

Progress Related to Maternal and Neonatal Health in Turkey

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Abstract

Aim: The aim of this review article is discussed progress about maternal and neonatal health in Turkey. Decreasing maternal and neonatal mortality is a global priority especially in developing countries. According to WHO 2005, Turkey is a middle-income country.

Methods: Using method is to investigate of politics of Ministry of Health and other ministries in Turkey. The policies that affect the health of Turkish Republic Ministry of Health and other ministries have examined and discussed based on the literature.

Findings: According to this investigate; the total fertility rate as 2.08 births per woman is still high. However, women's age at marriage and first childbearing age has been made great progress in the last 10 years. The average marriage age is found as 20.8 years of age. 1/5 of the marriages are consanguineous marriages. First childbearing age is 22.3 years of age. 73.7% of pregnant women receive antenatal care from physician, midwives or nurses, but the rate varies significantly according to geographic regions which are 89.5% of pregnant women in the west region. According to Turkish Statistical Institute (2011), maternal deaths decreased to 15.5 per 100,000 pregnant. Neonatal mortality rate decreased to 4.6 in 1,000 live deliveries. In 2011 by the Ministry of Health, "Vitamin-D Supplementation Program for Pregnant Women" was initiated. Working night shifts of women after birth is prohibited for a year. Pregnant or breast-feeding women cannot work for more than seven and a half hours a day. A nationwide newborn screening program for phenylketonuria (PKU) was started in 1986. Screening for congenital hypothyroidism was initiated at the end of 2006, and screening for biotinidase was initiated in 2008.

Conclusion: Turkey has recently achieved a good trend toward decreasing maternal and neonatal mortality. The decrease in these rates thought to be because of the rise in marriage age and childbearing age, majority of the births are being done by the help of medical staff and the drastic changes in health care system.

Keywords Newborn; Maternal; Health; Health politics

Introduction

Decreasing maternal, child and newborn mortality is a global priority in the World. According to State of the World's Mothers reports 2013, every year, 287,000 women die during pregnancy or childbirth, and 6.9 million children die before reaching their fifth birthday [1]. Almost all these deaths occur in developing countries where mothers, children and newborns lack access to basic health services. Only 1 percent of the world's newborn deaths occur in industrialized countries [1]. Most neonatal and maternal deaths could be prevented with appropriate antenatal care during pregnancy, safe delivery by experienced health care personnel, promotion of basic newborn care, early and exclusive breastfeeding, postpartum care, maintenance of kangaroo mother care for low-birth-weight infants (skin to skin care for warmth), and promotion of immunization according to national guidelines, promotion of adequate nutrition, iron and folate supplementation and performance of neonatal resuscitation (to save babies who do not breathe at birth); chlorhexidine cord cleansing (to prevent umbilical cord infections) [1-4]. Turkish Government has recently achieved a good trend toward decreasing maternal and neonatal mortality. The decrease in these rates thought to be because of the rise in marriage age and childbearing age,

majority of the births are being done by the help of medical staff and the drastic changes in health care system. In Turkey, a large number of programs for reducing maternal and neonatal mortality are carried out.

United Nations reviewed progress on the 15-year plan agreed upon in 2000 known as the 8 Millennium Development Goals in September 2010. Two of the goals in greatest jeopardy of not being met by 2015 are Goals 4 and 5-reducing child mortality and improving maternal health. Turkey has recently achieved a good trend toward decreasing maternal and infant mortality, with the policies about better primary care facilities, perinatal care services, baby and mother friendly programs such as baby friendly hospitals and intensive educational programs for both mothers and health care professionals. Further improvement will come with new perinatal organization and an increase in the number of beds and the quality of care in Level II and Level III neonatal care units throughout the country [2]. The aim of this review article is discussed progress reports related on maternal and neonatal health in Turkey according to law and regulations of Ministry of Health and other Ministries such as Ministry of Labor and Social Security, Ministry of Justice, Ministry of Family and Social Policy and Ministry of Education. The status and progress was discussed according to Millennium Development Goals 4, 5, and 6 in Turkey.

Methods

In this study, the method is to investigate the politics of Ministry of Health and other ministries in Turkey about neonatal and maternal health. In the reports of the Ministry of Labor and the Ministry of Family and Social Policy, the rights and regulations giving to pregnant and women who gave birth relating to the working conditions were

investigated. In the reports of Ministry of Health, maternal and infant mortality statistics and politics about maternal and infant health, certifications program of health professionals were examined. Turkish Civil law regulations related to the age of marriage and compulsory education time of the Ministry of Education in the last decade were investigated.

