Review Article

Promoting Health Care for Pregnant Women in Prison: A Review of International Guidelines

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Abstract

Background: There are standard guidelines for the provision of health care for pregnant women in prisons. There is no single guide to meet all the specific needs of imprisoned women. In this study, the related international guidelines were reviewed to reveal the existing gaps. **Materials and Methods:** In this narrative review, studies published from May 2010 to January 2019 were reviewed through investigating databases including PubMed, Scopus, the Cochrane Library database as well as Science Direct Google Scholar using keywords: Guideline AND Prison AND Pregnancy AND Prenatal Care. The contents of the guidelines were subjected to analogy comparison. **Results:** 13 guidelines were included in the study. Of these, 10 guidelines were related to the organizations deployed in the USA, two guidelines to the United Nations and the World Health Organization, and one guideline to the United Kingdom. The most comprehensive care coverage of pregnant women was suggested, at the first level, by Birth Champion and in the second level by the Federal Bureau of Prisons. The care recommended in the guidelines was classified into four general categories of health care, safety and security, education and counseling, as well as miscellaneous issues. Most of the care items mentioned in the guidelines were related to the issue of safety and security of pregnant women. **Conclusions:** There are currently gaps in the guidelines in many aspects including maternal and fetal health assessments, mental health care, and also ethical and communication issues. It is essential to upgrade the guidelines provided for imprisoned women to promote their health.

Keywords: *Guideline, health promotion, pregnant women, prenatal care, prisoners*

Introduction

In recent years, the number of female prisoners has had manifold growth in many countries.[1-3] There are currently about 704,285 female prisoners around the world,[4] accounting for about 9% of the total prison population worldwide. Since most of them are under age 50, they will be also exposed to specific reproductive health issues such as pregnancy.[5] Statistics on pregnancy within prisons are still unknown. However, it can be stated that about 6–10% of women prisoners are pregnant.[6] The only systematic assessment of the birth rate is related to 1998, according to which 1,400 births were reported from prisoner women.[7] Reports in the United Kingdom (UK) show that around 600 pregnant women are held in prison each year, and about 100 babies are born from these women.[8] Women in the criminal justice system are considered the most vulnerable people in society. They are subject to problems such as low education, inappropriate nutrition, domestic violence, psychological problems, drug misuse, and sexual and physical abuse.[9] If these women become pregnant, they will be vulnerable to poverty, poor health, lack of protection from family and friends, and isolation, as well.[8] Combining these demographic and health-related issues leads to special care needs among pregnant women in prison.[10] However, each of the mentioned problems results in challenges in access to routine care services for pregnant women in prison, and the specific needs of these women would no longer meet.[11] A survey from the USA showed that there is a deficiency or lack of care for women in prisons in 38 states,[12] and a report in 2008 from the Department of Justice revealed that 46% of female prisoners were not receiving prenatal care[13]; although the World Health Organization (WHO) declared in 2003 in Moscow that prisoners' health is one of the key issues[14] and the promotion of health during pregnancy and

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postpartum is one of the priorities.[15] It confirmed in 2009 that the provision of basic services to pregnant women is incomplete.[16] Over the past years, it was attempted to approve national and international guidelines to support the health and well-being of women in prison.[8] In 2008, new care policies were introduced for pregnant women and newly delivered in the federal system of the USA. Then, these guidelines were also implemented in New Mexico, Texas, and New York.[17] In the United Kingdom, since 1999, the principle of "solidarity of health care for prisoners and society" was registered.[18] According to this principle, prisoners should receive health care at the same level as the community. Moreover, there are "Bangkok Rules" for the care and treatment of imprisoned women, adopted by the United Nations (UN) General Assembly in 2010[19] and the standard rules adopted in 2015.[20] The National Commission for Correctional Health Care (NCCHC) seeks to monitor the needs of female prisoners as a specific population. In general, all these guidelines and laws attempt to protect the rights of imprisoned women. In 2010, the National Clinical Excellence Institution (NICE) in England provided a guideline on providing care to pregnant women with specific problems, such as pregnant prisoners. In this guideline, there are also suggestions for support in establishing effective maternal relationships, improving health outcomes and reducing the risk of maternal and neonatal complications.[8] Based on these guidelines, mothers and infants entering the criminal justice system should receive the necessary care and support throughout pregnancy, delivery, and postpartum. However, this group does not still receive the right care and support.[17] Although women in prison are at risk of adverse outcomes in pregnancy due to race, low education, lack of access to prenatal care, alcohol and drug use,[21] poor nutrition, history of domestic violence and mental and psychological illnesses[7]; nevertheless less information is found regarding care for pregnant women in prisons around the world.[22] Therefore, it was attempted in a study to review the international guidelines in this regard to get insight of the status of care, which is provided for pregnant prisoners. Although women in prison are at risk of adverse outcomes in pregnancy, however, less information is founded regarding the care of pregnant women in prisons around the world.[22] Also in Iran, based on the Iranian integrated maternal health care, there is no guideline for pregnant prisoners. Hence, by reviewing these guidelines, it would be possible to take steps toward improving the health of this vulnerable population and developing health promotion programs to meet their specific needs.

