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The Way Forward to Public Health
in Gulf Cooperation Council (GCC)
Countries: A Need for Public Health
Systems and Law

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From the Editor

This is the fifth issue this year with papers concentrating on metabolic changes, especially diabetes, in addition to a major landmark paper on regional public health.

A regional paper looked at the Way Forward to Public Health in Gulf Cooperation Council (GCC) Countries: A Need for Public Health Systems and Law. The authors stressed that Public health systems in the Gulf Cooperation Council (GCC) Countries are not well established. The existing systems do not match with the current health challenges and with the use of innovative technology in healthcare (diagnosis, treatment or rehabilitation). The authors conclude that the GCC countries have the infrastructure for establishing a national public health system. However they need an effective integrated and organized mechanism to shape this system; based on acceptable guidelines and criteria in such a way that they are institutional and capable of meeting the population needs. This system should be cost-effective and investment in health sector should be looked upon as a sustained investment in human and societal development. Despite the great efforts exerted and achievements made, there are great challenges ahead that can be overcome by exhibiting a strong political will and having a united approach of all stakeholders.

A paper from Jeddah evaluated the effect and safety of both intensive and conventional insulin therapy in patients with type 2 diabetes. The authors conducted a traditional systematic review; criteria for studies selection were formatted. Studies selected were criticized. Three mega trials (3) that randomized 23,182 participants with type 2 diabetes (11591 to intensive glycemic control and 11591 to conventional glycemic control) were included. The author concluded that there are no benefits from intensive glycemic therapy (target HbA1c < 6.4%) vs conventional glycemic therapy (target HbA1c > 6.4%) except for decrease the rate of new onset or progression of nephropathy

A paper from Turkey investigated the frequency of alternative medicine and factors affecting its frequency, and efficacy on HbA1c in patients with type 2 DM. A Total of 160 diabetic patients, 46 have used herbal therapy and 114 have not used, were enrolled into study. HbA1c level in patients who have used and have not used herbal therapy was 8.2±1.7 and 8.2±1.8, respectively, and it was not significant (p=0.984). The present study indicated that they had no affirmative effect on HbA1c. Due to potential side effects, and lack of sufficient evidence-based data, their use should be limited.

A paper from Jordan attempted to determine the effect of cholesterol and Chol: HDL ratio in ischemic heart disease patients who presented to the emergency department at Queen Alia Hospital with chief complaint of chest pain. Blood specimens were collected from (509) patients who were also smokers and hypertensive. The mean value of Cholesterol: HDL ratio in males and females in CHD: IHD group is greater than that of the healthy individuals. The authors concluded that the total triglyceride and LDL cholesterol may be of value to identify people at risk. Lipid level may be affected by diet, exercise, smoking and certain medications.

A paper from Oman evaluated the subjective importance of teaching communication skills by role playing in a undergraduate curriculum. The intervention included 2-hour communication skills workshop for final year medical students was developed. Strategies for enhancing communication skills based on the evidence-based practice and teaching and the interactive Role play of communication skills were included. The feedback on workshop conduct has given a good response in terms of objective and facilitation. The authors concluded that communication skills workshop with role playing helped student in their competency and confidence. Role playing by the students helped them to understand patient perspective and communicating effectively in difficult situation.

A qualitative study from the Sultanate of Oman analyzed the problem of difficult patient encounters and strategies which can be adopted in dealing with these challenging patients so as to win over them and gain confidence in these patients. The study included interviewing 20 randomly selected clinicians. The majority of clinicians accepted that most difficult encounters were the ones with repeated and multiple complaints not satisfied with the given treatment, followed by behavioral problems, socio cultural, literacy and language issues. The authors concluded that clinicians have to recognize this challenging problem of difficult encounters and try to identify the factors that contribute to this problem and address them with good interpersonal communication skills and ongoing specialized continuous professional education (CPE) in order to refine their perceptions in managing such encounters. Health care facilities should be improved and deficiencies overcome to satisfy all patients.

A paper from Kuwait assessed the prevalence of practicing six dietary habits

among freshmen students in Kuwait University and to examine the endogenous and exogenous correlates for practicing these habits. A total of 1547 freshmen university students in Kuwait University were included and a self-administered questionnaire was used to cover students. The results showed that : practicing poor, fair and good dietary habits was reported by 23.8%, 56.9% and 19.3% students respectively with no gender difference. The authors concluded that practicing poor dietary habits is alarmingly high among freshmen university students. Endogenous and exogenous factors significantly interact to development of poor dietary habits. Health campaigns to raise adolescents' awareness about the importance of practicing healthy dietary habits are mandatory

A second paper from Turkey looked at the oldest cost effective method: The Art of History Taking. The author shared with us one case of a patient with a longstanding abdominal pain. My resident appeared puzzled while explaining the case of a 57 years old female patient admitted to our outdoor patient clinic with the complaint of pain over epigastrium and diarrhea up to eight times every day for the last eight months. However some factors may interfere even at the beginning of clinical interview that may cause improper history taking. I would like draw attention to unwanted outcomes of improper or hasty history taking. The burden of which not only negatively influence patients subjected to unnecessary medical interventions but also cause losing of time and money in all steps of health care system.

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Frequency, causes and effectivity of herbal therapy in type 2 diabetic patients

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Abstract

Background: To investigate the frequency of prescription of alternative medicine and factors affecting its frequency, and efficacy on HbA1c in patients with type 2 DM.

Methods: The patients with DM type 2 were enrolled into the study. In this survey, current medication and status of herbal therapy use was inquired. HbA1c was evaluated on admission.

Results: A total 160 diabetic patients, 46 of whom have used herbal therapy and 114 who have not, were enrolled into the study. HbA1c level in patients who have used and have not used herbal therapy was 8.2 ± 1.7 and 8.2 ± 1.8 , respectively, and it was not significant ($p=0.984$). When the

reasons that encouraged the patients to use herbal medicines were investigated, there was no significant differences between age, gender, duration of diabetes and education level of the two groups ($p>0.05$). It was observed that the number of patients with co-morbid diseases was significantly higher in non-herbal treatment group rather than herbal treatment group ($p=0.04$). Among the individuals predisposed to use herbal therapy, health professionals (6/46, 13%), neighbours (18/46, 40%), herb sellers (4/46, 9%), other patients with diabetes mellitus (4/46, 9%), media (13/46, 30%) had influenced them.

Conclusion: The present study indicated that herbal therapy had no affirmative effect on HbA1c. Due to potential side effects, and lack of sufficient evidence-based data, their use should be limited.

Key words: Type 2 diabetes mellitus, Herbal medicine, HbA1c

Introduction

Type 2 Diabetes Mellitus (DM) is one of the most prominent chronic diseases, exhibiting the most rapid increase in the last 30 years. There are approximately 300 million diabetic patients throughout the world (1). Although many oral antidiabetic drugs have been used in the treatment of type 2 DM until recently, glycemic control levels could not be achieved. Experienced side effects reduce the compliance of patients and give them concern about switching from oral antidiabetics to insulin. Patients who are not willing to use insulin are turning to alternative forms of treatment (2).

In recent years, it has been observed that diabetic patients use alternative treatments with or without prescribed medical therapy according to recommendations from many different sources (2). Relevant data is not sufficient on this subject in Turkey, yet. The purpose of our study was to determine the frequency of usage of alternative herbal treatments and factors leading the diabetic patients to use alternative treatment options. We also aimed to clarify this impact of treatment on HbA1c levels among regular users.

Materials and Methods

The cross-sectional study was carried out in the outpatient clinic of Endocrinology, Internal medicine Department, and Duzce University Faculty of Medicine. We enrolled all consecutive diabetic patients who agreed to participate in the study, except type 1 DM patients, between August 2010 and December 2010. Informed consent was obtained from all participants. Ethical issues for the study were approved by the ethic committee of our institute. All patients were interviewed face to face. Patients' age, gender, duration of diabetes, types and doses of treatments were recorded at visits. HbA1c values of the last 3 month that were obtained from files of patients were also recorded. Co-morbid diseases were obtained from personal medical history, questionnaires and personal hospital records.

In this survey, patients were asked whether they were satisfied with the medical treatment. If they were not satisfied, reasons for dissatisfaction were sought. Patients were also asked whether they had used any herbal treatment in addition to current medical drug therapy. The patients' perspectives about their effectiveness on their blood glucose control were interrogated, if they had used any herbal treatment. They were also asked on whose recommendation had they been impressed in starting this herbal treatment. Patients who had been using herbal therapy for at least six months regularly, were included in the "herbal treatment group" since they assumed herbal treatment decreased their blood glucose levels.

The analysis was performed with SPSS computer software (version 13.0). Descriptive statistics for continuous variables were measured as mean \pm S.D, while categorical variables were expressed as percentage. Differences between the two groups were analyzed by Student's t-test. Chi-square test was used for categorical comparisons. Statistical significance was accepted when $p < 0.05$.

Results

The study included 160 type 2 DM patients. Mean age was 56.4 ± 12.4 years and the average duration of diabetes was 119.89 ± 94.91 months. 41 of 160 (25.6 %) patients were older than 65 years. 97 (60.6 %) of the patients were women. In terms of educational status 41 (25.6 %) patients graduated just from primary school or had basic literacy. 81 patients (50.6 %) were junior high school graduates and the remaining 38 patients (23.8 %) were high school or university graduates. Patients' information about their diabetes and other co-morbid diseases are mentioned in Table 1 (top of next page).

Almost two thirds of type 2 DM patients (73 %) were dissatisfied with their current oral antidiabetic drugs (OADs), OADs combined with insulin treatment or just insulin treatment. One-third of patients (33.1 %) thought that these treatments were not enough for their well-being.

Reasons for dissatisfaction with patients' current treatments are shown in Figure 1 (page 6).

There were 46 patients (28.7 %) using regular herbal treatment other than prescribed medical treatment to reduce blood glucose levels in the last six months. Number of patients and types of different herbal therapies which were used by these individuals are summarized in Table 2. Data about groups who use herbal treatment or not is shown in Table 3. HbA1c levels of 46 patients who use herbal treatment (Group 1) and those who only use medical treatment (Group 2) were 8.2 ± 1.7 , and 8.2 ± 1.8 , respectively ($p = 0.984$). There was no significant difference between the two groups neither in blood glucose levels nor in achieving the goal of HbA1c < 7 . There was also no difference according to age, gender, diabetes duration and educational status between the two groups. There was no difference between university-high school graduates and low educated patients in tending to herbal therapy.

Patients who were satisfied or dissatisfied with the current medical treatment were using herbal treatment in similar ratios. In addition, oral antidiabetic alone or oral antidiabetic and insulin or only insulin treatment did not change the patients' herbal treatment orientation. Patients with comorbid diseases such as hypertension, coronary artery disease, chronic renal failure were more frequently observed among the patients who have used herbal products ($p = 0.04$).

Factors that encourage the use of herbal treatment were as follows: neighbours 18/46 (40 %), health care workers 6/46 (13 %), herbalists 4/46 (9 %), other diabetic patients 2/46 (5 %), and media organizations (TV, Internet and newspaper) 13/46 (30 %). Only 3 out of 46 patients commenced herbal treatment without any encouraging factor (Figure 2). Neighbours and media organizations were found to be the most significant factors that prompt the patients to use herbal treatment.

Age	56.8 ± 12.0
Gender (F/M)	97/63
Duration of diabetes	119.89 ± 94.91
Co-morbid diseases (Hypertension, CAD, Dyslipidemia, COPD etc)	139
HbA1c (%)	8.27 ± 1.82
HbA1c ≤ 7	49 (36.6%)
Treatment type; OAD	89 (55.6%)
OAD+Insulin	40 (25%)
Insulin	31 (19.4%)
Were the patients satisfied with the current medical treatment? (No)	42 (26.2%)
Is the current medical treatment enough? (No)	37 (33.1%)
Treatment dissatisfaction reasons	
Side effects (nausea and vomiting, diarrhea)	4 (9.8%)
Ineffective (not reducing blood glucose)	25 (61%)
Hypoglycemia	7 (17%)
Weight gain	5 (12%)
Edema	1 (0.2%)

Table 1: Demographic features of the patients

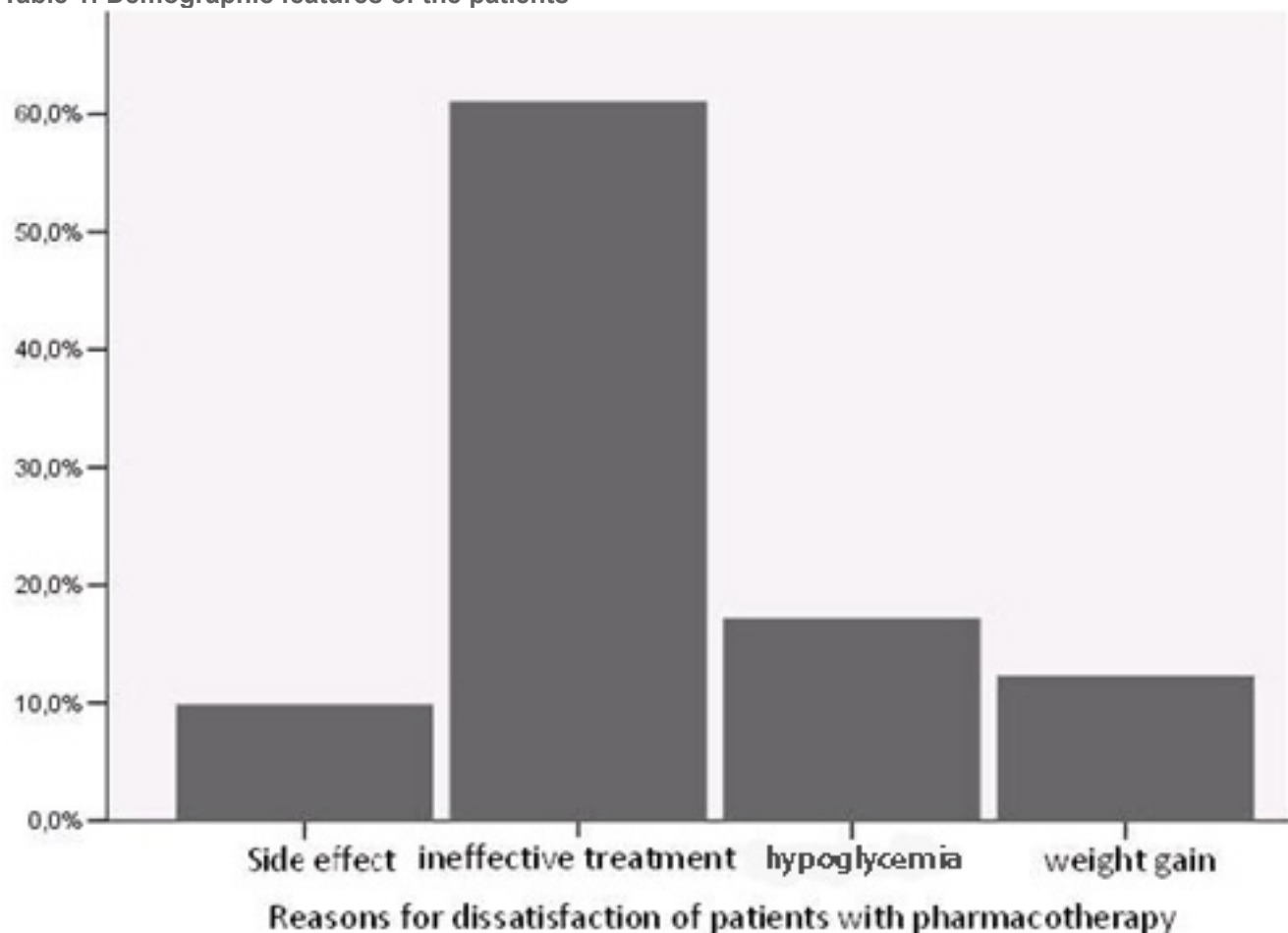


Figure 1: Most common reasons for dissatisfaction of patients with current pharmacotherapy

Herbals	Number of patients (n)	(%)
Olive leaf	2	4.3
Green tea	2	4.3
Cinnamon	4	8.6
Taflan leaf	3	6.5
Onion juice	2	4.3
Black grape (boiled)	1	2.15
Stinging nettle	3	6.5
Garlic	1	2.15
Pepino	5	10.85
Camomile tea	1	2.15
Pomegranate flower	3	6.5
Cabbage juice	3	6.5
Rosehip	2	4.3
Lemon/lemon juice	2	4.3
Bay leaf	1	2.15
Blackberry root/vinegar	2	4.3
Collards	1	2.15
Parsley-onion-walnut	1	2.15
Cloves	2	4.3
Chestnut blossom	1	2.15
Pear tree branch	1	2.15
Mulberry leaves	2	4.3

Table 2: Types and rates of herbals in the herbal treatment group

Discussion

In our current data, non-medical herbal use does not have any effect on HbA1c level in type 2 DM. No difference was detected in educational status and types of medical therapy for diabetes mellitus between the two groups. The most significant factors that lead the patients to herbal treatment were neighbours and media organizations. Presence of co-morbid diseases increased tendency to herbal treatments.

