health and relationship well-being. • To discuss situations, in which making good decisions could be difficult or challenging and to provide information on the importance of having a prepared plan to keep safe.	https://www.brook.org.uk/topics/relationships/
7	Relationship Management	E 45 minutes + Q&A	• To reiterate that consent is critical, and desire and willingness must be expressed by both partners. • To explain and highlight the importance of using condoms and other contraceptives. • To address any misconceptions about pornography and provide opportunities to discuss the relevance of pornographic portrayals of sexual relations to real-world sexual relationships, including consideration of how pornographic content can be misleading to mutual consent, pleasure, and respect. • To establish that all relationships should be based on mutual respect, responsibility, openness, and acceptance. • To explain the need for trust, commitment, communication, and power balance in a sexual and loving relationship.	https://www.brook.org.uk/topics/relationships/

	Subject	Suggested Duration	Objectives	Illustrative Resource
8	Sexually Transmitted Infections (STIs) and HIV	E 120 minutes + Q&A	• To describe a range of STIs, including chlamydia, Human Papillomavirus (HPV), herpes, gonorrhoea, HIV, and syphilis, explaining their symptoms, how they are transmitted, how to reduce transmission risk through safer sex (including condom use), and the importance of testing. • To remind students that some STIs may be present for some time without symptoms and to reiterate the importance of testing, including how and when to get tested. • To describe STI prevalence globally and nationally. • To emphasise the increased risk of STI transmission associated with multiple sexual partners and inconsistent condom use, highlighting that condoms are the only protection against STIs. • To offer information on healthcare providers (including doctors), and community health centres providing confidential advice and testing. • To provide instructions on how to access local treatment options. • To provide guidance on managing unsafe sexual situations and risky behaviours such as having sex after having drinking alcohol or taking drugs. • **To illustrate the importance of regular smear tests, administration of HPV vaccines, and providing information on available treatments for controlling herpes.**	https://www.brook.org.uk/topics/stis/

9	Contraception and Condom Use	E 180 minutes + Q&A	• To explain that condoms protect against unintended pregnancy and are the only protection against STIs. • To emphasise that condoms must be used correctly every time one has sexual intercourse with every partner to be effective. Condoms provide efficient protection when used correctly and consistently. Correct and consistent condom use can protect individuals against STIs and allow for enjoyable sex without the worry and regret that follow unprotected sex. To emphasise that condoms should be used for oral and penetrative sex. • To identify locally available outlets providing condoms, including what brands are available at what prices and, discuss plans on how to acquire and discreetly carry condoms. • To illustrate and demonstrate correct condom use and practice handling condoms, including unwrapping and placement when blindfolded. • To exemplify and demonstrate communication, negotiation and refusal skills needed to clarify that sex is wanted or unwanted, only acceptable with protection, and that even after advanced intimacy, they may need to stop because of withdrawal of consent. • To raise and discuss the issue of long-term relationships. At what point would a couple agree to abandon condom use while using other methods of contraception? The matters to discuss include mutually shared STI tests, trust in sexual fidelity, and relationship commitment. • To consider rare risks of condom use, including latex allergies and latex-free alternatives. • To discuss the correct and consistent use of contraceptives apart from condoms.	https://www.brook.org.uk/your-life/condoms/ and https://www.brook.org.uk/topics/contraception

	Subject	Suggested Duration	Objectives	Illustrative Resource
			• To describe and provide instructions for use on contraceptives (other than condoms), their effectiveness, benefits, and side effects including reversible and permanent (sterilisation) methods, emergency contraception, and longer-acting reversible contraception or LARC (implants, intrauterine devices). • To show a variety of locally available contraceptive methods and providing information on how and where these could be accessed. • To describe the decision parameters and provide opportunities for discussion of how to decide on the best contraceptive method, including what is available locally at what price.	
10	Fertility and Reproduction	E 30 minutes + Q&A	• To remind that lack of condom and contraceptives use is likely to result in an unintended pregnancy. • To explain how pregnancy happens. • To provide information on pregnancy testing.	https://www.brook.org.uk/topics/pregnancy/
11	Abortion	E 30 minutes + Q&A	• To provide information on abortion, its legality and accessibility in the local context, and its potential consequences.	
12	Access to SHRE Resources and Sexual Health Services	E 20 minutes + Q&A	• To provide information on available resources for self-study in Persian. • To provide information on (1) local clinics and sexual health services, and (2) test centres young adults can visit.	

