

A Study on Trends in Iran: A Closer Look at Democracy, Education, Fertility, Divorce, Nutrition Transition, and HIV/AIDS

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Abstract—In this study we look into the socio-political trends emerging after the 1979 revolution in Iran. The development of democracy, education, and health network system are remarkable achievements in the Islamic government. However, since economic factors in a society work in harmony, an integrated view about emerging trends results in more achievements and better future planning. This study seeks to bring a set of relevant trends to attention and present a multidimensional picture of Iranian society.

Index Terms—Mass education, fertility, divorce, nutrition transition, HIV/AIDS, Iran.

I. INTRODUCTION AND BACKGROUND

The 1979 revolution in Iran was just a trigger for Iranians towards a better future under the visionary leadership of Ayatollah Khomeini. The Iranians overthrew the Shah because they believed their government was corrupt and the leaders of the revolution would connect them to a brighter future, i.e. a balance of everything basically neglected by the Shah in his 40 years of reign. There was a sense of excitement and triumph in a revolutionary atmosphere in which individualism and family quarrels were forgotten temporarily [1]. The lowest divorce rate ever was just simple evidence of the situation.

After the success of the revolution, the Islamic government took over. However, this was not the beginning of the social reform that Iranians fought for during the revolution because their new government was challenged at the very beginning by the imposed war with Iraq. In fact, the imposed war that continued through the 1980s disrupted the social and economic structure of Iranian society and disturbed the daily lives of families and individuals especially the war refugee families from southern and southwestern provinces living in poor housing conditions with minimal access to social and economic resources. The refugee families had lost their homes, jobs, and even their self-respect, being settled in highly crowded camps [1].

The cease-fire between Iran and Iraq in 1988 released the economic resources previously devoted to war and the military. Also, increasing oil revenue accelerated the emergence of an era of economic reconstruction and development. The expansion of industrial units, the establishment of the health network system, and the increase

in access to electricity and safe water, transport and communication in remote areas were clear signs of economic development for Iranians [2]. Public universities were expanded in all provinces and opportunities for higher education were increased further by the establishment of a private university system parallel to public higher education institutions [1].

Due to the aforementioned socio-political changes, Iran has experienced a phenomenal fall in fertility since mid-1980s. Abbasi-Shavazi and McDonald [3] explain that education has been an important factor in fertility decline in Iran. The advancement of female education has affected delayed marriage and childbearing [4]. On the other hand, a pattern of increase in the rate of divorce has been observed for both rural and urban areas.

There is no doubt that socio-political changes affect all aspects of people's lives directly or indirectly. The nutrition transition in Iran is taking place in the context of rapid demographic change, urbanization and social development, but in the absence of steady and significant economic growth [5]. Despite all the post-war economic recovery and reconstruction, Iran has remained a lower middle-income country, with a per capita gross domestic product (GDP) of just under \$1300 [5]. Since there is a sharp income dependence of the household food basket in terms of quality, malnutrition and obesity are definitely expected given the economic situation in Iran. Therefore, the development of a nutritionally literate population is emerging as a priority not only for the control of malnutrition but also for prevention of a potential epidemic of obesity-related chronic disease [5].

The challenge of modernity has provoked widespread and strong revisions of traditional values and identities. In Iran, sexual activity and pre-marital sex are vaguely dealt with in the gray border of sharia and modernity by the government. Contemporary Iran with broad access to media such as satellite TV channels and the internet, however, demands revisions to the traditional view of sexual behavior. Although HIV prevalence in some countries has been revised downward, in Iran according to recent studies female sex workers, gays, and drug users are identified as three major contributors of the society where people are thirsty of sex education. Research results show a transition in the role of the primary HIV contributor from drug users to unprotected sexual contacts [6].

The focus of this study is to have a closer look at the trends of the aforementioned domains altogether in a compact framework and seek to understand how the elements of a certain trend impact other social trends. Moreover, we believe looking at trends of different domains reveals more facts

about social attributes of Iranians and how they have dealt with the socio-political changes as well as the challenges modernity brought to them in recent years.