Use of herbal treatment in diabetes is especially higher in Far East and Middle East countries. It is shown that some of them have positive effect on blood glucose levels (3-5). There are also western based

published studies which shows a plant based diet might delay diabetes development (6). Besides these, some media organizations (internet, television, newspapers) give false information that proposes a variety of crops for treatment. In our study, one of the most important factors directing patients towards to herbal treatment was found to be media organizations; 30% of patients had chosen herbal treatment under the influence of media.

Various co-morbid diseases are seen in diabetes mellitus, especially, cardiac diseases and hypertension are much more prevalent in these patients. Herbal treatments are known to be effective in reducing the severity of these diseases (7). There

is an increasing tendency towards alternative therapies beside current medical treatments in patients having more than one chronic disease. Also, in our studies patients who had co-morbid diseases were using more herbal drugs.

In animal studies, it had been shown that various herbal products were effective in reducing blood glucose and HbA1c levels. Wormwood herb (*artemisia sieberi*), corn seed (*Eleusine coracana*), black tea, palm kernel, cinnamon, cinnamon oil could be given as examples (8-10). Almost all the studies related with these herbals were studied on animals, but human studies on this subject are very limited. In this study, we observed that many diabetic patients

	Herbal treatment group (N:46)	Non-Herbal treatment group (N:114)	P
Age	55.4 ± 10.6	57.3 ± 12.6	0.372
Geriatric ages (> 65y)	9 (19.6 %)	32	0.285
Duration of diabetes (months)	131.1 ± 102.2	115.0 ± 91.8	0.332
HbA1c (%)	8.2 ± 1.7	8.2 ± 1.8	0.984
HbA1c < 7	13 (28.3 %)	36 (31.6 %)	0.680
Gender (Female)	23 (50.0 %)	74 (64.9 %)	0.081
Education level			
<i>Primary school</i>	10 (21.7 %)	31 (27.2 %)	0.428
<i>Junior high school</i>	22 (47.8 %)	59 (51.7 %)	
<i>High school-</i>	14 (30.5 %)	24 (21.1 %)	
<i>University</i>			
Co-Morbid Disease	10 (21.7 %)	11 (9.6 %)	0.040*
Medical treatment			
<i>Satisfied with</i>	35 (76.1 %)	83 (72.8 %)	0.670
<i>Dissatisfied with</i>	11 (23.9 %)	31 (27.2 %)	
Current diabetes treatment			
<i>OAD</i>	21 (45.7)	68 (59.6 %)	0.083
<i>OAD+ Insulin</i>	17 (36.9 %)	23 (20.2 %)	
<i>Insulin</i>	8 (17.4 %)	23 (20.2 %)	

*Statistical significance was accepted when $p < 0.05$.

Table 3: Demographic features of herbal and non-herbal treatment groups

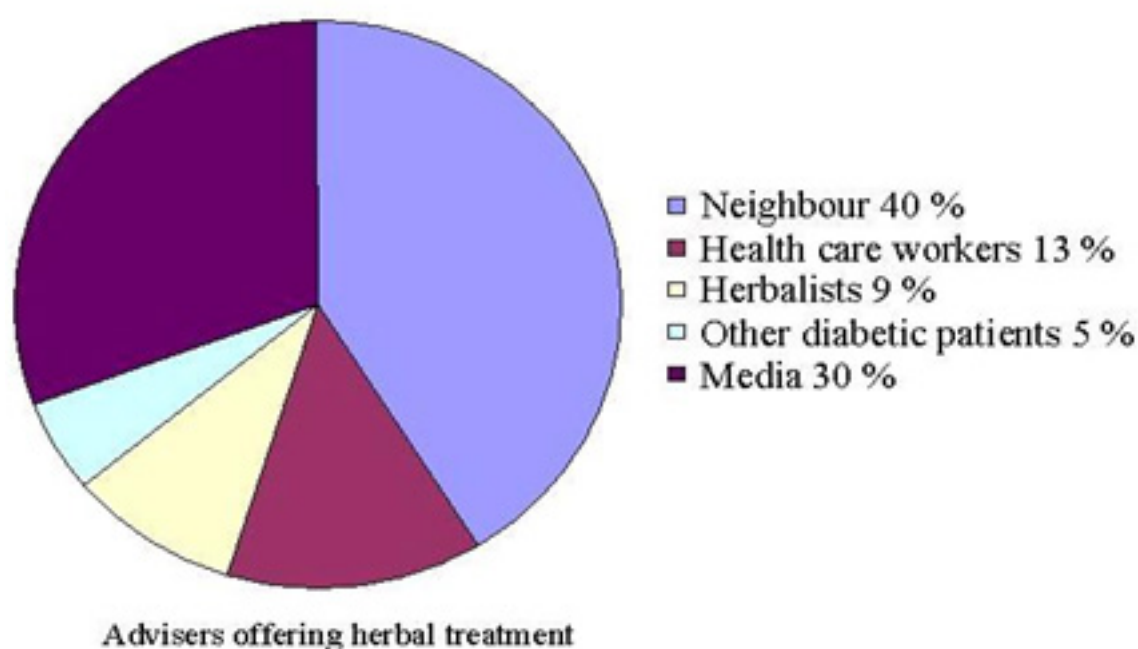


Figure 2: Graphic presentation of advisers offering herbal treatment in addition to medical therapy

had used a variety of herbs for treatment. Pepino (10.8%), cinnamon (8.6%), stinging nettle (6.5%), pomegranate flower (6.5%), cherry laurel (*Prunus laurocerasus*), carnation (4.3%) and mulberry leaf (4.3%) were the most commonly used herbals, respectively. Pepino is a melon-like taste, tropical originated fruit which grows in the western black sea region. This usefulness of fruit for various diseases has been published in media organizations. For example antidiabetic, aphrodisiac effect, weight loss effect, anti-aging effect and skin care effect have been written about. We think that pepino is the most commonly used herbal because of these related publications. Antidiabetic effect of cinnamon on both animals and humans has been reported in various publications. Cinnamon capsules (1 gr/day) reduce HbA1c levels in diabetic patients by 0.83% in 90 dayS (11, 12). It is noteworthy that the second most commonly used herbal treatment was cinnamon in our patients. As the dose and treatment modalities were different (capsules, tea, etc.), its effect on HbA1c level could not be evaluated statistically. Nettle seed (*Urtica dioica*) was the third most commonly used herbal. Nettle seed's impact is known in reducing rheumatic pain, boosting immunity, preventing benign prostate growth, and lowering blood glucose. There are several published papers showing the anti-diabetic effect of nettle seed. It is also shown that it can improve liver function in diabetic rats (13-15). Pomegranate blossom tea and pomegranate juice were the other used herbal products in this study. There has been a large number of news items in the media about antiviral, antihyperglycemic, antihypertensive effects of pomegranate blossom or pomegranate juice. Another commonly used herb was cherry laurel. Cherry laurel juice that is obtained from fresh leaves is used as an antispasmodic, antitussive and antiemetic. However, its overdose can be poisoning. We could not find any data about antidiabetic effects of cherry laurel and pomegranate blossom which were the most frequently used herbals by our

patients in the medical literature.

There was no statistically significant difference on HbA1c levels between our patients who use regular herbal treatment or not in the present study. Also, different forms of different herbals did not show any statistically significant effect on HbA1c levels. Different herbal treatments and different doses and forms had become a serious limitation in evaluation. For this reason, large scaled studies are needed in order to make comments about the effects of different herbals on blood glucose, one by one.

When the educational status of the patients was examined according to herbal treatment use, there was no difference between high school-university graduates and junior high school graduates and elementary school graduates. One of the most important results of our study is that education status has no effect on susceptibility to herbal treatments.

Differences in diabetic treatment modalities also have no effect with respect to tendency towards herbal treatments. Similar proportions of insulin and/or oral antidiabetic users have used herbal treatment. In addition, patients who were satisfied or dissatisfied with their medical treatment used similar rates of herbal treatment. From this point of view, treatment type and treatment satisfaction do not change orientation to herbal treatment.

One third of type 2 DM patients have used many different forms and types of herbals regularly. The most significant reasons to use herbals were presence of comorbid diseases beside diabetes. These lead patients to find alternative remedies. The most important factor leading the patients towards herbal treatment was the recommendation of other former users. The second most important leading factor was the media organizations. It is also observed that health care workers (doctors, pharmacists, nurses) had offered herbal treatment to the patients.

In conclusion, despite the regular usage of herbals, they did not reduce HbA1c levels in this study. Although various herbals could be used as adjunctive therapy to the current medical treatment, due to lack of evidence-based data in this field, potential adverse effects can result in death depending on incorrect use of this application. To prevent misuse of herbals for diabetic patients, we also recommend more educational programmes in the media.

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The effect of cholesterol and Chol: HDL ratio in Ischemic Heart Disease

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Introduction

The aim of our study is to determine the effect of cholesterol and Chol:HDL ratio in ischemic heart disease patients who presented to the emergency department in Queen Alia Hospital (Jordan) with the chief complaint of chest pain. Blood samples were taken from all patients included in the study, in the emergency department.

Serum lipids are important determinants of cardiovascular disease and related to morbidity. The high heritability of circulating lipid level is well established, and earlier studies of individuals with extreme lipid value or families with Mendelian forms of dyslipidemias have exposed the involvement of numerous genes and respective protein in lipid metabolism.(1,2)

Several clinical trials have demonstrated that elevated serum low- density lipoprotein (LDL-C) cholesterol is associated with increased risk of coronary heart disease (CHD), and that lowering serum LDL- cholesterol levels reduces the likelihood of new coronary events and associated mortality (3,4).

Serum lipids are important determinants of cardiovascular disease and related morbidity. The high heritability of circulating lipid level is well established and earlier studies of individuals with extreme lipid value or families with Mendelian forms of dyslipidemias have exposed the involvement of numerous gene and respective protein in lipid metabolism.(5,6)

Low plasma HDL- cholesterol concentration is encountered in clinical practice as part of mixed hyperlipidemia, or as an isolated abnormality. Low HDL cholesterol is common among patients with premature coronary artery disease.

Abstract

Objective: The aim of our study is to determine the effect of cholesterol and Chol:HDL ratio in ischemic heart disease patients who presented to the emergency department at Queen Alia Hospital (Jordan) with the chief complaint of chest pain.

Material and Method: This study was done in Queen Alia Military Hospital. Blood specimens were collected from (509) patients who were also smokers and hypertensive, and we compared these results with the control group who had no past history of any illness and normal vital signs.

Serum total cholesterol, triglyceride HDL-C were analyzed by enzymatic method (ANC-ROCHE) using Hitachi auto analyzer.

Results: The mean value of Cholesterol: HDL ratio in males and females in CHD: IHD group is greater than that of the healthy individuals.

Our study showed that, the mean value of Chol: HDL ratio in males or females in the CHD/I.H.D group is greater than that of the healthy individuals.

Conclusion: The total triglyceride and LDL cholesterol may be of value to identify people at risk. Lipid level may be affected by diet, exercise, smoking and certain medications.

Keywords: Ischemic heart disease (I.H.D) Chronic heart disease (CHD)

The cardio protective effect of HDL-cholesterol is will supported by both observational and experimental studies (8). Although the favorable effect of lowering elevated plasma low-density lipoprotein (LDL) -cholesterol has been well emphasized, the erythropoietic benefits of rising low HDL-C has only recently been demonstrated in clinical trials.(9,10)

Elevated total cholesterol and LDL-cholesterol have been well established as risk factor for ,coronary heart disease (CHD). Several large clinical trials have demonstrated that lipid lowering decreases the incidence and mortality that results from CHD.

Many experts believe that other lipid disorders may play a significant role in the atherogenic process, including elevated triglyceride levels alone or in association with low levels of HDL-cholesterol.(11)

LDL-cholesterol accounts for approximately 70% of cholesterol in the blood and is the primary target of intervention in the guidelines of the national cholesterol education program (NCEP).(12)

The total cholesterol to HDL ratio is a practical way to express its role in relation to CHD. The usefulness of cholesterol ratio was tested by the prospective cardiovascular Munster Trial (PROCAM) with more than 18,000 participants of both sexes aged between 17-65 years which was found to be a good predictor of the incidence of MI.(13,14).

Material and Method

This study was conducted on 509 C.H.D and I.H.D smoker hypertensives and 20 healthy individuals (140 m, 50f), tt Queen Alia military hospital, from patients with normal vital signs and no past history of illness. In all 509 patients included for study had C.H.D and I.H.D (200m, 119f) and were studied at the clinic for 7 months. Patient files were studied for age, sex, blood pressure and smoking habits. Most patients have had a history of hypertension and systolic blood pressure range (150-170) prior to treatment.

Blood specimens were collected from these individuals, serum total cholesterol, triglyceride, and HDL-C was done by enzymatic method using Hitachi analyzer.

Result

Table 1 (opposite page) shows the demographic data obtained for the patient and control group, regarding age, sex, cholesterol, T.G, HDL-cholesterol, LDL-cholesterol. As can be seen, the mean value of lipid profile was greater than that of the healthy individuals, however the mean value of Chol :HDL ratio in males or females in the CHD/I.H.D group is greater than that of the healthy individuals.

In I.H.D patients who are on treatment, the mean value of HDL-cholesterol in females is higher than that in males, but the chol:HDL -ratio is vice versa. Also 75% have LDL-C < 150 and 57.4% have HDL-C < 35 mg/dl.

Table 2 (opposite page) shows the calculated percentage of cholesterol, T.G: HDL ratio and control group. Value of cholesterol (>250mg/dl) in females is greater than that in males but the cholesterol : HDL ratio (>6) is vice versa.

All individuals in the healthy group have CHD and I.H.D risk < 20% but other patients have risk of > 20%.

Discussion

A survey in Baan Paew Disrical, Samusaleorn province, found that among 387 villagers whose ages ranged from 40-69 years, 13.2% had serum LDL-cholesterol level of 100 mg/dl or less.

According to Framinghams' experience (18) they would have a very low CHD risk (1%) for 10 years, however 11.37% had LDL-cholesterol level above 190 mg/dl and 4.13% had triglyceride level of 400mg/dl or more. In contrast, our study indicated 37% had LDL-C level above 150mg/dl. These latter groups need tight diet control, exercise and possibly medications to lower lipid levels in order to lesser CHD and IHD risk.