	Subject	Suggested Duration	Objectives	Illustrative Resource
13	Gender and Sex	D 60 minutes + Q&A	• To define and enable opportunities to discuss definitions and differences of sex, sexuality, and gender and how do they relate to one another. • To encourage non-judgmental discussions about different sexual identities and orientations, including heterosexuality, homosexuality, asexuality, and transgenderism, and to emphasise on inclusion and acceptance. • To explore gender roles and stereotypes and to discuss perceptions of masculinity and femininity within the family and society and how these lead to gender inequalities and gender bias.	https://www.brook.org.uk/topics/gender/
14	Sexual Rights	D 60 minutes + Q&A	• To explore, and provide opportunities to discuss, gender equality and existing cultural and social barriers to exercising gender equality. Focusing on diversity and tolerance within society with an emphasis on sexual identities, orientations, and preferences. • To emphasise the importance of autonomy and choice and their role in healthy and coercion-free decision-making, negotiation skills, and relationship management.	https://www.who.int/teams/sexual-and-reproductive-health-and-research/key-areas-of-work/sexual-health/defining-sexual-health

	Subject	Suggested Duration	Objectives	Illustrative Resource
15	Violence Prevention	D 90 minutes + Q&A	• To describe and explain different types of abuse, including sexual, physical, and emotional abuse, and to identify behaviours associated with each of these. • To describe and provide opportunities to discuss how each of the above could affect relationships and how these could be prevented. • To define and discuss recognition of the difference between sexual assault, sexual harassment, and rape, and behaviours that count towards each of the above. • To provide a list of contacts who can help and offer advice on how to respond to abuse and violence.	https://www.brook.org.uk/topics/abuse-and-violence/
16	Staying Safe Online with Sexual Content and Image Sharing	D 60 minutes + Q&A	• To describe and provide opportunities to discuss online intimidation and abuse, including cyberbullying and blackmailing. • To provide examples of what is and is not online abuse and provide opportunities to discuss these. • To provide a list of contacts who can help provide advice on how to respond to online abuse.	https://www.brook.org.uk/topics/staying-safe-online/

5.4: Discussion

The candidate developed a research-based SHRE programme outline for young adults in Tehran, based on local needs assessments and international best practice guidelines, co-designed in part with local experts and potential recipients. We believe this is the first time this has been achieved in Iran.

Following an 8-step method, we 1) summarised recommendations made by Tehranian young adults and healthcare professionals in previously conducted needs assessments, 2) generated a search strategy in order to source best practice SHRE guidelines in the English language, 3) extracted content and delivery recommendations included in those guidelines based on predefined inclusion and exclusion criteria, 4) searched and identified the Persian-language SHRE materials used in Iran, 5) mapped the Persian-language materials against recommendations made in best practice guidelines, 6) generated a bespoke SHRE programme including content recommendations from *Steps 1* and *3* of the Methods section, 7) then presented this programme to Tehranian young adults and healthcare professionals as stakeholders to seek their opinions and to further refine the materials, and 8) finally, revised the programme, including the improvements suggested by stakeholders in *Step 7*; and so produced a final revised version of the bespoke SHRE programme outline.

In *Step 1*, results sections of the studies reported in Chapters 3 and 4 were reviewed and searched for content recommendations made by Tehranian young adults and healthcare professionals. This involved categorising the content recommendations from the previous studies reported in this thesis, which generated 8 subject areas. It is noteworthy that provision of contact details for available sexual healthcare was only proposed by healthcare professionals, underlining the point that young adults in Tehran are unaware of existing sexual healthcare facilities, which was highlighted in both aforementioned needs assessment studies.

This proposed content was then compared to the recommended content in international SHRE best practice guidelines. Only six such guidelines were retained, which were instrumental in increasing the core content subject areas from 8 to 15. It was reassuring to observe the similarity of content recommendations across these international guidelines and to note the correspondence between recommendations from our two local needs assessment studies and those included in international guidelines. The latter was found to be more comprehensive but to clearly encompass the former. Thus, the guidelines broadened and extended the content recommendations retrieved from our needs assessment studies.

Step 4 involved the identification of Persian-language SHRE materials that are currently in use in Iran. These included some materials used for high school HIV-awareness programmes, pre-marriage classes and the “Science of Population” module aimed at undergraduate university students. These materials were reviewed and assessed for their SHRE content, which were then mapped (in *Step 5*) against the 15 subject areas recommended by the best practice guidelines with only 2 areas (sexual anatomy and some contraception options) being included, while even these were presented with limited explanation. This identified major gaps, between Persian-language materials, and the content recommendations extracted from best practice guidelines (which also encompassed recommendations made by Tehranian stakeholders). In summary, Persian-language materials were found to contain minimal content of the material regarded as best practice SHRE and do not meet the needs of young people as identified in our needs assessment studies. Hence emphasising the need for improved SHRE for young adults in Tehran.