Materials and Methods

In this narrative review, studies published from May 2010 to January 2019 were reviewed through investigating the databases including PubMed (n = 64), Scopus (n = 101), Google Scholar (n = 526), the Cochrane Library database (n = 11) as well as Science Direct (n = 31), and also Persian databases including SID (n = 3), and Magiran (n = 6). Keywords and Boolean combinations of (Guideline OR Standard OR Procedure OR Instruction OR Rule OR Principle) AND (Prison OR Prisoner OR Incarcerated OR Inmate OR Jail OR Behind bar) AND (Pregnant Women OR Pregnancy Outcomes) AND (Antenatal Care OR Prenatal Care OR Postnatal Care) were used to identify relevant results. Ultimately, out of 742 retrieved documents, after removing duplicates (n = 263), based on the review of abstracts, 48 articles were screened for further review. Then two authors independently screened identical lists of studies by reading the full text of each study and applying eligibility criteria. All the guidelines written in any language aimed at examining the provision of care services in the population of imprisoned women were included in the review. Exclusion criteria consisted of relevant documents other than guidelines or instructions, related guidelines to the non-prison population, the population of male prisoners or nonpregnant imprisoned women, as well as guidelines with a purpose except the examination of care services. Records were excluded if both authors excluded them and were included if both authors included them. Records for which authors had opposing views were reviewed again together until consensus was achieved. A total of 13 international guidelines were included in this review. The process of search strategy has been presented in Figure 1. Two authors extracted the data. The data extracted from the guidelines included the name of the country, guideline developer, its updating date, and the different items covered by the guideline. Then the constituent parts of the guidelines were subjected to analogy comparison and presented as a comparative table [Table 1].

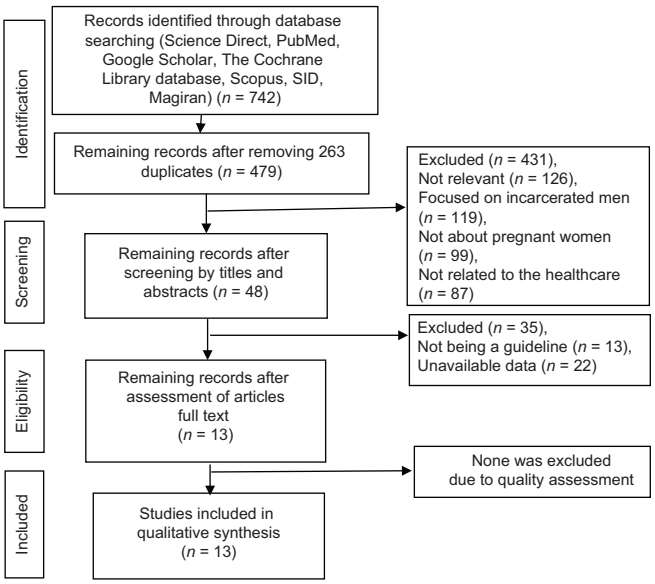

Figure 1: Flow diagram of the searching strategy

Ethical considerations

In this narrative review, the collected data were only used for scientific purposes and the rational property was valued in the reporting and publication of the results (IR.MUMS.REC.1398.099).