Indicators	
Population of Turkey (million) (2013)	75.627
Rural (million/%)	17.179 /22.7
Urban (million/%)	58.448 /77.3
Literacy rate (2013) (%)	95.8
Illiteracy rate of the women among the adult population (+15) (2011) (%)	9.8
Consanguinity marriage rate (2011)	21.2
Average women's age at marriage (2008)	20.8
Total fertility rate (2008)	2.08
Western fertility rate (2008)	1.73
Eastern fertility rate (2008)	3.27
Urban fertility rate (2008)	2
Rural fertility rate (2008)	2.68
Median age at first birth (2008)	22.3
Average antenatal care rate of pregnant women (2008) (minimum four times) (%)	73.7
Prenatal care rate of pregnant women in the west region (minimum four times) (%)	89.5
Births made at home without the help of medical staff in eastern regions (at least 250,000 babies each year) (%)	17
Use of family planning methods (2008) (%)	73
Use of modern family planning methods (condom, RIA (2008) (%)	46
Use of traditional family planning methods (2008) (%)	27
Maternal mortality rate (per 100 000 live births, 2011)	15.5
The neonatal mortality rate (per thousand live birth)	4.6

Table 1: Some Indicators Relating to Women and Children's Health in Turkey [5,6,7,8].

According to World Health Organization (WHO 2005), Turkey is a middle-income country with resources that fall between limited and enhanced levels [4]. Turkey's some indicators for maternal and child health of the last decade are given in the Table 1. Various ministry programs which initiate improvement are discussed in detail below. Turkey's population currently numbers about 76 million. Seventy seven point three percent (77.3%) of the population lives in cities. Illiteracy rate of the women among the adult population (+15) is 9.8%. In Turkey compulsory education in 1998 was raised to 8 years and by the year 2012 to 12 years [5-7]. In Turkey 1/5 of the marriages are consanguineous marriages (cross-cousin marriages) [5].

In Turkey, women's age at marriage and first birth years has been made great progress in the last 10 years. However, there is still a

difference in maternal and child health indicators between West and East of our country. According to Turkey Demographic and Health Survey (TDHS) 2008, the average marriage age is found as 20.8 years of age [5]. The average first age at marriage increased 3 years in the last 20 years. According to New Turkish Civil Law (2001), the age of marriage for women and men was equalized and increased to 17 years [8]. Median age at first birth is 22.3 years of age. The mean birth interval is 44 months, showing a 22% increase within the last 5 years. Adolescent age deliveries decreased to 5.9% in 2008 from the rate of 27% in 2003 [2]. The total fertility rate (average number of children) as 2.08 births per woman is still high. While the total fertility rate is 1.73 in the western part of the country, it is 3.27 in the east [6]. Average 73.7% of pregnant women receive antenatal care from physician, midwives or nurses, but the rate varies significantly according to geographic regions which are 89.5% of pregnant women in the west

region as shown in Table 1 [5-7]. Seventy three percent of the population uses a family planning method and 46% of whom using a family planning method prefers an effective method such as oral contraceptive drugs, intrauterine device, condom. Abortion/curettage is legal on request by women up to the tenth week of pregnancy. In the case of a fetal abnormality that is incompatible with life, curettage or induction is legally permitted and has been carried out up to 25 weeks of pregnancy [9-11].

Although a good trend was achieved for the last decade, some unmet needs such as voluntary abortions, difficulties in the availability of family planning in some regions of the county, are ongoing. Delivery complications may require immediate professional care, but deliveries still supervised by a traditional birth attendants particularly in rural areas. These factors should be considered that traditional family structure; language problems especially in the eastern region, shy temperament of the women reduce the demand in family planning and prenatal care. Furthermore, tough weather conditions in the east region of the country troubled transportation and this hurdle causes the women having difficulties in accessing the health care. Air ambulance helicopters and transportation of patient by sled were established to address this issue.

In our country, a serious migration is experienced, particularly from the east to the metropolitans (Istanbul, Izmir, Ankara). Cultural differences between rural and urban areas caused to remain the problems about services unavailability. The rate about migrants, cultural differences between regions highlight the significance of transcultural nursing in Turkey. In recent years, congresses and symposia are organized and scientific studies are carried out on this subject.