The candidate, therefore developed a new SHRE programme outline including 15 subject areas recommended by best practice guidelines. This programme contains specific objectives for each subject area and a suggested allocated presentation time. Finally, Tehranian young adults’ and healthcare professionals’ feedback were sought on how such a document could be improved and rendered as locally acceptable. All local consultants welcomed the proposed content and very few critiques were offered. Their recommendations for minor adjustments were incorporated into the programme outline in the final step of this study.

To our knowledge, there have been no formal evaluations of Iranian SHRE provision since its conception in 1993. Moreover, we are not aware of previous studies examining current Iranian SHRE content and comparing this to international best practice guidelines. Nonetheless, some studies have assessed aspects of this provision, including recipient responses. Some studies have aimed to explore marital satisfaction as a result of pre-marriage classes but did not evaluate the sexual health and relationship management aspect of this provision. They also lack robust reviews of the course materials and delivery methods.

Nearly all previous studies conclude that current materials are inadequate, concurring with this PhD project's findings (Bostani Khalesi & Simbar, 2017; Farnam et al., 2011; Mehrolhassani et al., 2018; Mokhtari zanjani et al., 2013; Moodi & Sharifzadeh, 2008; Pourmarzi et al., 2014; Rahmani et al., 2011; Rezabeigi davarani et al., 2016; Yazdanpanah et al., 2014). For example, Pourmarzi et al. (2014) surveyed 450 engaged couples who have completed pre-marriage classes and reported that 51% of men and 62% of surveyed women have found the provided education inadequate, while emphasising a critical need for training on "healthy sexual relationships". Similarly, Mehrolhassani et al. (2018) reviewed 56 articles reporting on various aspects of pre-marriage classes in Iran and concluded that educational materials were of poor quality, and the level of sexual health information of attendants, remained insufficient after receiving such education. Thus, there is a body of research evidence, consistently demonstrating that SHRE provision in Iran is inadequate to the healthcare needs of young adults and persistently calls for improved evidence-based SHRE provision.

Despite the novel progress made in this study, it has limitations that could be addressed in future work. The candidate looked in detail at only six international guidelines. Future work could assess whether these are, as we believe, representative of best practice as recommended across a larger, more comprehensive sample of international SHRE guidelines. Such work could result in amendments to the programme outline developed here.

Consultations with local stakeholders (in *Step 7*) included only six young Tehranians and six healthcare professionals. This was due to the time constraints of the study and the availability of those willing to take the time to review and comment on the programme materials. As is also advised by the MRC guidelines for complex interventions, and the Intervention Mapping (IM) framework, a more comprehensive co-design consultation, including with international SHRE educators, key decision- and policymakers, and government and quasi-government officials would be helpful in further developing this programme and its smooth and optimal implementation (Bartholomew Eldredge et al., 2016; Craig et al., 2013; Fernandez, ten Hoor, et al., 2019; Majid et al., 2018). Nevertheless, it is worth noting that the overall evaluations and content suggestions were similar across our sample of 12 consultants.

Wider consultation and evaluation of this programme in Iran is also needed. This programme was based on Tehranians' needs, hence further needs assessments would be required, for example, in other cities of Iran. These could highlight further cultural adaptations and local variations that could optimise delivery. In addition, amendments would be required, if this programme was to be adapted to meet the needs of young adults with learning difficulties, or ethnic minorities and refugees.

A more comprehensive stakeholder consultation would also be needed to explore implementation challenges. Views of key decision-makers and policymakers in several governmental organisations should be sought. Implementation would also necessitate considerable work in material generation and the retraining of teachers and educators. Current teachers for pre-marriage and university modules would need to be re-skilled or replaced with new teachers who are aligned with this guideline's comprehensive educational content. Involvement of international SHRE educators, especially those with expertise in developing settings would be helpful in such training.

5.5: Conclusions

In conclusion, collating Tehranian young adults' and healthcare professionals' recommendations and content recommendations from six international best practice SHRE guidelines has resulted in creation of a tailor-made SHRE programme outline that could be used for young adults in Tehran. This could be utilised to generate new SHRE materials or to augment the existing SHRE provision in Tehran, as there is considerable research evidence indicating that current provision is inadequate. Hence, the programme outline generated in this study could be employed to develop and implement an upgraded, research-based SHRE programme in Tehran and, later in Iran.

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Chapter 6: General Discussion

The aim of this work of research was to (1) explore and understand the SHRE and sexual health service needs of the young adults in Tehran, and (2) to propose improvements to the Iranian SHRE provision by generating a bespoke SHRE programme.

