

**The Relevance and Impact of
Laws Regulating Premarital Screenings
in the Muslim Arab Countries**

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Abstract

In order to maintain the general health and prevent against propagation of contagious diseases, the majority of the Arabic Muslim countries adopted laws and regulations implementing mandatory programs of premarital screening and counseling. All these countries faced the challenge of maintaining healthy society without breaching human rights or neglecting respect to the main rules and dispositions of Islamic religion. This research studied the evolution of the legalization of the premarital screening laws in the Arab Muslim countries. Data was collected from different legislations regarding the premarital screenings in certain Arab Muslim countries and other occidental countries and similar cultural communities. Data were included regarding 8 Arab Muslim countries, 3 occidental countries, China and the Orthodox Jewish Community. An intensive literature review regarding researches measuring the outcomes of premarital

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screening in Arabic Muslim countries was also performed. A document's review was performed over legal documents and scientific researches. The research showed that the majority of laws in the Arab Muslim countries made the analysis and medical examination mandatory. Nevertheless, it is up to the future husband and wife to decide whether to continue the process of marriage or not. The imposition of premarital medical examination laws in the Arabic Muslim countries lead us to observe positive outcomes in countries like Bahrain, Palestine, UAE, Saudi Arabia and no effect in Egypt, Kuwait and Tunisia. An urgent need of researches measuring the outcomes of programs of premarital screenings was observed.

Key words: premarital screenings, Laws, Muslim Arab countries

1. Introduction

Nowadays the world in general and mode of life specifically, changed drastically. Society became more individualist and socioeconomic relations mutated. Human beings and health conditions of people and communities improved gradually. At the same time, we notified the emergence of new diseases and uncontrolled epidemics that are widespread in some societies. These situations stressed governments to adopt new laws, rules and regulations in order to protect their citizens. One of the solutions proposed in order to limit the possibility of spread of certain contagious diseases is the implementation of laws imposing the premarital screening before marriage. Unfortunately, this idea created a big dilemma around the

world whether in occidental or oriental countries. Such laws could limit the freedom of humans and are ethically unacceptable. For others, such laws come against certain main religious principles and constrains the theological rules. Other researchers see that the question of premarital screening became obsolete, is not subject of debate, and needs to be abolished because it complicates the human life. In Muslim societies, this subject is considered recent and more than interesting because Muslims are still attached to the notion of family and the majority of conjugal relations are conservative and respect Islamic rules. The specificities of the Arabic Muslim societies made the majority of marriages as consanguineous. This last specificity generated a high rate of newborns affected by an inherited disorder. Again, in order to limit the spread of this phenomenon, the majority of Arabic Muslim countries adopted laws regulating the question of premarital examinations. However, a dilemma still exists in the Muslim countries. From one side some Muslim scholars see that governments cannot oblige their citizens to perform some premarital examinations. In another side, the spread of certain contagious diseases threatens the wellbeing of communities and populations and constitutes a great danger for the society in general, and a burden for governments and families specifically. In addition, in order to guarantee the continuity of worshipping God, Islam encourages the protection of future generations (Shammout, 2017). Perhaps, inside this dilemma, the aim of this research consists of

studying the evolution of the legalization of the premarital screening laws in the Arabic Muslim countries. We would like to explore how Arabic Muslim countries responded to the needs of society without breaching their Islamic rules. We will also explore the potential impact resulting from the adoption of certain laws in the Arabic Muslim countries. A comparison with certain occidental countries could also situate the evolution of the legislation in the area of research.

2. Definition of Healthy Marriage and Premarital Screening

Strengthening family cohesion was one of the main goals of Qatar National Development Strategy 2011-2016. The family is the basis of the Qatari society and the foundation of its social structure. The government supports programs that strengthen the Qatari family as a pillar of society. One of the main axes of this strategy focuses on the on maintaining health society. Couples wishing to get married must visit one of the accredited health centers in Qatar to undergo the premarital health check. This aims to avoid many genetic, hereditary and communicable diseases in addition to controlling the prevalence of disability and other diseases. Like Qatar, other Arabic Muslim Countries had chosen the way of the guarantee and maintain of healthy Marriage. The Saudi ministry of Health define a Healthy marriage as state of agreement and harmony between the marriage partners with regard to the healthy, psychological, sexual, social, and legislative aspects, aiming at making a sound family

and begetting healthy, happy children. For Ooms (2007) Healthy marriage consists of teaching general relationship skills relevant to many types of couples. It helps individuals to develop the knowledge, attitudes, skills needed to have a healthy and happy relationship, make wise marital choices, and stay successfully married. Indeed, the concept of healthy marriage is based on a more preventive, educational approach that can guarantee a happy and healthy relationship. This article will only focus on the health aspect. One of the ways that helps to guarantee a healthy relationship is the premarital screening or tests. Because of the increasing in the number of children affected with genetic or blood transmitted diseases, premarital testing became an important issue in the Arabic and Muslim countries, because they are crucial in identifying potential health risks for couples intending to get married as well as for their siblings. According to Abuobaida et al. (2018) the premarital Screening consists of conducting examination for couples intending to marry; in order to identify if there is any injury with genetic blood diseases and to prevent any risk of transmitting any disease to the potential children or partners (Fang 1991). It means that couples that are going to get married need to have a battery of tests related to genetic, infectious and blood transmitted diseases. The Saudi ministry of Health also mention that these analyses helps to provide participants with a medical consultation on the odds of transmitting these diseases to the other marriage partner or the children in the future, and to give options and alternatives

before soon-to-be married with the aim of helping them plan for a healthy sound family. From their side, Meyer (2005), Alswaidi and O'Brien (2009) admitted that premarital screening could potentially reduce the burden of inherited hemoglobin diseases by reducing the number of high-risk marriages. The national academy of sciences (1975) defined the premarital medical screening as a set of diagnostic medical procedure. Law, personal choice or religious bodies involved in contracting marriages, could require it. Its main objective consists of detecting abnormalities before the outset of any signs and symptoms among persons planning to get married. For the purpose of this research, knowing the position of the Islamic scholars concerning the premarital screening becomes essential.

3. The Islamic ruling on mandatory premarital medical examinations

No unanimity can be observed between Islamic scholars regarding the question of permissibility for government to require prospective marriage partners to undergo a medical examination as a precondition of marriage. Two categories of opinions converged: some scholars are pro premarital screenings and others are against it. The first cohort of Islamic scholars viewed the necessity of governments to pass rules, laws and regulations that make it mandatory to undergo a premarital screening before marriage. In Islam, Islamic Laws that tends to promote the wellbeing of future generations as well as the welfare of the family and society command

