

A TWINNING STUDY IN IRAN

*D.D. Farhud, M.D., Ph.D., M.G.¹; Gh.R. Walizadeh, M.D.²;
M.S. Kamali, Ph.D.³ and H. Malek Afzali, M.D., MPH⁴.*

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ABSTRACT

Three hundred twin births from a hospital in Tehran, Iran have been analyzed for seasonal variation at birth and physical measurements. The results show that the highest twinning rates for MM (5.61), FF (7.73) and MF (5.36) were seen in April, January and September, respectively. The four physical measurements at birth showed non-significant differences among the male and female twins, but MM and M twins showed higher physical measurements compared with those of FF and F twins.

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1. Dept. of Human Genetics and Anthropology, School of Public Health, Tehran Medical Sciences University.
P.O. Box 14155-6446, Tehran, Iran.
 2. Dept. of Pediatrics, Amir Kabir Child. Hospital, Tehran Medical Sciences University, Tehran, Iran.
 3. Genetic Clinic, Vallie Assr Sq. 16 Keshavarz Blvd.
Tehran, Iran.
 4. Department of Epidemiology and Biostatistics, School of Public Health, Tehran, Med. Sc. Univ. P.O.Box 14155-6446, Tehran, Iran.

Mean weight was 2441.14 (MM), 2467.29(M), 2391.45 (FF) and 2424.38 (F); that of the stature was 47.40(MM), 47.36(M), 46.78(FF) and 46.26(F); that of head circumference was 32.40 (MM), 32.30(M), 32.11 (FF) and 30.64 (F); and finally that of the chest girth was 29.61 (MM), 29.84 (M), 29.01 (FF) and 29.30(F).

INTRODUCTION

Dizygotic twinning rate has been shown to have a various incidence in different populations, because of geographical factors, maternal age and birth order of the twins (7). Seasonal variations in twin births have been shown by various studies (3,4,5,6,7,8,9,16). Weight of the twins at birth has also been studied (1,2,10,11, 12,14,15). The purpose of the present study is to report on the seasonal birth, twinning rate, weight at birth and other physical measurements of the Iranian twins.

MATERIALS AND METHODS

Data, regarding 150 pairs of twins who were born during 1969-77 in Bazargan Hospital, in Tehran, have been collected for the present study. The data are arranged according to the month of birth and type of twinning (MM, FF and MF). Weight, stature, head circumference and chest girth of the data at birth were taken according to Martin and Saller (1962). The Physical measurements have been compared, using the t-test.

RESULTS

Seasonal variation in twinning rates:

Table 1 and Figure 1 show the frequency and rates per 1000 of MM, FF and MF twins according to month of birth. The highest twinning rates for MM (5.61), FF(7.43) and MF (5.36) were seen in April, January and September, respectively, whereas, the lowest rate occurred in February (0.76) for MM, in September (1.79) for FF and in July and December (2.62) for MF. Mean twinning rates is 3.19 for MM, 3.96 for FF and 3.47 for MF.

Physical measurements of twins at birth:

Tables 2-5 show the means and standard errors for weight, stature, head circumference and chest girth of the MM, FF and MF. Males show higher physical measurements for both MM and M than the females. The MM, however, show lower weight and chest girth, and higher stature and head circumference than the M. This is also similar when comparing the FF with F. However, Comparisons of the physical measurements show significant differences only for chest girth among the MM and FF (Table 6).

DISCUSSION

Seasonal variations in twinning birth have been shown in many countries. An excess of twin births were reported in Spring in Hungary and Finland (3,16), of multiple births in the second half of the year in England and Wales (8), and the excess of the twinning conceptional

rates in Spring and Autumn (mild seasons) and lower rate in hot and cold climates in Niigata, Japan (9). The highest twinning conceptional rate was reported in April in Japan (7). In the present study, a seasonal variation was indicated for MM, FF and MF twins, and the highest twinning rate was found in April, January and September for MM, FF and MF, respectively. Therefore, the twinning rates are high in the Spring for MM (4.27) and MF (3.74). and in Winter for FF (5.46). Since the conceptions were begun in Summer and Spring, respectively, it seems, thus, likely that the twinning rates vary according to the season of conception and births in Iran. Some results have been obtained by Farhud et al (1986 a).

It was revealed, that birth weight, stature, head circumference and chest girth were higher in male than in female twins. The same results have been reported for birth weight (1,2). However, the sex differences have shown frequently non-significant differences.