Results

Out of the 742 retrieved documentaries, 13 were included in this narrative review. Of these, 10 guidelines were related to the US organizations as well as associations such as the American Civil Liberties Union (ACLU), the American College of Nurse-Midwives (ACNM), the American College of Obstetricians and Gynaecologists (ACOG), the American Medical Association (AMA), the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), Federal Bureau of Prisons (BOP), Health Insurance Portability and Accountability Act (HIPAA), Immigration and Customs Enforcement (ICE), NCCHC, and the National Women's Law Center (NWLC). Two guidelines were related to the international organizations including the UN/Handbook for women and imprisonment and the WHO/the international guidelines of the health in prisons and one guideline was related to the UK titled Birth Champion (BC). A summary of the main items and more detailed information of these guidelines is provided in Table 1. It should be noted that the care provided in the guidelines is classified into four general categories of health care, safety and security, education and counseling, and miscellaneous issues, which are described below.

1-Health care

The cares were concentrated on four areas of maternal and fetal assessments, screening for Sexually Transmitted Diseases (STDs screening), Mental Health Care (MHC) needs, and the history of abuse.

Maternal and fetal assessments

Maternal and fetal assessments were discussed in seven areas of maternal assessment, fetal evaluation, pregnancy outcomes, labor and delivery, abortion services, nutrition and diet, and continuity of care. Only four guidelines referred to pregnancy testing policies in prison.[23-26] The NCCHC[27] and the ACOG[23] recommend pregnancy diagnosis test for all women who are imprisoned. The ACOG believes that conducting pregnancy tests allows them to receive timely counseling services on emergency contraceptive methods.[23] The prenatal examination was mentioned only in two guidelines.[23,26] The ICE executive stated that female prisoners should also receive all prenatal care.[26] In none of the guidelines, the issue of abortion treatment services was raised. Only two guidelines considered the labor and childbirth measures.[8,27] According to the NCCHC, the threshold for the transfer of the imprisoned pregnant women to the hospital for labor and delivery is low. As soon as the earliest sign of labor is seen, they should be transferred to the hospital.[27] In eight guidelines, the nutrition and diet in pregnant imprisoned women was referred. All of the aforementioned guidelines agreed that prisons should consider the women prisoners' nutrition. The BC stated that healthy food and snacks should be given to women in prison to cover hunger between the meals not to lose the meals to prison for various excuses.[8]

Screening for sexually transmitted diseases

Screening for sexually transmitted diseases was discussed in two areas of sex and blood diseases. Three guidelines took into account the issue of STDs[28-30] and five guidelines considered blood transmitted diseases.[23-26,31] Tests for sexually transmitted infections should be performed for high-risk pregnant women. ACLU, ACOG,[23] the BOP,[25] and ICE[26] in the USA do routine tests for pregnant women in states where HIV test is not performed after entering the prison imminent.

Mental health care

Only three guidelines referred to MHC.[8,25,27] According to the federal system in the US prisons, prisoners not requiring urgent care are evaluated within 2 weeks after the request for consultation.[25] Although pregnancy involves likely a protective aspect against suicide, it can be reduced in cases of unwanted pregnancy or concurrent psychological problems.[32] The NCCHC considered insufficient attention to mental health issues during pregnancy associated with serious consequences and recommends to perform screening for mental problems routinely.[27]

The history of abuse

The history of abuse was discussed in four areas of abusing drugs, sexual abuse, physical abuse, and torture. Regarding the abuse, only two guidelines have addressed this issue.[23,26] According to the ACOG, pregnant women should be examined for drug abuse and should be consulted about the associated risks caused by it.[23] The US prisons have established cigarette elimination programs for all female prisoners.[26]

2-Safety and security

Safety and security were discussed in four areas including rights and ethics-related issues, environment-related issues, work-related issues, and communications.

Rights and ethics-related issues

The rights and ethics-related issues were deliberated in four areas of using shackles, transportation, accommodation, and privacy. Among the 13 reviewed guidelines, 10 referred to the use of shackles in pregnant women. All these guidelines agree that prisons should adopt a policy for not using manacles and chains in pregnant women.[23-29,33-35] Displacement of pregnant imprisoned women was regarded in 12 guidelines.[8,23-30,33-35] Using the shackles for the