us. As premarital medical examinations spare society social problems and economic burdens, several scholars strangled for the regulation of the question of the premarital medical screenings. The main scholars maintaining this opinion include Sheikh Muhammed Al zuhaili, Sheikh Hamadati Ma' al-'Aynayn Shabihuna (shabihuna, 2000), Dr. Mohammed Shabir, Sheikh Abdul Rahman Al-Sabouni, Muhammad al-Zuhayli, Arif Ali Arif, Usamah al-Ashqa and others... These scholars supported their opinion by arguments from Kuran, ahadith and Sunnah nabawiah. They see that, in order to protect the public interests, the Muslim ruler can issue laws that are judged beneficial to the community. They also believe that the premarital screening can prevent the spread of certain diseases, protects Muslims from those who are beset with contagious or hereditary diseases. It also helps to protect future generations from genetic defects and consequently safeguard the human lineage. The second cohort of Islamic scholars viewed that it is islamically unlawful to compel prospective spouses to undergo premarital medical examinations. For them, these examinations will not add a clear benefit to the public welfare. The ruler does not have the necessary prerogatives to decree certain permissible matters. The Islamic Scholars supporting this Ideology are: Dr. Abdul Rasheed Kassem, Abd alAzeez ibn Baaz, Zulmid Ali al-Barr, Muhammad Abd alsattar alsharif, Abd alKarim Zaydan, Muhammad Ra'fat Uthman, Ali Mohiuddin al-Qaradaghi (2018), and others... Again, these scholars supported their

opinion by arguments from Kuran, ahadith and Sunnah nabawiah. They see that conditions for marriage were clearly specified in the sacred Islamic texts and islamically speaking it is not acceptable to add other conditions. These scholars believe also that the effectiveness of premarital medical tests is limited in regarding of the number of diseases screened and test conducted. Before studying the evolution of laws related to the premarital examinations, we need to explore the theoretical fundamentals of the subject of research. Therefore, we will present postulates and concepts that identify the subject of the research.

4. Theories related to the concept of premarital examinations

Three main theories observed the necessity of the premarital screening. They consist of the racial hygiene movement, the realistic approach and the idealism theory.

4.1. Racial Hygiene Movement

The Racial hygiene movement emerged in the early twentieth century. Its defenders expressed their desire of promoting human characteristics deemed desirable. The purported goals of eugenics have variously been to create healthier, more intelligent people, save society's resources, and lessen human suffering. Its doctrine argued that certain groups of individuals are allowed to procreate and others not. The leader of this movement is Francis Galton. He invented the term Eugenics that is the basis of racial medicine. For Galton (1904), eugenics consists of "the science which deals with

all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage”. He also defined Eugenics as the “study of the agencies under social control that may improve or impair the racial qualities of future generations either physically or mentally” (Galton 1904). In its beginnings, the purported goal of eugenics have variously been to create healthier, more intelligent people, save society’s resources, and lessen human suffering (Backer 2016). Rapidly, this movement became controversial, and eugenics in theory and practice attracted criticism. In Nazi Germany, such movement served to adopt and support certain race hygiene measures serving Human Betterment and encouraged the extinction of certain Human races. In the United States of America, leaders of the racial hygiene movement provided the tool to monitor human population trends, and the findings of such surveys became the tools to shape public opinion and forge discriminatory social policies. Negative eugenics measures in the United States included forbidding marriage, segregation in institutions, and sexual sterilization of allegedly “unfit parents” and strengthening federal quotas on immigrants (in 1924) from nations believed to be “racially inferior” to Anglo-American stock (American Eugenics Society, 1926). The United States of America was the first country to adopt a law about the compulsory sterilization on the unfit and feeble-minded individuals (Backer 2016). In 1907, the state of Indiana adopted the first written compulsory sterilization law, it forced people to

undergo sterilization to prevent their reproduction, and the spreading of their defective genetics to another generation (Backer 2016). As this movement was based on racism and violated basic human rights, researchers and scientific movement quickly denied it specifically. This movement created a fear between researchers, which doubted the return of coercive state-sponsored genetic discrimination and human rights violations such as compulsory sterilization of persons with genetic defects, the killing of the institutionalized and, specifically, segregation and genocide of *races* perceived as inferior (Black, 2003).

4.2. The realistic approach

The approach has its roots in realist philosophy. It consists of accepting a doctor-knows-best approach. Dictionaries define the term “realistic” as “Having or showing a sensible and practical idea of what can be achieved or expected” and “representing things in a way that is accurate and true to life”. In such way and according to that approach, health care practitioners deliver care in a way that is right for the person and their family receiving care and that takes into account the priorities of people receiving care. Tilley and Pawson developed the Realistic approach in Medicine and specifically the “realistic evaluation of patients” in 1997. This theory was concerned with the identification of underlying casual mechanisms and how they work, under what conditions. A realist evaluation compares mechanisms and outcomes within programs. Its concern is with understanding causal

mechanisms and the conditions under which they are activated to produce specific outcomes (Areti, 2014). The approach developed by Tilley (2000), allows a physician to understand ‘what works for whom in what circumstances’. The Realism in the context of premarital Screening is important because it provide to the physician the main ingredients necessary to take a decision. Such approach helps to understand the specifications of the crucial contextual conditions for the intervention. It also clarifies the change-inducing mechanisms that will be triggered by the intervention. For the physician, it also gives an idea about the anticipated outcomes pattern that will be generated by triggering these mechanisms (Tilley, 2000). This approach gives to the physician a large pattern of decision making regarding premarital screening. The health practitioner becomes free to evaluate, judge and make a decision regarding the health condition of the possible future married. In certain circumstances, he can authorize or forbid the marriage. By giving the full authority to the physician to decide whether he medically allow the wedding or not, this approach became also subject of criticism. This approach had been seen as discriminatory and limiting the human rights. By attributing the decision to the physician, people became limited in term of the freedom of marriage and relationship. The majority of researchers admitted that physicians must play a consultative rather than judiciary role.

4.3. The idealism

The two previous theories dealing with premarital screening gave more authority to the government, health authorities and doctors to monitor and make decisions regarding the medical evaluation process. That is why they had been seen at a certain point as discriminatory and limiting the freedom of the future married. The Idealist approach led by Emmanuel Kant fiercely attempted to 'save' the human freedom. Idealism is essentially based on the idea of oneself conception of human beings. It supports freedom as main guise. It focused essentially on defending the freedom of choice, freedom of the will, freedom as autonomy to be an integral part of any conception of the self-worth pursuing (Guyer and Horstmann, 2015). In the medical era, this approach helped to adopt a new way of dealing with patients. It is called the "Expert Patient" and supports the patient self-management as key component of effective care and improved patient outcomes (Shaw and Backer, 2004). The concept of "expert patient" gave more autonomy to the patient and encouraged the self-management skills (Boulet, 2016). This new concept encouraged patients to take more control over their health by understanding and managing their conditions, leading to an improved quality of life. The idealist approach gave more autonomy and confidence to those who will get married. Under this approach, people are free to engage with whom they desire. The future married must inform their partners about the possibility of infection and their medical conditions.

In the majority of legislations, they must do the premarital screenings, but they take their own decision regarding the continuity of their relationship. So, the role of authorities is regulatory, it consists of introducing laws without harming the freedom of citizens. Inside this process, physicians play only the role of examination, diagnosis, informing and sensitizing about consequences in case of need. Finally, the main actors' concerned by the marriage need to feel free to be engaged in a marriage relationship or stop that process. By informing partners, respecting their autonomy and their right to get married, we systematically respect their freedom.

