Maternal Mortality and Reproductive Health in Morocco

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Abstract

Objectives

Moroccan population has known a growing demographic trend. However, beyond the global trend, reproductive health remains characterised by inequalities and inequity between urban and rural, rich and poor, developed and deprived regions.

Method

We relied mainly on data and statistics provided by the last five censuses, the four Demographic Health Surveys, reports of international bodies and publications dealing mainly with health and development in the Arab World.

Results

Fertility is declining due to different parameters. Moroccan policy makers need to give more attention to health indicators and social determinants. Many women still die during pregnancy partly because only 68% women attend antenatal care visits and 63% of births are attended by skilled medical personnel with large socioeconomic inequalities and regional disparities

Conclusion

The achievements accomplished in reproductive health remain insufficient. Infant mortality decreased and should reach the corresponding Millennium Development Goal. Maternal mortality has stayed nearly constant during 15 years. Family planning and contraception policies need to reach more women; antenatal and postnatal care should be enhanced especially to reach poor women living in rural areas and deprived regions.

Background

Morocco is a low-middle income country situated in North Africa with coasts on the Atlantic Ocean and the Mediterranean Sea. The Moroccan population has known a growing trend, passing from less than 12 million in 1960 to 30 million in 2005 (Table1)[1]. The rates of total fertility, crude birth, crude death and infant mortality have been decreasing during the last three decades [2]. Accordingly, the age structure is changing and the country is experiencing a transition on different levels (demographic, geographic, economic, political, and epidemiological). As stressed by the Worl Bank "in spite of the progress made in reducing income poverty, social indicators in Morocco are well below those of comparable countries and, within the country, there are enormous disparities in access to social services between urban and rural areas" [3].

Method

I this paper, we relied mainly on data and statistics provided by the last five censuses (1960, 1971, 1982, 1994, 2004) [1] , the four Demographic Health Surveys (1987, 1992, 1995, 2003-2004) [2], reports released by international organisms such as the World Health Organization(WHO)[4-6], the World Bank[3], the United Nations Development Programme(UNDP)[7], Population Reference Bureau[8] and other publications dealing principally with health and development in the Arab World.

Results

Demographic trends

During the last four decades, the Moroccan population has known nearly a threefold increase, from 11.6 million in 1960 to 29.9 million in 2004. However, the annual growth decreased from 2.8% between 1960 and 1971 to 1.4% between 1994 and 2004. The urban/ rural repartition has also known an important evolution, shifting from a rural (70%) dominance in 1960 to an urban (55%) dominance in 2004 [1] (Table1).

According to the last census in 2004, the Moroccan population is young, with 38% under the age of 15 years and 21% between 15 and 24 years. Table 2 shows that the country is undergoing a demographic transition leading to a new age structure with less people in the youngest class (0-14) and an increasing size of the elderly class (60+). During the next decades, the situation will be challenging for policy makers who will have to deal with the needs of young people in terms of education, health and employment; and to provide welfare and social care for the growing class of elderly people. Fertility and mortality are the main determinants of the age structure evolution, whereas the shift from rural to urban dominance is caused by socio economic parameters such as access to employment, social services, health and education facilities, etc...

Reproductive trends and health indicators

Life expectancy at birth has increased from 65 years in 1980 to 70.4 years in 2005 whereas the annual population growth rate decreased from 2.6 in the 1980s to 1.3 in 2005. These outputs are results of a decreasing trend in fertility, crude birth, crude death and infant mortality. Indeed, global total fertility (average number of children who would be born to a woman if she were to live to the end of her childbearing years) has decreased from nearly 6 children in 1980 to 2.5 children in 2005 independently of differences urban/ rural and poor/rich women (See Figure 1 for comparison with other countries). Infant mortality rate decreased from 140 per 1000 births in 1980 to 37 in 2005, similarly crude birth rate (respectively crude death rate) has decreased from 5.3 % in 1960 to 2.1% in 2004 (Table3) (respectively from 0.95 to 0.63). Whereas, maternal mortality ratio (MMR) decreased from 332 per 100 000 in 1980 to 228 in 1990 but since then it has remained nearly constant, indicating, in particular, that the goal fixed by the Millennium Development Goal(MDG) to "reduce by three quarters the MMR between 1990 and 2015" and "achieve universal access to reproductive health" is difficult to realize. More efforts are needed to improve health