II. TRENDS: PROJECTION OF SOCIAL ATTRIBUTES

A. Democracy in Iran: The Trends of Education and Fertility

The study of the drivers playing significant roles in improving political rights and democracy has a long history in the political science literature. Theories such as the modernization hypothesis [7] highlight the birth and sustainability of democratic political institutions as initial steps towards development and educational attainment in a

country.

The 1979 revolution in Iran was a pivotal point in the history of the country where Iranians managed to say no to the Shah’s decisions and change the socio-political atmosphere of the country for democracy based on sharia. Despite all the challenges ahead of the Islamic government, the government managed to tackle the issues rather successfully. Robin Wright [8] has noted that “just as the Reformation was critical to the Age of Enlightenment and the birth of modern democracy in the West, so too have Iranian philosophers advanced a reformation within Islam that is critical to lasting political change.” In their analyses, Lutz *et al.* [4] predict a fast-paced transition to modern democracy for Iran during the next 20 years.

TABLE I: THE POPULATION OF IRAN PROJECTED (RECONSTRUCTED) BASED ON THE DISTRIBUTION OF AGE GROUPS, GENDER, AND FOUR LEVELS OF EDUCATION IN 1970 (2000)
MYS STANDS FOR MEAN YEARS OF SCHOOLING. NUMBERS ARE IN THE SCALE OF THOUSANDS [4]

Age groups	Males					Females				
	No education	Primary	Secondary	Tertiary	MYS	No education	Primary	Secondary	Tertiary	MYS
In 1970										
15-19	360.9	585.3	627.8	0.0	6.1	703.3	478.1	303.9	0.0	3.7
20-24	380.5	492.6	368.2	28.3	5.3	732.7	328.9	163.0	8.2	2.8
25-29	375.3	358.9	180.6	51.2	4.7	648.5	202.4	76.4	12.3	2.1
30-34	407.7	268.6	84.2	41.7	3.6	612.8	124.5	34.2	8.0	1.4
35-39	446.4	191.1	44.6	22.6	2.5	586.5	75.0	16.9	3.7	0.9
40-44	416.2	152.1	30.3	14.5	2.1	520.8	54.5	12.5	2.0	0.7
45-49	384.7	119.2	20.1	9.0	1.7	461.3	39.4	8.9	1.0	0.6
50-54	344.8	89.9	12.8	5.3	1.4	401.5	27.8	6.2	0.5	0.5
55-59	295.7	64.5	7.7	3.0	1.2	343.3	19.3	4.1	0.3	0.4
60-64	252.5	45.9	4.6	1.6	0.9	293.2	13.3	2.8	0.1	0.3
65+	440.9	58.3	4.4	1.4	0.7	521.2	16.4	3.1	0.1	0.2
15+	4105.6	2426.6	1385.5	178.6	3.6	5825.1	1379.5	632.1	36.2	1.8
25+	3364.2	1348.6	389.4	150.3	2.5	4389.1	572.5	165.1	28.1	1.0
In 2000										
15-19	119.3	726.3	3702.1	0.0	8.7	209.6	1059.4	3073.0	0.0	8.0
20-24	133.1	835.0	2032.3	495.5	9.1	248.6	1166.8	1529.4	396.1	7.9
25-29	148.0	765.5	1283.5	369.2	8.6	317.8	972.6	979.6	236.2	7.0
30-34	181.6	643.6	1113.0	268.1	8.2	416.2	809.2	806.6	138.5	6.2
35-39	231.5	558.5	969.7	234.4	7.9	508.0	643.4	643.8	110.9	5.6
40-44	301.7	557.9	680.9	191.7	7.3	603.6	562.5	410.1	74.5	4.8
45-49	302.4	498.5	390.3	163.7	6.9	659.7	455.3	236.0	62.7	4.0
50-54	268.5	354.6	200.8	97.9	6.0	636.8	290.9	122.7	34.5	3.0
55-59	263.6	258.2	116.6	60.1	5.0	513.7	163.5	58.9	16.0	2.2
60-64	315.9	214.4	71.1	37.0	3.8	493.5	102.6	29.5	7.2	1.4
65+	1009.8	386.9	86.3	45.4	2.3	1239.6	135.9	33.2	6.2	0.8
15+	3275.3	5799.4	10646.6	1963.0	7.6	5846.9	6362.0	7922.7	1082.9	5.8
25+	3022.9	4238.0	4912.2	1467.5	6.8	5388.7	4135.9	3320.3	686.8	4.6