5. The evolution of legislation regarding premarital screening in certain Arabic Muslim countries

5.1. Bahrain

The Ministry of Health through the Genetics Department in collaboration with the Bahrain National Hereditary Anemia Society initiated the genetic counselling program in 1986. In 1991, "Committee for the Prevention of Genetic Blood Diseases" extended premarital genetic counselling to health centers. In 1993, the first voluntary premarital counseling program was introduced in the kingdom of Bahrain (Kumar 2012). In 2004, the Kingdom of Bahrain enacted Law number 11 requiring mandatory premarital counselling for couples wishing to marry. Any Bahraini citizen, about to get married, even if the spouse is non-Bahraini, must undergo a premarital check-up, which includes some hereditary, infectious and other diseases. In such regard, Bahrain laws make it possible

to fine those violating the requirements of the 2004 law on medical tests for certain “hereditary and contagious diseases (Welchman 2010).” According to the ministry of health, the new premarital counselling program will introduce certain benefits and effects on the present and future generations. In addition, globally the Bahrain society will register an improved genetic health. According to 11/2004 law, the premarital medical tests are mandatory, but the future married are free to take the advice given in the counselling sessions. In other terms, after passing the initial screening, couples shown to be at risk of haemoglobinopathies will receive counselling and information’s about potential risks in case they choose to get married. Therefore, the advice given by the geneticist is not compulsory and the couple is free to continue the marriage process or not (Al-Arrayed & Al, Hjeri, 2005). A formal document called “counselling certificate” and required by the Ministry of Religious Affairs is issued after the counselling process. It guaranteed the issuing of a legal marriage document. After the introduction of the premarital counselling, Al-Arrayed (2005) observed an increase of ‘separation before engagement’ in marriages and a decline of 50% in incidence of certain hereditary diseases. Another cross-sectional study conducted by Almutawa & Alqamish (2009) conducted on 1,070 couples that participated in the premarital counselling, reported a 43.3% at risk marriage cancellation rate.

5.2. Egypt

According to the Egyptian marriage registrar regulations paragraph (4) of Article (33), before concluding the marriage, the registrar must get the certification of the couple that they are free of diseases that may allow differentiation. These diseases are limited to Dementia, insanity, leprosy, sinus and AIDS. In August 2008, the Egyptians ministers of health and justice issued two decrees establishing mandatory testing as a condition for the registration of marriages. As a prerequisite for registering their marriage, all Egyptian citizens wishing to get married need to perform a comprehensive and mandatory medical examination. The idea behind the administration of these tests before marriage consists of avoiding genetic diseases, testing the reproductive capacity of couples and the protection against infectious diseases that may be transmitted through sexual contact. The process of delivering medical certification for marriage starts in the offices of the medical examination centers at the Ministry of Health or one of its directorates in the governorates. The future married need firstly to fill a form in which they deliberately authenticate if they are subject or have the knowledge of any hereditary diseases. If their answer is affirmative, they are both referred to the Center for Genetic Diseases. A blood samples are taken in order to administer the premarital medical examination. In case of the notification of the existence of hereditary diseases, both parties can decide to continue the other medical examination procedures. In such situation, complementary laboratory

medical examinations for hereditary blood diseases and infectious diseases are administrated. If results are negative for the parties, the medical center shall issue the certificate of completion of the premarital medical examination. In case of positive results, the doctor at the medical examination center before marriage gives the necessary medical advice to both parties and issue the certificate of premarital examination stipulating that the marriage is not safe. In the event that both parties wish to continue to conclude the marriage, they must sign a letter of consent to complete the marriage and a copy of that undertaking is given to both parties. Consequently, this declaration must be attached with the certificate of medical examination before marriage (Mona Abdelgalil, 2016). A study conducted in 2015 with 100 unmarried female adolescents' students studying Technical nursing at Ain Shams University concluded that the majority of students had lack of knowledge and negative attitudes regarding premarital genetic counseling (Elfattah & all 2015). This study showed also that these students would abstain from performing premarital genetic screening because they fear from consequences of positive results. The cost of tests constitutes also a barrier. For Elfattah & al., 2015 these results may be attributed to the absence of screening culture in Egypt. The lack of knowledge about the importance of premarital genetic screening tests plays also an important role. In addition, the coverage of premarital genetic screening is still limited in Egypt.

5.3. Kuwait

Like the majority of J.C.C. countries, the prevalence of genetic blood disorders is considered high in the State of Kuwait. This prevalence turns around 10% to 25% and is mainly due to consanguineous marriages (Al-Enezi & Mitra 2017). In order to reduce the impact of this high prevalence; In order to avoid the financial, psychological and social burdens that are usually present among families with children affected by genetic and chronic infectious diseases, the Kuwait government introduced a premarital screening program. Under the provisions of the premarital Law number 31/2008, the premarital screening becomes mandatory. The issuance of this law helps to maintain protection against diseases that can be transmitted by marriage. Starting from the second of august 2009, Kuwaiti citizens and those that will get married with Kuwaiti citizens must undergo the premarital screening. The premarital screening includes a set of tests aiming to tract hereditary conditions such as sickle-cell anemia and thalassaemia, as well as contagious diseases like Herpes, AIDS and Hepatitis B and C. The role of the Kuwait ministry of health consists also to refer citizens to specialized doctors in case diseases or health problems are detected. According to the law 31/2008, the government cannot impose a ruling on the couples. Those who wish to proceed with the marriage are free to do that at their own risk even if the premarital tests showed the existence of contagious or hereditary diseases or conditions. In 2010, Dr. Yacoub Al Kandari, the head of the

social health department at the Kuwait ministry of Health notified that medical tests were administrated to 15,718 since the beginning of the program. In 97.3 % per cent of cases, examinations were negative and people were given the all clear to get married. Dr. Al Kandari stated also that, for the same period, 315 people were tested positive for possible genetic problems. Despite the fact that they were informed that marriage could affect children, unfortunately, 45% of these at risk cases decided to get married despite the consequences. A research conducted by Al-Enezi & Mitra (2017) among 809 students of Kuwait University concluded that about 40% and 35% respectively expressed negative and uncertain attitudes regarding the influence of the results of premarital screening on the marriage decision. This demonstrates that for these young students the premarital test is just a mandatory formal process of issuing a safe marriage certificate in Kuwait. It is the last step in the process of the marriage (Al-Enezi & Mitra 2017).

5.4. Palestine

According to the first paragraph of the article 5 of the Palestinian Public Health Law for the year 2000 (amended in 2004) the premarital screening becomes mandatory. The new law requires couples seeking marriage to show an official proof of premarital testing. The objective is to ensure a safe marriage and to confirm the absence of any kind of diseases that may affect the lives potential children. According to the Palestinian laws, any person who wishes to contract marriage

must present an evidence of performing medical examination containing analysis regarding thalassemia. The medical examinations need to be performed by a governmental health center certified by the Ministry of Health. In addition, if the fiancé or fiancée is a non-Palestinian citizen, and he has not spent more than six months in Palestine, in such case he must present a medical certificate attesting the absence of HIV. In 2014, the Palestinian ministry of health launched the first Standard Protocol for Premarital Medical Examination. The first step of this protocol consists of performing a series of blood tests to determine whether the marriage is appropriate or inappropriate. Tests include analyzes regarding hereditary diseases or infectious diseases such as Thalassemia, tuberculosis and hepatitis. In the event of the discovery of any effect leading to some diseases, a medical report is made and the necessary treatment is administrated. In such case, the report does not prevent marriage. The future married are free to proceed with marriage. The medical center needs only to issue a notice signed by the both parties in which they notify that they are aware of the possibility of the emergence of diseases. A research conducted by Tarzi and all. (2007) showed that an increasing percentage of carriers of hereditary diseases couples did not go ahead with their marriages. The first year after the launch of the mandatory, premarital screening (2000), 0% of couples refused to conclude their marriage despite that fact that the analysis showed the existence of a risk on their potential children. In 2005, the rate jumped

to 73.7% cases of cancellation. Research showed that both partners were carriers in 19 couples. Out of them, 14 couples decided to separate while five continued their marriage (Tarzi and all 2007). The research showed that the new legislation about mandatory premarital screening contributed to the decrease in the number of new thalassemia cases. Before 2004, Palestine registered around 40 new cases of children born with Thalassemia. After 2004, this rate decreased to less than 10 registered new cases annually (Karmi, 2010).