indicators associated with women's reproductive health and maternal mortality, namely: MMR, proportion of births attended by skilled medical personnel, antenatal care visits, adolescent birth rate, contraceptive prevalence and unmet need for family planning.

The fertility decline is mainly attributable to factors such as the use of contraception and the delayed age of marriage. For instance, between 1980 and 2004, the percentage of married women using contraception increased from 19% to 63% ; and during the same period, the proportion of married women aged 15-19 (respectively 19-24) declined from 21% to 11% (respectively from 64% to 36%) [2]. However, these factors are interrelated with cultural and socio-economic factors. In particular, the high cost of a decent living standard (food, housing, education, health, transport, leisure, etc…) has become a real determinant of the number of children wanted by a couple, especially among educated people and those of the middle class.

Reproductive health and social determinants.

As stressed by the WHO Commission on Social Determinants of Health in it's recent report "Closing the gap in a generation" [6], health is influenced by the socio-economic conditions in which people are born, grow, live, work, reproduce, age and die. In particular, reproductive health is quantitatively and qualitatively determined by conditions such as poverty, income, employment, food security, housing, education, discrimination and the women status in general. In a previous paper dedicated to human development and health indicators in the Arab region, we carried out a data analysis on life expectancy at birth, infant mortality, maternal mortality, expectation of lost healthy years, deliveries attended by skilled attendants, pregnant women receiving prenatal care, number of inhabitants per physician, percentage of children under weight and data related indirectly to health such as percentages of literacy and enrollment. It was seen that very few Arab countries do globally worse than Morocco [9]. In another study devoted to infant mortality in 16 Arab countries, socio-demographic, perinatal and economic factors were considered, showing that Egypt, Morocco, Sudan, Yemen and Iraq

were classified in the group with the highest infant mortality rate [10]. Figure 2 shows how Morocco compares with other countries in terms of infant mortality and its reduction between 1980 and 2001.

In the case of Morocco, despite a substantial improvement in health indicators globally during the last decades, the country has embarked on the third millennium under the burden of inequity and large disparities between rich and poor, urban and rural, and developed regions opposed to deprived ones.

Rich-poor:

The country is characterised by huge inequalities in terms of income and consumption. The richest 20 % of the population absorb nearly 50% of income and consumption yielding an 11.7 ratio between the richest 10% and the poorest 10% of the population [7,12] (Table4). In terms of reproductive health and its determinants, the gap between rich and poor is illustrated by a multitude of health indicators such as the number of antenatal care visits, use of modern contraception, births attended by skilled medical personnel, adolescents pregnant or already mothers, infant mortality and others [2,8,9,11] (Table 5).

Rural-urban

During more than 50 years of independence, Moroccan policy makers have given little attention to the rural world. Consequently, by the beginning of the third millennium, only 56% of rural populations have access to safe drinking water, 31% have access to adequate sanitation and more than 40% are unable to afford essential medical care. A dramatic urban-rural contrast is seen in access to education, housing, drinking water, sanitation, economic opportunities and social services in general (Table 6). Given the fact that nearly half of the Moroccan population lives in under-served rural areas, the consequences on reproductive health are obviously negative.

Regional disparities:

Sixty years ago, the country's regions used to be classified into two classes: "useful regions" and "non useful regions". By the dawn of the third millennium, one can still state that "Morocco is a country of contrasts and dualistic development where debilitating urban and rural poverty coexists alongside modern urban centers" [12]. Indeed, as illustrated in Table 7, exorbitant disparities exist between regions in access to basic services such as education and health. A woman living in the deprived region is twice unlikely to give birth in a medical centre or to be assisted by a skilled medical personnel than a woman living in a developed region. Similarly, the ratios of illiterate women and the number of inhabitants per physician are nearly 3:1 and 5:1 respectively.