Receipt of good-quality, optimal SHRE can have substantial and meaningful benefits for individuals. SHRE provides individuals with the knowledge and skills that can lead to reduced risk of unwanted pregnancies and transmission of STIs. It also includes content to enable young people to effectively communicate about sex, sexuality, and sexual health with their intimate partners or friends and family, which may result in improved physical and emotional relationships. SHRE facilitates negotiation of needs and desires around sexual encounters, condom use, and self-protection, and empowers individuals to make informed decisions regarding family planning. The need for SHRE provision is considerable; and in countries like Iran, where no comprehensive sexual health and relationship education has ever been provided, sexual healthcare is limited, under-utilised, and stigmatised and cultural and social barriers prevent open communication about sexual health, there is an urgent need for research to address this.

This research project addressed the following questions:

1. What are the SHRE and sexual health service needs of the young adults in Tehran?

2. How can the current sexual health education, information, and provision be improved or augmented?

This thesis included three studies:

1. A qualitative assessment of the sexual health education, training, and service needs of young adults in Tehran

2. A qualitative assessment of healthcare professionals' assessments of, and recommendations for, sexual health education and service provision for young people in Tehran

3. Development of an SHRE programme outline for young adults in Tehran; integration of needs assessments, best practice guidelines, and stakeholder consultations

This chapter summarises and integrates the results of the three studies in a general discussion, by providing an overview of the main findings and consideration of strengths and limitations. I conclude with highlighting key implications for programme development, policy, and future research.

6.1: Overview of main findings

What are the SHRE and sexual health service needs of Tehranian young adults? - Chapter 3

Chapter 3 provides support for the lack of SHRE in Tehran, and substantial demand for it. Interviews with 25 young people highlighted considerable negative consequences of an almost non-existent SHRE, and the implications that this has had on their and their peer's ability to manage sexual relationships, understand and prevent STIs, and use contraceptives. Importantly, young women expressed their lack of empowerment in managing sexual relationships, emphasising the need for materials particularly addressing gender power inequalities. Interviews revealed misconceptions, misinformation, and informational gaps in their knowledge of sexual health, reproductive and sexual anatomy, and managing relationships. Many young people use information sources that are unreliable or inaccurate. Indeed, social media was a main source of information.

I concur with previous research that has been conducted in Iran indicating that SHRE for young adults is essential to population sexual health (Babayanzad Ahari et al., 2020; Farahani et al., 2012; Javadnoori et al., 2012; Malek et al., 2010, 2012; Mosavi et al., 2014; Shahhosseini & Hamzehgardeshi, 2015; Shokoohi et al., 2016; Yari et al., 2015).

This study provided additional information that could usefully inform the creation of new SHRE content. For example, interviews revealed that young people demanded a content covering sexual anatomy, explaining common STIs and their modes of transmission, symptoms, and treatments, self and relationship management skills including condom acquisition and negotiation, and contraception choice and use. This was notably similar to the content recommendations made by key international best practice SHRE guidelines (International Planned Parenthood Federation (IPPF), 2010; New Zealand Government Ministry of Education, 2020a, 2020b; Population Council, 2011; UK Government Department for Education, 2019; United Nations Educational, Scientific and Cultural Organization (UNESCO), 2018).

Importantly, young people in the study were unaware of the existence of government-funded sexual healthcare clinics, while visits to private doctors were considered inaccessible due to their cost. Cultural barriers, such as sexual prohibition, taboo and shame associated with premarital sex, and distrust in doctors due to fears of judgment and confidentiality breach also discouraged visits to sexual health professionals. Therefore, the study results strongly suggest a need for improved, well-publicised, accessible, confidential, and reasonably-priced sexual healthcare.

What are the SHRE and sexual health service needs of Tehranian young adults according to healthcare professionals? - Chapter 4

In chapter 4, I provide further evidence for the need and demand for high quality SHRE. Through interviews with 17 Tehranian HCPs, this chapter presents young adults' need for SHRE, and barriers to accessing sexual health services from healthcare professionals' perspective.

During interviews HCPs discussed how the lack of SHRE in Iran is significantly contributing to increasing STIs. Existing initiatives were criticised by HCPs, because of lacking useful SHRE content (i.e., how to access sexual healthcare, and how to use condoms) and predominant yet insufficient information provision on HIV at the expense of other STIs. The content was also thought to be lacking in terms of practical and behavioural capabilities, such as use of contraception

and negotiation skills. Moreover, pre-marriage classes were viewed as equally ineffective due to their poor timing, content planning and lack of evaluation and monitoring practises.

Furthermore, HCPs agreed with young adults that government-funded sexual healthcare facilities are limited and unadvertised, and private doctors are costly and distrusted by young adults, hence the need for improved, well-advertised, accessible, confidential, and affordable sexual healthcare in combination with a comprehensive SHRE programme.