Table 1: International Guidelines on Providing Care for Pregnant Women in Prison

Organizations Developed the guideline	Country/ Organization Version	Health care													
		Maternal & fetal assessment							STDs* screening		MHC*** needs	The history of abuse			
		Maternal assessment	Fetal assessment	Pregnancy outcome	Labor & delivery	Abortion services	Nutrition & diet	Continuity of care	STD	BBD**		Substance abuse	Physical abuse	Sexual abuse	Torture
American Civil Liberties Union[24]	USA 2011	+	–	–	–	–	+	–	–	+	–	–	–	–	–
American College of Nurse Midwives[33]	USA 2012	–	–	–	–	–	–	–	–	–	–	–	–	–	–
American Congress of Obstetricians and Gynaecologists[23]	USA 2011	+	+	–	–	–	+	–	–	+	–	+	+	+	+
American Medical Association[28]	USA 2014	–	–	–	–	–	–	–	+	–	–	–	–	–	–
Association of Women's Health, Obstetric and Neonatal Nurses[34]	USA 2011	–	–	–	–	–	+	–	–	–	–	–	–	–	–
Birth Champion[8]	UK 2018	–	–	–	+	–	+	–	–	–	+	–	–	–	–
Federal Bureau of Prisons[25]	USA 2015	+	–	–	–	–	+	–	–	+	+	–	–	–	–
Health Insurance Portability and Accountability Act[35]	USA 2015	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Immigration and Customs Enforcement[26]	USA 2013	+	+	–	–	–	+	–	–	+	–	+	+	+	+
The National Commission on Correctional Health Care[27]	USA 2009	–	–	–	+	–	–	–	–	–	+	–	–	–	–
National Women's Law Center[29]	USA 2010	–	–	–	–	–	+	–	+	–	–	–	–	–	–
Handbook for Women and Imprisonment[1]	UN 2008	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Health in prisons[30]	WHO 2007	–	–	–	–	–	+	–	+	+	–	–	–	–	–

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Table 1: Contd...

Organizations Developed the guideline	Country/ organization Version	Safety & Security																	
		Right's & ethical-related issues				Environmental-related issues					Work-related issues				Communication				
		Shackling	Transportation	Accommodation	Privacy	Hygiene	Over population	Inadequate ventilation	Poor temperature control	Physical Activity	Rest	Hard work	Heavy detergent	Toxic substances	Attachment	Staff	Health provider	Outside world	Family
American Civil Liberties Union (24)	USA 2011	+	+	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
American College of Nurse Midwives (33)	USA 2012	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
American Congress of Obstetricians and Gynaecologists (23)	USA 2011	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
American Medical Association (28)	USA 2014	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Association of Women's Health, Obstetric and Neonatal Nurses (34)	USA 2011	+	+	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Birth Champion (8)	UK 2018	+	+	+	–	–	–	–	–	–	–	–	–	–	–	+	+	+	+
Federal Bureau of Prisons (25)	USA 2015	+	+	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Health Insurance Portability and Accountability Act (35)	USA 2015	+	+	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Immigration and Customs Enforcement (26)	USA 2013	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
The National Commission on Correctional Health Care (27)	USA 2009	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

Contd...

Table 1: Contd...

Organizations Developed the guideline	Country/ organization Version	Safety & Security																	
		Right's & ethical-related issues				Environmental-related issues				Work-related issues					Communication				
		Shackling	Transportation	Accommodation	Privacy	Hygiene	Over population	Inadequate ventilation	Poor temperature control	Physical Activity	Rest	Hard work	Heavy detergent	Toxic substances	Attachment	Staff	Health provider	Outside world	Family
National Women's Law Center (29)	USA 2010	+	+	+	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Handbook for Women and Imprisonment (1)	UN 2008	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Health in prisons (30)	WHO 2007	–	+	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

organizations Developed the guideline	Country/ organization Version	Education & Counselling							Miscellaneous			
		Perinatal & Family planning counselling				Sexual Counselling						
		Pregnancy classes	Childbirth classes	Doula classes	Parenting classes	Family Planning Classes	Safe sex classes	Counselling services	Alternative Conviction	Gender specific health care	Breastfeeding	Prison nursery
American Civil Liberties Union (24)	USA 2011	–	+	–	+	–	–	–	–	–	–	–
American College of Nurse Midwives (33)	USA 2012	–	–	–	–	–	–	–	–	–	–	–
American Congress of Obstetricians and Gynaecologists (23)	USA 2011	–	–	–	–	–	–	–	–	–	–	–
American Medical Association (28)	USA 2014	–	–	–	–	–	–	–	–	–	–	–
Association of Women's Health, Obstetric and Neonatal Nurses (34)	USA 2011	+	–	–	–	+	+	–	–	–	–	–
Birth Champion (8)	UK 2018	–	+	+	+	–	–	–	–	–	+	–
Federal Bureau of Prisons (25)	USA 2015	–	+	–	+	–	–	–	–	–	–	+
Health Insurance Portability and Accountability Act (35)	USA 2015	–	–	–	–	–	–	–	–	–	–	–
Immigration and Customs Enforcement (26)	USA 2013	–	–	–	–	–	–	–	–	–	–	–