5.5. Qatar

In 2009, Qatar registered the rate of 54% of marriages concluded between cousins. It is considered as one of the highest rates of cousin marriage in the region (Bener and Al-Ali, 2006). Marriages between cousins, or what we call consanguinity, increase by 20% the chance of contracting debilitating genetic disorders. Qatari leaders have been working to improve national health and medical awareness and launched, in 2009, the mandatory program of premarital screenings. In order to avoid risks, Qatar ministry of health focuses its strategies on promoting the prevention. This prevention can be provided through the pre-marital medical examination to avoid hereditary diseases and protect children and grandchildren (Qatar ministry of Health). Leaders of the state of Qatar believe that the True Religion, Islam, has put forward the rules and principles to build a healthy and sound family, in addition to live a happy marital life. The objectives of the program consist of avoiding genetic, hereditary and

communicable diseases and possibly detect health problems and commence treatment as early as possible. The Qatari government would like also to secure happiness and well-being for Qatari children and grandchildren. The premarital screening program helps also to provide advice, counsel, medical and mental support to those who are intending to get married. On June 29, 2006, his highness Sheikh Hamad Bin Khalifa Al Thani issued a Decree enforcing the provisions of the Family Law No. 22 of 2006. The paragraph 18 of the law specifies “Each party to the contract shall submit to the marriage attestator/notary a medical certificate from a competent medical authority specifying that parties are free from genetic diseases and the other diseases specified by the National Health Authority in coordination with the relevant authorities”. It also specifies, “The marriage attestator/notary shall notify each party of the content of the medical certificate submitted before the signing of the marriage contract. The notary may not refuse the authentication of the contract as a result of the medical examination if the parties so desire”. That means, the results of screenings are non-directive and the couple has the choice to proceed with the marriage regardless of the screening result. Medically speaking, the pre-marital screening includes the inherited and contagious tests targeting diseases like sickle cell anaemia; haemoglobin abnormalities -thalassemia et al. The examinations also target the clotting factor to discover Haemophilia (A &B). The family history or any medical indicators can push examinations through other

diseases like syphilis, HIV (AIDS), hepatitis B & C. The premarital medical examination is administrated separately to the couples. In case the marriage proposal between the two parties was cancelled after the conclusion of the medical tests have been undertaken, both parties should keep confidential the medical information, which has become known during the process.

5.6. UAE

In UAE, the premarital screening mainly aimed at reducing the number of children with inherited diseases. According to the Health Authority, the premarital screening includes a set of comprehensive group of tests. The screening includes tests for infectious diseases, such as HIV, Hepatitis B & C, syphilis, and genetic diseases such as Beta-thalassemia, sickle cell and other hemoglobinopathies. Other Tests and Preventive Measures can be taken and they include checking for rubella, blood group and the Rhesus compatibility. Starting June 2008, the premarital medical examination became compulsory for all citizens and residents of the in United Arab Emirates. Previously, the medical examinations were mandatory only for citizens who will apply for Marriage Fund Grant. Therefore, the UAE Personal Status Law Article (27) paragraph (2) stipulates that a specialized medical committee formed by the Minister of Health stating that there is no disease or medical constraints that will potentially result from the marriage must submit a report. The same paragraph of the law Pointed out that the ministry has the right to separate between the pretending to

marriage in the case of one of them showed the risk of having infected disease that cannot be treated. Apparently, the premarital screening tests play only an advisory role for those that will pretend to marriage. However, reality is different especially for those who the results showed and abnormal case. In such situation, the couple will both meet with a doctor who will provide further counseling and clarification about the screening results and any potential risk. The advisory role of the doctor will help the people concerned to come to their own informed decision. If both parties are still willing to get married, they need to sign a consent part and the pre-marital report will be issued to them and the decision of marriage is referred to judicial department in UAE. In such case and according to the UAE Personal Status Law, the Shari'a courts may refuse to conclude a marriage contract in case one of the parties suffers from Genetic diseases in the blood or Infectious diseases. According to Kim & Tridane (2017), the number of affected births has been almost halved compared to the time before the introduction of prevention program in UAE.

5.7. Saudi Arabia

The Saudi premarital screening program is mandatory. Without premarital screening results, couples cannot get the official marriage license. The program targets all Saudis willing to get married in order to offer a primary prevention, reduce risky marriages and to educate non-compatible couples about the risks in case they continue marriage (Al-Quwaidhi & Al-Mazroa, 2008). According to the Saudi ministry of

health, the premarital screening will help to limit the spread of some genetic blood diseases and some infectious diseases. IT will also reduce the financial burdens assumed by family and community and resulting from the treatments of people affected. Another benefit of the program consists of reducing pressure over health institutions and blood banks. It also helps to avoid the social and psychological problems for families and potential affected children's. After performing premarital tests, a «compatibility certificate» is issued to compatible couples. Incompatible couples are confidentially informed and are referred to a genetic counseling clinic. However, counseling is non-directive and the couple has the choice to proceed with the marriage regardless of the screening result. In such situation, future married are offered health education and information regarding potential risks. Before having their «incompatibility certificates», the pretending for marriage must sign legal documents and assume their responsibilities (Al-Saeed & Al-Salem, 2002). In 2004, premarital medical examination was imposed on all Saudis who were expected to marry; bearing in mind that premarital screening was a mean of preventing genetic and infectious diseases. At the beginning, the program required tests limited to screening for sickle cell anemia and thalassemia. In 2008, the Saudi government launched The “Healthy Marriage Program” and added more mandatory tests to include the detection of HIV infection and viral hepatitis B and C. A research conducted by Memish & Saeedi (2011) showed that the

Saudi genetic counseling program obtained towards the end of marriage process was likely to be effective. Therefore, the research showed that between 2004 and 2009 the frequency of voluntary cancellation of marriage proposals increased from 9.2% to 51.9%. Their study also showed clearly the success of the premarital medical examination program in Saudi Arabia because it helped to reduce the detection and prevention of at-risk marriages. In their research, Memish & Saeedi (2011) showed that detection of at-risk marriages was reduced by about 60% (from 10.1 in 2004 to 4.0 in 2009 per 1000 examined persons). This was mainly driven by a more than 70% reduction of the prevalence of β -thalassemia during the same period.