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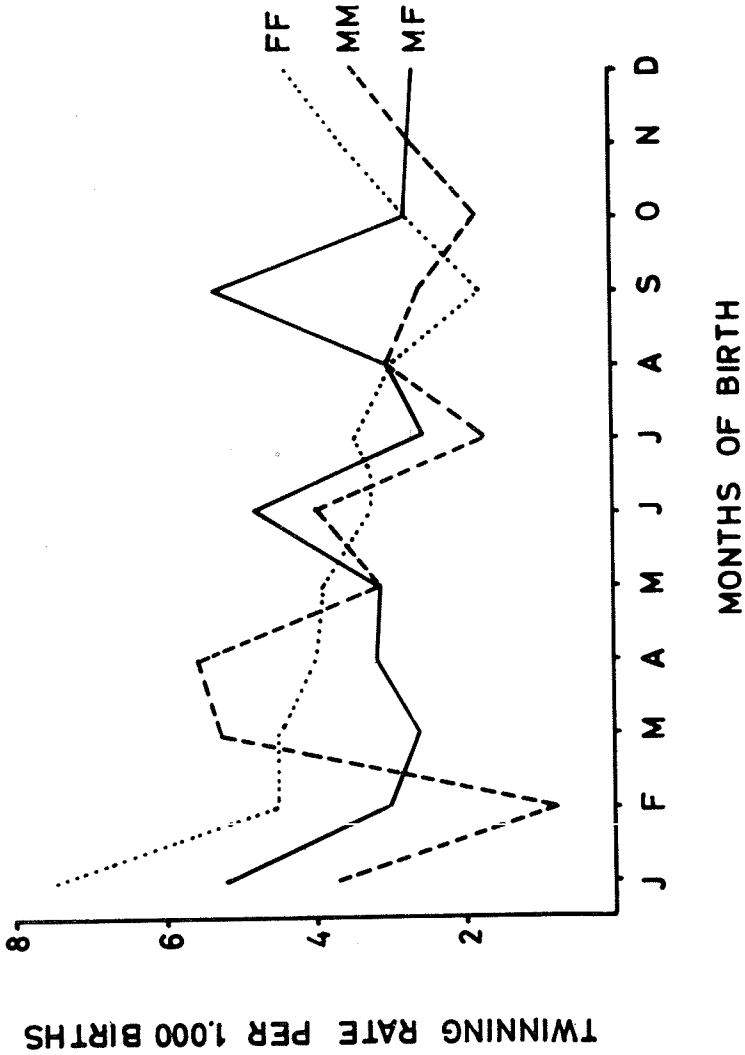


Fig. 1: MM, FF and MF twinning rates according to the month of birth.

Table 1. Twin deliveries and twinning rates per 1000 births according to the month of birth during 1969-77.

month of birth	MM		FF		MF	
	number	twinning rate	number	twinning rate	number	twinning Rate
January	5	3.71	10	7.43	7	5.20
February	1	0.76	6	4.55	4	3.03
March	6	5.29	5	4.41	3	2.65
April	7	5.61	5	4.01	4	3.21
May	4	3.16	5	3.95	4	3.16
June	5	4.05	4	3.24	6	4.86
July	2	1.74	4	3.49	3	2.62
August	3	3.01	3	3.01	3	3.01
September	3	2.68	2	1.79	6	5.36
October	2	1.85	3	2.78	3	2.78
November	3	2.75	4	3.67	3	2.75
December	4	3.49	5	4.36	3	2.62
Total	45	3.19	56	3.96	49	3.47

Table 2. Weight at birth in 3000 twin individuals

	MM	FF	MF		Total
			M	F	
Number of cases	88	110	48	48	294
Number of missing cases	2	2	1	1	6
Mean	2441.14	2391.45	2467.29	2424.38	2424.08
Standard error	46.49	49.51	73.09	44.10	42.75

Table 3. Stature at birth in 300 twin individuals.

	MM	FF	M	F	MF	Total
Number of missing cases	10	12	2	2	4	26
Mean	47.41	46.78	47.36	46.26	46.81	46.97
Standard error	0.29	0.64	0.51	1.42	0.76	0.49

Table 4. Head circumference at birth in 300 twin individuals.

	MM	MF			Total
		FF	M	F	
Number of cases	82	100	47	47	276
Number of missing cases	8	12	2	2	4
Mean	32.40	32.11	32.30	30.64	31.47
Standard error	0.14	0.19	2.37	1.49	1.98
					0.48

Table 5. Chest girth at birth in 300 twin individuals.

	MM	MF			Total
		FF	M	F	
Number of cases	80	100	45	45	270
Number of missing cases	10	12	4	4	8
Mean	29.61	29.01	29.84	29.30	29.57
Standard error	0.25	0.02	0.55	0.34	0.46
					0.17

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Table 6. Comparisons of the measurements among the 300 twin individuals.

character compared	comparisons	t-values
weight	MM x M	0.03
	MM x FF	0.44
	MM x F	0.26
	M x FF	0.86
	M x F	0.50
	FF x F	0.50
stature	MM x M	0.08
	MM x FF	0.51
	MM x F	0.79
	M x FF	0.71
	M x F	0.73
	FF x F	0.33
head circumference	MM x M	0.04
	MM x FF	1.23
	MM x F	1.18
	M x FF	0.08
	M x F	0.59
	FF x F	0.98
chest girth	MM x M	0.38
	MM x F	2.394
	MM x F	0.73
	M x FF	1.51
	M x F	0.84
	FF x F	0.85

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