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Table 1: Contd...

organizations Developed the guideline	Country/ organization Version	Education & Counselling									Miscellaneous				
		Perinatal & Family planning counselling					Sexual Counselling								
		Pregnancy classes	Childbirth classes	Doula classes	Parenting classes	Family Planning Classes	Safe sex classes	Counselling services	Alternative Conviction	Gender specific health care	Breastfeeding	Prison nursery
The National Commission on Correctional Health Care (27)	USA 2009	–	–	–	–	–	–	–	–	–	–	–
National Women's Law Center (29)	USA 2010	+	–	–	–	+	+	–	–	–	–	–
Handbook for Women and Imprisonment (1)	UN 2008	–	–	–	–	–	–	–	+	–	–	–
Health in prisons (30)	WHO 2007	–	–	–	–	–	–	–	–	+	–	–

*STD: Sexually transmitted disease, **BBD: Blood-borne disease, ***MHC: Mental health care

pregnant woman should be limited to meet her needs, and there should be a balance between the needs assessment and safety. The pregnant women have the right to settle in a cell where they feel more comfortable with services in the same cell.[8] Among these guidelines, five pointed out the issue of the accommodation of pregnant women in prison.[8,24,25,29,34] All these guidelines indicated that the living place of pregnant women should be separated from other prisoners, along with amenities, comfort, and cleanliness. Five guidelines referred to the privacy issue for pregnant women in prison.[24,25,29,34,35] According to the HIPAA, in the USA, the medical information of each prisoner is completely confidential.[35] Security agents should never be used to communicate between health care providers inside and outside the prison, as this is in violation of HIPPA laws. The ACLU has stated that the security staff must leave the examination room during prenatal care.[24]

Environment-related issues

Environment-related issues were discussed in four areas: hygiene, overpopulation, inadequate ventilation, and inappropriate temperature. While there are no other guidelines in this regard other than the BC guideline[8]

Work-related issues

Work-related issues were discussed in five areas of physical activity, rest, hard work, heavy detergents, and toxic substances. Only BC guideline[8] has guided in this regard.

Communications

Communications are considered in five areas: relations with prison staff, health care providers, families, infants and the world outside the prison. The only guideline referring to all five areas is BC.[8] BC indicates that all female prisoners must have a relation with well-guided staffs.[8] BC notes that conditions must be provided for these women to have temporary release conditions in order to meet their families.[8] After discharge of mother and newborns from the hospital, there should be a place for them to stay together.[8] Notwithstanding the importance of these issues, none of the other guidelines mentioned these issues.

3-Education and counseling

Education and counseling were discussed in seven areas of pregnancy classes, childbirth classes, classes for a doula, parenting classes as well as family planning counseling, safe sex counseling, and counseling services. Two guidelines referred to pregnancy classes.[29,34] The delivery classes were considered in three guidelines.[8,24,25] BC stated that imprisoned pregnant women should be able to attend prepregnancy classes run by trained individuals.[8] ACLU considers the training on labor and delivery as a very important issue. Regarding the doula classes, only the BC guideline pointed to this issue.[8] Only three guidelines considered the issue of parental education and holding such classes in prisons as necessary.[8,24,25] Training family

planning and safe sexual relationships are only mentioned in two guidelines.[29,34] Although all pregnant women should have access to counseling services, no guidelines provided explicit instructions to support this issue except BC.[8]

4-Miscellaneous issues

Four areas of alternative conviction, gender-specific health care, breastfeeding, and nursery in prisons are other issues that have been addressed in guidelines. According to the handbook for women and imprisonment/UN, the penalty of imprisonment of pregnant women should be reconsidered and alternative penalties should be imposed on them. The pregnant women should not be separated from their families and communities, and, if possible, other ways such as postdelivery imprisonment should be used to punish them.[1] Only the health in prison guideline/WHO stated that care provided to pregnant women in prison should be gender-sensitive and based on women's needs. All prisons must comply with the United Nations Children's Fund (UNICEF) standards for breastfeeding.[8] Only the BC guideline provided recommendations regarding breastfeeding in prison.[8] According to the BOP instructions in the USA, the prisons in the eight states run a prison nursery program. These programs help imprisoned mothers to keep their children with themselves.[25]