One of the policies that the Islamic government pursued after taking over was to discontinue the modern family planning system inherited from the previous regime. The taxing war with Iraq required more men in the battle field and, as a result, the government pursued the policy of encouraging larger families. A direct consequence of this policy was a rise of fertility rate to around 7.0 in the 1980s. Massive unemployment and the post-war economic situation persuaded the leaders that lower fertility would be in the interest of the country [9]-[12]. As a result, well organized family planning services integrated with a widespread health network system. Furthermore, the government invested on projects with focus on increasing the literacy rate of the country. Establishing a private university system parallel to the state sponsored schools provided the war-imposed baby

boom with the infrastructure required for their education. Lutz *et al.* [4] conducted a comprehensive study on recent demographic and education trends in Iran and the reasons of the fast-paced fertility fall in this country. The remainder of this section seeks to demonstrate the interplay between these trends.

In demography the concepts of women education and fertility are interwoven. In fact, education, especially women education, plays an important role when it comes to studying fertility transition. Education is said to provide access to modern ways of thinking, to provide the confidence to engage in the modern world, to reduce infant and child mortality, and to stimulate higher levels of gender equity within couple relationships [4]. In other words, education can be considered as an indicator of modernization [13], [14]. Broadly speaking,

education can be acquired through schooling, which is called mass education, or through various other sources such as media and face-to-face interactions, which is called informal education. There is no doubt that one of the main social changes in Iran over the past three decades has been the policy of widespread mass education all over the country. Although contemporary Iran has broad access to media such as satellite TV channels and the internet, the policy of widespread mass education played a significant role in increasing literacy especially in the post-revolution era. Table I compares the educational distribution of Iranians before the revolution and 20 years after in different age groups and gender. In Table I, the columns indicating secondary education in 2000 mark the post-revolution baby boom involved in mass education. Comparing them with the No Education columns in Table I reveals the role of mass education in fighting against illiteracy especially among young Iranians.

Table II shows the trend of literacy among 15-29 year-old Iranian women in a period of 40 years. There is no doubt that the successful trend of increasing average literacy skills changed the family economy by raising women’s confidence and improved their roles in family’s decision making [15]. Men, on the other hand, have sought to keep up with the expectations coming from the educated women with high aspirations [16]-[19]. Situations like this result in delayed marriage and childbearing on the one hand [4], and tensions out of these situations sometimes cause divorce of married couples on the other hand [1]. Although the policy of mass education appears to be successful and maybe necessary for increasing literacy, it seems that other types of education should be taken into account alongside it when its side effects break out in the society. It is worth mentioning that, though, the ability to erect and sustain massive educational systems is ultimately dependent on major economic changes; but the timing of such economic change is not necessarily closely related to the timing of alterations in the social structure that are sufficient to initiate new patterns of social behavior [20].

TABLE II: THE LITERACY RATE OF IRANIAN WOMEN. NUMBERS ARE IN PERCENTAGE [4]

Age groups	1966		1976		1986		1996		2006	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
15-19	57.7	5.4	75.4	19.8	85.8	53.0	96.9	86.4	98.3	93.2
20-24	41.2	2.7	59.4	10.1	75.8	36.5	93.8	77.9	97.9	90.5
25-29	29.5	1.4	49.4	4.9	65.5	22.0	89.5	65.4	96.3	84.1