Overall, the results of both studies suggest a need for enhanced, well-advertised, accessible, confidential, and justly-priced sexual healthcare in addition to a comprehensive SHRE provision, which was strongly encouraged to be co-created with young adults.

What should be included in a tailored SHRE programme for sexual health and relationship education (SHRE) for young adults in Tehran? - Chapter 5

In chapter 5, results of content recommendations from studies 1 and 2 were integrated with theory and international best practice SHRE guidelines to create a tailored programme for delivery of sexual health and relationship education in Tehran. The bespoke programme is based on an 8-step systematic methodology, which integrates the results of the two aforementioned studies and six internationally used and recognised best practice guidelines on SHRE. Initial content was refined and optimised through stakeholder consultations, namely with Tehranian young adults and healthcare professionals. The international body of evidence was sourced through searching multiple online databases, using predefined inclusion and exclusion criteria. Six healthcare professionals and six young adults reviewed and commented on the proposed material, which included SHRE topics such as consent, sexual anatomy, STIs, contraception and condom use, and violence prevention. Their comments resulted in minor changes to the proposed material such as changes to the order in which two of the topics were represented and the addition of content on subjects such as HPV vaccinations and myth-busting around hymen and virginity. The final product can serve as a programme outline for SHRE development and delivery in Tehran.

6.2: Strengths and limitations

This body of research presents a thorough exploration of the sexual health and relationship education needs of Tehranian young adults, and uses novel methods to produce a bespoke SHRE programme outline which is designed to be accessible and useable in Iran. A key strength of this project is the integration of qualitative data with internationally recognised guidelines to offer tailor-made content instructions that facilitate designing and delivering a locally acceptable sexual health education programme. Both qualitative studies (Chapters 3 and 4) confirm an existing need and demand for SHRE and provide insight from key stakeholders, namely intended service users (young adults), and service providers (healthcare professionals). Contextual factors, such as organisational misalignments and cultural taboos, and limitations caused by socioeconomic deprivations were also considered and discussed. The use of qualitative methods has specifically allowed for an in-depth understanding of Tehranian young adults' and healthcare professionals' SHRE demands, and was usefully employed to highlight content recommendations that were incorporated in the SHRE programme outline reported in Chapter 5.

Moreover, this doctoral project was theoretically guided by the IMB model, which has been successfully used in many similar programmes globally, and employed multiple best practice guidance and high-quality empirical evidence to inform a tailor-made SHRE programme, which was further refined with inputs from stakeholders' comments.

Nonetheless, there are challenges to conducting research on sensitive subjects such as sexual matters in Iran, which have resulted in some limitations explained below. Hence, as we noted at the outset, the work was inevitably conducted within the cultural and religious values of the Iranian society.

Firstly, the number of studies reporting on sexual health education needs of Iranian young adults is limited. There are even fewer studies reporting findings on specific populations, for example, young adults within a certain age living in a specific location. Moreover, the official language in Iran is Persian, and therefore many studies are published in a language other than English. Hence, it is likely

that some studies are missed in the literature review section in the first chapter, due to variations in searched keywords and the potential of missing papers which were available only in the Persian language. It is worth noting that the candidate is aware of a wider body of literature concerning sexual relationships and sexual practices in Iran, including the resources focusing on the sexual culture and sociological aspects of sex. However, as this PhD programme was primarily focused on sexual health and relationship education and its public health aspects, the revision and inclusion of such literature would fall beyond the scope of this project.

Indeed, the local sexual culture goes hand in hand with how sexual relationships and sexual health are maintained by the Iranian population. Future research would be beneficial to highlight how the local sexual culture can potentially facilitate or limit the provision of SHRE and the successful management of sexual relationships. Addition of such materials would also augment the proposed SHRE programme in this thesis.

Moreover, confidential, inaccessible and unpublished government and research papers and reports are also missing. This was beyond the scope of the present study and required various permissions from different organisations. It is likely that a substantial number of such reports are produced and prepared for high rank government officials (e.g.; the president, ministers, and parliament members), but are not accessible to researchers and members of public, in line with the sensitive and stigmatised nature of sex-related matters.