5.8. Tunisia

The 3rd of November 1964 the Tunisian president Habib Bourgiba promulgated the Law No. 1964-0046 instituting the premarital medical certificate. The first article of the law stipulated that the registrar of civil status or notaries, chosen for the establishment of the marriage certificate, could proceed to the celebration of the marriage, only after the delivery by each future husband of a medical certificate dating less than two months, attesting that the person concerned was examined for the purposes of marriage. The second article of the same law specified that the physician must particularly focus its diagnosis on contagious diseases, mental disorders, alcoholism or any other dangerous diseases for the spouse or descent and including tuberculosis and syphilis. Article 3 of

the same law specified that the physician will communicate his findings to the person concerned and will inform him of the scope. Perhaps, He can refuse the delivery of the certificate if the marriage appears to him undesirable or will postpone this delivery until the patient is no longer contagious or his state of health is no longer prejudicial to his descendants. The article 5 of the same law gave judges the authority of exemption of the delivery of the medical certificate in certain exceptional cases. In Tunisia, the aim of the premarital consultation is the detection and prevention of certain communicable diseases or likely to be transmitted to the spouse. For such regard, to get a premarital certificate the physician will administer a series of tests. They include the screening for syphilis and viral hepatitis B and C and sexually transmitted diseases. He will also determine the blood group and in order to detect tuberculosis he administer a radiography of the thorax. Physician can also administer tests to detect hereditary and chronic diseases. By concluding all these clinical examinations, the physician can deliver separately the premarital certificate. In order to preserve confidentiality and medical secret, the physician cannot tell the other partner about the medical condition of his potential married. However, in practice, more than 80% of the newly married do not perform the clinical and complementary examinations. Indeed, many compliant doctors issue the certificate without requiring an examination. An investigation made in 2014 by the journal of al Maghreb showed that in practice few number

of physicians perform effectively the premarital screening. Despite the dispositions of the law 46 of 1964, the majority of the medical staff working in the private or public medical institutions deliver the premarital certificates in few minutes comparing at between 3 days and 1 month in the normal process. Certain unofficial statistics confirm that only 20% of the future married really perform the premarital examinations (Zibis, 2014). The irregularities observed in the process of delivering the premarital certification can be explained by several reasons. Unfortunately, the Tunisian laws punishes the Physician who delivers the certificate without examinations only in the case of complaining of the subjects of the examinations. Historically, registers of the Tunisian ministry of health does not contain any such cases. Consequently, we can say the law 46 of 1964, is based on the ethical responsibility of the physician on term of the administration and observation of the required medical tests. In addition, the same law does not oblige the physician to maintain a register in which he consign the medical examinations and tests administrated to the future married. The second limitation of the law regarding premarital medical certificate is related to its informative character. In such law, the physician informs future married about the potential existence of certain diseases or risks. He also educates them about the potential dangers for them and potential kids. Despite the fact that the law gives the physician the authority to refuse or postpone the delivery of the certificate; in reality, they do not

follow these dispositions because they know that the future married will systematically consult another physician who is going to deliver the certification without examinations. The examination of the statistics issued by the Tunisian national institute of statistics showed that the percentage of newborns affected by an inherited disorder jumped from 0.65% in 1964 to 0.85% in 2013. The same data shows also that the increase in the number of newborns affected by inherited disorders accelerated and increased by 25 % between 2004 and 2013.

6. The evolution of legislation regarding premarital screening in certain occidental countries, China and Orthodox Jewish community

6.1. USA and Canada

In 1954, Dr. Nadina Kavinoky confirmed that 34 states inside America had their own State laws and consequently requires a health certificate before the couple is granted a license to marry. At that time, church and colleges offer marriage courses to the future married. Physicians play also an important role by preventing misunderstandings from becoming deep-seated problems. His informative role about sexual organs helps also future married to consummate their marriage without undue trauma. The physician can also recognize and treat potential medical threats to marriage (Kavinoky, 1954). The different states of the USA adopted the program of premarital medical examination in order to prevent the transmission of venereal diseases and marital maladjustments. It also helps in preventing annulments of marriages and divorces. Due

to several critics and judicial challenges of laws approving premarital screening, the different States of USA had chosen to abolish laws requiring a health certificate before the couple is granted a license to marry. The last law was abolished in the State of Montana in October 2007. Premarital screening for genetic diseases is considered as primary prevention. Contrarily, neonatal screening is secondary or tertiary prevention (Tamhankar and All, 2007). The latest decades, Canada and USA abolished all laws related to the primary prevention of couples and focused their strategies on genetic testing and neonatal screenings. According to the Canadian ministry of Health, genetic testing helps to verify the state of a person's genes or chromosomes. It can also identify changes in a person's genes. These tests can be administrated before pregnancy. In such case, to be tested for a specific genetic condition, embryos are created using in vitro fertilization. If testing shows embryos carry a genetic condition, they are usually destroyed. Nowadays, the most prevalent genetic test in Canada is the prenatal screening. According to the Canadian ministry of Health, it is done before a baby is born. It helps to detect pregnancies with a higher chance of being affected with a chromosome condition (like Down syndrome) or birth defects (like Spina bifida). The third kinds of tests are called the prenatal genetic testing. It consists of testing a fetus for genetic changes by including amniocentesis and chorionic villus sampling.

6.2. France

In France, the premarital certificate was considered as a medical certificate necessary to establish a civil marriage. Under the Vichy regime, the act of 16 December 1942 and regulated by Articles 63 of the French Civil Code and L153 of the Public Health Code, those who will get married must perform two separate medical consultations and biological examinations. The main objectives of the premarital screening consist of offering a medical checkup and the information of future spouses about pregnancy, contraception, sexually transmitted diseases and lifestyle. Before 2008, Biological tests were administrated in order to check blood group, rhesus, irregular agglutinins, serology of toxoplasmosis and rubella serology. Other examinations may be offered, but are not mandatory, they include HIV serology, serology of syphilis, hepatitis B and C serology. A genetic counseling clinic can be offered if there is a known history of genetic disease in the family. In person and separate consultation with physician was then offered to the future spouses. The second medical certificate is then prescribed. We must notify that the doctor can neither prohibit the marriage nor alert the other future spouse of an anomaly that he has detected in his partner. The certificate must not contain any medical indication in order to preserve the medical secrecy related to the examination, whether with the registrar responsible for validating the marriage or with the spouse. Thus its practical utility lies only on placing the future spouses in the face of their individual

responsibilities. During the last 40 years, the French society was marked by a big transformation in the life style and the notion of family. We observed a frequent practice of premarital cohabitation and 80% of couples who marry in that time have been living together for years. In addition, the rate of births outside marriage increased drastically (47% in 2007). These indicators greatly contributed in the decrease of the scope of the prenuptial certificate. Starting January 2008, the French government decided that the premarital certificate is no longer mandatory. The removal of the premarital certificate was also justified by the financial burden generated by the registration of 270,000 marriages yearly. The social security system covers the cost of medical consultations at the order of 14 million Euros a year.

6.3. China

Starting 1986, Republic of China begins to carry out the premarital screening program. Initially it was compulsory, though not free of charge (Wang and all. 2013). Before October 2003, couples wishing to get married must pass the premarital medical examination. The main purpose of the examination is to screen for hereditary illness. The examination provides opportunities for the diagnosis of untreated diseases and for health education (Hesketh, 2003). Depending on the results of the examination, couples fall into one of three categories. Couples who meet the requirements are issued with the certificate of health for marriage. In other cases, the marriage must be postponed to allow some form of

treatment or counselling (Hesketh, 2003). However, due to ethical considerations and its overtones of eugenics, China introduced in 2003, new regulations on marriage registration. Premarital screening became voluntary (Gu and all. 2014). By the year 2000, the rate of premarital screening in China was as high as 63.4% (Chin. 2003). After the introduction of new regulations on marriage registration and premarital screening, the number of couples undergoing PME in Zhejiang province has dropped drastically (Li. 2009). Initially, in 2003, the province registered the rate of 94.3% of future married participating in the program. Directly, after the issuance of the new law, the rate decreased to 1.6% in 2004 and slowly reached 40% in 2009 (Li. 2009).