Based on the NCEP 1999 (16) guidelines for atherosclerotic primary prevention 16.8% had lipid levels in the desirable range and were at low risk for atherosclerosis. Significantly, males had serum lipid within the gold standard range more then females in our study. 13% had lipid level at low risk for atherosclerosis, significantly, females had serum lipid within the control range more than males.

Wilai and Donpichit's study (22) shows that serum total cholesterol level less than 200mg/dl had high specificity, up to 97.5% for serum LDL-C level of 130mg/dl or less, the same as Framingham's (20) risk factor categories of serum total cholesterol. In our study, the mean value of cholesterol in male and female is greater or approximately equal to the ratio but in I.H.D patients, vice versa. In contrast, our study shows that serum total cholesterol level less than 200mg/dl had specificity, up to 46%, for serum LDL-cholesterol level of 120mg/dl and 67% level of 150mg/dl.

The increased level of cholesterol, HDL-C and Chol: HDL ratio had been associated with increased risk of CHD and I.H.D. There was a significant difference in the value of these risk factors found in either males or females, with established CHD, I.H.D and values found in a sample from health's controls. The concentration level of Chol:HDL ratio found in healthy controls are approximately not variable while concentrations of HDL-C, cholesterol are variable and different from other studies depending on the genetic inheritance of the population studies (region) and habits.

If we look at the relationship between HDL-C and CHD, I.H.D population than the ratio of cholesterol alone or HDL-C alone. Among racial groups, cholesterol holds up as a risk factor, HDL-C does not, but the ratio of cholesterol to HDL-C does.

Assman and Procan'a studies (5) found that the ratio of total serum cholesterol to HDL-C of about 6.0 will identify nearly 70% of the people at risk of CHD or destined to have CHD.

CHD	Males (30-70 years)	Cholesterol	Triglyceride	HDL-cholesterol	LDL-cholesterol	Chol:HDL ratio
		292.5-(174-411)	390 (71-2272)	35.3(24-78.5)	147 (47-246)	6.1 (5.2-7.3)
	Females 30-70 years	293.5(203-384)	216(170-791)	32.1(27.4-66.7)	190.2(60-320)	6.2(3.6-8.3)
Healthy Group	Males (20-50 years)	185(145-220)	120(55-170)	50(36-72)	115(50-160)	4.0(2.1-5.1)
	Females (22-45)	180(140-210)	110(60-165)	52(40-75)	122(80-156) (30-70)Years	3.1(2.1-5.5)
I.H.D	I.H.D Males (30-80) years	206(113-307)	263(111-472)	33(20-53)	111(52-238)	6.5(2.9-10.3)
	I.H.D Females (30-80 years)	220(114-323)	281(103-486)	47(24-70)	150(57-240)	6.8(2.7-11)

Table 1

Patient	Cholesterol <150mg/dl		Cholesterol >250mg/dl		Chol:HDL ratio <6.0		Chol:HDL ratio >6.0	
	Males	Females	Males	Females	Males	Females	Males	Females
Healthy individuals	11.9%	17.6%	6.7%	11.5%	92%	82.4%	8%	17.6%
CHD	9.5%	20%	13.3%	50.1%	25.1%	42.7%	59.7%	41.3%
I.H.D	73.5%	67.9%	21.6%	32.1%	31%	21%	22%	23%

Table 2

As shown in this study, the mean value of TC:HDL ratio of 6.0 will identify the people at risk of CHD, I.H.D. Our study indicated dietary treatment for cholesterol > 250mg/dl and ratio > 5.0 in both sexes.

Exercise increased serum HDL-C replacing LDL-C. Males who drank alcoholic beverages and ethyl alcohol, 66.7% had rising HDL-C levels (15).

Distribution of lipid profile and Chol:HDL ratio among CHD, I.H.D patients and general group.

Conclusion

The total triglyceride and LDL cholesterol may be of value to identify people at risk.

Lipid level may be affected by diet, exercise, smoking and certain medications.

Also it is useful to the clinician when combined with detailed knowledge of the patients other risk factors.

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Determinants of Healthy Dietary Practices Among University Students

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Abstract

Background: Dietary habits developed during adolescence maintain during adulthood. Adolescents' adverse dietary habits contribute in the development of chronic illnesses later in life.

Objectives: to assess the prevalence of practicing six dietary habits among freshmen students in Kuwait University and to examine the endogenous and exogenous correlates for practicing these habits.

Design: A cross sectional study was conducted and multistage stratified sampling technique was employed.

Subjects: 1547 freshmen university students in Kuwait University.

Settings: A self-administered questionnaire was used to cover students':

- 1) practicing six healthy dietary habits;
- 2) socio-demographic explanatory variables;
- 3) general nutrition knowledge and knowledge relating to nutrition and disease;
- 4) dietary health beliefs; and
- 5) health locus of control.

Results: Practicing poor, fair and good dietary habits was reported by 23.8%, 56.9% and 19.3% students respectively with no gender difference. Multivariate analysis illustrated that a relatively lower level of mother education and small/medium family sizes symbolized the exogenous correlates for practicing poor dietary habits (OR: 1.5, CI: 1.13-1.92; OR: 1.97, CI: 1.35-2.88 respectively). However, students'

poor level of nutrition knowledge - general and related to disease - (OR: 3.4, CI: 2.48-4.54; OR: 2.6, CI: 1.9-3.92 respectively); and weak/moderate dietary health beliefs (OR: 2.84, CI: 1.96-4.12; OR: 1.79, CI: 1.22-2.61 respectively) characterized the endogenous correlates for practicing poor dietary habits.

Conclusions: Practicing poor dietary habits is alarmingly high among freshmen university students. Endogenous and exogenous factors significantly interact to development of poor dietary habits. Health campaigns to raise adolescents' awareness about the importance of practicing healthy dietary habits are mandatory.

Key words: dietary habits, nutrition knowledge, dietary health beliefs, locus of control, adolescents

Introduction

Dietary habits developed during adolescence can persist, and thus contribute in the making up of dietary habits during adulthood. The significance of practicing healthy dietary habits during adolescence has two facets. The first relates to adolescents' growth and development, which is mainly supported by optimal diet. The second communicates adverse dietary habits practiced during the period of adolescence to the development of non-communicable diseases (NCDs) later during adulthood [1-3].

Kuwait, a small country in the Gulf region, has showed a remarkable and rapid move in nutrition transition[4]. The urbanization surge that took place in Kuwait since the discovery of oil and the economic boom in the last few decades came along with a notable modification in cultural and social dietary habits particularly among adolescents and young adults. The diet change in terms of quantity and quality has become more "Westernized" [5,6].

Several factors are contemplated to influence dietary habits and nutrition transition among adolescents. These factors can be categorized as individual endogenous and/or individual exogenous factors. Among the individual endogenous factors, nutritional knowledge is believed to play an important role in promoting as well as adopting healthy eating habits [7-9]. People who are aware of the association between poor nutrition and certain health conditions are more likely to follow healthy dietary choices [10,11].

Additionally, one of the most widely studied control-constructs is the health locus of control, which is derived from the social learning theory [12]. According to the social learning theory, "internals" refer to people's belief that their own health behaviors exert influences on their health status. On the other hand, "externals" refer to people's belief that health outcomes are dependent on other people's actions or 'chance' variables such as luck and fate. Overall, studies have found

a significant relationship between endorsing internal locus of control and practicing healthy dietary habits [13]. However, health beliefs are considered the key motivating force among the determinants of protective health behaviors [14].

With regards to individual exogenous factors, parents' level of education is considered an important exogenous construct. It contributes to the effective use of information, and development of skills and values necessary to adopt healthy behaviors to shape healthy lifestyles among their children [15].

According to our knowledge, the studies related to dietary habits among adolescents in Kuwait are very scarce. Therefore, the objectives of this study are to assess the prevalence of practicing six healthy dietary habits among freshmen students in Kuwait University and to examine the endogenous and exogenous correlates for practicing these habits.

Methods

Sample:

A cross sectional study was conducted among freshmen university students in Kuwait University in the academic year 2009-2010. A stratified sampling technique was employed to reach a total study sample size of 1547 students. Stratification of the Kuwait university faculties into two strata - scientific and literature - was performed. Within each stratum, five randomly selected faculties were identified. Freshmen students were targeted in the study to avoid any educational bias related to type of university study. Randomly selected intact classes of freshmen students (using a random start) in each randomly selected faculty, took place. A convenience sample of 130-150 freshmen students from the selected classes were invited to participate in the study. The study was approved by the Ethical Committee for Research, Kuwait University.

Materials and Methods:

An anonymous self-administered questionnaire was used and verbal consent was sought from

each student before filling in the questionnaire. A total of 1650 questionnaires were distributed and 1547 students completed the questionnaire with a response rate of 93.8%.

The data were analyzed using SPSS version 18. A p-value of ≤ 0.05 and confidence interval of 95% were considered to be significant.

Variables:

Practicing six healthy dietary habits: These were divided into three unhealthy dietary habits: 1) regular consumption of vitamins as a replacement to natural sources, 2) usually drink tea directly after meals, and 3) usually prefer to eat fast food more than home made food; and three healthy dietary habits: 4) usually prefer to drink fresh juice more than carbonated drinks, 5) eat 3-4 servings/day of fruits and vegetables and 6) usually have breakfast. Practicing each habit was scored as 1 if it is healthy and scored as 0 if it is unhealthy. The total score range of 0-6 was recoded to poor (0-2), fair (3-4) and good (5-6) dietary habits practices.

Socio-demographic explanatory

variables: This section contained data about the student's age, sex, parent education, residency and family monthly income.

Nutrition related variables:

This second part of the questionnaire was designed to assess the students' knowledge on nutrition. It included 60 items which covered 6 areas of nutrition knowledge - general, carbohydrates, proteins, fats, water and vitamins and minerals - with a dichotomous answer of yes/no that scored 1 for the correct answer and 0 for the wrong answer. A total score range of 0-60 was calculated. The reliability coefficient was 0.81.

The third section of the questionnaire was considered to evaluate the students' knowledge about the relationship between nutrition and disease. It consisted of 20 items, for example: developing osteoporosis is related to low calcium intake. The reliability coefficient was 0.72. The same scoring system of the previous

part was followed with a total score range of 0-20. The total score of each section - second and third - was divided according to the median score of the total sample in each section. Those scoring below the median (33 for second section and 13 for third section) were categorized as poor knowledge and those scoring equal to or above the median score were categorized as good knowledge.

Dietary health beliefs and Locus of control:

This part consisted of 5 statements about students' dietary health beliefs, for example: "If I adopt a healthy diet, it would help lower my cholesterol". Each statement was scored on a Likert scale of 0-3 (0 = strongly disagree and 3 = strongly agree). A total score range of 0-15 was recoded to: weak (0-5), moderate (6-10) and strong (11-15) beliefs.

The last section aimed to measure the students' locus of control pertaining to weight loss. The Internal versus External Control of Weight scale (IECW) was used [16]. The 5-item IECW scale attempts to measure the degree to which respondents consider achievement of a goal as contingent or non-contingent to their own behavior. Items are arranged in a forced-choice format; one alternative reflects an internal orientation and the other reflects an external orientation. The standardized scoring was applied, where external choices scored "1" and internal choices scored "0" with a total score ranged 0-5 with the highest towards external locus of control.

Analysis: how does the analytical strategy mesh with the research questions?

The significance of bivariate associations between practicing healthy dietary habits (poor versus fair/good) and different variables were tested by using Chi-square test and Student-t test. Multivariate analysis was conducted using binary logistic regression in order to ascertain the relative strength of association between different outcome variables and practicing

poor dietary health habits. Practicing fair/good dietary habits was defined as "0" (76%) and practicing poor dietary habits was defined as "1" (24%).

Results

More than half the students consumed complementary vitamins rather than obtaining them from natural food sources as illustrated in Table 1 (next page). A significant proportion of male students drank tea immediately after meals, compared to female students (55.5% and 43.9% respectively). Preference of fast food over home made food was practiced by more than two thirds of the students with females significantly exceeding males (69% versus 64% respectively). On the other hand, 73% preferred drinking fresh juice more than carbonated drinks, and 64% ate fruits and vegetables 3-4 servings/day with no gender difference. Males (68%) significantly overcame females (62%) in regularly having breakfast.

Practicing poor, fair and good dietary habits was reported by 23.8%, 56.9% and 19.3% of the students respectively with no significant gender difference. For analysis purposes, practicing fair and good dietary habits were assembled together into one group.

Table 2 (page 19) showed that students who practiced fair/good dietary habits belonged significantly to: 1) large family sizes (33%), 2) mothers whose educational level is university and above (55%) and 3) high family monthly income (39%) compared to those who practiced poor dietary habits (22%, 46% and 25% respectively).

Table 3 (next page) illustrated that students who practiced fair/good dietary habits had significantly higher mean general nutritional knowledge and nutritional knowledge about diseases than their counterparts who practiced poor dietary habits (35.4 vs. 31.2 & 31.6 vs. 27.8 respectively). In addition, they had stronger dietary health beliefs than those who practiced poor dietary habits (43.3% versus 19.7% respectively).

The study showed a significant negative correlation between the total score of dietary habits (0-6) and locus of control total score ($r = -0.21$, $p = 0.002$). This means that the more internal the students are, the more they are practicing healthy dietary habits.

Multivariate analysis of the binary logistic regression models of significant correlates of practicing poor dietary habits are shown in Table 4 (page 20). Model I illustrates that students belonging to small and moderate family size were almost two times more likely to practice poor dietary habits compared to students belonging to large family size (OR: 1.97, CI: 1.35-2.88 and OR: 2.03, CI: 1.46-2.81 respectively). The second correlate was the level of maternal education. The students whose mothers had a university level of education were 1.5 times at risk to practice poor dietary habits than their correspondents whose mothers' level of education exceeded university level (CI: 1.13-1.92).

Adding nutrition related independent variables to model II didn't change the picture of dominating family size and maternal education as significant correlates to practicing poor dietary habits. Moreover, the table illustrates that students who either had a poor level of general nutritional knowledge or nutritional knowledge related to diseases were almost three times more prone to practice poor dietary habits relative to those students who had fair/good nutritional knowledge in the two domains (OR: 3.4, CI: 2.48-4.54 and OR: 2.6, CI: 1.9-3.92 respectively). Another finding was that students who had weak and moderate dietary health beliefs were almost three and two odds respectively to perform poor dietary habits compared to their counterparts who had strong dietary health beliefs (OR: 1.79, CI: 1.22-2.61 and OR: 2.84, CI: 1.96-4.12 respectively).