According to Turkish Statistical Institute 2011 reports, maternal deaths decreased to 15.5 per 100,000 pregnant [6]. Neonatal mortality rate decreased to 4.6 in 1,000 live deliveries in Table 1. TDHS 2008 reports [5] detected that uneducated mothers living in rural areas and having more children receive less antenatal and postnatal care and are more likely to lose their newborn. Percentage of newborns with low birth weight (<2500 g) stable between 1998 and 2003 but increased between 2003 (7.9%) and 2008 (11%) this trend may reflect the better reporting instead of worsening situation. This idea is supported by simultaneous increase in low birth weight rate in the same vulnerable populations which have also been marked by increases in births at health institutions [7-9]. The major causes of neonatal deaths are prematurity and congenital abnormalities in Turkey [6]. Prematurity is the single largest cause of newborn deaths worldwide. Preterm birth, severe infections and complications during childbirth together account for more than 80% of all neonatal deaths [12-15].

Finding

The Family and Social Politics of Ministry, Report on State of Women in Turkey, 2012, "National Strategic Action Plan (2005-2015) about Sexual and Reproductive Health" includes strategic plans about safe motherhood and childbirth, and postpartum care related with Millennium Development Goals 4, 5, and 6 [16]. The programs conducted in Turkey are given below:

Marriage and Pre-Pregnancy Counseling Program

"Pre-Marriage Counseling and Sexual Health Program" was launched in 2007, Turkey. The aim of this program is to raise the status of women health, to reduce early marriage, to increase the use of

modern family planning methods, to reduce unwanted pregnancies, induced abortions and maternal mortality [16]. In 2013, 62 health professional was educated to pioneer the pre-marriage counseling and sexual health educations in their own regions [17]. Overall the rate of consanguineous marriages (CM) is 20.9 %, but the rate varies significantly according to geographic regions. Hereditary blood disorders, thalassemia and sickle cell anemia are the two major hereditary blood diseases in Turkey [12]. According to the "Hemoglobinopathy Controlling Program" instructions (2002), the beta-thalassemia and sickle cell anemia screening test is mandatory-compulsory for all couples who intend to marry in the 33 high-risk cities of Turkey [12,18]. After the screening test is completed, if the carrier test is observed as positive, genetic counseling is provided by professionals either at the thalassemia diagnosis centers [12].

15 – 49 Age Female Follow-up Program

This programs includes to give information about fertility behavior to all women 15-49 years of age, to detect of risk situations at an early stage of pregnancy, to give information about family planning method use, to consulting issues related women's health and family planning at least two times as annual is monitored and reported to the Ministry of Health by primary health care centers [16].

Antenatal Care Services Program

This program of the Ministry of Health is one of the routine services that apply across the country to improve maternal health and to reduce maternal mortality. According to the "Prenatal Care Management Guide", the follow-up programs are provided at least 4 times to pregnant women do not risk have any during pregnancy. Also at Risk Pregnancy protocols are being prepared. With the implantation of this guideline, every pregnant at least, should be monitored 4 times; postpartum follow-ups should be done 3 times at hospital and 3 times at home, should be hospitalized 24 hours after normal birth and 48 hours after cesarean, every birth should be done in the hospital, up to 42nd day of birth the postpartum follow up should be done, management of urgent obstetric cases and in case of need their stabilization and referral should be done [16]. Tıraş et al. has found that 38.7% mothers of the babies who died after monitored in the neonatal intensive care unit didn't attend regular antenatal care in their studies [19]. Şahin et al. studied maternal deaths and it is found that %93.3 of the cases didn't attend antenatal care [20]. The factors associated with maintenance and the frequency of antenatal care of pregnant women are; the education and the employment of mother, primiparity, socio-economic status of the family, disease history of mother and baby [21-23].

Iron Support Program for Pregnant Women

The aim of this program is to meet the growing need for iron during pregnancy of all pregnant women and to provide iron support to 5 months from 16th week of pregnancy and 3 months after the birth as daily 40-60 mg of iron supplement. Iron supplementation program was initiated in 2005. Iron deficiency anemia is also common in our country but the efforts to reduce negative effects of it are progressing more slowly. According to research results it is generally seen in average 50% of 0-5 age group children, 30% of school age children and 50% of breast feeding women [16,24,25].

Vitamin-D Supplementation Program for Pregnant Women

Prevention of vitamin D deficiency is important for the development of public health. In our country it is necessary to provide vitamin-D supplementation for women in breast feeding period and also important both for the mother's health and to prevent vitamin-D deficiency in babies. In 2011 by the Ministry of Health, "Vitamin-D Supplementation Program for Pregnant Women" was initiated. Under the program, from the 12th week of the pregnancy 6 months during the pregnancy and 6 months after the birth, totally 12 months vitamin-D supplementation is being implemented. The dose of vitamin-D is daily 1200 IU (9 drop). Under the program, education of the staff who is engaged in pregnant follow up is providing the monitoring and assessment of the program at the field and the programs' sustainability [16].