Fig. 1 shows the trends of fertility rate in four educational categories, i.e. illiterate, primary, secondary, and advanced (diploma and higher), as well as the general trend of fertility in Iran. As it can be seen in the figure, the fertility rate among all groups of education has dropped slightly after the cease-fire between Iran and Iraq in 1988. The fertility trend of secondary education almost met the trend of advanced education in 2000 and the gap between the fertility trend of illiteracy and all other trends has reached its minimum. Furthermore, studies show the wide gap between fertility in rural and urban areas has narrowed substantially [4]. Caldwell [20] suggests that in countries in the early stages of fertility transition or apparently nearing fertility decline, the most marked fertility differentials appear to be educational ones. Postponing marriage and childbearing on the woman’s side

along with high aspirations and investments on children’s schooling on the parent’s side appear to have affected the fall of fertility rate in Iran [4]. Although education is positively related to more favorable attitudes towards birth control, a greater knowledge of contraception, and husband-wife communication [21], Caldwell [20] argues that the primary determinant of the timing of the onset of the fertility transition is the effect of mass education on the family economy. The direction of the wealth flow between generations is changed with the introduction of mass education, at least partly because the relationships between members of the family are transformed as the morality governing those relationships changes [20].

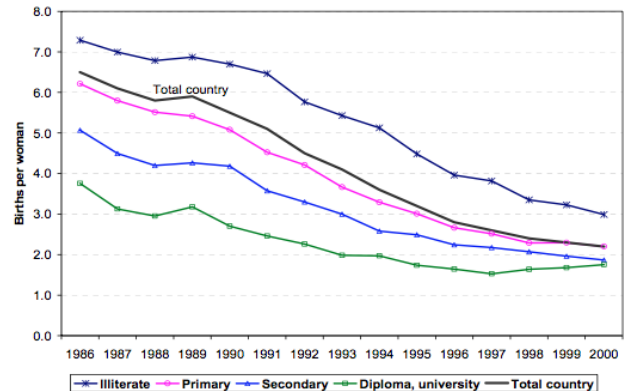


Fig. 1. The trend of total fertility rate in different education levels [4]. The estimates are from the survey of Iran Ministry of Health and Education.

B. Divorce

When it comes to marriage, there is a saying in Iran that goes, “a woman will go to her husband’s house with her veil and come out with her shroud”. It refers to traditional marriage in the past where traditional families have been responsible to propose to the bride and organize the ceremony. First birth has been usually within the first year of marriage and the size of families has been relatively large. Divorce has been culturally a taboo and directly impacted family reputation. Overall the house has been formed around the financial support of the husband and women’s economic contribution has been only through childbearing and childrearing.

In the 1930s the first divorce-related law was introduced in Iran. It required the registration of divorces in state registries as part of the expansion of the legal and civil code system [22]. Divorce was culturally in absolute power of men until 1967 where a legal act designed for family protection prohibited men from exercising their absolute right of divorcing their wives [1]. After the 1979 revolution the Family Protection Law was replaced by a Special Civil Court Procedure [23] where the judges are Islamic scholars who ought to consider all avenues of reconciliation before approving a divorce. In 2004 the right of women to receive half of the property and wealth accumulated during the period of marriage was also included in the law [1].

The economy of divorce in the modern world has completely changed. High literary rate and various employment opportunities for women make them independent and give them chances to opt their own way of life. The traditional mindset that advised young brides to

remain loyal to their husbands has been replaced by seeking happy, loving, and continuing relationships. Even in traditional and hard-line families where women are restricted by old values, early marriage followed by a divorce has become a means whereby women find a way out of old traditions toward more independence. The rise of divorce in Iran is part of the adoption of developmental idealism [24], which has produced widespread tendencies toward individualism and self-actualization. These values and beliefs, along with a rational tendency to be free from a miserable marriage, are part of a set of cultural beliefs and values about development and how development relates to family and demographic behavior [1], [24], [25].