Discussion

A cross-sectional study was carried out among 1547 freshmen students in Kuwait University to scrutinize the endogenous and exogenous correlates of practicing poor dietary

Dietary habits	Total n=1547	Males n=593	Females n=954	p value
Unhealthy dietary habits				
Usually consuming complementary vitamin instead of food (n=774)	51.2	53.2	49.9	0.224
Usually drinking tea immediately after meals (n=731)	48.3	55.5	43.9	<0.001
Usually prefer fast food more than home made food (1015)	67.3	63.9	69.3	0.032
Healthy dietary habits				
Usually prefer drinking fresh juice more than carbonated drinks (n=1101)	72.8	74.2	72.0	0.372
Eat vegetables and fruits 3-4 servings/day (n=966)	63.8	63.3	64.2	0.741
Usually have breakfast (n=968)	64.0	67.8	61.7	0.018

Table 1: Percentage distribution of practicing six dietary habits among Kuwait university students according to gender (n= 1547)

Variables	Fair/Good dietary habits n=1174	Poor dietary habits n=373	p value
Locus of control <i>Mean ±SD</i>	2.11 ± 0.93	2.19 ± 0.93	0.132
General nutritional knowledge <i>Poor (n=746)</i> <i>Good (n=791)</i> <i>Mean ±SD</i>	42.1 57.9 35.4±6.1	69.9 30.1 31.2±6.4	<0.001 <0.001
Nutritional knowledge about diseases <i>Poor (n=555)</i> <i>Good (n=982)</i> <i>Mean ±SD</i>	27.2 72.8 31.6±4.4	65.6 34.4 27.8±5.4	<0.001 <0.001
Dietary health beliefs <i>Strong (n=577)</i> <i>Moderate (n=470)</i> <i>Weak (n=476)</i>	43.3 30.3 26.3	19.7 32.6 47.7	<0.001

Table 3: Prevalence of practicing fair/good dietary practices vs. poor dietary habits according to students' nutrition knowledge background, dietary health beliefs and locus of control among Kuwait university students (n=1527) (% is column wise)

Variables	Fair/Good dietary habits n=1174	Poor dietary habits n=373	p value
Age (mean ±SD) (n=1527)	18.3±0.5	18.2±0.5	0.330
Gender			
<i>Males (n=593)</i>	38.3	38.0	0.908
<i>Females (n=954)</i>	61.7	62.0	
Family size			
<i>Small (3-6) n=350</i>	21.7	28.1	<0.001
<i>Moderate (7-9) n=712</i>	45.7	52.2	
<i>Large (10+) n=447</i>	32.6	19.7	
Residency			
<i>Urban (n=811)</i>	52.4	54.5	0.487
<i>Semi-urban (n=722)</i>	47.6	45.5	
Father education			
<i>University (n=437)</i>	27.8	30.8	0.270
<i>University and above (n=1098)</i>	72.2	69.2	
Mother education			
<i>University (n=866)</i>	45.5	63.2	0.004
<i>University and above (n=667)</i>	54.5	36.8	
Family monthly income (KD):			
<i>Low (<1500) n=397</i>	24.6	31.9	0.020
<i>Moderate (1500-<2000) n=552</i>	36.9	35.1	
<i>High (2000+) n=563</i>	38.5	33.0	
Type of study			
<i>Scientific (n=717)</i>	46.8	46.5	0.921
<i>Literature (n=818)</i>	53.2	53.5	

Table 2: Prevalence of practicing fair/good dietary habits vs. poor dietary habits according to socio-demographic characteristics among Kuwait university students (n=1527) (% is column wise)

habits. The endogenous ones were students' poor knowledge regarding general nutrition and relation between nutrition and disease, and weak/moderate health beliefs; while the exogenous correlates were maternal relatively low level of education and small/moderate family size.

Unhealthy eating habits are among the imperative contributors to inequalities in health and diseases. Dietary habits developing during adolescence are indispensable as they may root the adulthood dietary

habits. Accordingly, patterning of early dietary habits might propose the fundamentals for prevention of non-communicable chronic diseases [17,18].

The study revealed that healthy as well as unhealthy eating habits are practiced by the majority of the freshmen students in Kuwait. This can reflect the lack of awareness and low perceived importance of healthy eating habits. This finding is in agreement with the study of Al-Rethaiaa et al. (2010) in Saudi Arabia

and emphasizes the imperative need to promote healthy dietary habits among Kuwaiti adolescents and youth [19]. Curiosity, freedom - two landmarks of the adolescence period - and urbanization are the potential incentives leading to these kinds of practices among most adolescents. The study found that male students significantly outnumbered female students in having regular breakfast in the morning. This finding is congruent to a previous study where the same dietary habit was practiced by 69% and 60% of boys and girls

Variables	Model I ^a				Model II ^b			
	β	Adjusted OR	P value	CI (95%)	β	Adjusted OR	P value	CI (95%)
Socio-demographic correlates								
Family size								
<i>Small (3-6)</i>	0.679	1.971	<0.001	1.350-2.878	0.612	1.845	0.003	1.220-1.789
<i>Moderate (7-9)</i>	0.708	2.029	<0.001	1.463-2.813	0.564	1.758	0.004	1.230-2.513
<i>Large(10+)(Ref.)</i>							0.002	
Mother education								
<i>University</i>	0.385	1.470	0.005	1.125-1.920	0.359	1.432	0.017	1.065-1.925
<i>University and above(Ref.)</i>								
Nutrition related correlates								
Nutrition knowledge related to diseases								
<i>Poor</i>					1.210	3.352	<0.001	2.477-4.536
<i>Good (Ref.)</i>								
General Nutrition knowledge								
<i>Poor</i>					0.950	2.587	<0.001	1.901-3.915
<i>Good (Ref.)</i>								
Dietary health beliefs								
<i>Weak</i>					1.045	2.844	<0.001	1.962-4.122
<i>Moderate</i>					0.579	1.785	0.003	1.222-2.607
<i>Strong (Ref.)</i>								

Table 4. Binary logistic regression of significant correlates of practicing poor dietary habits among Kuwait university students (n=1547) a Explanatory variables entered model I (age, gender, residency, family size, father education, mother education, family income, and type of study) b Model II added variables: Nutrition knowledge, nutrition knowledge related to diseases, locus of control and dietary health beliefs explanatory variables were added.

respectively [20]. Additionally, the present study revealed that females' consumption of fast food was significantly higher than their male correspondents. Adopting two major poor dietary habits among females can echo gender inequity in regards to practicing dietary habits. Health equity advocacy is a key principle for improving health status among this crucial age group.

Regarding the exogenous correlates of practicing dietary habits, maternal educational level emerged. In bivariate analysis, maternal education, and not paternal, had a significant influence in practicing healthy dietary habits among university students. The strength of this influence manifested in multivariate analysis in model (I) where exogenous factors related to students' socio-demographic factors entered the model. The same factor sustained its explanatory role in model (II) after adding the students' endogenous factors. This reflects the strong influence of maternal education in establishment of healthy dietary habits among her children. Mothers are the first window that a child discovers the world through; hence a highly educated mother will directly teach her offspring the healthy habits that will continue through adulthood. Moreover, she will also educate them indirectly through living and growing in a home environment where healthy food choices are available and healthy habits are practiced. Children will learn by observation and imitation of the same practiced healthy lifestyle. This fascinating finding is in agreement with Wickrama et al. (1999) who validated the role of intergenerational transmission of health-risk lifestyle and role of parents in indirectly influencing adolescents' health-risk lifestyle and behaviors [15]. In addition, educated mothers will help in structuring her children's attitudes towards healthy lifestyle, in developing internal locus of control and strong health beliefs that are considered as the pillars of practicing healthy dietary habits.

On the other hand, paternal education although important, did not show a significant association either

on the bivariate or the multivariate level of analysis. This can be explained by the fact that the effect of paternal education is reflected indirectly on the income of the household through a direct relation with father's occupation. As the study showed, there is a positive significant association between monthly income and practicing good/fair dietary habits on the bivariate level of analysis. This is expected as healthy food choices are usually costly. This finding is in accordance with the findings of preceding studies. A study conducted among 28 European countries revealed that practicing healthy dietary habits among adolescents increased with family material wealth and higher parental occupation [21]. Additionally, Janssen et al. (2004) found that a low socioeconomic standard was associated with unhealthy eating habits among Canadian adolescents [22].

Another interesting exogenous correlate in this study is the larger the family size, the more tendency to practice fair/good dietary habits. Although it is an unexpected result; this may reflect the indirect association between level of parental care and number of children. As a natural consequence, freedom and independent food choices experienced during adolescence might act as a conflicting reaction to the extra care and strict instructions children might experience in small family sizes. Accordingly, the hunger of freedom and independency among children -belonging to large families- manifested in independent food choices and eating habits will exist on a low profile. This explanatory variable persisted significantly in model II after adding students' endogenous variables. This echoes the indispensable need for parental counseling and guidance towards the appropriate level and style of caring throughout the raising of their children and adolescents. Moreover, the particular characteristics of the adolescent period necessitate meticulous parental skills to deal with youngsters targeting toward creating comfortable family atmosphere with modified instructions and least stressors.

Regarding endogenous factors that prejudiced practicing poor dietary habits, students' better level of nutrition knowledge either in general or in relation to diseases represented a significant contributor in both levels of analysis (bivariate and multivariate). This finding is in agreement with Kolodinsky et al. (2007) who found that increased knowledge of dietary guidelines to be positively related to more healthy eating practices among college students [23]. Nutritional knowledge is a key element in constructing positive attitude towards dietary habits that translate into practicing healthy dietary habits. This finding echoes the importance of enriching nutrition knowledge very early during childhood.

Another important endogenous correlate is students' dietary health beliefs. The study illustrated the significant role of strong dietary health beliefs as a positive contributor to practicing healthy dietary habits in either bivariate or multivariate analysis. This finding is in concurrence with the results of Wardle et al. (1997) in his study among 16,000 students from 21 European countries [13]. Dietary health beliefs were significant predictors of practicing dietary habits. Knowledge about healthy nutrition might act as a predisposing factor for adopting a healthy diet but unsatisfactory for motivating practicing healthy eating [24]. Other psychosocial considerations must not be neglected. Healthy behavior or habit is the outcome of believing that this particular measure (e.g. eating habit) will overcome a perceived vulnerability to a risky condition (disease). This imperative finding is in agreement with the Theory of Planned Behavior. The theory hypothesizes that an adopted health behavior depends on the individual's belief that the advantages of success outweigh the disadvantages of failure expected from performing a certain health behavior and if the individual has enough control over other factors that might influence the achievement of the behavior objective [25].

Students' locus of control did not manifest as an endogenous

significant correlate to practicing poor dietary habits in the multivariate analysis. This finding is not in agreement with the results of a previous study, where the locus of control was a significant predictor for practicing healthy dietary habits among students [13]. This might be elucidated as the people in Kuwait in general are more likely to be externals [26,27]. This can reflect that the external locus of control might be a characteristic of the Kuwaiti population rather than a particular finding in this study. Furthermore, locus of control refers to just an expectation of an individual's behavior in relation to the surrounding environment. Therefore, individuals with internal locus of control are expected to more likely engage in preventive health behaviors, rather than being a strong predictor to this health behavior [25].

In the light of the above discussion, it is obvious that practicing poor dietary habits has immense public health implications. The majority of health problems are directly related to the individual's adopted dietary pattern. Therefore, investment in intensifying healthy dietary habits among children and adolescents will play a great role in profiting healthy communities with a declining curve of non-communicable diseases.

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The Way Forward to Public Health in Gulf Cooperation Council (GCC) Countries: A Need for Public Health Systems and Law

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Abstract

Introduction: Public health systems in the Gulf Cooperation Council (GCC) Countries are not well established. The existing systems do not match with the current health challenges and with the use of innovative technology in healthcare (diagnosis, treatment or rehabilitation). This paper is intended to give an overview of the public health situation in

these countries. It discusses the need for effective and integrated system of public health laws that plays important role in addressing high priorities in public health.

Conclusion: The GCC countries have the infrastructure for establishing a national public health system. However it needs an effective integrated and organized mechanism to shape this system; based on acceptable guidelines and criteria in such a way that they are institutional and capable of meeting the population needs.

This system should be cost-effective and investment in health sector should be looked upon as a sustained investment in human and societal development. Despite the great efforts exerted and achievements made, there are great challenges ahead that can be overcome by exhibiting a strong political will and having a united approach of all stakeholders.

Keywords: Public health, Public health laws, Public Health Surveillance, GCC countries

Introduction

Advancements in the field of Public Health in the 20th century have improved the quality of life; increased life expectancy, reduced infant and child mortality, and communicable diseases [1]. Public Health leaders continue to play their roles as advocates for improved population-based health in a community that is increasingly becoming integrated and global.

Public Health is defined as the science of protecting and improving the health of communities through education, promotion of healthy lifestyles, and research for disease and injury prevention. Public health professionals analyze the effect on health of genetics, personal choice and the environment in order to develop programs that protect the health of individual and community at large [1].

The term "The New Public Health" was coined in the 1990s, in recognition of the observation that disease prevention and the organization of personal care services were interdependent with health promotion and social conditions [2].

The New Public Health focuses on application of a broad range of evidence-based scientific, technological, and management systems with implementation of measures to improve the health of individuals and populations. Its main objectives are the political and practical application of lessons learned from past successes and failures, in disease control and the promotion of preventive measures, to combat existing, evolving and re-emerging health threats and risks [3].

Era of Evidence-Based Public Health

We currently live in the age of Evidence-Based approaches to all disciplines including public health practice. It involves the development, implementation, and evaluation of effective programs and policies in public health through scientific reasoning, including systematic uses of data and information systems,

and appropriate use of behavioral science theory and program planning models [4].

Several important tools and processes are available to Public Health Practitioners to assist them in determining when public health action is required [5]. The most important tools are meta-analysis, risk assessment, economic evaluation, public health surveillance and expert panels and consensus conferences [6].

Public Health Surveillance:

It is a tool to assess the population based health status and behaviors. Surveillance can directly measure population status with regards to health and behaviors and is useful both for measuring the need for interventions and can measure impact after intervention takes place. The purpose of surveillance is to inform and empower decision makers and stakeholders, to lead and manage more effectively by providing timely and useful evidence [7]. The significance of surveillance can be arbitrated from the HIV and severe acute respiratory syndrome (SARS) epidemics where, surveillance played a critical role in protecting the global community at large [8].

However, it is essential for the decision makers to have competent staff members to provide scientifically valid surveillance information and communicate the results as information for action [8]. Competent epidemiologists and surveillance staff members are necessary for rational planning, implementation, and intervention [9].

Investment in public health

Most public health interventions have been shown to be cost effective and their cost-effectiveness ratios are better than or equivalent to health care interventions [10]. For instance tobacco initiatives, immunization, cardiovascular disease prevention, workplace health promotion programmes, and food hygiene [10]. A need therefore exists to invest in public health initiatives to have larger favorable impact on population health globally.

Barriers to investing in public health

There are several barriers to investing in public health:

1. Resource allocation to public health initiatives is considered as an unwise investment, since it is unreasonably argued that people living longer as a result of public health initiatives will ultimately incur extra health sector costs [10, 11]. The issue of rationing of limited available resources based on principles of equity is increasingly appearing on the agenda of policy makers allocating and distributing them.
2. Some public health interventions may not produce results for many years. This is again unreasonably regarded as a drawback of public health interventions since decision-makers operate with a mindset based on shorter timeframe.
3. If health resources are scarce, many people would prefer to relieve the suffering of an identified individual than to fund an intervention which does not address current illness, even if it would improve the health of people at large.
4. The influence of interest groups. These include health consumer and patient organization, which may tend to focus on health care and treatment services rather than public health and industry interest groups, such as the tobacco and alcohol industries, which can be threatened by the public health initiatives [10, 11].

Need for Public Health law [12]

Public health laws play a crucial role in confronting and controlling important public health issues e.g. smoking bans (e.g. WHO Framework Convention for Tobacco Control, globally & national laws to control tobacco) food fortification, safety belt use, air pollution, and fluoridation of water [13].

Public Health law research seeks and identifies factors that impact Public Health policy including strategies for effecting policy change. Research undertaken at international

level is important in this domain, as it helps determine effective legal approaches in improving health environment, behaviors, and outcome [13]

Cost of new public health legislation:

There is strong scientific evidence that legislature measures can help improve public health [13]. A recent systematic reviews of 65 studies found that 52% of the Public Health laws were effective in achieving health related objectives [14].

A closer look at the “ten great public health achievements” made in the United States of America (USA) between 1900 and 1999 confirm that the public health interventions which lead to achievements were supported by effective legislative measures [1].