6.4. Orthodox Jewish community

As abortion is forbidden in the orthodox Jewish community, a premarital carrier-testing program was designed and implemented by the ultra-orthodox Jewish community. Its main objectives consist of reducing the number of children born with genetic diseases. The Dor Yeshorim program also called Committee for Prevention of Jewish Genetic Diseases is an organization that offers genetic screening to members of the Jewish community worldwide. Before arriving to the premarital genetic testing stage, the organization collects mass screening drives of blood throughout the world from the members of the Jewish community. Participants to the program receive a confidential identification number. The samples of blood are then being subject of analysis to

potentially detect anomalies in 9 main areas: Tay–Sachs disease, Familial dysautonomia, Cystic fibrosis, Canavan disease, Glycogen storage disease (type 1), Fanconi anemia (type C), Bloom syndrome, Niemann–Pick disease and Mucopolidosis type IV. Then, the results are entered into a highly sophisticated database. When two members of the system contemplate marriage, they contact the organization and enter both their PINs. A detailed report is then issued and the potential dangers from the union can easily be detected. The decision to continue the Union returns exclusively to the future married. According to Shaw & Raz (2015) Dor Yeshorim, the premarital carrier testing program designed and implemented by the ultra-orthodox Jewish community, has succeeded in generating high uptake thus considerably reducing the number of children born with genetic diseases.

7. Conclusion and discussion

All the Arabic Islamic countries subject of the research made a great legislative progress in term of premarital examinations. In 1964, Tunisia was the first country in term of implantation of premarital laws. Researchers showed that the implementation of such regulation contributed in its beginnings to reduce the prevalence of certain contagious and consanguineous diseases. However, the Tunisian law failed in the last two decencies to reach its objectives because it categorically relays on the objectivity and ethics of physicians. In other countries like Bahrain, Palestine, U.A.E. and Saudi Arabia the last few years registered an important success in

term of reducing the prevalence of certain contagious and consanguineous diseases.

The legislation of certain countries like UAE, in term of the law of premarital screening covers citizens and residents of the country. Contrarily, certain countries like Bahrain, Kuwait and Saudi Arabia made their laws mandatory only for their respective citizens (Table 1). The unequal coverage of the dispositions of these laws and regulations puts policy makers in a flagrant dilemma. From one side, these legal dispositions came to protect residents of a certain geographical area. From another side, the protections and precautions covers only certain residents of the designated area. As these people live and interact together, the probability of contamination still exists and could be easily transmitted. The adopted legislations consequently lose their value.

~~Please insert Table 1 Here~~

The research showed also that the repartition of analysis and diagnosis is also convergent from one country to another. The well-developed and rich countries like Qatar, Kuwait and UAE, conduct a battery of examinations before the issuance of the premarital certification. By contrast, in countries like Egypt and Tunisia, physicians can issue the certification without asking for any medical diagnosis. In such regards, the question of financial capacity of the state and people plays an important role in term of avidness to the premarital laws and regulations. Again, the attachment of physicians to the ethical dispositions is sometimes questionable. For

example, In Tunisia, the irregularities observed in the process of delivering the premarital certification can be explained by several reasons. The Tunisian laws punish the Physician who delivers the certificate without examinations only in the case when the subjects of the examinations complain. Historically, registers of the Tunisian ministry of health does not contain any such cases. Consequently, we can say the law 46 of 1964, is based on the ethical responsibility of the physician in terms of the administration and observation of the required medical tests. In addition, the same law does not oblige the physician to maintain a register in which he consigns the medical examinations and tests administrated to the future couple. The second law defect regarding premarital medical certificate is related to its informative character. In such law, the physician informs future married about the potential existence of certain diseases or risks. He also educates them about the potential dangers for them and their potential kids. Despite the fact that the law gives the physician the authority to refuse or postpone the delivery of the certificate; in reality, they do not follow these dispositions because they know that the future married will systematically consult another physician who is going to deliver the certification without examinations.

The research also showed that the majority of laws in the Arabic Muslim countries made the analysis and medical examination mandatory. However, the decision whether continuing the process of marriage returns to the future married. The only exception was observed in UAE were, in

certain cases, court must make a legal decision regarding the prohibition or the allowance of the marriage. That is why, we can say that the majority of the Arabic Muslim countries relay on the authority of the government in term of making mandatory premarital screenings before marriage. Such legal dispositions could limit the universal principle of the personal freedom. This situation reminds us that the majority of the occidental countries abandoned the idea and laws obliging people to get medical examinations before marriage. In fact, in the majority of occidental countries and China, laws related to premarital examinations were abolished successively at the beginning of the 21st century. Government judged that these laws constitute a threat to the personal freedom, complicate life of their citizens and constitute a financial burden for them. Respective government believe more about the information and prevention against the contagious diseases. They also rely more on the responsibility and maturity of their citizens in term of prevention. This latest strategy failed in china. Just after the abolition of the mandatory premarital examinations, Chinese citizens abstained drastically from performing medical tests before marriage. By the year 2000, the rate of premarital screening in China was as high as 63.4% (Li, 2009). After the introduction of new regulations on marriage registration and premarital screening, the number of couples undergoing PME in Zhejiang province has dropped drastically (Li, 2009). Initially, in 2003, the province registered the rate of 94.3% of future married participating in the program.

Directly, after the issuance of the new law, the rate decreased to 1.6% in 2004 and slowly reached 40% in 2009 (Li, 2009). Thus, we understand that Chinese citizens have not learnt enough from the previous law and are not ready to accept voluntarily and relay individually to the different strategies of prevention against contagious diseases. The abolishment of mandatory premarital screenings in the Arabic Muslim countries could lead to the same results like China. We assume that Citizens of these countries did not develop a reasonable amount of personal responsibility in order to relay on their own awareness regarding the importance of such medical tests. The researches conducted in Kuwait (Al-Enezi & Mitra, 2017) and in Egypt (Elfattah, Soliman, & Amin, 2015) are good examples that could confirm such assumption. Meanwhile, in term of health policies and public health, the answer to this question is still pending: What comes first? The personal interest or the public interest? : The personal freedom or the public health?

In addition, through this study, we notified that the occidental societies were marked by an important mutation in term of the notions of family and marriage. In these societies, marriage lost its main value because people can have conjugal relations outside the marital state. In addition, several researchers showed that in the occidental countries more than 50 % of newborns arrive outside the state of marriage. That is why, in these countries, the sanitary authorities focus more their strategies of prevention on Genetic testing, neonatal

screenings and prenatal screenings. They also turned their focus and research on the relevance and impact of increasing knowledge on genomic analysis and genetic testing. In order to maintain a more accurate and personalized treatments as well as preventive plans and new lifestyle indications (Wald & Wald, 2019).