Table III shows the trend of divorce rate from 10 years before the revolution to 30 years after it occurred. The numbers highlight divorces per 1000 marriages in each year. The table clearly shows the decline of divorce rate right before the 1979 revolution in Iran. The exciting atmosphere and the hope among Iranians for a better future resulted in the lowest divorce rate this country has experienced in the past 50 years. The trend starts to pick up during the Iran-Iraq war and reaches a peak at the time of cease-fire between Iran and Iraq. Since then the general trend of divorce rate has been increasing even though there were fluctuations in mid-points along the way. Table IV looks into the duration of marriage before a divorce occurs by comparing the numbers for 2004 and 2010 in Iran. As Table III shows the rate of divorce almost doubles from 2004 to 2010, therefore, investigating the length of marriage definitely sheds some light on the types of marriage ended up with a divorce eventually. The numbers in Table IV highlight two groups of unsuccessful marriages. It appears that most of divorces in this period occurred among marriages lasting 5-9 years and the ones lasting more than 20 years. Furthermore, Table IV shows a decreasing trend of divorce rate among marriages lasting less than 5 years and the ones lasting between 10 to 14 years.

TABLE III: DIVORCE RATE IN IRAN [1]

Year/period	Rate
1966	165
1976	107
1977-1979	79.43
1980-1988	91.6
1989-1996	76.7
1997-2004	89.6
2005	106.9
2006	120.8
2007	118.7
2008	125.4
2009	141.3
2010	153.9
2011	154.0

Rate is shown in number of divorces per 1,000 marriages in each year. Source: National Organization for Civil Registration of Iran (2012).

TABLE IV: DURATION OF MARRIAGE FOR DIVORCES IN IRAN [1]

Duration in years	2004 (%)	2010 (%)	Growth in 2010 Against 2004
Less than 5	54.8	51.3	-6.3869%
5-9	19.9	22.4	12.5628%
10-14	11	10.6	-3.6364%
15-19	6	6.3	5.0000%
20+	8.3	9.3	12.0482%

Source: National Organization for Civil Registration of Iran (2012).

Table V shows a side-by-side comparison of divorce rate

and urbanization rate [26], [27]. Urbanization rate is shown as percentage of the population living in places with 5,000 or more population or those with less than 5,000 but designated as urban by the government [1]. The observed trend in Table V is the higher the urbanization rate, the higher the divorce rate. However, there are exceptions to this observation. For example, Mazandaran has a below average urbanization rate (less than 68%), but divorce rate in this province is very high. The lowest divorce rate belongs to a Baluchi ethnic group in Sistan-Baluchestan.

TABLE V: DIVORCE RATE, AND URBANIZATION RATE [1]

	Divorce rate 2010	Urbanization rate 2006
Hormozgan	96.5	47.1
Kohkyluyeh-Boyerahmad	97.3	47.6
Khorasan-Shemali	118.8	48.4
Kolestan	105.7	49.2
Sistan-Baluchestan	30.7	49.6
Khorasan-Jonubi	91.8	51.3
Charmohal-Bakhtyari	66.6	51.6
Mazandaran	180.0	53.2
Gilan	167.5	53.9
Hamadan	140.0	57.6
Zanjan	106.8	58.0
Ardebil	104.5	58.3
Kerman	111.7	58.5
Kurdistan	167.3	59.4
Lurestan	107.4	59.4
Azərbayjan-Ghābi	121.4	60.0
Ilam	65.7	60.7
Fars	144.1	61.2
Būsher	156.1	65.2
Azərbayjan-Sharghi	136.6	66.7
Kermanshāhan	173.8	66.8
Khūzīstān	116.7	67.2
Ghāzvin	138.0	68.1
Khorasan-Razavi	171.3	68.2
Markazi	155.0	69.0
Semnan	167.5	74.7
Yazd	95.7	79.7
Isfahan	153.2	83.3
Tehran	303.9	91.3
Ghom	214.1	93.9

TABLE VI: RATE OF DIVORCE IN SELECTED COUNTRIES, 2006 [1]

Country	Divorce rate
United States	5.5
Canada	3.2
Japan	3.1
Denmark	4.0
France	3.5
Germany	3.5
Ireland	1.3
Italy	1.3
Netherlands	2.9
Spain	2.4
Sweden	3.4
United Kingdom	3.7
Iran 2006	1.9
Iran 2011	2.5