Effective of a legislative measure is crucial but has to be considered along with its cost-effectiveness. Such an approach helps better utilization of scarce resources to have maximum gains, in terms of improvements in the health of the population.

Several regulatory interventions are effective in improving public health but it is important to be able to compare the cost-effectiveness of different regulatory interventions with each other and with other public health interventions. For example, a health policy-maker may want to compare the cost-effectiveness of a regulatory intervention, such as a new law to increase tax on tobacco, with a non-regulatory intervention, such as a government-funded social marketing campaign aimed at reducing smoking or the provision of funding for smoking cessation therapies.

Public Health Systems in Gulf Cooperation Council (GCC) Countries:

A need exists for better and improved establishment of public health systems in the Gulf Cooperation Council (GCC) countries [15]. Existing public health systems do not fully confront the current health challenges. Use of innovative

technology in healthcare (diagnosis, treatment or rehabilitation) clearly needs further upgrading.

The Gulf Cooperation Council (GCC) Countries have fairly good infrastructure needed that can help develop effective public health systems. This includes a network of primary health care centers, well equipped laboratories as well as various secondary and tertiary health facilities spread all over the countries with good referral systems [15].

Many Gulf Cooperation Council (GCC) Countries have established governing bodies such as the Supreme Councils for Health, Health Promotion Councils, Health Insurance Councils, etc. This again testifies the fact that infrastructure and processes for establishing a national public health system are available. Effective coordination and organization in an integrated mechanism is required, to shape a public health system based on acceptable guidelines and criteria, in a manner processes are institutional and capable of meeting the population needs [15-17].

The policies should be within the national health priorities, focusing on the current and emerging health challenges e.g. climate change and health reforms in the region to suit the challenges of the 21st century. This system should also be cost-effective by all means and health is looked upon as a sustained investment in development [16, 17]. Table 1 (next page) includes the status of public health Infrastructure and function in Gulf Cooperation Council (GCC) Countries.

Current public health laws in the Gulf countries [15]:

Some of the current public health laws in Gulf countries are given in Table 2 (next page).

Expected Outcome of National Public Health Systems (NPHS)[18]:

The outcome and impact of NPHS can be outlined in the following:

1. Improvement in the methodology of using the data through credible epidemiological methods

in statistical analysis such as surveillance of diseases, injuries, road accidents, etc.

2. Provision of opportunities to produce realistic, practical and evidence-based reports about population health which can be utilized in planning and setting health policies.
3. Bridging the gap and deficiencies in provision of safe and high quality healthcare to patients, and addressing health emergencies.
4. Full utilization of resources to deliver high quality health services in various health facilities through continuous coordination and effective partnership.
5. Increasing community awareness and changing behaviors of people related to risk factors such as tobacco use, physical inactivity, diet, etc.
6. Provision of high quality health service for all population will be provided taking into account while considering the social determinants of health and equity.
7. Improving health system research and helping utilize research outcomes and evaluating health policies.
8. Produce public health leaders in the Gulf Cooperation Council (GCC) Countries, with better training and qualification so as to deal with complexities of public health issues and engage with multiple stakeholders, as well as be able to effectively influence organizations and conduct public debate on controversial and sensitive Public Health issues, to undertake initiatives to solve population-based community problems.

Conclusion

The Gulf Cooperation Council (GCC) countries have the infrastructure for establishing a national public health system. However, it needs an effective, integrated and organized mechanism to shape this system; based on acceptable guidelines and criteria in such a way that they are institutionalized and capable of meeting the population needs.

The starting point could be the implementation of the International

Country	Infrastructure	Function	Funding	Training	Status
Bahrain	Academic + service	Medium+	Not well defined	Arab Board	Medium
Kuwait	Service	Strong	Defined	Arab Board, Academic	High
Oman	Service	Developing	Defined	Arab Board	High
Qatar	Service	Developing	Defined	Arab Board (but no community medicine yet)	Medium/high
Saudi Arabia	Academic + service	Medium/Strong	Defined	Arab Board, Saudi National Board	Medium
UAE	Service	Strong	Well-Defined	Arab Board	High
Yemen	Academic + service	Not Known	Not known	Arab Board, Academic diploma, masters	Low

Resource: Public Health in the Middle East and North Africa: Meeting the Challenges of 21st Century
 Table 1: Public Health Infrastructure and Function in Gulf Cooperation Council (GCC) Countries

Country	Public Health Law
Bahrain	Issued law no. 3, in 1975 about public health
Kuwait	“The health regulations” was drafted in 2 parts (1960 – 2006) which include many Amiri decrees and resolutions that deal with all aspects of public health in a detailed manner
Oman	The Seventh-Year Plan for Health Development (2006 – 2010) involves chapter on alleviations of risks threatening public health
Qatar	Law # 17 in 1990 about prevention of infectious diseases
UAE	Public health laws are being reviewed
Yemen	A manual involving all laws and resolutions related to health, was published in 2005

Table 2: Public Health Laws in the Gulf countries

Health regulations (IHR) which could be useful in making national public health laws, supported with the commitment of the GCC countries to institute public health systems together with appropriate public health laws.

Despite the great efforts exerted and achievements made, there are great challenges ahead which can be overcome by the following:

1. High political commitment needs to be obtained beforehand to have the national public health system in the context of health reform.
2. A high level committee should be established to assess/ analyze and evaluate the current situation in each country (health system components, indicators, available infrastructure, human resources and health facilities)
3. The committee should encompass representatives from various health sectors including Ministry of Health, universities, and other non-health sector stakeholders such as Ministry of Education and Higher Education, Ministry of Information, Ministry of Planning, Municipalities, Ministry of Interior, Ministry of Finance, Civil Service, General Organization for Statistics. The private sector should be represented in the committee.
4. An organizational structure of the National Public Health System should be established.
5. After setting the plan and its approval by the concerned authorities, a "Board of Trustees" should be established to oversee the implementation of the plan and evaluate its application.
6. A public health law is enacted where all issues of practice are organized through a credible team of lawyers.

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Teaching Communication Skills in Undergraduate Medical Students: Is Role Play going to help?

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Abstract

Objective: To evaluate the subjective importance of teaching communication skills by role playing in undergraduate curriculum.

Introduction: Communication is an essential skill for establishing physician-patient relationships and effective functioning among health care professionals. Effective communication and collaboration can positively influence patient satisfaction and outcomes.

Intervention: A 2 hour communication skills workshop for final year medical students was developed. Strategies for enhancing communication skills based on the evidence-based practice and teaching and the

interactive Role play of communication skills were included. Workshop quality and conduct with self-assessment was evaluated by the students using self-filled questionnaires. Resulting quantitative data was coded, entered, and analyzed in the Statistical Package for the Social Sciences (SPSS). Descriptive analysis of the variables was calculated and the frequencies and the percentages of the distribution of the variables were presented.

Results: Feedback on workshop conduct has shown good response in terms of objectives and facilitation. Nearly half of them agreed that this workshop had given them confidence in communication while 17.2% did not agree with that. 41.4% were fully satisfied while others have

some agreement; 60.3% strongly agree that self-assessment is an important mechanism for lifelong learning and self-improvement while half of them agreed that self-assessment identifies their weaknesses and strengths.

Conclusion: Communication skills workshop with role playing helped students in their competency and confidence. Role playing by the students helped them to understand the patient perspective and communicating effectively in a difficult situation.

Key Words: communication skills, role play, undergraduate medical students

Introduction

Most medical trainees learn verbal and nonverbal communication skills by watching their teachers and preceptors [1]. In Family Medicine settings, learners are expected to be actively coached in communication by their supervising teachers, Family physicians and other members of the health care team. More recently, skills workshops and simulated practice sessions have been used to teach communication skills. Some features of clinical competence (e.g. empathy, compassion, counseling, and showing support to patients) might have to be explicitly discussed with learners, as they are often hidden within the communication process [2-3].

Interviewing real patients in real practice has been shown to be valuable for learning communication skills and understanding patient illnesses [4]. The patient-centered clinical method is used in family medicine teaching as a model for interacting with patients and as part of the evaluation framework for the Certification Examination in Family Medicine. Patient-centered communication has been validated in terms of improved outcomes for patients [5]. The UK's General Medical Council (GMC) emphasizes effective communication as fundamental to good medical practice.

A positive relationship is fundamental for trust and confidence in the doctor, and necessary for constructive collaboration and compliance [6-8]. The most important technique for obtaining a positive relationship with the patient is reassurance and attentive listening by the doctor. Another important technique is to give permission to the patient to express his or her complaints, and to be the person they are [9-11].

Role play in clinical practice is defined as "someone emulating a patient's role in a clinical encounter, taking into consideration all possible medical, cultural and behavioral contexts" [12]. It allows for practicing communication in a safe and

controlled environment [13]. It also gives a space for learners to practice communication and receive feedback from staff and peers. Role play between learner and teacher is most common in family practice, as there is a great deal of opportunity for one-on-one teaching [14]. Such role play can often be done in less than a minute, but can be very effective in equipping a learner with effective communication strategies [15-16]. Role play has been shown to be effective in enhancing communication skills. Time for preparation, volunteers' anxiety, and difficulties in giving proper feedback are some of the obstacles for engaging in role play [17-18].

Learners always have to exercise their learning process in a safe and supportive educational climate to achieve their goals. Group work has been shown to enhance retention of knowledge and skills. Working and role playing in groups can increase learners' sense of participation, as they can work together and assess different communication skills in various situations. Small groups help in filling gaps in the knowledge and skills of the group members, and they use a learner-centered process with less didactic teaching [25]. A standardized or simulated patient, by well-trained actors is an alternative way of role playing specific communication skills or solving certain patient problems. Simulations can mirror reality quite closely and are good for improving certain communication skills, such as counseling and breaking bad news [19].

More recently, skills workshops and simulated practice sessions have been used to teach communication skills. Communication is an essential skill for safe, effective, and compassionate health care practice. Moreover, recent research also suggests that effective inter professional communication and collaboration can positively influence patient satisfaction and outcomes [20].

Teaching and Learning communication skills at Oman Medical College:

Oman Medical College (OMC) offers a seven-year curriculum, leading to the degree of Doctor of Medicine (MD). The College admits students directly after their graduation from secondary school. Students enter a 3 year General Foundation Program, which concentrates on English language skills, mathematics, physics, biology, chemistry, information technology, and study skills. The MD Program entails two years of premedical science studies, followed by two years of basic biomedical science/pre clinical studies, and culminates in two years of clinical training. The basic biomedical science subjects are taught in an integrated curriculum design. This includes integrated components of Problem Based Learning and clinical skills (i.e., history taking and general/system physical examination techniques) and communication skills.

After successful completion of the basic biomedical sciences, students commence two years of full-time clinical training in healthcare settings of the Oman Ministry of Health, specifically the Sohar Regional Hospital, Rustaq Regional Hospital, Sohar Primary Healthcare Clinic, Saham Primary Healthcare Clinic, and Rustaq Primary Healthcare Clinic.

Following completion of all coursework and clinical training, the students sit separate, comprehensive, externally-moderated examinations in Medicine, Surgery, Pediatrics, OBG, and Family Medicine (FAMCO). These examinations include assessments for clinical/basic science knowledge and clinical skills, communication skills using the formats of multiple choice questions, Observed Simulated Clinical Examinations (OSCE), and clinical cases. Students must pass all five subject examinations to graduate and receive the MD degree.

Communication skills are an integral part of clinical teaching at OMC. The Family Medicine department organizes special communication skills sessions to help the students communicate with their patients. Students develop knowledge of the implication of cultural, social, economic, and legal contexts for patient care and develop awareness of the unique health care needs of ethnically diverse populations and communities. They learn knowledge of basic communication concepts, communication models, direct and indirect messages, types and functions of non-verbal communication, attribution, ability to elicit accurate, comprehensive and focused medical histories. This training improves the ability to provide consultation in a structured way, the ability to educate patients about their health problems and to motivate them to adopt health-promoting behaviors.

Methodology

Pre Workshop need assessment and Focused group discussion for designing a workshop on Communication skills:

A focused group discussion was held with the faculty of Family Medicine and students of final year to discuss the importance of communication workshop and needs assessment.

1. Level of learner: Final year medical students
2. Experience in communication skills teaching and learning / role play
3. Communication issues in clinical practice and OSCE: breaking bad news, dealing with angry patients
4. Choosing the content: the goal of the session included an approach to a newly diagnosed diabetic, breaking bad news to a patient with breast cancer and dealing with an angry patient who is angry because the doctor did not start antibiotics for her son who has moderate diarrhea and smoking cessation counseling
5. Planning for effective and safe learning
6. Design of session and role play to address educational goal

The 2-hour workshop provided the evidence for effective communication and the opportunity to observe and practice skills through role-playing in scenarios with trained students. Groups then engaged in discussing and debriefing the approaches used, and identifying those that appeared most effective and factors influencing their effectiveness. Facilitators included trained health professionals.

Workshop theme included

- (1) Essential Communication Skills
- (2) Delivering Difficult News and Providing Support
- (3) When Patients and Families are upset and angry
- (4) Approach to a newly diagnosed diabetic patient
- (5) Counseling for smoking cessation

The innovative program incorporated strategies for enhancing communication skills, based on the science (evidence-based practice and teaching) and the art (interactive theater) of communication skills. The course material, simulated patient scenario, and tutor guide were developed by the faculty of Family Medicine Department. An interactive session on essentials of communication skills was conducted first followed by practice session on four important topics identified by needs assessment. The most challenging role for the educator during the session is to monitor the role-play, deciding when to intervene, and concluding with feedback and debriefing.

Setting up Role play: This included confidentiality in the group, time-outs used to highlight points for discussion, and that the learner can call a time-out at anytime to ask the group or facilitator for guidance. As learners have a background experience and self-knowledge that they bring to the encounter the role of the educator is to act as a guide to the learners to deepen and develop connections with the skills and content.

Data collection: Self-filled questionnaire was used for the evaluation of workshop and facilitation, self-assessment of the

students. Likert scale was used (Strongly Disagree, Disagree, Agree, Strongly Agree) for the following attributes:

1. Objectives of this workshop were clear
2. Communication skills practice session with feedback helped in learning
3. This workshop increased your level of confidence/ competence in communication skills
4. Feedback was constructive for each group presentation
5. Self-Assessment identifies your weaknesses and strengths
6. Self-assessment is an important mechanism for lifelong learning and self-improvement
7. Recommend this workshop to others
8. Facilitation of workshop was appropriately done

Data Analysis:

The quantitative data gathered from the questionnaire was coded, entered, and analyzed in the Statistical Package for the Social Sciences (SPSS). The frequencies and the percentages of the distribution of the variables were calculated and illustrated in tables and graphs.

Results

58 students out of 74 (78%), participated in the workshop, 18 of them were male and 40 female representing 69% of the participants. The questionnaire was distributed to 70 students and 58 were returned representing an 83% response rate. Feedback on workshop conduct has given good response in terms of objective and facilitation. Nearly half of them agreed that this workshop had given them confidence in communication while 17.2% did not agree with that. Regarding feedback on their practice session of role play 41.4% were fully satisfied while others have some agreement.