There are other limitations to this work, and thus it should be regarded critically and extended in future studies. For example, while both qualitative studies reported in this thesis (Chapters 3 and 4) provided a novel and thorough insight into the SHRE needs and demands of Tehranian young adults, the studies would have been more insightful if further groups and stakeholders such as LGBTQ young adults, young adults living in the suburbs and those with special needs, teachers, parents and guardians, university staff and lecturers, religious leaders and quasi-governmental decision-makers were interviewed. However, many studies which have included these stakeholders came to similar conclusions as those reported in this thesis (e.g., Akbari et al. (2013), Banaei et al. (2019),

Latifnejad Roudsari et al. (2013), MirzaiiNajmabadi et al. (2019)), which offers support for the validity of our findings. For example, Latifnejad Roudsari et al. (2013) conducted 9 focus groups and over 23 interviews with mothers, young girls, policymakers, and healthcare professionals, and concluded that socio-cultural taboos are a major barrier to the provision of sexual health education in the Iranian context. Furthermore, governmental organisations' misalignment and cultural and religious resistance was remarked by Akbari et al. (2013), who interviewed 55 religious leaders, policymakers, university lecturers and healthcare professionals. These results are in agreement with the conclusions made in the studies reported in Chapters 3 and 4. Nonetheless, further qualitative studies with more participants and a large-scale quantitative survey with a population representative sample would provide additional evidence into the SHRE and sexual healthcare needs of Tehranian young adults. Further research would be informative to investigate the representativeness of themes and voices identified in chapters 3 and 4, including the role of gender power relations in sexual health and relationship issues and socioeconomic limitations, in an Iranian context.

Additionally, the relatively short duration of the interviews with Tehranian young adults (approximately 45 minutes) and the lack of prior rapport between the candidate and the interviewees might have resulted in missing information or limited discussion of certain topics. This could have been potentially compounded by the social, cultural, religious, and legal constraints and taboos around this sensitive subject.

This also applies to the study reported in Chapter 4, as the snowball sampling technique was used to recruit healthcare professionals. Some key healthcare professionals were potentially missed, due to a limited network of HCPs, tight schedule and unavailability of potential participants, and minimal communication between the professionals in different hospitals and universities. Therefore, the HCPs that were not contacted, or were invited and could not attend interviews, may have provided different perspectives. Moreover, in both qualitative studies, some of the sub-themes were generated by quotes made by only two or three of the participants; hence, interviewing a larger number of participants may have resulted in more supporting quotes.

To create the SHRE programme described in Chapter 5, several online databases were searched using predefined inclusion and exclusion criteria. Although six internationally recognised guidelines were selected to inform the process, a systematic review was not performed as it did not match the aim of the study. Thus, a systematic review could facilitate additional research, through which a robust body of evidence, potentially inclusive of a higher number of SHRE guidelines could be produced, to inform future intervention content and evaluation standards. Moreover, as there was no known Persian-language SHRE best practice guidance, we included English-language guidelines, while reviews of reviews, systematic reviews, and journal articles were excluded. While it is understood that such best practice guidelines are developed based on systematic reviews and other scientific evidence, there is a potential that relevant papers and reviews are missing from the selected evidence used to inform the bespoke SHRE programme reported in Chapter 5. It is important to note that results from locally performed needs assessments and stakeholder consultations were employed to ensure cultural relevance and local acceptability of the international content recommendations. However, as was previously mentioned, there are factors such as social, cultural, and legal constraints around sexual health and its related matters within the Iranian society that need to be addressed and accommodated in order for such programme to be implemented successfully.

Moreover, to analyse and extract content recommendations in each guideline, an informal content analysis was performed, where different content categories were identified and noted. This was optimal given the scope of the work and time limitations. However, a thorough content analysis based on categorisations made by an expert panel of SHRE providers and researchers, including inter-coder reliability checks, could result in a richer and more reliable representation of the global consensus on optimal SHRE for young people. In this PhD project the candidate has only attempted to develop an SHRE programme outline in the third study of this thesis focusing on the provision of information and development of motivation, following the IMB model, recommendations made by best practice SHRE guidelines, as well as integration of locally performed needs assessments. Hence, such programme proposal necessitates further refinements and inclusion of other supporting actions as is detailed in sections 6.3 and 6.4 of this thesis, in addition to obtaining the required permissions from relevant authorities.

No intervention like the SHRE programme proposed in the fifth chapter of this thesis has ever been implemented in Iran and therefore, the proposed programme is considerably different to the currently available provision. Hence, it could be viewed as controversial amongst policymaking members of government organisations, despite the widely documented demand by different groups of Iranian citizens for an improved SHRE programme. This can create challenges to the implementation of this initiative, as there may be reservations amongst those in position to fund and support this plan of action. The proposed programme may include content that may be viewed as challenging to the existing legal or social norms, and therefore modifications may be necessary. In addition to the appropriate permissions, further support should be sought from relevant high profile and influential stakeholders, to plan and conduct negotiations to ensure the optimal delivery of this programme.