Rate is shown in Number of Divorces per 1,000 Populations

Table VI presents a comparison between divorce rate in Iran and a selected set of European countries and the United States. The numbers clearly show that the rise of divorce rate in Iran has been in such a way that in 2011 Iran was ahead of high-divorce countries such as Spain, Italy, and Ireland. Increasing divorce rate was observed first in Western societies, and was associated with modern attributes such as individualism, autonomy of children, marriages arranged at mature ages by the prospective bride and groom, romantic love, nuclear families, equality between women and men, and planned and low fertility [1]. Many of these attributes have been emerging in Iran and are gaining in popularity [24], [25]. The increasing trends presented in Tables III to VI can be interpreted as consequences of this paradigm in Iran.

C. Nutrition Transition

Studies show that the Islamic government managed to keep

its promises in various areas such as in health and education. As a result of these policies, we have experienced a significant increase in life expectancy from 12 years to 67 years. Also, major decline on infant and maternal mortality are other examples of such improvements. Universal childhood immunization coverage and accessible basic health services to almost all of the population are among other consequences of these policies. The economic situation, on the other hand, has cast a shadow over these achievements. The impact of a long term war with Iraq can still be seen in the society. Household income and expenditures remained at depressed levels after the cease-fire with Iraq in the late 1980s [5]. Fig. 2 shows the trend in urban and rural household food expenditures in Iran. The dropping trend clearly shows the influence of the war (1980-1988) in the economy of Iran.

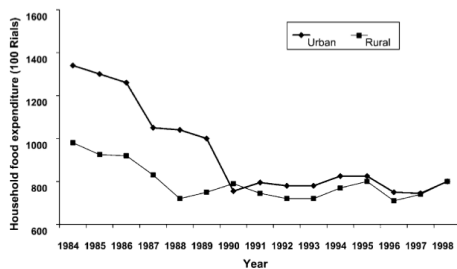


Fig. 2. The trend in household food expenditure [5].

Gross domestic product (GDP) and the human development index (HDI) are two measures of assessing the development of a country. Table VII presents the trends in GDP and HDI for Iran. The improvement in HDI from 0.566 in 1975 to 0.706 in 1998 is as a result of gains in education and health arenas [5]. Despite the decreasing trend of GDP in Iran, per capita GDP for all developing countries was increasing from US\$ 720 in 1975 to US\$ 3260 in 1998. In 1998 the HDI for developing countries was 0.642 [5], [28], [29].

TABLE VII: TRENDS IN THE HUMAN DEVELOPMENT INDEX (HDI) AND GROSS DOMESTIC PRODUCT (GDP) PER CAPITA FOR IRAN, 1975–1998 [5]

	1975	1980	1985	1990	1998
HDI	0.566	0.573	0.618	0.653	0.706
GDP per capita (1995 US\$)	1511	1129	1208	1056	1275

The following statistics in this section are based on two major surveys: a national Household Budget and Expenditure Survey available since the early 1970s, and a National Food Consumption Survey carried out in 1995 by the National Nutrition Institute [5]. According to the aforementioned surveys, there has been an increasing trend in per capita dietary energy availability from just over 2000 kcal person⁻¹ in 1970 to almost 3000 kcal person⁻¹ [30]. Nevertheless, the food-insecure households – 20% of households – have access to less than 90% of their dietary energy needs. The severely food-insecure households (~11%), however, have access to less than 80% of energy needs [31]. Furthermore, studies show that 30% of households consume less than 80% of the requirement for calcium, 46% for Vitamin A, and 70% for riboflavin [31]. Evidently household income directly impacts on dietary quality. Lower income makes individuals replace expensive food items of their household basket with low-quality and inexpensive food and, as a result, causes

malnutrition.