Students' self-assessment regarding their own performances was satisfactory, 60.3% strongly agree that self-assessment is an important mechanism for lifelong learning and self-improvement while half of them

Feedback	Frequency / Percentage				Total
	Disagree	Agree	Strongly Agree	Missing	
Clarity of the workshop objectives		32 (55.2%)	26 (44.8 %)		100%
Communication skills practice session helped in learning	2 (3.4%)	28 (48.3%)	28 (48.3%)		100%
The workshop increased the level of confidence and competence in communication skills of the student	10 (17.2%)	28 (48.3%)	19 (32.8%)	1 (1.7%)	100%
Feedback was constructive for each group presentation	3 (5.2%)	30 (51.7%)	24 (41.4%)	1 (1.7%)	100%
Recommend this workshop to others	2 (3.4%)	26 (44.8%)	30 (51.7%)		100%
Facilitation of workshop was appropriately done	1 (1.7%)	19 (32.8%)	37 (63.8%)	1 (1.7%)	100%

Table 1: Workshop Conduct and Process

Feedback	Frequency / Percentage		
	Agree	Strongly Agree	Total
Self-Assessment identifies your weaknesses and strengths	29 (50.0%)	29 (50.0%)	100%
Self-assessment is an important mechanism for lifelong learning and self-improvement	23 (39.7%)	35 (60.3%)	100%

Table 2: Students Self-Assessment in Role Playing

agreed that self-assessment identifies their weaknesses and strengths.

Discussion

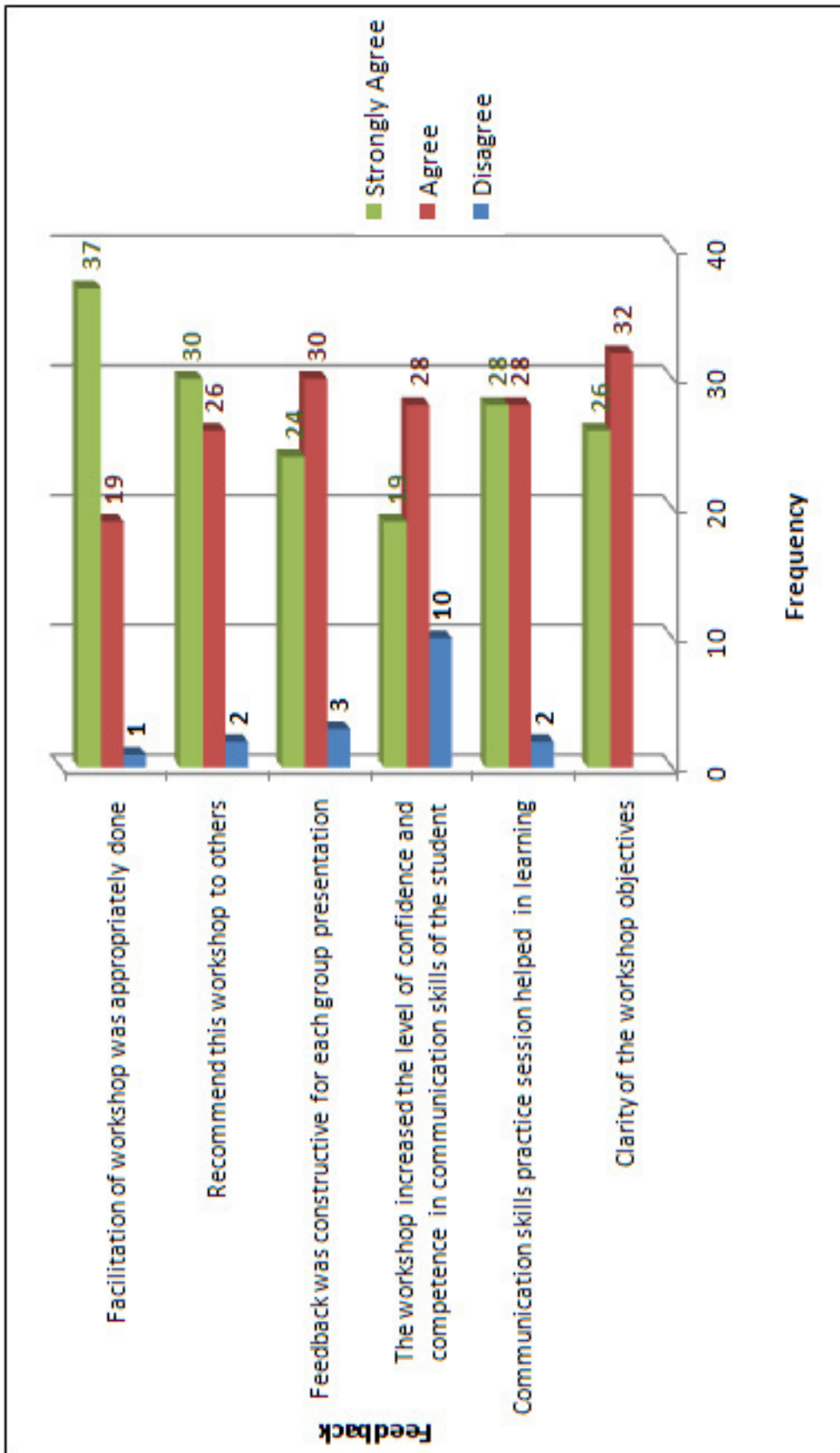
Despite enormous technological innovation for rapid and accurate diagnosis, therapeutic relationships that involve the patient and physician plays an important part in health care delivery. Regarding the familiar triad of knowledge, attitudes and skills, when it comes to teaching and assessing communication in the context of medical education, the primary emphasis is on skills. The focus on skills, suggests that

communication can be taught, learned and improved [21]. However, the work on skills needs to be placed in context. The most useful thing about communication is a transactional process in which messages are filtered through the perceptions, emotions and experiences of those involved [22].

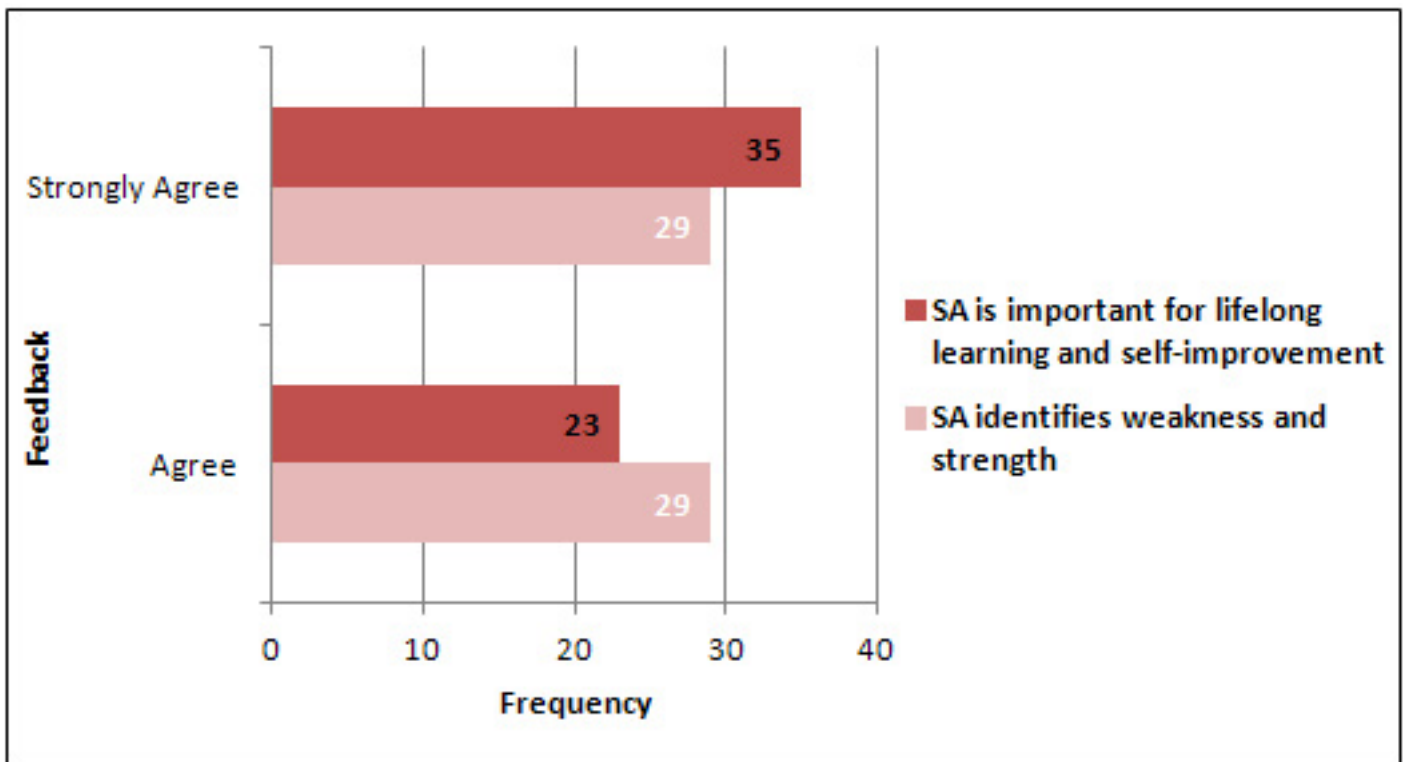
The workshop was well received by the students, and role-playing and practicing their skills in front of others was the most exciting segment [Table 1]. The most useful aspect of the workshop was identified as seeing how differently students interacted

in the same situation [23]. Literature has also mentioned that teaching communication skills in different scenarios makes students more comfortable in real practice [24-26]. Students' perception regarding their confidence and competency had some disagreement which is acceptable as this workshop event was the initiation of self-practice in a controlled environment and students need more practice sessions [Graph1 - next page].

Peer and facilitators feedback was another factor which made students understand their weaknesses and



Graph 1: Workshop Conduct and Process



Graph 2: Students Self-Assessment in Role Playing

strengths. A great majority of our students think that this workshop has increased their confidence and competency in communicating with simulator in special circumstances like breaking bad news and handling difficult patients. In addition to communication, another aspect of the doctor-patient relationship is ability to convey distressing news to the patients and their relatives [27-28]. Breaking bad news is an inevitable part of medical practice. Medical schools continue to incorporate small-group learning formats into their curricula, and communication skills that facilitate medical practice (e.g., conflict management, team building, and public speaking) are quickly becoming necessary tools for effective learning [29]. While doing a consultation students should be able to understand “patients’ perspectives” in their consultation to be a safe and competent doctor providing appropriate advice to the patient and their families and acknowledges basic coping mechanisms i.e. problem-oriented and emotion oriented, and understand the caregiver’s stress [30-31].

Self-assessment of knowledge and accuracy of skill performance is essential to the practice of medicine and self-directed life-long learning.

Students demonstrated appropriate self-evaluation of their skills where they were quite motivated to participate in the skills learning and self-assessment which usually correlates with the frequency of performance [Table 2]. Student’s attitude and anxiety may play a major role in their communication [32]. There is evidence that self-assessment not only improves clinical skills but also gives students confidence in communication skills, to promote professionalism, teamwork, and better patient management. Student’s self-assessment in role play shows that one third of the students strongly agree that self-assessment is an important mechanism for lifelong learning and self-improvement [Graph II]. Recent literature of communication skills teaching suggests that experiential learning using role-play with highly trained facilitators may be the most effective strategy [33-34].

Through our workshop we have learned that the key to managing the consultation is embedded in the phase we call anxieties: clarifying ideas, concerns and expectations on behalf of the patient, and revealing the reflections of the patient.

Conclusion

We learned several important lessons from this program, being positive in nature; communication skills and behavior can be improved by a 2-hour interactive workshop. Role playing by the students helped them to understand patient perspective and communicating effectively in a difficult situation. As educators, we have the task of helping the learners develop this competency in an effective learning environment. The keys to successful teaching of this type included assessment of the learner, assessment of the group, the educator’s ability to create a safe learning environment, the educator’s ability to provide constructive, goal-directed feedback and cultivating the ability of the learners to reflect on the processes of communication. If, as educators, we invite trainees to take a risk in their communication and repay them with deep learning, we have succeeded.

Recommendation: It is recommended that there should be a complete (transversal and vertical) integration of communication skills, including effective teaching methods, assessments, and examinations in order to be valued by the students. This would necessitate curricular

changes in terms of teaching and learning communication skills as a longitudinal theme in our medical education curriculum.

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Glycemic control: What level should we reach?

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Introduction

Diabetes mellitus is a risk factor for cardiovascular disease (1). Due to the link between hyperglycemia and cardiovascular risk, a lot of trials have been conducted to look if decreasing blood glucose is associated with decreasing the risk of cardiovascular disease. Data from the United Kingdom Prospective Diabetes Study (2) showed that reduction of glycated hemoglobin from 8 to 7% did not exhibit a reduction in macrovascular complications; interestingly in subgroup analysis of patients treated with metformin a noticeable reduction of microvascular complications was reported (2). Other trials did not reach the same results, so the issue of intensive glycemic control needed more studies.

Objective

To evaluate the effects and safety of intensive glucose control on cardiovascular events in patients with type 2 diabetes.

Search Strategy

I searched The Cochrane Library, MEDLINE, EMBASE, trip database and reference lists of relevant reviews . Also I contacted experts and manufacturers.

Selection criteria:

Large (participants > 1000 subjects) randomized controlled trials comparing conventional glycemic control with intensive glycemic control in patients with type 2 diabetes.

Data extraction:

All studies found were assessed for their quality.

Main Results

Three mega trials that randomized 23182 participants with type 2 diabetes (11591 to intensive glycemic control and 11591 to conventional glycemic control) were included.

Abstract

Background: Recently a hot debate was raised to answer if intensive glycemic control aimed to reduce HbA1c to less than 6.5% is better than conventional therapy in terms of future outcomes. A lot of studies were conducted to explore that but few mega trials were conducted.

Objective: To evaluate the effect and safety of both intensive and conventional insulin therapy in patients with type 2 diabetes.

Methodology: Traditional systematic review was conducted; criteria for studies selection were formatted. Studies selected were criticized.

Results: Three mega trials (3) randomized 23182 participants with type 2 diabetes (11591 to intensive glycemic control and 11591 to conventional glycemic control) were included. Only diabetic nephropathy was noted to be delayed in onset or progression by intensive insulin therapy.