Women status and Family planning

In the Arab World, it is often stressed that economic development will remain disabled unless women status is enhanced to allow them to fully participate economically, politically and socially side by side with men. According to the author of a study in Islamic and Arabic countries [13], the low social and economic status of girls and women is a fundamental determinant of maternal mortality and reproductive health in many Islamic and Arab countries. Taking this fact into account, the Moroccan parliament adopted in 2004 a new family code (Moudawana). Hoping to empower the woman status, the reform stipulates amongst other the following women rights:

- The minimum legal age of marriage is 18 (it used to be 15 for women and 18 for men)
- Polygamy needs the judge's authorisation and the consent of the man's first wife
- The principle of divorce is by mutual consent and the right to divorce is a prerogative of both men and women under judicial supervision
- Responsibility for the family is jointly shared by the husband and the wife.

- Women have the “self marriage guardianship”. They have also the right to impose a condition during the first marriage preventing polygamy.

In the field, however, despite the existence of this ideal framework, pragmatic and executive procedures need a long time before women can pick the fruit.

In the same spirit, although encouraging results were obtained by the national family planning program launched in the early 1960s and contraception was legalized by the same period. Feed-back studies indicate the possibility to improve the efficiency of these services which are available through vertical programs by more integrated and comprehensive ones. There is still room for quantitative and qualitative improvements in terms of percentage of women using contraception (63%) (Figure 3), diversification of contraceptive methods and reduction of unplanned pregnancies especially among young women who are behind the estimated 150 000 illegal abortions performed annually.

Conclusion

During the last decades, Morocco has globally made noticeable achievements in terms of reproductive health. The achievements, however, remain insufficient compared to other developing countries with similar level of economic development. While, due to immunisation efforts, infant mortality has been decreasing during the last four decades and should reach the corresponding Millennium Development Goal (MDG4), the MDG5 seems difficult to realize since maternal mortality has stayed nearly constant during the last 15 years. As stipulated by the 2008 report released by the Wold Health Organisation [4], now more than ever, an efficient primary health care is needed if countries like Morocco are to reach the goal of health for all. Family planning and contraception policies need to reach more women; antenatal and postnatal care should be enhanced, and more skilled medical personnel are

needed to assist women during labour, especially for poor women living in rural areas and deprived regions.

Limitations of our research

The present paper is based on available data related to reproductive health in Morocco. It should be stressed, however, that sometimes data may vary from one source to another. For instance, a higher level of maternal mortality rate (140 per 100 000 in 2005) was given by the joint estimation provided jointly by WHO, UNICEF, UNFPA, and the World Bank[5].

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Dedication: This humble contribution is dedicated to Moroccan women living in rural areas.

Competing interest:

The author declares that he has no competing interests.

References

1. Haut Commissariat au Plan. **Recensements**. Accessed 30/9/2008 at [http://www.hcp.ma]
2. Moroccan Ministry of Health. **Demographic Health Surveys**. Accessed 3/10/2008 at: http://www.measuredhs.com/countries/country_main.cfm?ctry_id=27
3. The World Bank. **Morocco: Poverty, Adjustment and Growth.** Accessed 3/10/2008 at: [http://web.worldbank.org/]
4. The World Health: **Primary Health Care- Now More Than Ever**. Geneva, World Health Organization, Annual Report 2008. Accessed 10/10/2008 at: [http://www.who.int/whr/2008/en]
5. WHO: Maternal mortality in 2005: estimated by WHO, UNICEF, UNFPA, and the World Bank. Geneva: World Health Organization, 2007.

6. Commission on Social Determinants of health. **Closing the gap in a generation: health equity through action on the social determinants of health**. Geneva: World Health Organization, 2008.