Table VIII presents change in food basket of rural and urban households. While consumption of bread in urban households increased about 20% from 1985 to 1995, rural households have almost halved the consumption of bread in their food basket. On the other hand, the consumption of meat, fruits, and vegetable has been halved in urban areas whereas in rural areas they have been used 20% more from 1985 to 1995. Dairy products show opposite trends in urban and rural areas. Rural households increased consumption of dairy products by 20% whereas in urban areas consumption of dairy products has been reduced by 20% from 1985 to 1995.

TABLE VIII: CHANGE IN HOUSEHOLD FOOD BASKET (EXPENDITURE DATA) FOR URBAN AND RURAL AREAS, 1985–1995 (G PERSON⁻¹ DAY⁻¹) [5]

Food item/group	Urban households (mean) (g person ⁻¹ day ⁻¹)		Rural households (mean) (g person ⁻¹ day ⁻¹)	
	1985	1995	1985	1995
Bread	355	435	561	332
Rice	104	107	86	100
Meat	138	65	50	58
Dairy products	182	153	164	203
Eggs	29	22	20	18
Fruits and vegetables	755	432	284	334
Fats and oils	32	33	18	32
Sugar	41	50	40	60
Total	1630	1297	1223	1137

Table IX presents household-level food consumption with respect to Food and Agriculture Organization/World Health Organization (FAO/WHO) recommended intakes. The higher the numbers under the “secure” column, the more balanced the food consumption. However, large numbers in the “severely insecure” and “over-consumption” columns evidently show imbalanced food consumption in Iran. Taking into account that consuming quality food is highly income-dependent, it is obvious that a lower middle-income country like Iran requires the development of nutritionally literate population and modern agricultural knowledge for the control of malnutrition.

D. HIV/AIDS

Broadly speaking socio-economic changes such as changes in marriage expectations and sexual activity are in conflicts with the traditional values governed in a society for years [32], [33]. However, with technology and mass media, which provide the young generation with enough information about other cultures around the globe, the chance of premarital sexual activity and having several sex partners inevitably increases [33]. Lack of data about the dimensions of HIV/AIDS especially in Iran makes any research about sexual behavior and sexually transmitted diseases very important in shedding some light on different aspects of this matter.

In Iran speaking about sexual activity immediately absorbs concerns from different arenas. Religion and traditions are known as the old barriers. Islam restricts sexual activity among married couples only and since the laws in Iran are legislated based on Islamic codes, there is no single law in Iran to alleviate, not to overrule, the Islamic perspective of sexual behavior. On the other hand, age at marriage has been rising in Iran and individuals would have to wait a long time for sex if they should follow the instructions in Islam. Obviously in situations like this many resort to risky sexual behavior where lack of sufficient knowledge about the health

of sexual activity may cause consequences such as sexual transmitted diseases. Sexual activity is not the only contributor to HIV/AIDS. In this section we look into the

major contributors and investigate the trend of HIV/AIDS in Iran.

TABLE IX: PER CAPITA FOOD CONSUMPTION IN RELATION TO FAO/WHO RECOMMENDED LEVELS FOR SELECTED NUTRIENTS, IRAN, 1995 (PERCENTAGE OF HOUSEHOLDS)

Nutrient	<80% of recommended ('severely insecure') (%)	80-90% of recommended ('mildly insecure') (%)	90-110% of recommended ('secure') (%)	>120% of recommended ('over-consumption') (%)
Energy	11	9	25	43
Protein	8	7	19	55
Calcium	30	10	18	34
Vitamin A	46	5	10	34
Vitamin B ₂	70	9	11	7

Source: National Nutrition and Food Technology Research Institute, 1996.

The primary requirement of any trend analysis is data. Because of all the background advanced here about HIV/AIDS in Iran, statistical data about HIV/AIDS is inaccurate and out-of-date. Haghdoost *et al.* [6] tackle the problem of not enough data in their research through applying probabilistic models on available datasets. Estimation and Projection Package (EPP) and Spectrum are off-the-shelf tools designed for analyses on specific domains such as HIV/AIDS [33]. More about these tools can be found at <http://www.unaids.org>.