Discussion

This review attempts to provide an overview of pregnancy care to female prisoners worldwide through a comprehensive review of international guidelines. According to the eighth section of the United States Constitution, health and sanitary should be provided for all prisoners.[36] Since the pregnancies are generally of high risk for imprisoned women, fundamental care is essential for this group.[7] Reviewing 13 guidelines showed that care policies vary from state to state in the USA, as well as within different countries around the world. Four guidelines addressing maternal and prenatal assessments[23-26] recommended that all women should be screened for pregnancy. Howard *et al*. (2011) and also Ferszt and Clarke (2012) found that the results of pregnancy in prison are greatly influenced by the quality and quantity of prenatal care.[32,36] NCCHC and ACOG recommend that prenatal care is provided for all pregnant women in prison.[7,23] UN Office on Drugs and Crime (UNODC) in Handbook for Prison Managers and Policymakers on Women and Imprisonment emphasized that all prisons must provide the conditions and facilities necessary for prenatal care. However, the prison authorities should adopt written policies and processes in this situation.[1] All imprisoned pregnant women have the right to receive counseling for the termination of their pregnancy.[8] Despite this legal right, conditions vary with states, religions, and regional facilities. Even some laws in the USA prohibit the use of federal funds to cover the cost of abortion for imprisoned women. No guideline explicitly has illustrated this issue. One of the most important priorities of the reviewed guidelines is the nutrition and diet of pregnant women.[8,23-26,29,30,34] Bell and Iverson stated that since imprisoned women do not have control over the consuming time, meals, food content, and adequate fluids, there should be proper planning for the timing and flexibility of their dietary regimens.[37] They should be given healthy food and snacks to cover their starvation in between.[8] According to the British Courts of Justice, section 4800, different nutrition patterns should be held for women in prison, including foreigners, pregnant women, lactating mothers, elderly women, and women with religious obligations.[8] Reports indicated that prenatal care does not persist after release. One of the obstacles is the lack of permanent housing, adequate transportation, and financial problems.[37] The lack of guidelines regarding continuity of prenatal care is among the tangible gaps in the reviewed guidelines. Prison health staff have to follow the women after their release. Earls (2010) found that prisoners usually have a high incidence of sexually transmitted infections.[38] The likelihood of HIV transmission among female prisoners is higher.[8] In accordance with the five reviewed guidelines,[23,25,26,30,33] an imprisoned pregnant woman should be routinely screened for STDs. In the three guidelines, mental health was addressed[7,8,25] and it was stated that inadequate attention to psychological problems during pregnancy has serious consequences. Therefore, the routine screening of psychological problems for them is mandatory.[7] Two guidelines provided instructions for pregnant women who have a history of drug use.[23,26] The prisoned pregnant women should be investigated for drug and alcohol abuse and counseled regarding the associated risks.[23] Security and safety issues are the most common areas for guidance.[23-29,33-35] In 2007, the US Marshall Service announced a policy for nonuse of chain for pregnant women within labor, delivery.[39] However, in some countries, the use of chains during pregnancy, labor, childbirth, and postpartum has remained a controversial issue. Although according to the laws of Bangkok in the UN,[1] governmental, clinical, social,[37,40-42] and legal recommendations[43] have allowed its use under extreme conditions.[1,43] However, as these guides are not compulsory, prisons usually follow their national policies.[44] Since prenatal care is usually carried out by in-prison and community specialists as a shared responsibility, therefore, the process of transferring imprisoned pregnant women to the closest therapeutic center is necessary for some measures or to manage high-risk pregnancies. Most of the guidelines also mentioned this issue.[8,23-30,33-35] During pregnancy, using shackles for pregnant women should be restricted to a level that meets their needs, and a balance should be established between the met needs and the safety of the prisoners. As a result, using manacles and chains for the mother should be excluded by assessing the individual risks and the reasons for its use. If it is decided to use these devices, the level and duration should be considered. Five guidelines address the issue of the accommodation of pregnant women in

