prevalence of overweight, while the Saudi females have more obesity.[2] This predicts the future trend of overweight and obesity among boys and girls in the present study, with the current lifestyle pattern, putting Saudi school children at high risk of becoming obese in adulthood. This study therefore presents the urgent need to implement comprehensive lifestyle modification intervention programs in schools that addresses nutrition and physical education, and other healthy lifestyle habits, targeting school children, and parents, to reduce the risk of overweight and obesity and its health consequences in adulthood.

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The study of diabetes mellitus in Gorgan, Iran

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Diabetes Mellitus (DM) is a serious disease and it causes a number of chronic diseases the same as cardiovascular disease, renal failure, and neuropathy. Globally, it is expected that the prevalence of DM will double from 2000 to 2030, while public awareness remains less.[1] Several studies have demonstrated that DM has a strong negative impact on the health-related quality of life, especially in the presence of complications.[2] It is commonly linked with ecological factors such as food habit, physical activity, and obesity. These factors can increase, decrease or prevent the side effects of DM. Therefore this study was carried out to determine anthropometrical status, some biochemical indexes, and nursing supervision on 334 diabetic patients attending the Gorgan Diabetic Clinic.

The cases (109 men and 225 women) were chosen by random sampling over 3 months. The questionnaires, weight, and height were recorded for all. Serum triglycerides (TG), cholesterol, and fast blood sugar (FBS) were determined using laboratory kits (enzymatic methods), and the spectrophotometery technique (model JENWAY 6105 UV/VIS). Hemoglobin A1c (HbA1C) was measured via electrophoresis. All of the cases agreed to participate in this study. The data was saved on computer, and analyzed by Statistical Package for Social Sciences, version 11.5 software; χ^2 and correlation tests were used to compare the groups. The $p<0.05$ was considered to be significant.

In this study, 24.9% (83) of patients suffered from insulin dependent DM (IDDM), while 75.1% (251) suffered from non insulin dependent DM (NIDDM). With regard to dwelling place, 15.6% lived rurally, and 84.4% lived in an urban area. Seventy-seven percent were illiterate or had elementary education, 30.4% had been patients for 15 years. Body mass index (BMI) over 25 kg/m^2 was observed in 49.9% of IDDM patients, and 85.2% of NIDDM patients. The HbA1C in 85.3% of patients was over 8%, which is not suitable for blood glucose control. Fasting blood sugar of ≥110 mg/dl was observed in 73.2% IDDM, and 86.4% NIDDM (**Table 1**). The level of serum cholesterol in 40.6% of IDDM and 9.1% of NIDDM patients and serum TG in 1.73% ad 86.4% of these patients were higher than normal rang (Normal rang: Cholesterol; 140-250 mg/dl and TG; 50-170 mg/dl). There were statistically significant differences between the 2 diabetes types on basis of serum FBS ($p<0.005$) and serum cholesterol ($p<0.0004$). There is a reverse significant correlation between mean serum TG ($p<0.01$, r=0.098), serum cholesterol (p<0.01, r=0.193) and BMI ($p<0.01$, r=0.172) with literacy, but it has a positive correlation with HbA1C.

Some studies show that food pattern, low physical activities, and genetic factors are original agents for obesity, DM, and cardiovascular disease. In this study, the prevalence of overweight was observed in more than 80% of NIDDM, but it was less in IDDM. It is known that high body fat is common in NIDDM. High body fat causes insulin resistance and decreases glucose metabolic rate. Therefore, these patients should achieve an optimal weight for better control of blood glucose. The HbA1C was measured for control of blood glucose

Table 1 - Comparison of biochemical indexes between 2 types of diabetes mellitus (DM).

Types of DM	N	FBS (mg/dl)*			HbA1c (%)		TG (mg/dl)			Cholesterol (mg/dl)*		
							n (%)					
		<60	60-110	>110	<8	>8	>50	50-170	>170	>140	140-250	>250
IDDM	82	2 (2.4)	20 (24.4)	60 (73.2)	15 (18.3)	67 (81.7)	2 (2.4)	46 (56.0)	33 (40.2)	9 (10.9)	65 (79.2)	7 (8.5)
NIDDM	250	0 (0.0)	34 (13.6)	216 (86.4)	35 (14.0)	214 (85.6)	2 (0.8)	118 (47.2)	131 (52.4)	6 (2.4)	176 (70.4)	69 (27.6)
Total	332	2 (0.6)	54 (16.3)	276 (83.1)	50 (15.0)	281 (84.6)	4 (1.2)	164 (49.4)	164 (49.4)	15 (4.5)	241 (72.6)	76 (22.9)

IDDM - insulin dependent diabetes mellitus, NIDDM - non insulin dependent diabetes melitus, FBS - fasting blood sugar,
TG - triglyceride, *χ^2 test is statistically significant between the 2 groups.

during the previous 3-4 months. In this study, 85.3% of patients did not have good blood glucose control. In this case, IDDM and NIDDM are similar. The study by Matini et al[3] on patients at Kashan Hospital, Iran reported a lower ratio in comparison with this study. There is no significant correlation between literacy and HbA1C. Other studies are necessary to detect the factors effecting low blood glucose. Serum TG in NIDDM is higher than IDDM in this study. Navaii et al[4] in Islamshahr observed that the mean TG serum in women was higher than men, and reported obesity and hyperlipidemia among diabetic patients. In this study, the level of serum cholesterol in IDDM was higher than NIDDM diabetic patients. The study of Amini et al[5] among <40 year old people in Isfahan, showed similar results in diabetic patients. Serum TG and blood pressure among diabetic patients is higher than healthy people.

We conclude that most patients in this study have 2 main problems; they have no knowledge about their diet and blood glucose control. The high serum TG and cholesterol, high blood pressure and obesity, are also problems. Therefore, educational planning is necessary to decrease the rate of diabetic complications. More studies are necessary to fully investigate the status of DM in rural and urban area of Gorgan, Iran.

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