Fig. 3 shows the results of a recent study on the estimation of HIV infections in Iran [33]. The major contributors to HIV are identified as follows: intravenous drug users (IDUs), prisoners, female sex workers (FSWs), and men who have sex with men (MSM). As it can be seen from the figure, all the curves depict upward trends except for the trend associated with IDUs. Haghdoost *et al.* [6] estimated HIV prevalence among adults to be 0.16% (0.08% - 1.03%) in 2009 and 0.15% (0.06% - 1.08%) in 2012.

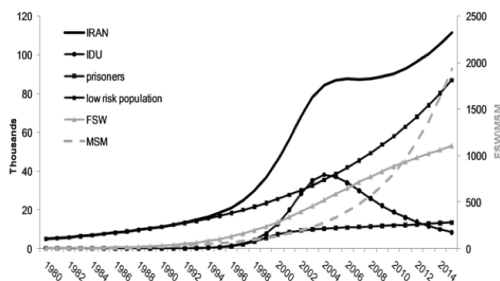


Fig. 3. Estimate of HIV infections in Iran [33]. IDU (intravenous drug users); FSW (female sex workers); MSM (men who have sex with men).

The vertical axis at the right hand side is associated with the curves of FSW and MSM. Other curves are associated with the vertical axis at the left hand side of the figure [33].

According to Haghdoost *et al.* [6] around 24% of HIV prevalence in 2009 occurred in IDUs that made them the main high-risk group among others [33]. However, IDUs are predicted to lose their primary role in contribution to HIV due to increasing contributions of other groups. FSWs were the second high-risk group and are predicted to increase their significance because of their direct interaction with ordinary people that are basically clients of FSWs. An interesting point in Fig. 3 is an implicit relationship between IDUs and MSM; while the trend of IDUs has been dropping since 2007, the trend of MSM has been accelerating instead. Although programs such as safe syringe distribution and methadone maintenance treatment have been relatively effective for

IDUs [34]-[37], due to social sensitivity to addressing sexual intercourse the strategies toward controlling unsafe sex have not been so effective [38]. Studies show that the primary role of contribution to HIV transmission is in a transition from unsafe injection to unprotected sexual contact [33].

III. CONCLUSION

The Islamic Revolution of 1979 began an era that forms the context for the demographic, mass education, and nutrition transition that are currently underway in Iran [5]. Following the revolution, there was a period of relatively rapid reorganization of institutions and social policies, with the goal of forming a society governed by Islamic principles of social justice and equity [5]. Policies and institutions were structured to invest heavily in making basic services and amenities, including infrastructure (roads, electricity, safe water), education, primary health care services, staple foodstuffs, and social security available to the entire population [5]. Taking into account that socio-political changes impact on different economic factors in a society, a set of social elements has cast a shadow over the improvements advanced here which basically reveals imbalanced concerns among economic factors of the society.

As a result of emphasizing on the policy of mass education, the relationships between family members have transformed gradually and, therefore, the rate of fertility and divorce has dramatically increased in Iran. Delayed marriage and childbearing on the one hand, and pursuing high aspirations, on the other hand, have resulted in emerging new economic challenges in the society.

The last several years have seen some economic recovery, but Iran remains a lower middle-income country, with a per capita gross domestic product (GDP) of just under \$1300 [5], [39], [40]. Since there is a sharp income dependence of the household food basket in terms of quality, low income makes individuals replace costly items of food basket with inexpensive dietary energy which results in decreased dietary quality and malnutrition. It appears that Iran requires the development of nutritionally literate population along with modern technology such as nuclear techniques in agriculture for the control of nutrition transition in the society.

The justice system in Iran works based on the legislation reflecting the instructions taught in sharia. Since sexual activity is restricted for married couples in Islam, there is no well established infrastructure in Iran to educate individuals and families about the health of sexual behavior. As a result,

the trend in HIV infections appears to be increasing.

Overall all the economic factors in a society have to be taken into account when it comes to developing integrated plans. Overlooking emerging trends and alerting signals in a society could result in failure of other plans in a long run. It appears that patterns of fertility, divorce, nutrition transition, and HIV/AIDS require careful attention in Iranian society.

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