Conclusion: There are no benefits from intensive glycemic therapy (target HbA1c < 6.4%) vs conventional glycemic therapy (target HbA1c >6.4%) except for decreasing the rate of new onset or progression of nephropathy

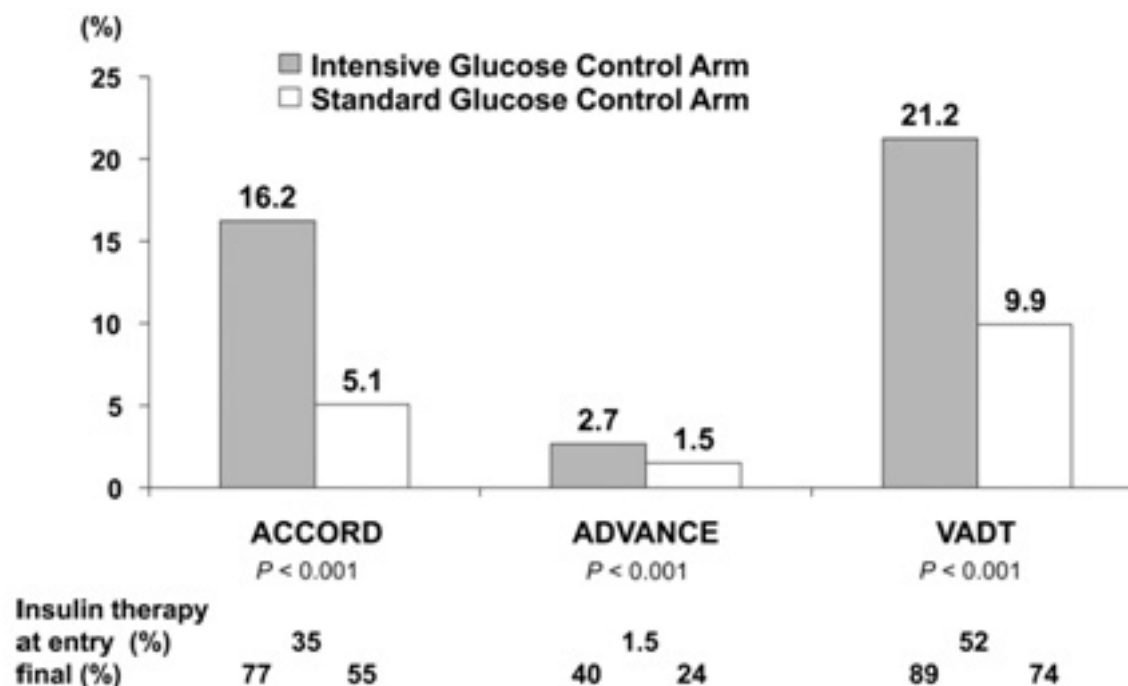
Key words: Diabetes, intensive therapy, conventional therapy, microvascular complications, macrovascular complications

Abbreviations

SD	Standard Deviation
CVD	Cardiovascular disease
VADT	Glucose Control and Vascular Complications in Veterans with Type 2 Diabetes
ACCORD	Action to Control Cardiovascular Risk in Diabetes Study
ADVANCE	Action in Diabetes and Vascular Disease: Preterax and Diamicron Modified Release Controlled Evaluation
BP	Blood pressure
LDL Chol	Low Density Lipoprotein cholesterol
HDL Chol	High Density Lipoprotein cholesterol

The VADT study (3) is a multi centers study (20 centers in USA only) randomized 1791 (892 in intensive therapy and 899 in conventional) for 5.5 years. There was no difference in death between the two groups. There was no difference between the two groups in microvascular complications. The rate of adverse events, predominantly hypoglycemia were 16.6 in the conventional group and 24.1% in the intensive group.

The ACCORD study (4) is a multi centers study (77 centers, USA and Canada) that randomized 10251 (5571 in intensive glycemic control (median HbA1c target was 6.4%) and 5123 in conventional glycemic control (median HbA1c target 7.5%)); of these 35% had had a previous cardiovascular disease. Compared with the conventional therapy group, the intensive group had significantly higher rates of hypoglycemia (Figure 1), weight gain and fluid retention ($P < 0.001$). Compared with the conventional therapy group the use of intensive therapy increased mortality and did not significantly reduce major cardiovascular events.



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Figure 1: Percentage of severe hypoglycaemic events in ACCORD, ADVANCE, and VADT

The ADVANCE study (5), a multi center study (215 centers; 20 countries) randomized 11140 (5571 in intensive therapy and 5569 in conventional therapy). The intensive therapy regimen reduced the incidence of combined major macrovascular and microvascular events by 10% relative risk reduction as a consequence of 21% relative reduction in nephropathy). There was no significant effect on retinopathy, death from cardiovascular causes or death from any cause. Hypoglycemia in the intensive therapy was 2.7% and 1.5% with conventional therapy.

Discussion

	ACCORD (2008)	ADVANCE (2008)	VADT (2009)
Number of participants	10251	11140	1791
Age(SD)	62.2(+/- 6.8)	66	60
M/F (%)	61/39	58/42	97/3
Median duration of study (year)	3.5	5	5.6
BMI (SD)	32.2 (+/- 5.5)	28 (+/-5)	31.3(+/-3.5)
Duration of diabetes (year)	10	8	11.8
Median HbA1c (SD)			
<u>Baseline</u>			
Intensive	8.1	7.2	9.4
Conventional	8.1	7.2	9.4
<u>End of trial</u>			
Intensive	6.4	6.3	6.9
Conventional	7.5	7	8.4
CVD	35%	32%	40%
1yr CVD end point (RRR)	Decreased by 10% (P=0.04)	Decreased by 6% (P=0.37)	Decreased by 13% (P=0.12)
Mortality over all	Increased by 22% (P=0.04)	Decreased by 7% (P=NS)	Increased by 6.5% (P=NS)
CVD mortality	Increased by 35% (P=0.02)	Decreased by 12% (P=NS)	Increased by 25% (P=NS)

Table 1: Clinical characteristics and effects of intensive glucose lowering vs. conventional therapy on primary CV end point, total mortality, and CV mortality in ACCORD, ADVANCE and VADT

The ACCORD, ADVANCE and VADT trials are mega trials investigated the effect and safety of intensive glycemic control versus conventional glycemic control.

Table 1 compared the Clinical characteristics and effects of both group in the three studies. Table 2 discusses the conclusion and limitations of the three studies.

Non glycemic cardiovascular risk factors were not optimally controlled (Table 2).

The improvement in glycemic control in intensive therapy groups could contribute to reduce the events of microvascular complications, mainly nephropathy. The absence of a reduction in macrovascular events implicates an additive effect of non glycemic risk factors that

often accompany diabetes such as hypertension, dyslipidemia and hypercoagulability.

In the effect of a multifactorial intervention on mortality in type 2 diabetes trial (6) the investigator randomized 160 patients with type 2 and persistent microalbuminuria (80 patient in intensive therapy and 80 patients in conventional therapy group). The mean treatment period was 7.8 years and 5.5 years of follow up. There was absolute risk reduction for death from any cause of 20% among patients with intensive glycemic regimen with microalbuminuria as compared with those in the conventional therapy group. Also there was 13% absolute risk reduction in cardiovascular death in the intensive therapy group in comparison with the conventional

therapy group. Although the Effect of a multifactorial intervention on mortality in type 2 diabetes was a sample size study (160 participants) it reflected interesting results.

The investigators concluded that intensive intervention with multiple drug combinations and behavior modification had sustained beneficial effects with respect to vascular complications and on rate of death from any cause and from cardiovascular causes. The investigators hypothesized that early intensification of non glycemic risk factors and the drugs they used (class effect) may stand behind their results.

	ACCORD (2008)	ADVANCE (2008)	VADT (2009)
Conclusion	Intensive glucose control in patients with poorly controlled type 2 diabetes had no significant effect on the rates of major CVD. intensive therapy increased rate of mortality	Intensive glucose control in patients with poorly controlled type 2 diabetes had no significant effect on the rates of major CVD, mortality and macrovascular complications except for new or worsening nephropathy (RRR 21(95% CI 7-14 P=0.01))	Intensive glucose control in patients with poorly controlled type 2 diabetes had no significant effect on the rates of major CVD, mortality and microvascular complications except progression of albuminuria (P=0.01)
Limitations	<p>The study population was high risk type 2 diabetics (> 40 y and cardiovascular disease, or >55 y and two additional cardiovascular risk factors).</p> <p>Non glyceic cardiovascular risk factors were not optimally controlled</p> <p>At end of study: <u>Intensive therapy</u> BP mmHg: Sy 126.4 (+/-) 16.7 Dy 66 (+/-) 10.5 LDL chol(mmol/L) 2.39 (+/-) 0.88 HDL chol (mmol/L) ? BMI ?</p> <p><u>Drugs used:</u> Aspirin 75.5% Statins 88% Any BP Xt 88.9%</p>	<p>Patients in the intensive therapy group had more frequent contact with health care providers (after 2 weeks of randomization, then at months 1,2,3,4,6; and every 3 months thereafter. Patients in conventional therapy group were seen at 3, 4, 6 months after randomization and every 6 months thereafter.</p> <p>Non glyceic cardiovascular risk factors were not optimally controlled</p> <p>At end of study: <u>Intensive therapy</u> BP mmHg: Sy 135.5 (+/-) 17.6 Dy 73 (+/-) 9.8 LDL chol(mmol/L) 2.64 (+/-) 0.97 HDL chol (mmol/L) 1.24+/- 0.35 BMI 28 (+/-) 5</p> <p><u>Drugs used:</u> Aspirin 57% Statins 45.6% Any BP Xt 88.9%</p>	<p>Participants are predominantly male</p> <p>At the time of VADT protocol design, availability of new drugs was limited which may affect the results</p> <p>Underpowered (no available study on intensive glyceic control at the time of VADT protocol design)</p> <p>Non glyceic cardiovascular risk factors were not optimally controlled</p> <p>At end of study: <u>Intensive therapy</u> BP mmHg: Sy 127 (+/-) 16 Dy 68 (+/-) 10 LDL chol(mmol/L) 2.11 (+/-) 1.05 HDL chol (mmol/L) 1.05+/- 0.29 BMI 33.8 (+/-) 6</p> <p><u>Drugs used:</u> Aspirin ?% Statins ?% Any BP Xt ?%</p>

Table 2: Conclusions and limitations of ACCORD, ADVANCE and VADT (Part 1)

<p>Conventional therapy: BP (mmHg): Sy 127.4 (+/-) 17.2 Dy 67.7 (+/-) 10.6 LDL chol (mmol/L) 2.39+/-0.89</p> <p>HDL chol (mmol/L)? BMI ?</p> <p>Drugs used: Aspirin 75.5% Statins 87.6% Any BP Xt 92%</p>	<p>Conventional therapy: BP (mmHg): Sy 137.9 (+/-) 18.4 Dy 74.3 (+/-) 9.8 LDL chol (mmol/L) 2.65+/- 1.06</p> <p>HDL chol (mmol/L) 1.25+/- 0.35 BMI 28 (+/-) 5</p> <p>Drugs used: Aspirin 54.9% Statins 47.7% Any BP Xt 88.4%</p>	<p>Conventional therapy: BP (mmHg): Sy 125 (+/-) 15 Dy 69 (+/-) 10 LDL chol (mmol/L) 2.11+/- 0.81</p> <p>HDL chol (mmol/L) 1.07+/- 0.31 BMI 32.3 (+/-) 5</p> <p>Drugs used: Aspirin ?% Statins ?% Any BP Xt ?%</p>
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Table 2: Conclusions and limitations of ACCORD, ADVANCE and VADT (Part 2)

Conclusion

There are no benefits from intensive glycemic therapy (target HbA1c < 6.4%) vs conventional glycemic therapy (target HbA1c >6.4%) except for decreasing the rate of new onset or progression of nephropathy. Targeting single risk factor (blood glucose) is not as beneficial as targeting multiple risk factors (such as hypertension, dyslipidaemia and hypercoagulable state and behavioral problems) .

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Difficult patient encounters in the developing world

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Abstract

Background: Health providers (doctors, nurses and paramedical) come across patients perceived as difficult. Difficult patients are the group of people who because of their behavior frustrate the clinicians and eventually do not receive the proposed care by the care givers. The real problem is the relationship between the doctor and patient leading to difficult encounters.

Objectives: The aim of our study was to analyze the problem of difficult patient encounters and strategies which can be adopted in dealing with these challenging patients so as to win them over and gain the confidence of these patients.

Method: A qualitative study was conducted by interviewing 20 randomly selected clinicians of the specialist grade and above with more than 07 years experience in their speciality in two regional hospitals in Oman.

Results: The majority of our clinicians accepted that most difficult encounters were the ones with repeated and multiple complaints not satisfied with the given treatment, followed by behavioral problems, and socio cultural, literacy and language issues. The clinician's personality, approach and job stresses were other reasons behind perceiving the patients as difficult. Free of cost health services, improper appointment system, inability to be registered under one particular doctor as in health care services in government sector may be partly responsible for these unpleasant

reactions. Structural deficiencies in the health care system, care process, human and economic resources are other contributory factors.

Conclusion: Clinicians have to recognize this challenging problem of difficult encounters and try to identify the factors that contribute to this problem and address them with good interpersonal communication skills and ongoing specialized continuous professional education (CPE) in order to refine their perceptions in managing such encounters. Health care facilities should be improved and deficiencies overcome to satisfy all patients.

Key words: difficult patient, encounters, clinicians, psychological problems, heartsink

Introduction

A difficult patient is one who interferes with the physician's ability to establish a normal patient physician relationship. All physicians agree nowadays that it is the medical encounter which is the problem rather than the term difficult patient that is attracting a lot of interest and challenge. A difficult patient for one health worker may not necessarily be difficult for another. The difficulty may be the inexperienced physician, his work style, stress and behavioral interaction with his arrogant and demanding patients causing distressful encounters for both. Difficult patient is defined as one who impedes the clinicians ability to establish a therapeutic relationship (1) adding to deterioration in doctor-patient relationship such as frustration, exasperation, defeat and rejection on both sides. The other description of the difficult patient is a person who does not assume the patients' role expected by the healthcare professional by having beliefs and values which differ from the care giver (2). Literature (3-4) reviewed so far estimates 10 to 20 percent of clinical consultations as difficult with twice the prevalence of psychopathological disorders and greater incidence of multiple physical symptoms. These patients have been labeled as hateful, heartsink and resistant (5). Recently due to both practical and emotional implications it is preferred to use the term difficult encounters, or difficult relations are more appropriate and accepted, as the problem can be either way. Earliest description of difficult patients was given by Groves (6) as manipulative, self-destructive deniers, dependent clingers, entitled demanders, help-rejecters and somatizers. These patients consume considerable time and resources, and demand a lot of unnecessary investigations and alternative treatments which are not appropriate for them. Litigations are common in such groups which cause considerable anguish among doctors. There is growing evidence suggesting that difficult encounters have less desirable outcomes for the patients.

These patients usually end up having poor functional results, reduced satisfaction, and greater use of healthcare service(7). The majority of studies on this subject have been conducted by psychiatrists in their settings, taking into account only patient factors responsible for difficult encounter(8). In the present study which is one of the few from the middle east we have tried to study and analyze patient, clinician, socio-cultural and healthcare factors which are contributing to this complex problem and various strategies which can be adopted to improve the doctor patient relationship.

Methods and Materials

Design: Qualitative research method (9) based on Grounded theory (GT) was used for data collection and analysis. Grounded theory described by Holloway and Wheeler (10) stresses on generation of theory from systematically collected data and analysis. It is commonly used in areas where theoretical knowledge is limited and particularly useful to study human behavior and social factors. GT was the ideal design for this study as theoretical knowledge is limited central to the subject matter of 'difficult patients' in a specialist referral hospital setting.

Setting: The study was conducted in two regional referral hospitals in Oman. In order to avoid bias, twenty randomly selected clinicians of specialist grade with seven years and above experience who had good working Arabic knowledge participated in the study. All the selected clinicians consented to take part in the study. The selected specialist doctors were drawn randomly from different specialties in the hospital.

Data collection: Semi-structured interview using standard interview guide was used and recorded. The respondents were encouraged to address questions directly and voice any of their concerns freely during the interview so as to allow the interview to be held in a more relaxed and conversational atmosphere. The questionnaire was designed based on the existing literature and author's

experience of the topic. Interview topics were discussed randomly depending on patient's response and other topics related to treatment were explored. The question list was expanded if the respondents brought out new items during the interview.

Data analysis was done by two members of the research team independently. Separate coding was applied initially to avoid bias of interview transcripts. This was followed by open coding by both interviewers in order to highlight important topics. The code book along with all sub-codes was generated after final discussion, analysis and compatibility tests. Final analysis of results was based on the following categories:

1. Difficult patient characteristics along with socio-cultural influences.
2. Clinician related factors.
3. Health care system factors.

Lastly the strategies for dealing with difficult encounters were discussed. The data was tabulated in descending order of frequency and answers to questions were scored as either yes or no without numerical averages. Clinicians drawn from different specialties who participated in this study had uniformity to a large extent in their observations about difficult patients and encounters, as was seen during encoding of interviews.