7. UNDP: **Human Development: Morocco 2007-2008.** Accessed 30/10/2008 at: [http://hdrstats.undp.org/countries/data_sheets/cty_ds_MAR.html]

8. Population Reference Bureau. **Population & Economic Development 2007 data Sheet.** Accessed 2/10/2008 at: [www.prb.org]

9. Boutayeb A and Serghini M: **Heath indicators and human development in the Arab region**. International Journal of Health Geographics 2006, **5**:61.

10. Shawky S: **Infant mortality in Arab countries: sociodemographic, perinatal and economic factors**. Eastern Mediterranean Health Journal 2001, **7**(6): 956-965

11. Boutayeb A: **Social Inequalities and health Equity in Morocco**. International Journal for Equity in Health 2006, **5**:1.

12. USAID. **Morocco: development challenge**. Accessed 30/10/2008 at: [www.usaid.gov/pubs/cbj2002/ane/ma]

13. Mohana N: **Maternal Mortality in Islamic and Arabic Countries**. The Internet Journal of Health 2005, **4**:1

14. The World Bank. Gender and Development in the Middle East and North Africa : Women in the Public Sphere. MENA Development Report, 2004, Washigton , DC

Tables

Table 1: Demographic and urban/rural evolution [1]

Year of Census	Population (millions)			Annual growth rate
	Urban (%)	Rural (%)	Total	
1960	3.4 (29%)	8.2 (71%)	11.6	
1971	5.4 (35%)	9.9 (65%)	15.3	2.8%
1982	8.7 (43%)	11.7 (57%)	20.4	2.6%
1994	13.4 (51%)	12.7 (49%)	26.1	2.1%
2004	16.5 (55%)	13.4 (45%)	29.9	1.4%

Table 2: Evolution of the age structure in Morocco [1,2]

Year Age group	1950	1975	2000	2025*
0-14	44.4%	47.2%	34.6%	23.8%
15-59	51.0%	47.6%	59.0%	65.0%
60+	4.6%	5.2%	6.4%	11.2%

* predicted

Table 3: Evolution of the crude birth rate [2]

Census/Survey	Period	Crude births per1000
Census	1960	53.0
EOM(Survey)	1962	46.1
ENFPF(Survey)	1979-1980	41.0
EDPR(Survey)	1986-88	31.6
ENPS(Survey)	1992	29.2
ENSME(Survey)	1997	23.6
EPSF(Survey)	2003-2004	21.1

EOM : Enquête à Objectifs Multiples (Survey with Multiple Objectives)
ENFP : Enquête Nationale de Fécondité et de Planification Familiale (National Survey on Fecondity and Family Planning)
EDPR : Enquête Démographique à Passages Répétés (Repeted Demographic Survey)
ENPS : Enquête Nationale sur la Population et la Santé (National Survey on Population and Health)
ENSME : Enquête Nationale sur la Santé de la Mère et de l'Enfant (National Survey on Mother and Child Health)
EPSF : Enquête sur la Population et la Santé Familiale (Suevey on Population and Family Health)

Table 4: Share of income or consumption [6,7]

Poorest 10%	2.6%
Poorest 20%	6.5%
Richest 20%	46.6%
Richest 10%	30.9%
Ratio richest 10% to poorest 10%	11.7

Table 5: Health indicators by quintiles [1,2,7,8]

Quintile Health Indicator (around 2005)	Poorest fifth	Middle fifth	Richest fifth
Total fertility rate	3.3	2.5	1.9
Child mortality rate(under five) per 1000 births	78	47	26
% of births assisted by skilled personnel	30	70	95
% of newly mothers who received antenatal care	40	71	93
% of births delivered at home	71	32	6
% of married women using modern contraception	51	55	57
% of adolescents 15-19 pregnant or already mothers	9	8.6	2.6

Table 6: social determinants and urban-rural contrast [2,7,11]