In addition, decisions made throughout the SHRE programme development process were based on the scientific evidence and training materials published to date (international best practice guidelines, Iranian produced and used SHRE materials), use of professionals' expertise (Iranian SHRE professionals, UK supervisors, and experts), and stakeholder involvement. Therefore, the final document is a result of identifying and utilising these variable resources at a particular point in time. Hence, it is possible that variations can occur, should either of these elements change considerably, for example, in case of a major transformation in the Iranian SHRE provision, or updated research that suggests extra content as necessary for a comprehensive SHRE programme.

Finally, due to the scope and purpose of the study and limited resources, only six Tehranian young adults and six healthcare professionals were invited to review the proposed materials based on their immediate availability, which may have resulted in key voices being missed. Although there were no major discrepancies amongst the stakeholders, a larger group of stakeholders including stakeholders from the government and quasi-governmental sectors would likely provide a wider range of opinions, which could further enhance the programme's local acceptability.

Notwithstanding these limitations and clear future challenges, this doctoral research demonstrates the need and demand for improved SHRE and presents a clear set of content and delivery advice that illustrates how optimal SHRE could be developed for young adults in Tehran, and potentially Iran. It provides a foundation for pilot-testing of preliminary modules, in educational workshops, incorporating local stakeholders' recommendations and learning from international best practice guidance. This study's findings could provide direction to policymakers about the existing educational and service gaps in Tehran and could facilitate the revision of SHRE and sexual healthcare provision for young Tehranians.

6.3: Implications for practice

The studies completed for this PhD project establish a strong need and demand for an SHRE provision to be designed and delivered for young Tehranians. This was confirmed through interviews with young adults and healthcare professionals, who are the intended users and managing partners of this training. Their comments elaborate features that could optimise the design, delivery, and evaluation of this provision to maximise uptake and effectiveness. The main implications for practice, are, therefore (i) co-creation and provision of a comprehensive SHRE programme to improve Tehranian young adults' sexual health knowledge and relationship management skills, and (ii) inclusion of well-advertised, accessible, confidential, and fairly-priced sexual healthcare facilities, that allow widespread accessibility. Moreover, implementation of a comprehensive SHRE programme could be improved through considering contextual factors and educators' training, which are explained below.

Researching and potentially improving structural and contextual factors that affect SHRE reception and sexual attitudes and behaviours

This work and previous studies (e.g., Akbari et al. (2013), Banaei et al. (2019), Latifnejad Roudsari et al. (2013), MirzaiiNajmabadi et al. (2019)) have highlighted the need to address structural and contextual factors such as local laws and regulations, organisational and governmental hierarchies, access to private healthcare and limited purchasing power with regards to contraception and

condoms, gender power inequities, and cultural, religious and social norms to ensure the optimal impact of SHRE programmes on young adults' sexual health and relationships. It should be acknowledged that particular groups (e.g., women, and those from lower socioeconomic backgrounds) may have minimal or no access to sexual health information or services, and therefore, additional support or specifically tailored interventions may be required to cater to this population. Further research is essential to identify not only the most influential of these contextual factors but importantly, to provide practical culturally-tailored guidance for responsible organisations to address them accordingly.

Educators' training

Implementation would necessitate considerable work in materials generation and the retraining of teachers and educators. Training educators is vital to the successful implementation of SHRE programmes (Denford et al., 2017; Kirby, 2008), as such training is essential to establish their confidence in teaching potentially sensitive sex-related content. Currently, Iranian SHRE educators and teachers are trained based on the limited provision's requirements, and therefore will need to be re-trained and up-skilled to be aligned with a comprehensive SHRE programme, such as the one created and reported in this PhD project.

6.4: Implications for research

This PhD project illustrates the needs and demands of Tehranian young adults regarding sexual health and relationship education while emphasising the proven efficacy and importance of such education. It demonstrates that Tehranian young adults require comprehensive, confidential, and non-judgmental sexual health education and improved access to sexual healthcare. It also presents a bespoke programme outline for the provision of SHRE in a local context. Yet, there are some questions that remain unanswered, resulting in new research gaps. The implications for research can be categorised into five research areas: (1) conducting a large scale, population representative needs assessment, (2) searching and identifying a larger number of SHRE guidelines, (3) widening stakeholder involvement, (4) designing, delivering, and evaluating pilot feasibility studies, and (5) complementing the suggested SHRE programme with other

community-based interventions and activities, each of these is further described below.