Results

The profile of the participating clinicians is shown in (Table 1). The majority of clinicians had experience of between 7-10 years in their respective fields; five among them had additional work responsibilities such as to attend meetings in the quality assurance department, compensation board meetings and other hospital and departmental meetings. Monthly encounters were more, compared to weekly or daily encounters. In our study (Table 2) the majority of these encounters were for repetitive complaints leading to repeated outpatient visits and unnecessary admissions in wards even to the extent of some

1. Gender :	
Male	20
Female	10
2. Average Patients Seen Daily:	
Less than 20	16
More than 20	14
3. Experience (years):	
07-10	11
11-14	10
15 and above	9
4. Additional workload:	
Yes	5
No	25
5. Difficult patient encounters:	
Daily	7
Weekly	13
Monthly	22

Table 1: Clinicians Profile

1.	Multiple repetitive complaints
2.	Anxiety
3.	Never satisfied or reduced satisfaction
4.	Angry
5.	Refusal to consent for procedure
6.	Behavioural problem (Aggressive, Violent, Rude, Manipulative)
7.	Demanding/Exploitative
8.	Seeking secondary gain
9.	Uncooperative
10.	Complaining about care givers
11.	Psychotic disorder

Table 2: Relative frequency in descending order of difficult patients

1.	Language barrier
2.	Illiteracy
3.	Religious beliefs
4.	Fear of surgery
5.	Shame
6.	Superstition
7.	Consent factor
8.	Cultural factors
9.	Expatriate worker unable to pay

Table 3: Socio-cultural and economic factors

1.	Free health care
2.	Discrepancy in Clinician-patient ratio
3.	Improper appointment system
4.	Unavailability of proper receptionist
5.	Administrative social pressures

Table 4: Healthcare factors contributing to difficult patient encounters

of them threatening to be admitted on social grounds, especially the geriatric patients. The second group was those with behavioral problems meaning noncompliant, never satisfied, angry at the doctors, aggressive, those refusing consent for surgical and medical treatment and always complaining about the care givers. Very few encounters had psychosomatic disorders such as anxious patients, psychotic disorder, demanding and exploitative personalities. Often females with repetitive complaints with no identified cause of illness were labeled as hysterical and managed with the help of psychiatrist and psychological support. Socio-cultural and economic factors shown in (Table 3) are important especially in the developing world where they can contribute to difficult encounters. Health care system related factors (Table 4) cause patients to become frustrated and difficult. These factors are all avoidable and if care is taken it can minimize difficult encounters. Clinician related factors like job stresses, overwork, lack of experience, poor communication, lack of training in counseling skills and in general personality of clinician all are adverse factors for poor patient-doctor relationship. The positive clinician factors which are helpful in interaction with patients are tolerance, patience, empathy, good sense of humor, openness, ability to love and interact freely with patients.

Discussion

The finding of our study was that difficult patient encounters are multifactorial. It was noted that the patients visiting the doctors are mainly those with vague, repetitive complaints for which inappropriate investigations are ordered and physicians recommend them for multiple consultations to satisfy them. At the end of sessions they demand a follow up appointment and medications even though they are not in need, but because of clinging attitudes the clinicians prescribe some medication just to be relieved of the persisting demands. Patients with behavioral problems of anger, aggression, violence and uncooperation are next in order

not consistent with other recent studies, where behavioral problems constitute the majority of challenging encounters (11-12). In earlier studies mentally ill patients topped the list of difficult patient encounters (7). Individuals with soft psychiatric disorders can be comforted by good communication and counseling skills. However most of the clinicians find difficulty in tackling these cases due to lack of professional expertise and time consuming processes for which these clinicians are not prepared. The individuals with soft psychiatric problems are overlooked and do not receive adequate attention making them more violent. This requires continuous professional education (CPE) training in order to learn how to deal with these patients. The involvement of a social worker in such cases may be helpful. Hard psychiatric conditions like schizophrenia and bipolar affective disorders need adequate treatment by specialists.

In our experience senior clinicians have less difficult patient encounters and can treat and communicate better in comparison to the less experienced by handling such situations with consideration to relieve patients' anxiety, worry and fright(9-12). Most of these aggressive patients behave very politely with the senior doctors and quietly listen to their advice.

Patients with multiple and repetitive complaints put a lot of pressure on the clinicians who possibly cannot satisfy these patients in their limited consultation time. Multiple investigations in these patients show normal results but the complaints continue. Such patients can be treated better by good communication skills, regular follow up, and caring for the patient rather than showing neglect(9-13). The clinicians sometimes refuse to see them and send them for multiple unnecessary consultations by other doctors. Litigation is common in this group of patients. They are often labeled as problem or frustrating patients.

Another important category of difficult patients are those who had in the past a bad experience or encounter with health providers. These patients prove difficult to relate due to distrust and fear which is preconceived in them from past experiences(11). It requires understanding, and good communication on the part of the clinician to evoke trust and faith in the doctor-patient relationship. Terminally ill and drug addicts are challenging encounters for the health providers. These patients need a multidisciplinary approach with involvement of family, friends, psychiatrist, social worker and psychological support. Encounters with drug addicts in Obstetrics and Gynecology is almost negligible in our hospitals.

Socio-cultural factors (Table 3). To have good understanding of the cultural background of your practice is essential for better health care delivery for all patients. Female patients in this part of the world may not make eye contact with a male clinician as in their culture such acts may indicate some form of sexual advance. Patients booked for surgery may ask for postponement for social functions such as marriage or to participate in funeral services. Some refuse procedures like amputation, mastectomy or hysterectomy for malignant condition due to shame or superstition. And the question still unanswered is whether a physician should respect a patient's refusal of treatment predicated on false belief? A person must be informed of all relevant facts in absence of coercive pressures, as ignorance of material facts cannot allow any individual to make a truly voluntary decision (14). Refusing treatment or failure to accept treatment may result in harm to others or society for example increasing the costs to health institutions where treatment is totally free of costs as in our hospital setup. Health providers are guided by four principles of medical ethics: autonomy, justice, non-maleficence and beneficence. Autonomy involves respecting patient' values but there is danger in respecting autonomy as refusal of expert clinical judgment may inflict harm. The ethical principles

of medical practice are influenced by the patient-doctor relationship. If a paternalistic attitude is adopted a patient has a right to refuse treatment but not to demand unnecessary risky medical treatment.

Consenting: Refusal to consent due to lack of understanding the consequences as in obstetric and pediatric surgery can be a very hard task for the medical staff. Refusal of medical treatment or consent to medical treatment in a difficult patient may be due to clinician's inadequate disclosure. This will make the patient unable to understand the need for procedure or to make the correct decision. In countries with patriarchal systems the female is not expected to sign consent in absence of a responsible male family member. Forcing the female to sign consent at times in emergency situations can lead to a multitude of problems for the clinician and institution. Involvement of community leaders, family, friends and public relation officers of the hospital may help in such cases.

Language and literacy factors: In countries with immigrant health care providers who have to deal with patients whose language is different than their own, many patient encounters are difficult. In such situations help of interpreter should be sought after understanding the patient's agenda and expectations which improves compliance and follow up (14). Low literacy rates can be an additional contributory factor.

Most of the participating doctors in our study felt that clinician personality, behavior and attitude can be a contributory factor to this problem(12). Arrogant clinicians who overemphasize strong beliefs may disempower patients from understanding the situation appropriately and not allow them to reach a shared decision which may be the only solution to a particular situation. Identifying trigger issues, delegating to others some of the work and diplomatically bowing out of some commitments are some of the suggestions (3). Being involved in activities such as audit, research,

and continuous professional education (CPE) directed towards developing counseling skills may be valuable in decreasing such encounters (11,15). It is a wrong practice to blame difficult encounters on mischief or malice towards the caregivers. All cannot be labeled as psychopathic. A competent person who persists in refusing a medical procedure could be based on ignorance or false belief. A Physician has a moral obligation to attempt to change a patient's false belief. Various social and medical conditions like mental disease, alcoholism, drug use, obesity and muscular skeletal diseases are some difficult medical conditions for physicians (13).

From the literature survey and our own experience, various strategies have been proposed which can be adopted to decrease difficult encounters. By polite communication fears of serious illness and repeated complaints can be reduced (7). The virtues of warmth, sympathy, understanding and above all non-judgmental listening in all health workers may win over the patient's apprehensions and gain confidence in their treating clinicians finally allowing them to accept the proposed treatment plans. Tolerance, patience and understanding of patient's perspective and expectations can solve many problems. Use of humor by sharing our own personal experiences with patients may calm the encounter making it pleasant either way. Finally make the patient believe and feel that something is being done so that no element of negligence creeps into their minds. Informed refusal should be documented in a patient's medical records so that no talk of malpractice will be raised in future. In recent years consent to medical treatment or a refusal of medical treatment is considered valid and the caregiver may be under an obligation to respect a patient's refusal. An interpretive relationship, repeated consultations, addressing reasons for refusal of treatment will help to establish a confident relationship with your patients.

Health care system related factors (Table 4) may be responsible for difficult encounters. Strategies must be planned which can reduce such unpleasant encounters. Free of cost healthcare services as are seen in all Gulf countries may be responsible to some extent for repeated visits to hospitals and the attitude of 'shopping' in hospitals. This is however a very debatable and sensitive issue. Improper appointment systems, and walk in patients increases the workload on the healthcare system. Untrained receptionists and poor doctor-patient ratio all have negative impact on the clinician-patient relationship (13). Healthcare providers should not ignore the environment in which they work. A chaotic, noisy environment which does not afford privacy increases the likelihood of a difficult patient encounter (3). Physicians should always aim to remain culturally sensitive towards different beliefs about health and illness, religious and gender issues. Breaking bad news is another sensitive aspect of concern to be dealt with experience and sympathy (13). Patients who have half knowledge and are semi-literate demand a lot of unnecessary information and questions. Sometimes the demand is for most unlikely alternatives to treatment or unnecessary investigations. Physicians should avoid blaming their patients and practice self-management to control their own emotions instead, as multiple diverse problems regarding personality disorder of both physician and patient together with health care system can lead to difficult encounters (16-17).

Case Scenarios

Case 1: Angry aggressive patient. Due to some last minute emergency professional work you are late to your outpatient clinic and the patient scheduled for first appointment is angry and behaves aggressively threatening to file a complaint for not respecting his time. Such type of patient behavior is quiet uncomfortable for the clinicians and can lead to dissatisfaction and poor communication. Strategies to diffuse anger are important.

- Try to identify the real cause of his anger. Allow patient to vent his anger.
- Validate the anger with empathetic comments such as that “you apologize for the delay and frustration that it has caused. Also try to explain the reason for delay. Follow up questions should be “shall we get started”. This may help to calm the patient.
- Give ample opportunity to the patient to discuss his concerns and involve him in decision making and any solution to his problem. Reassuringly ask him “How can I help you?, Do you have any suggestions”.
- Irrationally behaving patients use threats of filing complaints in order to intimidate the clinicians. In such cases make sure you have completed the documentation of the case including the care provided, should there be complaint. Offer consultation with another clinician in case patient still continues to be dissatisfied.

Case 2: Demanding patient.

Young patient with sudden onset low back pain without distal neurological deficit following weight lifting insists from the start at having MRI scan and narcotics whereas we would order plain radiograph and start with NSAIDS course and wait for 1-2 weeks before deciding on further investigations.

Assess the background situation: Patient fears may be related to past experience of such problem with her close relatives or friends. Determining the problem that is most troubling and worrisome for her will help to address her fears. Try to reassure the patient that diagnostic tests or further referrals are not being withheld for cost factor and will be done only if warranted for the particular situation. If this approach is not effective involve her in management plan which will facilitate compliance from patient. Show empathy.

Beware of drug addiction if patient is strongly insisting on narcotics in spite of adequate analgesia. Such cases need intervention in the form

of counseling and pain management clinics.

Case 3: Manipulative patient:

This type of patients wants the system to work as per his wishes so he will visit different team members till he is satisfied with the answer he wants. In such a situation communication among team members is important and it is better for team members to discuss and allow a single member to make the final decision so as to avoid such a situation.

Conclusion

It is now recognized that difficult patient encounter result from various factors related to patient, clinician, healthcare system and socio-cultural factors. At the onset the clinician needs to change his/her thinking from that of difficult patient to difficult encounter. Four E's that is, engagement, empathy, education and enlistment will help in dealing successfully with such encounters. Acknowledge that the situation is difficult for both parties. Clinicians need to be cool and calm so as not to risk imitating a patient's behavior. Share information with respondent frankly and give the patient hearing to their feelings responding in a supportive and compassionate manner. Set rules and boundaries about time spent, contents of visits and try to mobilize all resources that can help such encounters to be less difficult. Lastly if the relationship still is not moving forward, arrange consultation with another clinician. Development of communication, counseling skills is very important for good practice. Social worker, community and religious leaders can be of ancillary help in tackling various socio-cultural factors contributing to this problem.

Limitations of study:

1. Additional studies involving multiple hospitals with a large sample size are required to have better understanding of the subject.
2. All clinicians in our study were of specialist grade from different specialties' and not G.P's whose perceptions about difficult patient

or encounters can vary although literature has not shown much variation.

3. Variance related to difficult patient and encounters may be limited in our study.
4. Direct patient and clinician behavior during such interviews are needed.
5. Paucity of information about 'difficult' patients' perspectives about the treatment provided and its outcomes in our setting.
6. More studies incorporating paramedical staff views and experiences in management of such encounters would further refine such studies.

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An Oldest Cost Effective Method: The Art of History Taking

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Letter to the Editor

I would like to share the case of a patient with a longstanding abdominal pain. My resident appeared puzzled while explaining the case of a 57 year old female patient admitted to our outpatient clinic with the complaint of pain over epigastrium and diarrhea up to eight times every day for the last eight months. She had consulted many clinics for the relief of cramps and pain over the epigastrium spreading to the whole abdomen and diarrhea. Diarrhea was watery, explosive in nature and contained no blood, mucous material and no other clue that may be associated with any gastrointestinal system disease. Previous microscopic and culture analysis of stool revealed no abnormality. Upon persistent symptoms and discomfort the patient had been referred to a tertiary care center where colonoscopy had been applied to rule out the malignancy and other likely diseases of the gastrointestinal tract.

Concurrently taken biopsy during colonoscopy revealed no etiology other than minimal ischemic changes and eosinophilic infiltration. The patient was admitted to the Family Medicine clinic to be prescribed metformin. She had been using metformin 1000 mg 2x1 for the last two years. The patient was evaluated thoroughly and asked not to use metformin for one week. During her visit she reluctantly expressed her loss of hope to find a remedy for her long standing discomfort. The patient was requested to visit the Family Medicine outpatient clinic at the end of one week. She had relief from the cramps, abdominal pain and from the explosive diarrhea.

Metformin's discovery goes back to the era of invention of insulin. However a greater focus on insulin in 1920's overshadowed further research on the effects of metformin for almost two decades. McWhinney stated that "The profound changes

now occurring in medicine can only be fully understood if they are viewed from the perspective of history". The same could be applied to each patient as well. Every patient's history is unique and gives physicians invaluable clues which could be never elicited otherwise. These clues starting right from the first encounter with the patients or their relatives are the initial steps to good medical practice implementations as usually practiced by many family physicians. However some factors may interfere even at the beginning of clinical interview that may cause improper history taking. We would like to highlight the unwanted outcomes of improper or hasty history taking, the burden of which not only negatively influences patients subjected to unnecessary medical interventions but also causes loss of time and money in all steps of the health care system.

And we also pondered over the art of history taking; the oldest cost effective method which has remained to be a powerful diagnostic tool that has been commended by the family physicians in the era of immense technological advances, enlightening the practice of family physicians all across the world.

Sincerely yours.

This letter has been presented as a poster at the WONCA Europe Conference July 4-7 Vienna, Austria 2012. *The Art & Science of General Practice*.