Social determinant	Urban	Rural
% of population below national poverty line	12	27
% of population using safe drinking water	99	56
% of population using adequate sanitation facilities	83	31
% of population able to afford essential medical care	70	55
% of poor woman's literacy	39	12

Table 7: Regional disparity [2]

Region	Births attetended by skilled personnel	Births in medical centres	Inhabitants per physician	Illiterate women
Grand-Casablanca	91.1 %	87 %	999	24.3 %
Rabat-Salé-Zemmour-Zaer	85.3 %	89 %	836	33.4 %
Marrakech-Tensift-AlHouz	48.0 %	47 %	3329	64.1 %
Taza-AlHoceima Taounat	48.5 %	45 %	4587	65.4 %
National Average	63.0 %	64 %	2084	50.1 %

Figure 1: Decline in Total Fertility Rates in Middle East and North Africa countries between 1980 and 2002 [14]

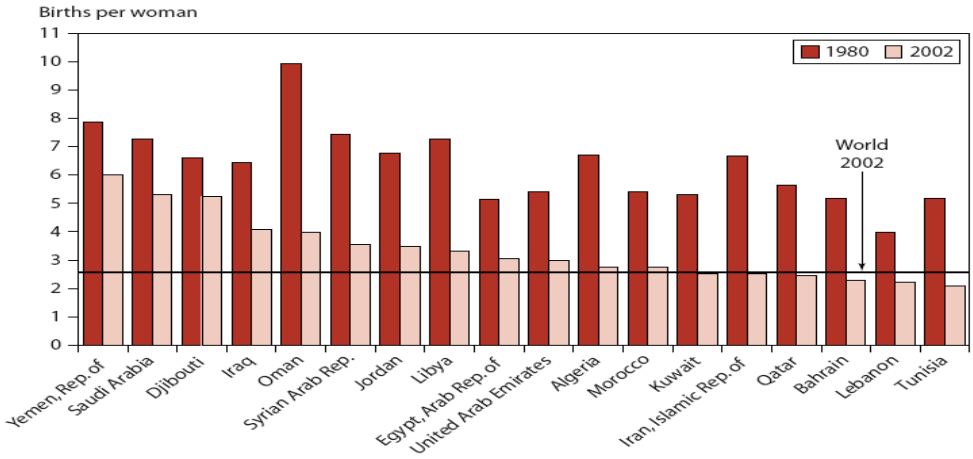

Figure 2: Infant Mortality per 1000 live births in Middle East and North Africa countries [14]

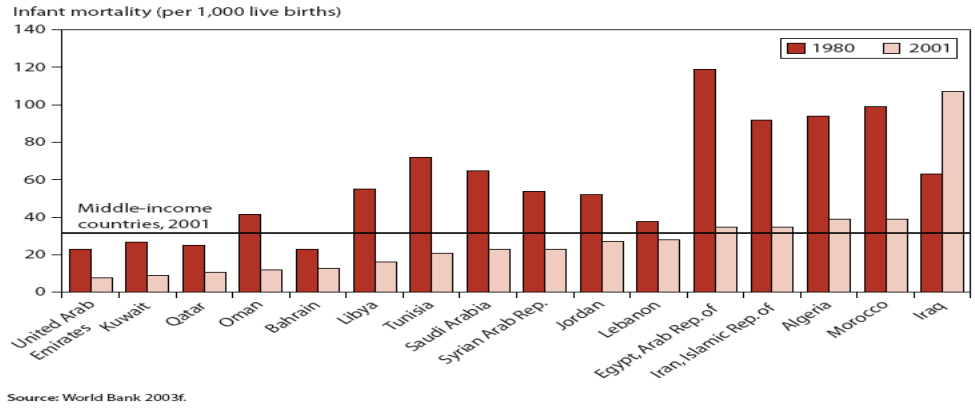

Figure 3 : Contraceptive Prevalence in Middle East and North Africa countries 2003 or most recent year [8, 14]**.**