Urgent Obstetric Care Program

Every year 287.000 women all over the world die from pregnancy and avoidable pregnancy complications. The main cause of mother death is urgent obstetric complications [1]. WHO recommends to "Urgent Obstetric Care Program" as an infrastructure model to reduce mother deaths [15]. In our country the program started to be implemented in 2009 and the "Urgent Obstetric Care Clinician Education" is being provided to all obstetrics and gynecology specialist physicians. Aim of this program is to be able to gain management skills and knowledge about the complications which threaten the mother's and her baby's life before and after the birth. So far 374 obstetrics and gynecology specialist physicians have attended this education program.

Mother-Friendly Hospitals Program

This program aims to ensure all deliveries made in the hospital, to qualified pregnant and postpartum follow-up and to reduce maternal and infant mortality by increasing the quantity and quality of maternal health services. 17% of births (at least 250,000 babies each year) in our country are still made at home without the help of medical staff especially in the eastern regions [5].

Another aim of this program is to promote vaginal birth and reduce interventions rates and to make birth healthy and safe in the hospital of all pregnant women, to achieve cesarean rates at reasonable levels and to provide stay in the hospital at least 24 hours during postpartum, if there is no risk of maternal and neonatal. It is obvious for mother friendly hospitals to give safe, high quality prenatal, delivery and antenatal care and consultant services; present environment comply with the standards; concern about privacy and evidence based studies [16].

According to Ministry of Health Cost Analysis Report (2013) Turkey was one of the head countries in cesarean births among OECD countries between 2000 and 2009 [26]. Cesarean births are raised and reducing these rates is one of the important policies of the Ministry of Health. According to 2012 data, while this rate decreased to 36% in hospitals that depending to Turkey Public Hospitals Authority it is still above 25% of OECD countries rate [26,27]. WHO (2002) suggests cesarean rate to be 15% of all births [28].

Postnatal Care of Mothers

Early postnatal care is substantial for mothers as well as newborns. 60% of maternal deaths occur in the early postnatal period, especially in the first six weeks after birth [1]. To address this Health Ministry of Turkey pioneered "Postpartum Care Management" and published circular about the topic [16]. Several rights are recognized for lactating women in Turkey. "Working Conditions of Pregnant or Breastfeeding Women, Breastfeeding Room and Child Care Facilities Regulation" was first published in 2004 and revised 2013 [29]. Working night shifts of women after birth is prohibited for a year. Pregnant or breastfeeding women cannot work for more than seven and a half hours a day. Regardless of age and marital status, with 100 to 150 female employees in a workplace, the employers are obliged to establish a breastfeeding room in working places and up to 250 meters away from the workplace. Female officer is granted three hours a day for the first six months after maternity leave and one and a half hours in the second six months for breastfeeding [29].

"National Strategic Action Plans and Provided Programs" about Maintenance of Newborn Health in Turkey

Since so many deaths occur in the first hours and days after birth due to prematurely, infections, birth asphyxia, delivery with skilled health professionals and early postnatal care is a key to improving neonatal health [1]. However, in our country, approximately 17% of births in our country are still made at home between 7.9% in urban and 20.1% in rural areas, babies never take postnatal care [5]. 60% of maternal deaths occur in the first six weeks after birth, and nearly half those deaths occur in the first day after delivery [1] Neonatal follow-up programs implemented in our country are discussed in detail below.

Neonatal Intensive Care Services

In our country, the first Neonatal Intensive Care Unit (NICU) included a single incubating was built in 1957 at Hacettepe University Children's Hospital. Today, there are 6728 infant beds in a total of 194 centers of State and University Hospitals. 28% of them are of the First Level, 32% of them are Second Level and 40% are third Level intensive care beds [29]. While the number of intensive care beds and ventilators are adequate, the number of neonatologists and neonatal nurses are lacking [30,31]. The majority of health professionals working in NICU are pediatricians (totally 2616 people). Neonatologist working in NICU of state and university hospitals is only 119 people. In 2009, "Neonatal Intensive Care Certification Course" has been begun for pediatricians working in NICU with the protocol between Turkish Society of Neonatology and Ministry of Health. 139 pediatricians have completed this course, yet [31]. For nurses "Neonatal Intensive Care Certification Course" is conducted annually 2-4 times by the Ministry of Health. In 2010, the number of neonatal nurse reached around 3000 people [32].

Helping Babies Breathe

When nurses, midwives and doctors working NICU and delivery room are trained to help babies start breathing after birth, they can prevent one of the major causes of newborn deaths. Every year 717 thousand babies die depending on birth asphyxia in the world [15]. Therefore, in our country, the "Neonatal Resuscitation Course" has been launched for reduce neonatal mortality at birth to midwives,

nurses and doctors since 1998. Since the program's inception totally 36,032 health professionals were trained in this regard [33]. So, training newborn resuscitation has been improved in the past two decade.