Conducting a large scale, population-representative needs assessment

Although studies reported in Chapters 3 and 4, have demonstrated a clear need and demand for SHRE provision, their results could not be generalised to a larger population, due to their small sample size and limited diversity of the participants (e.g.; no young adults with special educational needs were interviewed). Hence, a large-scale, population-representative needs assessment could be illustrative in understanding the needs of a wider population, including under-represented groups, and will be helpful in designing a more inclusive SHRE provision. Such study will also be helpful in identifying factors that may affect SHRE provision uptake or effectiveness, for example gender power and knowledge inequalities and socioeconomic or religious background.

Searching and identifying a larger number of SHRE guidelines

As was noted earlier, the study reported in Chapter 5 was informed by the content recommendations made by six international best practice SHRE guidelines, which were sourced and selected through defining specific keywords and were assessed against predefined inclusion criteria, matching the aims of the study. By making variations in the keywords (e.g., including the phrase reproductive health) and widening the search criteria (for example searching guidelines published after 2020, in English and other languages), a larger number of SHRE best practice guidelines may be identified that can further enrich the proposed SHRE programme outline created in this PhD project. This may result in additional content recommendations and material development guidance.

Widening stakeholder engagement

The SHRE programme described in Chapter 5 benefited from Tehranian young adults' and healthcare professionals' consultation for improved local and cultural acceptability. Given the novelty of such a programme, and recognised contextual factors such as organisational misalignments and cultural and religious beliefs,

employing a wider range of stakeholders' comments would be instrumental in enhancing the programme's acceptability and cultural relevance. This includes seeking views of representatives of several Iranian governmental organisations, health and education key decision-makers and policymakers, Iranian SHRE experts, international SHRE developers, especially those involved in developing countries' programme design and delivery, and a larger number of end-users from different educational, religious and socioeconomic backgrounds. Seeking the opinions of political and religious leaders will likely facilitate the widespread reach and implementation of this programme.

Designing, delivering, and evaluating of pilot studies

The study reported in Chapter 5 provides a bespoke programme outline for the provision of SHRE in the Iranian context, integrating the results of the research reported in Chapters 3 and 4. Although this tailor-made programme is based on internationally recognised best practice guidance and is refined with stakeholders' recommendations, a number of pilot studies are essential to determine the local acceptability and possibility of running such a programme and to further enhance the intervention, before delivering it on a larger scale. The literature review in this thesis illustrates a minimal number of experimental studies on sexual health and relationship interventions in Iran. As was mentioned earlier in the Introduction Chapter, these interventions and their respective published reports lack critical elements such as a detailed explanation of the taught content, baseline data of participants, the reason for inclusion and exclusion criteria, rationale for the choice of programme, mode of delivery and target population, and appropriate theory and evidence use. Therefore, designing and delivering pilot studies using the evidence-based bespoke programme outline reported in this thesis, will generate further understanding of the feasibility and effectiveness of SHRE interventions in a local context. This could be further explored based on gender differences in acceptability and responsiveness towards each component of this programme.

In addition, limited interventions that were conducted in Iran did not report rigorous process evaluations, which makes it unclear for us to determine under what circumstances and for what reasons the interventions succeeded or failed.

Hence the need for qualitative studies to understand and address structural and contextual factors that affect sexual knowledge and attitudes in young adults, intervention delivery methods, including how and under what instructions such interventions are delivered, and how were the communication and engagement established between educators and students.

Complementing the bespoke SHRE programme outline with other community-based interventions and activities

Concurring with the IMB model, the existing literature, and the cultural, social, and legal barriers that have been quoted in the first two studies of this thesis, it is likely challenging to change sexual attitudes in young adults by the provision of information alone. Engaging the wider community with whom young adults are in contact, including parents, university staff and lecturers, religious leaders, and community healthcare providers, could enhance the effectiveness of SHRE programmes. Further research is needed to understand the best methods to design and deliver SHRE for an inclusive, community-wide reach.

6.5: Conclusions

The three studies reported in this thesis highlight a strong need and demand for sexual health and relationship education, and accessible and confidential sexual healthcare to be provided for young adults in Tehran. Although the empirical literature is inconclusive about the effects of SHRE on long-term behaviour change, the evidence indicates that quality SHRE can bestow greater knowledge, promote sexual health motivation, provide sexual health skills and therefore raise public health standards. The research reported here highlights gaps in the current provision of SHRE and sexual health services for young adults in Tehran. The work also presents an SHRE programme outline based on needs assessments, international recommendations, and a review of current Iranian materials. This was endorsed and refined through consultations with stakeholders. Despite this progress there are social, organisational, and cultural factors influencing the implementation of such a programme and improved services. A holistic, scientific, political, and public health approach will be needed to overcome potential barriers; and, thereby, raise SHRE in Tehran to world-class standards. The data

and recommendations included here represent an important step on that journey.

6.6: References

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