The research showed also that the Tunisian premarital law does not give the physician the authority of divulging the health situation of people seeking counseling. The medical secret law limits Tunisian physicians. Such situation is problematic because it gives the respective partners the responsibility to communicate to each other their respective medical conditions. Added to that, this disposition is positive because it preserves the intimacy and privacy of persons in case they take the decision not to continue their marital engagement. In the other countries, physician must share his findings regarding the medical screening between the two future married.

The research also focused on exploring the outcomes of the imposition of premarital medical screenings laws in the Arabic Muslim countries. The examination of certain researches lead us to observe positive outcomes in countries like Bahrain, Palestine, UAE, Saudi Arabia and no effect in Egypt, Kuwait and Tunisia. These preliminary results need to be solidified by further and more accurate researches. Right now, the number of researches measuring the outcomes of the adopted legislations is very limited and inexistent in certain

countries. Future researches need to make deep analysis on the prevalence of inherited disorders before and after the adoption of premarital screening laws and regulations. Right now, it is not easy to find researches measuring the outcomes of the premarital medical screenings in Arabic Muslim countries.

To conclude with, we can say, that majority of Arabic Muslim countries made the premarital screenings mandatory. Nevertheless, after performing the medical examinations, the decision regarding the maintaining of marriage returns in the majority of cases to the future married. In that regard, the majority of governments relied on the theory of idealism (Emmanuel Kant). Thus, we understand these countries respected the principle of freedom, the Islamic dispositions and the best interests of their citizens. If we focus our analysis on the other non-Islamic Arabic countries, we discover that strategies of prevention against genetic disorders and hereditary diseases are completely different. Orthodox Jewish community implemented their own Dor Yeshorim program. It is confidential and effective in certain cases. Dor Yeshorim, the premarital carrier-testing program designed and implemented by the ultra-orthodox Jewish community (Shaw & Raz, 2015). The program has succeeded in generating high uptake thus considerably reducing the number of children born with genetic diseases. However, the efficiency of this program was judged limited because it covered a limited number of analyses. The Muslim and Arabic countries must

move forward to the second step and show more interests in regard of genomics, genetic testing, neonatal screening and prenatal screening. Through this research, we could also conclude that the majority of the Arabic Muslim countries relay on the authority of the government in term of making mandatory premarital screenings before marriage. In term of our research, we can say, by making the premarital screenings mandatory by law, the Arabic Muslim countries relay on the racial hygiene movement. However, after performing the medical examinations, the decision regarding the maintaining of the marriage returns in the majority of cases to the future married. In that regard, the majority of governments relayed on the theory of idealism. By relaying on two theories at the same time, the majority of the Arabic Muslim countries respected the freedom of their citizens, the Islamic dispositions and the best interests of their citizens (Table 2). By maintaining the final decision regarding marriage under the authority of legal courts, the UAE limited the freedom of citizens and residents and constrains the point of view of certain Islamic scholars that are against the premarital examinations.

This research is restricted to a number of the Arabic Muslim countries. It can cover and analyze the legal context of premarital examination in countries like Jordan, Iraq, Algeria and Morocco. In certain cases, we were not able to evaluate the concrete contribution of laws regarding premarital examinations. The subject of research is not well covered

and a lot of research need to be done before jumping to conclusions regarding the success of premarital programs in the Arab Muslim countries.

Table 2: the main theories of premarital screening and their link with respective countries

Theory Country	Racial Hygiene Movement (Authority of government)	Realistic approach (Authority of the physician)	Idealism (Freedom of the individual)
Bahrain	X		X
Egypt	X	X	X
Kuwait	X		X
Palestine	X		X
Qatar	X		X
UAE	X		
Saudi Arabia	X		X
Tunisia	X	X	X
USA and Canada			X
France			X
China			X
Orthodox Jewish community			X

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9. Refernces

1. Abdelgalil, M., (2016). Knowledge and attitudes of the family towards endogamy and the premarital medical examination, *Alexandria Science Exchange*, 37(4), 698-716.
2. AlArrayed, S. S., & Al, Hjeri. A. (2005). Premarital genetic counseling: a new law in the Kingdom of Bahrain. *Journal of Health, Social and Environmental Issues*, Middle Sex University, 6(2), 31-34.
3. Al qardaghi, 2018 <http://www.qaradaghi.com/chapterDetails.aspx?ID=170>
4. Al-Arrayed, S.S. (2005). Campaign to Control Genetic Blood Diseases in Bahrain. *Community Genetics*. 8:52-55.
5. Al-Enezi, K., & Mitra, A. K. (2017). Knowledge, Attitude, and Satisfaction of University Students Regarding Premarital Screening Programs in Kuwait. *European Journal of Environment and Public Health*, 1(2), 07.
6. Almutawa, F., & Alqamish, J. (2009). Outcome of premarital counseling of hemoglobinopathy carrier couples attending premarital services in Bahrain. *J Bahrain Med Soc*, 21, 217-220.
7. Al-Quwaidhi, Abdulkareem & A. Al-Mazroa, Mohammed. (2008). Saudi Premarital Screening Program: Public view

- after 3 years of implementation. Saudi Epidemiology Bulletin. 15. 19-20.
8. Al-Saeed, H. H., & Al-Salem, A. H. (2002). Principles of blood transfusion in sickle cell anemia. Saudi medical journal, 23(12), 1443-1448.
 9. Alswaidi, F. M., & O'brien, S. J. (2009). Premarital screening programmes for haemoglobinopathies, HIV and hepatitis viruses: review and factors affecting their success. Journal of medical screening, 16(1), 22-28.
 10. American Eugenics Society, A Eugenics Catechism, 1926
 11. Areti, S. (2014). Using the principles of realistic evaluation approach in nurse education. Health Science Journal, 8(4).
 12. Baker, N. (2016). Eugenics and Racial Hygiene: The Connections between the United States and Germany.
 13. Bener A, Alali KA. Consanguineous marriage in a newly developed country: the Qatari population. J Biosoc Sci. 2006; 38(2):239-46.
 14. Black, E. (2003). War against the weak: Eugenics and America's campaign to create a master race. New York.
 15. Boulet, L. P. (2016). The expert patient and chronic respiratory diseases. Canadian respiratory journal, 2016.
 16. Chin, J. (2003) Reprod Health. 14(2):81–85.
 17. Elfattah, H. A., Soliman, S. M., & Amin, F. M. (2015). Premarital Genetic Counselling among Female Adolescents Students. Journal of American Science, 11(6).
 18. Elfattah, H. A., Soliman, S. M., & Amin, F. M. (2015).

Premarital Genetic Counselling among Female Adolescents Students. *Journal of American Science*, 11(6).