Newborn Screening Tests

In Turkey, a nationwide screening program for phenylketonuria (PKU) was started in 1986. Screening for congenital hypothyroidism was initiated at the end of 2006, and screening for biotinidase was initiated at the end of 2008 [12]. The screening process for PKU, congenital hypothyroidism, and biotinidase deficiency involves demonstrating absent enzyme activity in filter paper samples collected ideally on day five after birth. Collected filter papers are sent to metabolic clinics. In the event of a positive test for any of the disorders, advanced examination of the baby's blood or urine is performed [12]. Newborn screening for congenital deafness was initiated in 2009. The newborn hearing screening program is hospital-based program. Newborn Hearing Screening Units have been established in 584 centers in 81 provinces. The Transient Evoked Otoacoustic Emission Test (THEOT) and Auditory Brainstem Audiometry Screening Test (ABR/BERA), which are used for hearing screening, do not provide complete information about the degree of hearing loss, but instead detect a suspicion of hearing loss. In 2009, approximately 441,332 infants have hearing screening. 1055 infants were diagnosed with hearing loss and covered under national treatment programs [12,34].

Baby-friendly Hospital Program

The aim of this program is to encourage mother's to early initiation of breastfeeding during the neonatal period in cooperation with trained health personnel and to support for breastfeeding continue. In our country, 56% of births as a result of this are performed in "Baby Friendly Hospitals". However, breast-feeding rate at the first six months is low (41.6%) [5]. There are baby-friendly hospitals in 78 provinces in Turkey. The annual number of deliveries in baby-friendly hospitals is 452000 [34].

Before Baby-friendly hospitals program started, babies are taken in a separate room after birth, sugar water was given to the baby by the nurse and baby was given to the mother for the breastfeeding times. With the implementation of baby-friendly hospitals program, mother-baby togetherness is provided and breastfeeding is supported by all health professionals.

In the study in which Çamurdan et al. evaluated the effects of 'baby-friendly hospital initiative' (BFHI) on breast feeding, in the 4 consecutive months after BFHI in a university hospital, breast feeding status until the second year of life in 297 babies, born in the same hospital was compared with the values of 258 babies born before BFHI. The results showed that BFHI is helpful for promoting and supporting of breast feeding [35].

Postnatal Care of the Newborn

The early postnatal period is highly vulnerable time for child and mothers. Infectious diseases are one of the most important causes of neonatal death in the worldwide [1]. Sepsis, meningitis and tetanus account for approximately 15% of all neonatal deaths every year [1]. In 2009, The World Health Organization announced that neonatal tetanus has been eliminated from Turkey depending on increased

hospital births and neonatal tetanus immunization programs but it has seen two cases in 2010 [36]. In Turkey, previously unvaccinated pregnant women are made of two doses of tetanus vaccine to protect the baby from newborn tetanus in the second and third trimesters of pregnancy [37].

Testing and prophylaxis for sexually transmitted infections such as syphilis and gonorrhea are a simple way for prevention of these diseases [1]. In Turkey, for the prevention of neonatal gonococci conjunctivitis 1% silver nitrate has been used for many years. However, 1% tetracycline and 0.5% erythromycin ointment is more preferably depending on the toxic effect due to chemicals causing conjunctivitis of silver nitrate [38]. In Turkey, for umbilical cord care, it is recommended that umbilical cord should be kept dry and left open. Additionally, hepatitis B vaccine as protecting from infection and vitamin K (1 mg) injection for protecting from hemorrhagic disease of infants is applied in first 24 hours to all newborn [39].

Conclusion

Turkey has recently achieved a good trend toward decreasing maternal and neonatal mortality [40]. Improved preventable health policies have the major role in this decline. Each major cause of neonatal deaths can be prevented or treated with interventions such as appropriate antenatal care during pregnancy, safe delivery, promotion of basic newborn care, postpartum care and promotion of immunization and adequate nutrition. The efficient prenatal and neonatal health policies of the government, the increased widespread of the health services and to provide the use of them more effectively are the most important factors in the decline of maternal and neonatal mortality in Turkey. Studies indicate that the encouragement deliveries in the hospital and the mother-friendly and baby-friendly hospital programs reflected significantly affirmative to maternal and infant health. However, disparities in the western and eastern of the country about maternal and infant health indicators are ongoing. To address this, educations about deliveries supervised with health professions, breastfeeding, safe family planning methods, care of newborn and their mothers and home visits continue.

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