prison.[8,24,25,29,34] Pregnant women have the right to settle in a more comfortable cell and thus the services will be allocated to that specific cell.[8] Damouny (2016), based on previous studies, showed the importance of respecting women's dignity and protecting their privacy during childbirth and breastfeeding.[45] In this case, five guidelines have references.[24,25,29,34,35] Prison staff should be taught that they must respect women's privacy at all stages of childbirth and breastfeeding.[38] It is well-known that a stressful environment can affect women's ability during labor and their relationship with the fetus. BC is the only guideline that has issued some recommendations regarding environment and issues related to the prisoners' work.[8] Some heavy activities are not suitable for pregnant women in prison, such as working with harmful and damaging substances, standing for a long time, working with heavy equipment or devices with high temperatures. Sufrin (2014) told physical activity should be restricted to imprisoned pregnant women.[7] Regarding the communications of pregnant prisoners with guards and the outside world, the BC provides guidance.[8] Security officers and health workers should be properly trained toward working with pregnant women. These trainings include limiting the tasks, preserving their safety, not using the shackles, taking into account specific nutritional needs, hydration, diverse and frequent meals, and the implementation of the Prison Rape Elimination Act (PREA).[43] According to the Article 8 of the human rights law, everyone must have the right to family relationships. Consequently, pregnant women and mothers of newborns should also be allowed to meet their families more often.[46] Goshin *et al.* (2014) stated that most female prisoners giving birth are forced to withdraw from their newborns 1–2 days after childbirth.[47] Stress and anxiety can affect the baby resulting in problems such as separation anxiety and mental attachment to the mother.[8]

Studies indicated that prisoners responded positively to training for health promotion.[48] Generally, female prisoners have poor access to educational services similar to those are provided in the society. In prisons, training programs depend on the duration of imprisonment and on state laws.[36] Based on the recommendations, the educational counseling services should be provided to the women and in all prisons regarding pregnancy, childbirth, parental care, family planning, safe sexual function, and the role of a doula.[29,34] The specific issues that concern pregnant women in prison are the introduction of alternative conviction programs, gender-specific issues, and restrictions on keeping of newborns. In some other prisons, a step is taken beyond prenatal care and indeed, they provide coordinating arrangements for care after the release of these women from jail and return to the society. This results in a sharp drop in the likelihood of recidivism and returning to prison.[12]

In many prisons, the Women and Infant at Risk Program (WIAR) is used. These programs are referred to as alternative penalties, meaning that the pregnant or newly delivered women are transferred to other places instead of holding them in public prisons. In these programs, pregnant women are moved to special centers for up to 4 months after childbirth which allows the mother and her infant to stay together. These centers provide the following services: complete facilities, prenatal training, family planning and delivery, dietary supplements, transferring to a hospital with relatives and acquaintances, being supported by the family, using of child care centers, counseling, drug abuse prevention trainings, group therapy, recruitment classes, home care coordination, follow-up care, and also comprehensive and coordinated medical care after release.[49] However, most prisons do not have such facilities. Future options include giving infants to their families, friends, nurses, and/or adopting them. If the mother cannot take care of the child, the state would take responsibility. The strength of this review was that we used an extensive search strategy and were able to locate relevant studies that had not been published in scientific journals. However, most studies were found in the USA. Another limitation of this study was the lack of information from prisons in low- and middle-income countries as well as adolescents' rehabilitation centers.

Conclusion

Despite the efforts made in international maternity guidelines to address the issues of care for pregnant women, there are currently deficiencies in many health aspects of pregnant prisoners and the special needs, such as prenatal care and assessment fetal health, MHC, ethical issues, problems related to the prison environment and forced labor, communication with the environment and people inside and outside the prison. As a result, incarceration in prisons should be considered as an opportunity for updating the requirements of pregnant women and to develop comprehensive health promotion programs through studies in order to promote their health status. Simultaneously, the evaluation system must be considered to guarantee the implementation of these rules. It is recommended to policymakers, researchers, and providers of reproductive health services for pregnant mothers in prisons, using the findings of the present study, to upgrade the guidelines provided for imprisoned women or alternatively to develop comprehensive health promotion programs to meet the specific needs of this vulnerable group. It is suggested to conduct more studies in the future to design new or updated health promotion guidelines for pregnant women in prison.

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Conflicts of interest

Nothing to declare.

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