19. Galton, F. (1904). Eugenics: Its definition, scope, and aims. *American Journal of Sociology*, 10(1), 1-25.
20. Gu, Y., Li, L., Zhou, C., Yang, T., & Dong, H. (2014). Factors influencing voluntary premarital medical examination in Zhejiang province, China: a culturally-tailored health behavioral model analysis. *BMC Public Health*, 14, 659.
21. Guyer, Paul and Horstmann, Rolf-Peter, "Idealism", *The Stanford Encyclopedia of Philosophy* (Fall 2015 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/fall2015/entries/idealism/>>.
22. Hesketh, T. (2003). Getting married in China: pass the medical first. *BMJ : British Medical Journal*, 326(7383), 277-279.
23. Karmi, B. (2010), Palestine and Thalassemia, *This week in Palestine*, Issue 150, <http://archive.thisweekinpalestine.com/details.php?id=3237&ed=187>
24. Kavinsky, N. R. (1954). Premarital medical examination. *Journal of the American Medical Association*, 156(7), 692-695.
25. Kim, S., & Tridane, A. (2017). Thalassemia in the United Arab Emirates: Why it can be prevented but not eradicated. *PloS one*, 12(1), e0170485.
26. Kumar, D. (Ed.). (2012). *Genomics and health in the developing world* (No. 62). Oxford University Press.

27. Li DZ. Premarital screening for thalassemia in mainland China. *Prenat Diagn.* 2009;29(6):637
28. Li, D. Z. (2009). Premarital screening for thalassemia in mainland China. *Prenatal Diagnosis: Published in Affiliation With the International Society for Prenatal Diagnosis*, 29(6), 637-638.
29. Memish, Z. A., & Saeedi, M. Y. (2011). Six-year outcome of the national premarital screening and genetic counseling program for sickle cell disease and β -thalassemia in Saudi Arabia. *Annals of Saudi medicine*, 31(3), 229.
30. Meyer, B. F. (2005). Strategies for the prevention of hereditary diseases in a highly consanguineous population. *Annals of Human Biology*, 32(2), 174-179.
- Fang, X. (1991). HBV Infection among newly married couples. *Chin J Virol*, 7, 35-37.
31. National Research Council, & Committee for the Study of Inborn Errors of Metabolism. (1975). *Genetic screening: programs, principles, and research*. National Academies.
32. Ooms, T. (2007). *Adapting healthy marriage programs for disadvantaged and culturally diverse populations: What are the issues?*. Washington, DC: Center for Law and Social Policy
33. Pawson, R., & Tilley, N. (1997). *Realistic evaluation*. Sage.
34. Shabihuna, H. M. A. A. (2000). *Al-Amrad Allati Yajib an Yakuna Al-Ikhtibar Al-Wirathi Fiha Ijbariyan*.
35. Shammout, H., Khatatbeh, M., & Al Omari, O. (2017).

PREMARITAL SCREENING TESTS: AN ISLAMIC VIEW. EUROMEDITERRANEAN BIOMEDICAL JOURNAL,12 (23) 113–114

36. Shaw, A., & Raz, A. E. (Eds.). (2015). *Cousin marriages: Between tradition, genetic risk and cultural change* (Vol. 28). Berghahn Books.
37. Shaw, A., & Raz, A. E. (Eds.). (2015). *Cousin marriages: Between tradition, genetic risk and cultural change* (Vol. 28). Berghahn Books.
38. Shaw, J., & Baker, M. (2004). “Expert patient”—dream or nightmare?.
39. Tamhankar PM, Agarwal S, Arya V, Kumar R, Gupta UR, Agarwal SS. Prevention of homozygous beta b-thalassemia by premarital screening and prenatal diagnosis in India. *Prenat Diagn.* 2009;29:83–8.
40. Tarazi, I., Al Najjar, E., Lulu, N., & Sirdah, M. (2007). Obligatory premarital tests for β -thalassaemia in the Gaza Strip: evaluation and recommendations. *International journal of laboratory hematology*, 29(2), 111-118.
41. Tilley, N. (2000, September). Realistic evaluation: an overview. In *founding conference of the Danish Evaluation Society* (Vol. 8).
42. Wald, D. S., & Wald, N. J. (2019). Integration of child–parent screening and cascade testing for familial hypercholesterolaemia. *Journal of medical screening*, 26(2), 71-75.
43. Wang, P., Wang, X., Fang, M., & Vander Weele, T. J.

- (2013). Factors influencing the decision to participate in medical premarital examinations in Hubei Province, Mid-China. BMC Public Health, 13, 217.
44. Welchman, L. (2010). Bahrain, Qatar, UAE: First time family law codifications in three Gulf States.
45. Zbis, H. (2014). Physicians and nurses violate medical examination before marriage, Arab Reporters For Investigative Journalism.

~~Table 1. Inventory of Premarital screening laws and regulations among Arabic Muslim Countries Coverage and outcomes~~

Country/ Community	Year of adoption	Currently, is routine premarital screening carried out (Y/N)?	If currently yes, is it mandatory (M) or voluntary (V)?	Can marriage be denied by law? (Y/N)	Disorders/diseases being screened for	Results shared with both partners? (Y/N)	Government offers premarital counselling? (Y/N)	Populations covered by the programs	Positive effects of the program? (Y/N)
Bahrain	1986	Y	M (laws make it possible to fine those violating the requirements)	N	Hereditary, infectious, other	Y	Y	Bahraini citizens	Y
Egypt	2008	Y	M But coverage is incomplete in practice and relays more on self-declarations rather than on Medical analysis.	N	Dementia, insanity, leprosy, sinus, AIDS	Y	Y	Not specified	N

Kuwait	2008	Y	M	N	Hemoglobinopathies including sickle-cell, anemia, thalassemia and contagious diseases like herpes, AIDS, hepatitis B and C	Y	Y	Kuwaiti citizens and their future partners	N
Palestine	2000	Y	M	N	Thalassemia, HIV, tuberculosis, hepatitis	Y	N/A	Palestinians and residents since more than 6 months.	Y
Qatar	2009	Y	M	N	Hereditary and communicable, sickle-cell, anaemia, haemoglobin thalassemia, haemophilia (A and B), syphilis, HIV, hepatitis B & C	Y	Y	Qatari citizens	Data not available

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UAE	2008	Y	M	Y (UAE Personal Status Law Article (27) paragraph (2): the ministry of health has the right to separate between the pretending to marriage in the case of one of them showed the risk of having infected disease that cannot be treated.	Infectious diseases, such as HIV, Hepatitis B & C, syphilis, and genetic diseases such as Beta-thalassemia, sickle cell and other hemoglobinopathies. Other Tests and Preventive Measures like rubella, blood group and the Rhesus compatibility	Y	Y	Citizens and residents	Y
Saudi Arabia	2004	Y	M	N	Sickle-cell, thalassemia, HIV, hepatitis B and C	Y	y	Saudi citizens	Y

Tunisia	1964	Y	M	Y but compliance is very limited	Contagious disease, mental disorder, alcoholism, tuberculosis, syphilis, hepatitis B and C	N	Y	Not specified	N
USA and Canada	Abolished	N (actual efforts focus on genetic testing and neonatal screenings)	V	N	Genetic testing, neonatal screenings, prenatal screening	N	Y	Citizens and residents	Not verified
France	Abolished in 2008	N (actual efforts focus on genetic testing and neonatal screenings)	V	N	Genetic testing, neonatal screenings, prenatal screening	N	Y	Citizens and residents	Not verified
China	Abolished in 2003	N	V	N	Not applicable	N/A	N/A	N/A	N
Orthodox Jewish Community, Dor Yeshorim programme	N/A	N	V	N	Tay-Sachs, cystic fibrosis, Canavan disease, Gycogen storage disease type I, Fanconi anaemia, Bloom syndrome, Niemann-Pick disease, mucopolipidosis type IV	Y	N/A	N/A	Y